University of Zürich

People and Computing Lab

Master Thesis

"Women just have to accept it when the man wants it": An Investigation of the Practice of Forced Marriage and the Potential for Design Interventions

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Abstract

There has been a growing interest in Human-Computer Interaction (HCI), and Computer-Supported Cooperative Work (CSCW) in research on marginalized communities and women's health and well-being. Important work has been done considering domestic violence (DV), intimate partner violence (IPV), and technologies to address these problems, but little research thus far has looked at the issue of forced marriage. In this paper, we present a study investigating the experiences of individuals affected by forced marriage from various cultures, ethnicities and backgrounds. We also examine the processes and challenges for helping organizations that provide assistance to people in forced marriage situations and explore opportunities for the design of technologies to support individuals affected by forced marriages. Through in-depth interviews and participatory design exercises with people affected by forced marriage and help organization staff members, we offer a rich account of the experiences surrounding forced marriage and identify avenues via which the HCI and CSCW research communities can leverage their expertise to address the problem of forced marriage, potentially contributing to the reduction or elimination of this harmful practice.

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1 INTRODUCTION

> *"I always had trouble understanding what a healthy relationship looks like; I thought that as a woman, I am supposed to be obedient and serve my man and his family; I thought that is how a relationship works. I was always so sad because it felt depressing, and I was scared I would always be stuck in a loveless relationship but would have to accept it because that is how it is supposed to be. My mother told me, once she found out we had sex education in school, that this is 'not how it works in our culture, how we don't kiss or hold hands and that when it comes to intercourse, women just have to accept 'it' when the man wants it."* —Huma

According to the Universal Declaration of Human Rights, the freedom to choose a spouse is a fundamental human right that equally applies to all human beings, regardless of race, nationality, or religion. It further states that marriage should only be conceived with both spouses' free and full consent [82]. Despite national and international laws aimed at preventing involuntary marriage, many people, disproportionately women and girls, are prevented from exercising this right [70]. In forced marriage, it is often the case that family members and the greater community project their expectations and pressure on a young woman and force her to marry someone of their choice. This pressure can present itself in several ways, including psychological, physical, emotional, or socioeconomic pressures. It is a harmful practice that prevents young women from living free from violence and violates their rights to self-determination, freedom of movement, and bodily and psychological integrity. [38, 83]. The Swiss Centre of Competence against Forced Marriage (CoCFM) is a non-governmental organization based in Switzerland that aims to raise awareness of forced marriage, provide assistance to people in forced marriages or at risk of forced marriage, and ultimately contribute to the elimination of the practice. In this research, we partner with the CoCFM to learn about the practice of forced marriage, the challenges facing people affected by forced marriage, and the ways in which the organization provides support to them, with the goal of identifying areas in which HCI research and technology design can offer benefit. According to article 181a of Swiss criminal law, forcing someone to marry is prohibited in Switzerland and punishable by up to five years in prison. Despite these laws, the CoCFM [9] had 361 registered cases in 2020, similar to the numbers in past years. Globally, the numbers are even more distressing (see Table 1). It is also believed that there is a much higher number of unregistered cases [9, 62] since there is a strong tendency for sexual and domestic crimes to go underreported due to the social culture and hierarchical power structures. Cultural expectations and social consequences often discourage victims from disclosing abuse and seeking help [7, 35, 50, 56]. In a study in 2012, the Swiss Federal Council [57] stated that there is a considerable gap in knowledge regarding forced marriage and identified several problems, such as the lack of information and required measures, as well as missing procedures and resources for affected people.

Human-Computer Interaction (HCI) and Computer-Supported Cooperative Work (CSCW) have the potential to significantly impact and enhance the lives of marginalized and disadvantaged communities [22, 25, 31, 53, 74, 78, 84], and there has been a rising interest in these fields in designing technologies that positively impact women's health, well-being, and safety [8, 23, 42, 67]. HCI research on women's safety and well-being has frequently addressed topics such as domestic violence (DV) and intimate partner violence (IPV) [20, 24, 30, 59, 65], with several researchers discussing the role of technology. Some of these studies highlight opportunities for technology-supported coping strategies [20, 48], and others have analyzed how technology can further aggravate the problem and stress the importance of appropriate design [24, 30, 46, 65]. There is, however, a lack of research in HCI and CSCW concerning the particular issue of forced marriages. People affected by forced marriage have a high likelihood of experiencing DV and IPV [21, 52]. Clearly, there is an overlap between DV and forced marriages, and some researchers have even argued that forced marriages

Region	Est. Number of People in Forced Marriage
World	15,443,000
Africa	5,820,000
Americas	670,000
Arab States	170,000
Asia and the Pacific	8,440,000
Europe and Central Asia	340,000

Table 1. Number of people in forced marriages by location [40]

are a form of DV itself [29, 52]. Despite the relationship to DV, forced marriages often have unique characteristics and implications that may not be present in DV and IPV cases, in particular regarding its social acceptability, the way it is systematized within social structures, and the authority of its perpetrators within a community or culture [9, 32, 66]. Forced marriages, IPV, and DV, are, of course, not problems that are technological at their core. They cannot be solved entirely by technology and do not exist as a result of a lack of technology. However, there are opportunities for technology to raise awareness, provide support, and increase access to information and resources for people affected by forced marriage or organizations fighting to eliminate forced marriage. As digital technologies play an increasingly central role in everyday life, research in HCI, CSCW, social science, medicine, and political science has shown that technology can act as a medium for support and help-seeking [38, 70, 75]. The anonymity and access to information that technology facilitates have enabled an increasing number of people to make use of digital mediums for support in issues of abuse and help-seeking[58, 61].

As the body of HCI and CSCW research on marginalised communities and women's well-being continues to grow [44], it is crucial to develop our understanding of the wide-ranging experience of gender-based violence[1] and the potential of HCI research and design to contribute to these contexts. Using participatory and collaborative approaches, this work involves people affected by forced marriage as an active part of the design process. It embraces their "experience" and "meaning-making" as legitimate sources of knowledge [49]. As McDonald and Mentis [51] argued, HCI researchers must consider these individuals as citizens who require a specific type of assistance and not a passive component of the design process. Foley et al. [26] further highlight that if we see *"our users as impaired in some specific way, our design is likely to try to compensate for the impairment, configuring the variety of people who might use it in terms of that specific impairment and neglecting their many and varied other qualities"*. Thus, incorporating the affected individuals and the advisors of the CoCFM as active participants through a participatory approach helps us shape a better-informed design of technologies in the context of forced marriages.

Against this backdrop, we formulated three main research goals: (i) to investigate the experiences of individuals affected by forced marriages from various cultures, ethnicities and backgrounds, (ii) to learn about the processes and challenges of helping organizations providing assistance to people in forced marriage situations, and (iii) to explore opportunities for designing technologies to support individuals affected by forced marriages as well as the organizations that provide them with assistance through HCI and CSCW research and design.

To address these goals, we first conducted an extensive literature review of existing studies of forced marriage outside of HCI; we describe key aspects of forced marriage in Section 2. We then conducted a qualitative study focusing on

[1]It should be noted that forced marriages affect people of all genders. Research has shown that up to 20% of affected are male on average in the world [9, 39]. However, as the problem disproportionately affects women and the participants to whom we had access were exclusively women, in this paper, we focus on the experiences of women who have escaped forced marriage situations and females affected by forced marriages. It may not be possible to generalize their experiences to males, primarily because forced marriages are often connected to patriarchal communities in which males and females have dramatically different gender norms. This often entails a power imbalance between women and men, with vastly different access to resources and opportunities and different challenges between genders.

affected individuals' needs and challenges in their experiences of forced marriage. Specifically, we engaged in in-depth interviews with CoCFM staff and affected individuals to gain insight into the practice and effects of forced marriage. The contributions of this work are threefold:

(1) We provide a rich account of the experiences of individuals affected by forced marriages of various backgrounds and life circumstances, identifying needs and challenges surrounding the problem.
(2) We synthesize our findings regarding forced marriage and distil from them key considerations for designing interactive technologies and highlight design opportunities for the HCI and CSCW communities.
(3) We provide examples of exploratory design concepts based on our findings and consider their potential value and appropriateness for supporting people affected by forced marriage in collaboration with the CoCFM. These design examples are not intended as finished technology solutions for people affected by forced marriage but as explorations of the design space of technologies to address forced marriage.

Our work calls for attention to designing for those affected by forced marriage to help provide technologies to support, fight and cope with their challenges. In this paper, we first provide background on the practice and effects of forced marriage as context and framing for our research. We review related literature within and outside of HCI on forced marriages and the related issues of DV and IPV. We then present our study design and findings of our qualitative interview-based inquiry with CoCFM staff members and women affected by forced marriage we conducted in 2021 for my previous work and build upon that through additional material we gathered through workshops and feedback from the CoCFM. We identify design opportunities and implications for how the HCI community can contribute to addressing the problem of forced marriage and support individuals in forced marriage situations on a broader scale. We present several designs for concrete technologies based on our study findings and assess these concepts with feedback from the CoCFM. Finally, we conclude with a discussion of the considerations and directions for further HCI research in support of people affected by forced marriage.

2 BACKGROUND ON FORCED MARRIAGE

The term "forced marriage" refers to a marriage where one or both spouses do not give their consent for the marriage, and coercion is involved. This coercion can take various forms, including physical, psychological, financial, sexual, and emotional pressure on the unwilling party. As a result, the affected individual may refrain from refusing the marriage due to fear of potential negative repercussions [9, 27, 79]. It is essential to differentiate between "forced marriage" and "arranged marriage." In an arranged marriage, the family takes the lead in finding a marriage partner for their son or daughter. Both parties theoretically have the freedom to decide whether to enter the marriage, and parents are expected to respect their child's preferences [57, 79]. However, previous research indicates that the distinction between arranged and forced marriages can sometimes be unclear and uncertain [18, 32]. Even when a child has the right to refuse a marriage, they may not exercise this right due to fear of potential negative consequences. There could be intense pressure from their families and society not to decline, or they might be too young (under the age of 18) and inexperienced to make an informed, independent decision [9, 19]. Child marriage, where one or both parties are under the age of 18, is considered a subform of forced marriages as they can not give their full, free and informed consent [9, 81].

In 2016, there were an estimated of 15.4 million people in forced marriages [40]. The Forced Marriage Unit [28] consistently provided advice to 1,200-1,500 individuals annually. Additionally, the National Centre for Social Research [43] estimated that there were likely between 5,000 and 8,000 cases per year in England. The Government of the Netherlands [72] reported on their website that there were between 674 and 1,914 individuals affected by forced marriage in the country. Similarly, the CoCFM in Switzerland noted a significant increase in the number of cases, reporting a rise from "two cases per month" to "five cases per week" [9], with a total estimated annual number of around 700 cases [57]. This has led various scholars to research forced marriages and the underlying causes as well as recommend measures, preventive interventions, and support programs for the affected [27, 57, 60, 72].

Forced marriages are not limited to a specific religion or nation; rather, they are influenced by traditions and customs. Focusing solely on one religion when discussing forced marriages is considered detrimental. In Switzerland, the occurrence of child and forced marriages is linked to migration patterns and affects both Islamic and non-Islamic individuals and countries. For example, in Europe, Roma and Sinti communities experience minor marriages. In Spain, a Christian country, the marriageable age was as low as 14 until 2015, when it was raised to 16 with parental consent. Similar patterns can be observed in other Christian countries like Colombia and Venezuela, where the minimum age for marriage with parental consent is 14. Additionally, Mexicans in the United States constitute the third-largest group affected by forced marriages [9]. UNICEF [81] data further supports this, revealing significant child marriage rates in various religious contexts (e.g. India, Cuba, Thailand, Uganda). These data demonstrate that forced and child marriages are not specific to any religion but rather a global issue influenced by cultural practices and societal norms. Researchers have explored the root causes of forced and child marriages, identifying three main factors: traditionalism, familism, and patriarchy. Switzerland, with a high number of immigrants (25.1% [2]), becomes a melting pot of various cultural communities with different perceptions about gender roles, marriages, families, and lifestyles.

Familialism emphasizes the importance of family, promoting anti-individualism. It contrasts with individual societies, where self-sufficiency and personal autonomy are highly valued. In anti-individual families, decisions are made for the good of the group rather than individual desires. Such families often live in extended or joint setups, and young adults prefer to be closely involved with the family unit [10, 45, 75]. Forced marriages are common in such communities, where parents may insist on marrying within the same ethnicity or nationality. These marriages are often used to

maintain family honor and control the sexuality of children. The fear of dishonor or exclusion from the community may drive families to impose restrictions and curfews on their children, leading to limited freedom of movement and lack of privacy [3, 9, 27, 57, 80]. Escaping forced marriages can be difficult due to a conflict of loyalty, dependency, limited capabilities, and fear of retaliation or "honour-killings" may prevent individuals from seeking help or pressing charges against abusive partners. The complex interplay of traditionalism, familialism, and patriarchy contributes to the challenges faced by those trying to resist forced marriages.

Forced marriages have profound consequences, impacting individuals, families, and communities. Women coerced into marriage often endure repeated rape and domestic violence [27]. Such marriages are associated with various health problems, affecting psychological well-being, and increasing the risk of self-harm and suicide [6, 62–64]. Those subjected to domestic violence, sexual abuse, and forced early marriage are at higher risk of developing mental disorders, adversely affecting daily activities, family relationships, and physical health. They may struggle in decision-making and face challenges in marital conflicts [41]. Pregnant women in forced marriages also experience high psychological stress, impacting birth outcomes and potentially affecting their children's long-term health and development [12, 13].

3 RELATED WORK

This section presents related research on forced marriages within and outside of HCI and CSCW. Our related work addresses three principal research areas: (1) studies on arranged marriages and forced marriages in HCI and other fields; (2) technology-mediated support for DV and IPV; and (3) HCI research on technology-mediated abuse.

3.1 Studies of Arranged Marriage and Forced Marriage

In recent years, there has been an increase in research on forced marriages in the social, political, and medical fields [37, 38, 64, 70, 75]. This has also led to a number of Western nations, such as the Netherlands, Germany, Switzerland, and the United Kingdom, commissioning research and studies in their country on the topic and recommending measures, preventive interventions, and support programs for the affected [27, 57, 72]. In comparison to the volume of research on forced marriages in the political and social sciences, the HCI efforts are scarce in this space – there have only been a few studies on arranged marriages in HCI and CSCW and none on forced marriages. Sharma et al. [68] studied Indian matrimonial websites that facilitate arranged marriages with a focus on safety and inclusivity. Additionally, a study by Al-Dawood et al. [5] analyzed the acceptance of such technology in Saudia-Arabia and highlighted concerns regarding matchmaking technologies in the cultural context.

3.2 Technologies to Address DV and IPV

HCI research focusing on women's safety and well-being has addressed topics such as DV and IPV, which are closely related to forced marriage [21, 52]. DV can occur between any two individuals living in the same household, such as parent-child, siblings, or roommates, while IPV specifically involves romantic partners, whether they share a household or not [9, 54]. In contrast, forced marriage often involves multiple perpetrators from within the immediate family, the extended family, the community, and the spouse, leading to the oppression of the affected individual [9, 32, 66]. While DV and IPV are primarily associated with traditional gender norms and gender inequality [9, 66], forced marriage cases involve intersections of gender norms, traditionalism, and familialism. As a result, seeking help from family or the community may be a viable option in DV and IPV cases, but it may be less feasible for those facing forced marriage [50, 56], potentially leading to exclusion and negative consequences from their respective community and society. Despite these differences, exploring the intersections between these topics and previous research on IPV and DV can provide valuable insights into the discourse surrounding forced marriages.

Studies have highlighted the significance of technology in supporting individuals facing DV and IPV. For instance, Younas et al. [86] emphasized how Facebook groups offered anonymous peer support and a safe space for discussing sensitive topics like abortion, sexual harassment, rape, and DV among women in Pakistan. Naseem et al. [55] further examined the opportunities and challenges of designing peer-support mechanisms within patriarchal and religious contexts.

Tarzia et al. [77] investigated young women's perception of technological interventions to support those experiencing domestic violence. The women welcomed such solutions, expressing that technology offers an easier way to seek help, raises awareness, and protects safety and privacy. Glass et al. [33] developed the MyPlan app, which educates women on IPV and healthy relationships while providing personalized suggestions for friends to support affected individuals privately and safely. A study evaluating the app's effectiveness revealed a decline in physical or sexual abuse among women after 12 months of use [34].

With regard to research in this field, there has been a recent shift from survivor-centred design towards designing for responsibility, with authors such as Bellini et al. [14, 15] arguing for fostering progress through efforts to change perpetrators' abusive behaviours. To address this, they developed the web-application ChoicePoint, which allows perpetrators to adopt the roles of "*different fictional characters in an abusive scenario for conveying the essential skill of perspective-taking*". While we believe that designing for responsibility is an important ideal to strive for, this goal may be especially challenging when the perpetrator is not a single individual but a family, community or society at large.

Finally, we have also considered the numerous commercial applications intended for the general safety of women, including bSafe[2], Circle of 6[3] and Bright Sky [4]. According to Sinha, Shrivasta, & Paradis [71], these apps can be classified into four categories: (1) crowd-sourcing reporting apps, which allow people to report incidents that they witness, which may be helpful for a community or law enforcement; (2) emergency assistance apps, which allow users alert contacts such as friends and family, or response services such as police, hospitals, or counselling services in emergency situations, (3) self-help/assessment apps designed to increase the user's understanding of violence, self-learning, and self-assessment of their risk of abuse/danger in their relationship, and (4) evidence-collection applications, which allow for safe uploading and storage of evidence of abuse.

3.3 Studies of Technology-Mediated Abuse

Research in the HCI community has also investigated the role of technology within abusive relationships [24, 30, 46, 65] in regard to the ways technology may be used to facilitate abuse*technology-facilitated abuse*. Southworth et al. [73] found that the technologies that the people experiencing abuse relied on to access information and gain support are often the same ones that enable perpetrators to monitor, harass, and control their victims. A survey by Woodlock [85] also revealed that abusers often used technology to create a sense that the perpetrators were omnipresent and inescapable. In another study, Freed et al. [30] explored how perpetrators were exploiting technologies to intimidate, threaten, monitor, impersonate, harass, or otherwise harm their victims and argued for IPV safety reviews in HCI design. Leitão highlighted how smart homes and other increasingly intelligent technologies can affect DV and IPV by making it even harder for affected individuals to maintain their privacy and security [46]. A study by Tseng et al. [78] showed that there is a significant challenge to providing remote support to people affected by IPV, highlighting how several trade-offs must be made to ensure safety and privacy. Research by Matthews et al. [48] found that survivors engaged in various digital privacy and security practices during different phases of leaving their abusers, providing design guidelines for technology designed to help survivors of IPV. Arief et al. [8] further discussed in their work how researchers can design for DV victims without facilitating misuse. They proposed the idea of*sensible privacy* as a design priority, allowing applications *"to address the intended users' needs while at the same time minimizing the risks of the solution being misused for illegal or other harmful activities"* [8].

In summary, prior research in various fields provides valuable context for understanding the complex problem of forced marriage, while related work within HCI has explored the role and potential for technology to address issues of IPV and DV. Our work builds upon this body of research by exploring: (i) the challenges that arise through technology for individuals affected by forced marriages from various ethnic, religious and cultural backgrounds; and (ii) opportunities for designing supportive technology in the aforementioned vulnerable context without facilitating misuse.

[2]https://getbsafe.com/
[3]https://www.circleof6app.com/
[4]https://www.hestia.org/brightsky

4 METHOD & CASE STUDY

We employed a qualitative, participatory research approach in our study to provide insights into the complexity of forced marriage cases. Our method aims to incorporate the stories and meaning-making of the affected and the insights and observations of the CoCFM gained handling cases of forced marriage to form a comprehensive picture of the challenges and human experience surrounding forced marriage. The approach we take to our inquiry and analysis is also designed to facilitate the identification of specific aspects of stages of the experience in which technology could help the affected or the organizations that provide support to them. The study was conducted in 2021 for my bachelor thesis, but the collected data has been reanalysed and synthesized to provide broader design implications.

4.1 Qualitative Study 1: The Swiss Competence Centre Against Forced Marriages (CoCFM)

First, we introduce the CoCFM and elaborate on their engagement in our study. We rely on their knowledge, educational activities and previous research to build a solid understanding of the forced marriage situation locally and worldwide.

4.1.1 The Swiss Competence Centre against Forced Marriages. The CoCFM, a Swiss non-profit organization, is dedicated to advocating for human dignity. Their primary focus lies in providing consultations and support for individuals impacted by or involved in cases of coercion related to marriage, sexuality, and love. With over two decades of experience, the CoCFM operates nationwide and has established international connections with state-administrative authorities, NGOs, and specialists. Their comprehensive range of assistance includes consultations, workshops, and resources offered at support centers. The CoCFM has also played a significant role in developing recommended measures against forced marriage in Europe. Through their website (www.forcedmarriage.ch), individuals affected or at risk can seek assistance and support to change their circumstances, and the website also offers valuable information and resources for those addressing the issue from political, scientific, or professional perspectives. The CoCFM team comprises members from diverse backgrounds, representing various geographic locations, professions, and educational fields, bringing a wealth of experience and expertise. Since 2015, individuals who were once affected by forced marriage have joined the team, contributing their knowledge to enhance the organization's services. To ensure their safety, particularly from potential harm or retaliation by perpetrators, the team operates anonymously, even when communicating with those affected.

4.1.2 Expert Interviews & Educational Workshops with the CoCFM. We conducted two expert interviews with the head of the advisors of the CoCFM and participated in workshops and educational presentations with two other members. During the workshops, we engaged in conversations with the CoCFM staffers focused on various functions and procedures of the organization (e.g., their counselling processes). The conversations were scaffolded around materials they had previously prepared that they periodically use for presentations and other outreach activities. These workshops helped us to get an overview of the organization and its main operations. The interview with the head of the advisors was more semi-structured in nature and served to help us gain an understanding of the problems faced by the affected and the help organization. It also allowed us to learn how the CoCFM works in practice (e.g., what services and resources they offer for affected individuals, what their goals and approaches are in aiding the affected) and to hear their ideas for how they can improve the help that they provide. During the final part of the interview, we engaged in a collaborative design exercise with the expert, during which we collaboratively sketched out different design ideas for technologies that could support the organization in its support of the affected. These design ideas were based on the topics discussed earlier in the interview and were done in the form of wireframes of technological solutions that the expert believed could be applicable to their work to aid affected individuals. After the interview, the expert shared the wireframes with

other members of the CoCFM, including other advisors, social workers and their legal department, who provided their feedback and suggestions on the concepts.

Through their research and activities, the CoCFM has vast knowledge, resources and experience working in sensitive settings. Through various workshops, the CoCFM advised the authors on working with the affected individuals and provided guidance on correct terminology, as well as established social and cultural norms. Familiarizing ourselves with the individuals' cultural contexts was essential to avoid inflicting additional pain or harm on the participants through our inquiry.

4.2 Qualitative Study 2: Individuals Affected by Forced Marriage

We now present the main part of this study: the semi-structured interviews with participants from various cultural and ethnic backgrounds.

4.2.1 Participants. We interviewed five affected individuals for this part of the study. The affected individuals were recruited by the CoCFM and previously under their organization's support and protection. Their participation was voluntary, and the CoCFM included individuals from diverse backgrounds from different cultures and age ranges. It should be noted that the participants of our study are not necessarily representative of the full spectrum of experiences surrounding forced marriage; in particular, we were unable to recruit male participants; we were only individuals who had already succeeded in leaving their families or forced marriages, and gaining some degree of independence. This is not always the case and does not fully represent the general population affected by forced marriage. Interviewing individuals still in the midst of a forced marriage situation could threaten their safety so we did not attempt to recruit any such participants. Only one out of the five women had been forcibly married; the other four had managed to escape before the marriage could take place. To protect their identities, we intentionally reveal as little information as possible about their lives and specific experience and use pseudonyms when quoting or referring to them. The term ***affected*** is used throughout this paper. It describes people who are at risk of forced marriage, are being forcibly married, are in a forced marriage (also known as martial captivity), or have escaped a forced marriage. Throughout the interviews, several participants abstained from using the word victim, preferring to use 'survivor' or 'affected' due to negative association and bias. Furthermore, the term *affected* can cover the many different situations a woman can find herself in regard to forced marriage and thus was chosen as the most respectful, accurate, and appropriate term to refer to the participants in this work.

4.2.2 Semi-Structured Interviews with the Affected. For the second phase of our qualitative study, we chose to conduct two-on-one interviews, in which always a member of the CoCFM was present during the interview, in addition to the researcher and the participant. This was a condition posed by the CoCFM to ensure the safety and well-being of the participant. The time and place for the interviews had to be decided to accommodate the needs and safety of the affected. The location and time of the interview were organized by the CoCFM with the participants as the research team could not have contact with the affected outside of the interview itself. The interviews ranged from 60 to 90 minutes in duration and were audio recorded and partially transcribed. The interview was held in German or Swiss German, depending on the participant's preference.

The entire interview process was executed with the guidance and supervision of the CoCFM advisors due to the sensitive nature of the topic and the vulnerability of the participants. We created the interview protocol in several iterations with feedback from the CoCFM before arriving at the final version. One of the main difficulties in creating the protocol was to gather enough information and but at the same time, minimize the extent to which the interview would

facilitate the sharing of information that could put the participants at risk. The final draft was also sent to the managing director to check for problematic questions. However, the director did not see the need for further modifications to the protocol. The interview questions were split into two main topics: challenges and problems arising **prior to leaving** their family/marriage and **after leaving**. The final 20-30 minutes of each interview were used to collaboratively explore potential technological interventions that the participants felt would have helped them or others in their situation. They were also asked to provide feedback on the wireframes of the previous concepts developed with the CoCFM. The individuals were also given the opportunity to expand upon and improve these previously sketched ideas. Throughout the study, the interviewer repeatedly emphasized that participants could decide to end the interview whenever they wanted. Furthermore, if a question triggered an emotional response, the affected were given time to compose themselves and were asked if they still wanted to continue the interview. The CoCFM advisor present in the interview often provided further context or added comments based on their knowledge from working with these women when they felt it necessary (e.g. in case the affected could not remember an aspect of an experience or were too emotional to recount it themselves). These additions were done during or after the interview if the participant decided that the advisor should take over answering.

4.3 Data Analysis

Our research materials consist of interview transcripts from the study in 2021, field notes,various documentation provided by the CoCFM and feedback gathered through the CoCFM and affected individuals. We followed a thematic analysis [17] approach and opted for an inductive coding strategy [36]. The six-step process included the following stages: (1) gaining familiarity with the data, (2) inductively generating codes, (3) searching for themes/clusters of codes, (4) reviewing these themes, (5) defining and naming themes, and (6) writing up a final summary. The first author led the process, with two other authors involved in various stages, especially in the initial coding and the final theme clustering. The coding was done primarily by the main author. We collaboratively agreed on the final coding tree and discussed the semantic affinity of the patterns, and reached an agreement on the naming of the empirical categories. Working our way up from low-level codes to high-level analytic categories, we went back and forth between the materials, insights, notes, and the emerging structure of empirical categories. We also showed the resulting composition of the themes to CoCFM such that they could correct or corroborate assumptions or insights. We distilled three main high-level themes stemming from the analysis of the interviews with the participants about their lived experiences in forced marriages: (i) Information & Resources, (ii) Situational Context, and (iii) Technology Misuse.

4.4 Privacy and Ethics

Our University ethics committee and the legal division of the CoCFM approved this study. As we were conducting research with marginalized and vulnerable communities, it was important to us to keep our identities and potential lack of knowledge about our participants' lived experiences in mind. The paper's first author is of South-Asian ethnicity and was herself a victim of forced marriage in Switzerland. Not only did the authors lay a significant focus on protecting the participants, but also on exercising caution in immersing oneself into this sensitive setting [47] and minimising the risk of re-victimization for the first-author.

We created the interview protocol in several iterations with feedback on the formulation (e.g. to avoid sensitive or triggering wordings) from the CoCFM before arriving at the final version. The protocol was adjusted for participants to omit questions on topics and themes which they felt uncomfortable with. This information was given by the affected to the CoCFM who informed us of any adjustments needed before the specific interviews. One of the main difficulties in

creating the protocol was to gather enough information and but at the same time, minimize the extent to which the interview would facilitate the sharing of information that could put the participants at risk. The final draft was also sent to the managing director to check for problematic questions. However, the director did not see the need for further modifications to the protocol.

Throughout the study, the interviewer repeatedly emphasized that participants could decide to end the interview whenever they wanted. Furthermore, if a question triggered an emotional response, the affected were given time to compose themselves and were asked if they still wanted to continue the interview. The CoCFM advisor present in the interview sometimes provided further context or added comments based on their knowledge from working with these women when necessary (e.g. in case the affected could not remember an aspect of an experience or were too emotional to recount it). These additions were made during or after the interview **only if the participant decided that the advisor should take over answering**. The affected were then asked if the formulation of the advisor was accurate or if they would want to add something to that.

5 FINDINGS

Below we present our findings, unpacking three themes we have derived through the analysis of our interviews and design exercises with the experts and the affected individuals: (i) Information & Resources, (ii) Situational Context, and (iii) Technology Misuse. While some findings are similar to our previous work, taking a deeper look has allowed new findings to emerge, implying broader design implications for the HCI community.

5.1 Information and Resources

5.1.1 Lack of Knowledge on Existing Resources. None of the affected individuals were aware of the CoCFM before deciding to seek help, and they were surprised to discover the extent of support and resources available to them. Among the participants, Huma was the sole individual who directly contacted the CoCFM, while the other three initially reached out to other support organizations, such as *Mädchenhaus* or *Terre Des Femmes*, which primarily address domestic abuse and may not be well-equipped to handle cases of forced marriage. Subsequently, they were referred to the CoCFM through these organizations. It is important to note that the issue of forced marriage becomes even more challenging when an affected individual leaves the country or is outplaced. While individuals in Switzerland had some level of capability and resources to take action, their ability to act might be significantly constrained in other countries. For instance, Fariha recounts her fear that her parents might marry her off during their vacation in her family's home country. In preparation, she organized some money with her secret partner as a contingency plan, but she was unaware of organizations she could refer to for assistance in such a situation. Most likely, there were not only local institutions in her family's home country that could have potentially helped Fariha, but also NGOs and other communities. However, the lack of awareness about forced marriage is not limited to the affected individuals alone. All the participants mentioned the immense difficulty they faced in finding the right help centers, as there is little to no awareness among the general population about this issue. This lack of awareness was particularly distressing for them, as they had expected to find support in institutions such as schools or workplaces but found a lack of information and understanding. For instance, Durime recalls her experience with the police when seeking help, where she encountered ignorance regarding the topic:

> *"I told them that I wanted to leave home because my parents were planning to marry me off. He said that I could simply leave home because I was of legal age. They did not understand the gravity of the situation, and perhaps also not the cultural context. It was just an easy 'get up and leave' for them. They could have at least pointed me to the appropriate resources."*

A point raised during the interviews was the importance of transparency in such organizations. In contrast to the other participants, Huma and Aylin mentioned that it was vital for them to have the assurance that nothing would happen against their will. Domestic abuse and forced marriage are official offences in Switzerland, so organizations and police are obligated to report them, according to article 43a in the Swiss Civil Code (ZGB) [5]. However, organizations, such as the CoCFM, are subjected to confidentiality according to article 11 in the Swiss Victims Assistance Act (OHG)[6]. More transparent communication would help affected individuals find the appropriate resources which fit their current needs and thus lower the barrier to access. From an HCI and CSCW research standpoint, these findings point to opportunities to examine the ways in which affected individuals seek resources and the ways in which the design of tools and presentation of information can help to engender trust and safety. Furthermore, it would be worthwhile

[5] https://www.fedlex.admin.ch/eli/cc/24/233_245_233/de#art_43_a
[6] https://www.fedlex.admin.ch/eli/cc/2008/232/de#art_11

to consider how technologies could play a role in creating greater awareness of forced marriage, not only for people affected but for the greater population.

5.1.2 What Are My Rights? A recurring concern among the participants revolved around their lack of awareness regarding their rights and education. The absence of information on topics such as access to education, freedom of choice, privacy, sexuality, love, and relationships was deliberate and intended to enforce obedience and compliance. Cheyenne expressed her realization of this limitation, saying, *"I did not know I had the right to say no. I did not know that as a woman I actually could decide for myself! I always thought I must comply with what my family says, even though I am no longer a minor."* Similarly, Huma shared her struggles in understanding what a healthy relationship entailed, as she believed that as a woman, her role was to serve her partner and his family. She felt trapped in a loveless relationship due to cultural norms, unaware that her experiences were not inevitable.

Durime's experience shed light on the lack of understanding about consent and boundaries. She endured sexual abuse by her father, but it took her several years to comprehend that what was happening to her was wrong. Her friend from the mosque educated her about menstruation and the significance of body autonomy, which was a turning point in her realization of the abuse.

This lack of awareness regarding their rights can have lasting consequences, even if individuals manage to leave a forced marriage situation. Durime's post-marital experiences repeated the harmful patterns she had endured before, as she fell into another abusive relationship that was deemed acceptable within her community. This emphasizes the importance of promoting awareness and education on such critical issues to prevent individuals from falling back into similar harmful situations. In considering this theme, there are important issues in which HCI and CSCW research could be beneficial, namely examining the ways in which digital technologies could be designed with the specific goals of educating people about their rights, how these technologies might be integrated into daily life, and particularly how they could be employed to create awareness among young people whose ideas regarding social norms are especially malleable.

5.1.3 Misconception as Hindrance to Help. During the expert interview, the CoCFM advisor highlighted the prevailing lack of awareness regarding forced marriage among the general population. Additionally, they highlighted how misconceptions surrounding forced marriages hinder the development of culturally and religiously appropriate resources. Individuals affected by forced marriage come from diverse global backgrounds, including regions like the Balkans (e.g., Kosovo), Turkey, Sri Lanka, Eritrea, Somalia, Iraq, Iran, Afghanistan, Pakistan, Syria, and the United States, among others. Forced marriage is not solely based on religious beliefs but rather on cultural traditions, extending across various communities such as Muslim, Christian, Jewish, Hindu, Buddhist, and atheistic societies.

Moreover, the CoCFM emphasized that misconceptions persist about the demographics impacted by forced marriages. Notably, around 20% of the cases handled by the CoCFM involved males experiencing coercion to marry for reasons such as homosexuality or as a disciplinary measure for behaviour perceived as "promiscuous" by their parents. Additionally, in 2020, out of the 361 cases addressed by the CoCFM, 133 concerned minors. The organization further asserted that neither educational nor economic backgrounds shield individuals from the risk of forced marriage, stating that "Education is not liberation. Knowledge and education are not the same, so we try to convey keen insights into human dignity and human rights to the people exposed to forced marriage (attempts)." The CoCFM also disclosed cases of well-educated individuals, including physicians with medical degrees, finding themselves in forced marriage situations. Although individuals with higher education may possess greater personal resources if they choose to leave, it does not guarantee they have the requisite knowledge and understanding to navigate their circumstances or prevent forced marriage

situations from arising. **Misconceptions and lack of awareness regarding who is affected by forced marriage can impede the help-seeking of those affected through the lack of appropriately adapted resources.** Aylin explained that she felt that the misconceptions were to blame for the ignorance displayed by her friends:

> *"Whenever I tried to talk with 'friends' about these problems, they did not understand and often did not take it seriously since they could not imagine something like this happening in Switzerland. I tried to Google resources or support groups in my area, but I never found any relevant suggestions which gathered my needs or addressed the issues of my community. I felt all alone."*

Cheyenne further extended this statement by explaining that she felt unseen since she could not find any resources or stories online with which she could identify: *"It felt like I was the abnormal one, maybe even, as if I was in the wrong? I was hoping to find some resources or a community perhaps where I could see myself, but all I found were stories on gruesome things reported by the media."* Here as well, there are opportunities for HCI and CSCW research and design in building awareness of forced marriage, helping people connect as a way of combatting misconceptions and stereotypes, and potentially allowing for the sharing of resources and experiences such that affected individuals can find culturally specific information that is relevant and helpful.

5.1.4 Challenges in Transitioning to Independence. Our findings reveal that the process of rebuilding life for the affected individuals continues to be difficult even after leaving their families or spouses. Both Cheyenne and Huma shared their experiences of being taken aback by the reality they faced in the initial days away from their previous circumstances. Huma expressed unexpected feelings of guilt and selfishness during this period, which she had not anticipated. Adjusting to entirely new life situations and overcoming hurdles becomes paramount for them, especially since many have grown up in collectivist communities that shielded them more than their fellow age peers due to familial constraints. The abrupt shift to being entirely self-reliant and individualistic presents challenges, as they find themselves responsible for tasks they had not encountered before. Simple actions like paying bills or opening a bank account can feel overwhelming. The lack of prior experience in these matters, as expressed by Aylin and Durime, adds to their feelings of anxiety and uncertainty. Cheyenne also felt distressed about being dependent on her CoCFM advisor for various matters, fearing she might become a burden. On the other hand, Fariha, having had more opportunities and freedom in the past and support from a partner, faced fewer problems in these areas. However, she still worried about becoming overly reliant on her partner. The CoCFM acknowledged these challenges and emphasized the importance of striking a balance in their support, fostering the affected individuals' independence while preventing them from becoming excessively dependent on the organization or new relationships.

Overall, our study highlights that transitioning to a new life after leaving forced marriage situations involves coping with emotional and practical difficulties, and the support offered by organizations like CoCFM plays a crucial role in facilitating this process. The challenge of supporting a transition to independence is an especially interesting one for HCI - here, there are many potential avenues to explore, such as ways in which support could be provided through automated, semi-automated or intelligent tools or agent-based interaction that would allow the affected to seek assistance without overburdening advisors, or perhaps tools that help to train independence and reflect progress back to the user.

5.2 Situational Context

5.2.1 Cultural Acclimation. Experts from the CoCFM argued that forced marriages are more systematically ingrained in culture than general domestic abuse. Children are often conditioned from a young age to accept the concept of forced marriage, leading them to believe they cannot refuse their parents' choices, as it is perceived as the norm. Girls are

encouraged to learn household skills early on, which can deter them from pursuing education or career opportunities, reinforcing the expectation of becoming a stay-at-home wife. This conditioning can leave them with limited personal resources and a belief that these outcomes are inevitable. Participants shared similar sentiments, feeling as though they had been groomed throughout their lives to accept the proposed marriage, making it feel less forced and more like the natural course of events. Aylin describes this:

> *"I did not know I had the right to say no. I did not know that as a woman, I could decide for myself! I always thought I had to comply with what my family said, even though I am not a minor anymore. I mean, how could I have known? I was taught and saw this everywhere in our community; it just seems so normal. And everything else feels wrong because that is not how I was brought up; I mean, I was told for over two decades how to behave, what to do, that the ultimate goal for me was to be a perfect housewife, and everything I did or my parents did, was to set me up for a good marriage.".*

Childhood abuse often establishes a tolerance for abuse after marriage, a phenomenon observed in interviews with the CoCFM and supported by research by Shields et al. [69]. Addressing this deeply rooted cultural issue may be challenging, but technology could play a role in raising awareness, providing education, and disseminating information about rights to tackle the problem indirectly.

5.2.2 Limited Freedom to Act. Participants shared experiences of feeling unsafe and scared of their families, which significantly influenced their behaviour and limited their ability to take action. Instances of verbal and physical abuse, as well as threats of violence, were reported. Some participants described situations where they were closely monitored, and any deviation from family expectations was met with harsh consequences. The fear of retaliation and the need to maintain secrecy about seeking external help further complicated communication with the CoCFM. The strict protective measures imposed by their families significantly restricted the participants' freedom to engage in everyday activities. They had to navigate covert communication with the CoCFM to avoid raising suspicion from their families or spouses. This covert communication was essential, especially during emergencies or when they were taken to different locations by their families.

The fear of making a mistake and facing abuse led some participants to stop engaging in any activities altogether, for it gave them a sense of safety. On the other hand, some individuals felt that since they were already punished unjustly, they might as well engage in activities that brought them joy, even if it led to further punishment. These experiences highlight the urgent need for research and solutions to provide accessible help, especially in emergency situations, and to ensure digital safety and privacy for individuals facing extreme risks. Addressing the challenges of maintaining communication and seeking help while avoiding detection by perpetrators is crucial for supporting those affected by forced marriages.

5.2.3 Conflicting Loyalties. A common theme among the affected was the feeling of betraying their families. Despite experiencing a wide range of abuse, many affected people do not wish to go against their parents or see them punished for crimes. The CoCFM reported that despite being able to inform the police, many affected explicitly ask the CoCFM not to involve law enforcement and seek options in which they can avoid confrontation and act *"behind their family's back"*. Aylin recounted how she felt like a traitor for wanting to leave and eventually leaving, despite knowing what was being done to her was wrong: *"I did not want to confront them or dare to look into their eyes after what I have put them through for leaving. It was not the fear, but the shame that I betrayed my parents"*. **The desire for freedom conflicts**

with the sense of loyalty stemming from the familialism of their community. Fariha stated that she thinks it would have been easier if she had known how to set boundaries and what healthy relationships look like:

> *"How was I supposed to know my needs matter if nobody told me? I realized it much later after I had already left. I could be happy without my family, without sacrificing everything for them, you know? It was not what I was brought up to believe, and it is something you need to teach children about your rights and your free will."*

5.2.4 The Need for Someone who Understands. The affected individuals' love for their families and their upbringing create challenges in standing up for themselves. They may struggle to recognize that what is happening to them is a violation of their rights, as they have been exposed to these practices their whole lives and these practices are accepted within their families and communities. This sense of normalization can lead them to believe that they are the ones at fault or abnormal for questioning these practices. The participants often felt isolated from their surroundings, as others could not fully understand or accept their cultural norms and the context in which they grew up. Lack of awareness and understanding about forced marriage among teachers, colleagues, and friends further contributed to this feeling of isolation. Speaking with the CoCFM advisors, who understood the cultural complexities surrounding forced marriage, helped the participants feel more understood and accepted. The participants expressed the need for positive stories of successful escapes from forced marriages to counterbalance the negative portrayals they often encountered in the media and on the internet. Such stories would provide hope and encouragement to those seeking help and support. Additionally, the participants expressed a desire to connect with others who have had similar experiences. They not only sought such connections for guidance and support but also expressed a willingness to help others facing similar situations. This presents an opportunity for HCI research to explore how to foster these connections digitally in a culturally-sensitive manner that minimizes risk for those involved. In conclusion, addressing the complex emotional and cultural factors involved in forced marriages is crucial for providing effective support to those affected. Creating spaces for understanding, acceptance, and positive narratives can empower individuals to seek help and connect with others who share similar experiences.

5.2.5 Disobedience as a Coping Strategy. Ensuring personal safety is of utmost importance for the affected individuals in their daily lives. Cheyenne describes how she adopted various safety strategies, such as acting inconspicuously and deleting text conversations and call records, to protect herself from suspicion and abuse by her family. Similarly, other participants also took precautions to avoid arousing suspicion and safeguard their privacy: *"I acted stupid and dumb, so they thought I would not ever dare to do anything, so they left me alone"*.

The participants displayed resourcefulness and creativity in devising unexpected yet effective safety measures. For instance, Cheyenne decided to shave off all her hair when her parents proposed marriage, knowing that this would make her unsuitable for marriage in their eyes, as long hair is highly valued for beauty in her culture. Fariha shared a similar story, intentionally sabotaging her image to discourage potential suitors. Cheyenne remarked how necessary such protective measures are:

> *"As long as my family thought I am innocent and too incapable of doing anything, I was able to avoid any suspicion and secretly plan my escape. However, I jeopardized everything when I was caught sneaking out of the house. They were much stricter [after that], making it much more difficult to escape."*.

The CoCFM acknowledges that each individual may employ unique and imaginative approaches to ensure their safety, which may not be conventional or expected. These creative strategies demonstrate the resilience and determination of the affected individuals in navigating their difficult circumstances.

Overall, the participants' actions highlight the lengths they go to protect themselves and assert some control over their lives, even in challenging situations. Such insights underscore the need for further research and solutions that can support and empower those affected by forced marriages to ensure their safety and well-being.

5.3 Technology Misuse

5.3.1 Technology as a Double-Edged Sword. The affected often used technology to seek information that could help them in their situation, from trying to understand what is being done to them to finding the appropriate resources to reach out to. However, during the interviews, it became apparent that even though technology offers opportunities for the affected when seeking help, it can also put them in danger. The CoCFM reports that in over 80% of the cases they have handled, the affected individual's phone put them at risk eventually. Specifically, parents or spouses would monitor the affected individual's phone usage, check text conversations and go through the pictures or search histories to ensure the individuals were not doing anything 'wrong'. Neglecting to delete their browser history could put affected individuals at significant risk. Cheyenne recounts how her brother used to supervise her phone usage and once found that she had a private Instagram. He forced her to log in and went through her private conversations, eventually punishing her for contacting others without his permission. The CoCFM also shared a story in which a family downloaded spyware onto their daughter's phone and learned about her plans to run away with her boyfriend. They humiliated her in front of the whole family by loudly reading her private and intimate conversations with her boyfriend, insulting her and locking her up so that she could not leave as planned. Being tracked through Apple's AirTag or the restrictive 'Family' features on the iPhone was a common occurrence the CoCFM encountered in their cases. These instances show that technology, and even technology that is designed to improve safety, can be misused to violate someone's privacy or restrict their freedom.

Almost all of the women interviewed were technically literate enough to know how to cover their digital tracks to some extent. However, some participants and the CoCFM were concerned that not all affected are tech-savvy enough to keep themselves protected and to be aware of the potential risks. These findings point to the already existing need for further research and design consideration in regard to the ways in which technologies can create risks for people in vulnerable situations, as well as ways in which these risks can be alleviated, and misuse can be thwarted.

5.3.2 Establishing Trust, Safety, and Transparency. Issues of trust and transparency came up repeatedly during the interviews and were also frequently mentioned in the co-design exercises when discussing potential technology interventions with the participants. Most of the affected were wary about help-seeking and, knowing the consequences they could face, were worried about relying on anything that they did not feel could be trusted completely. Specifically, they mentioned instances in which they would reach out to an organization (e.g., law enforcement) for help but were afraid that they would do something against their will or behind their back. Huma highlighted how the same principles would apply to a technological solution:

> *"I would only be comfortable using an app if I could trust it and its creators 100%; I would want to know what happens to my data, is it safe? Can anyone see it? Can it protect it? I looked into apps that promise the safe storage of the evidence you gather against your abuser, but somehow, I could never*

> *trust them. It did not seem well-kept, and I could not reach out to anyone. What is the point of using it, taking the risk to use it, if it will just end up biting me in the back because it is not well done?"*

The CoCFM described how they have previously examined various applications and tools that might be helpful in supporting their cases but concluded that they could not be used because it was unclear what would be happening with the data, and their safety could not be evaluated. **Technologies which seem promising but even raise even minor concerns are likely to be rejected by both the affected as well as help organizations**.

Issues of trust and safety hold significant importance when assisting individuals who have recently left an abusive home. In the case of those who have sought help from the CoCFM after leaving forced marriage situations, ensuring their well-being is a top priority. During the initial weeks, the CoCFM closely monitors the affected individuals to ensure their safety. They maintain regular communication and impose guidelines to protect them from potential harm. To enhance the safety of these individuals, the CoCFM advises against befriending new people from similar cultural backgrounds during their early period of independence. They also conduct daily check-ins, where the affected individuals share their feelings and activities. While some might perceive these rules as restrictive, all participants, except Durime, acknowledged their necessity. Transparency and clear explanations from the CoCFM regarding these measures foster compliance and understanding among the affected individuals.

In addition to pointing out the need for further research into what vulnerable individuals require in regard to safety and security when interacting with technology, it will also be important to consider how a technology or service's trustworthiness or security can be verified by and conveyed to potential users.

6 EXPLORATIONS IN TRANSLATING FINDINGS INTO DESIGN

As can be seen from our findings, the challenges that face people affected by forced marriage and the organizations that support them are not inherently technological problems. However, they comprise issues surrounding communication, information access, privacy, awareness, and connectedness that are of high relevance to the HCI community and for which HCI research and design may be beneficial. To explore some preliminary opportunities for design, we employed a participatory approach, gathering ideas and conceptualizing them as wireframes with the participants and CoCFM. We then collected feedback on these design ideas from the CoCFM. After this first iteration, we analyzed the findings of our interviews and used the insights from our analysis as well as the initial feedback on the wireframes, to modify and refine the ideas into more detailed prototypes. Finally, we collected further feedback on the new designs from the CoCFM. In total, we generated semi-functional prototypes for a total of six design ideas. It should be noted that these design ideas were intended to be preliminary in nature, as early explorations of the design space of technologies to address forced marriage. The intention behind creating this set of design concepts was first to bring into definition some of the challenges and opportunities for design and understand how experts perceived their value for addressing forced marriage. The goal at this stage of our knowledge was not to create solutions that would be used by the help organization or the affected in any immediate time frame. This is, however, planned as future work for this research. In the following section, we present an illustrative selection of our exploratory design concepts previously presented in my Bsc thesis but analyse them in regard to their broader challenges and potential in the HCI community. This section aims to provide three concrete directions for future work in this area.

6.1 Socially- and Technically-safe Digital Support for Communication

It is important that technologies designed to support communication between the affected and help organizations take into account the specific situational challenges of help-seeking activities. People who feel that they are under threat of forced marriage or are trying to avoid or leave a forced marriage situation rely on communication help organizations such as the CoCFM on a variety of topics, including abuse, violence, and the logistics of leaving. The CoCFM maintains contact with the affected, playing a critical role in providing information and resources, making arrangements for their safety, and keeping track of at-risk individuals. However, the communication necessary to support these activities can be incredibly challenging because the affected may not have the means to communicate safely with the organization, as illustrated in sections 5.2 and **??**. As our findings show, digital interactions and device content may be monitored by perpetrators and how engaging in information-seeking or help activities also poses significant risks for the affected. Whereas in most present-day technology designs, it can be generally considered that people can have private interactions with their personal devices, this assumption does not necessarily apply to individuals in forced marriage situations. Existing methods of maintaining digital privacy, such as password protection, may not be applicable for these users, who may be expected to divulge passwords to family members when asked. The risks of being discovered to be engaging in help-seeking activities could be severe, including more significant restrictions on freedom or physical harm. Communication also poses challenges for help organizations which are tasked with managing cases and maintaining contact with individuals who may be challenging to reach, surveilled, or even unexpectedly taken out of the country.

For these reasons, we considered how to support communication between help organizations and affected individuals while minimizing the risk of discovery for both parties and the potential for misuse while also taking the affected's social and situational context into account. To address this issue, we propose that designers use web applications. Using

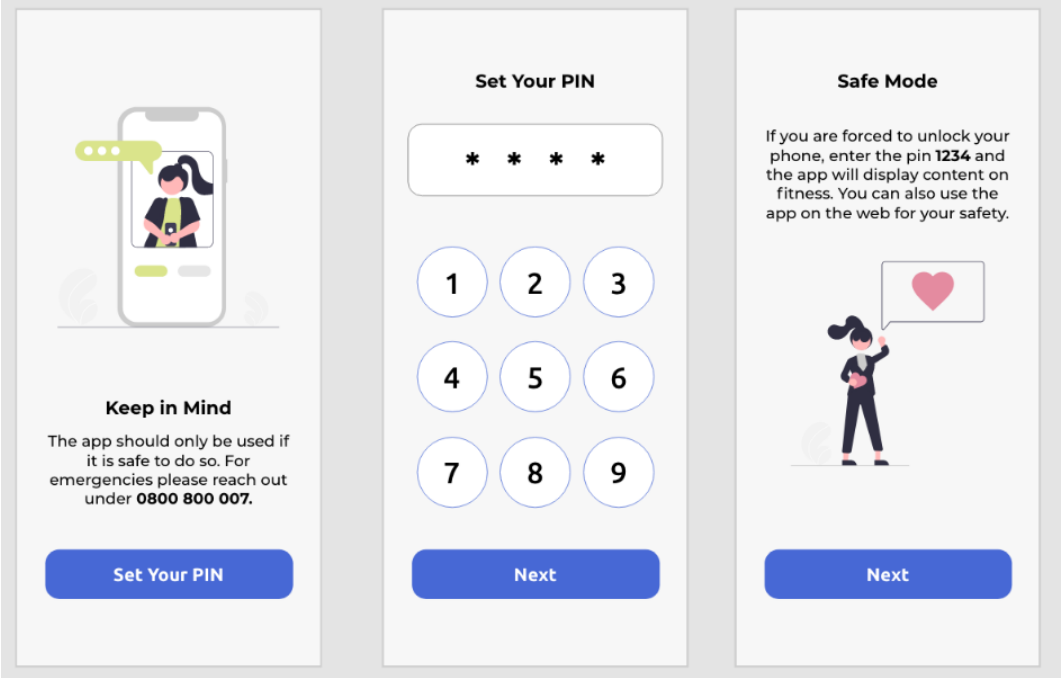

Fig. 1. High-fidelity prototype of the onboarding, PIN and Safe Mode screen.

a web application, as opposed to a native smartphone application, will ensure that the affected can access services from any device, including a public computer or a friend's mobile phone, thus reducing the likelihood that communication with a help organization will be discovered in an inspection of the affected individual's device. From a design standpoint, we should also consider how the appearance and interaction provided by the application can be leveraged to minimize risk to all parties. For example, the application can be designed to look like an innocuous website, such as a weather or recipe site, with access to the help organization only available through hidden features or specific action sequences. The BrightSky app [1] has successfully implemented an approach similar to this to address issues of DV. Another option would be a password protection mechanism to determine access to the protected content. The user is asked to set a pin code upon downloading the app. If the user enters their set pin code, they will be led to the app enabling access to the help organization. However, if they enter a specific set code (e.g., 1234), the app will lead them to generic content (e.g., fitness or organization). The MyPlan app has previously employed a similar approach[16].

In Figure 1, we illustrate what such an onboarding mechanism of a web app could look like. On the first screen, the user is informed that the app is not meant to be used for emergencies. Additionally, it provides the user with the number of the CoCFM for emergencies. This is followed by the PIN Code screen, where the user has to create a pin to access the help organization aspects of the app. Lastly, the user is informed that if someone forces them to open the app, the PIN code '1234' displays generic content (e.g., fitness tips). The Onboarding and Safe Mode screens are only shown when the application is accessed for the first time. This idea was met positively by both the affected and the CoCFM, and neither expressed any concerns about challenges or risks that the design might introduce. Overall it was seen as a potential improvement over existing channels of communication that were available in regard to safety.

6.2 Culturally Relevant Information Sharing and Community Building

The desire to connect with others who have experienced the same in their cultural circle and personalized information and advice was a prominent topic in our interviews. In our design exercise, several participants expressed a desire for a technology that would enable them to assist others in similar situations to help them gain certainty about their situation and be empowered to act, as described in Section 5.2. Individuals may be at different stages in the process of gaining independence, ranging from people who are concerned that they are at risk of forced marriage and seeking information to understand better their rights to others who have left a forced marriage situation and are in hiding from their families or spouses for fear of harm or retaliation, to those who have managed to transition to living independently and in safety. The community of individuals affected by forced marriage potentially have myriad questions and a wealth of different experiences that could be leveraged to provide support for others within the community. For example, a girl in a situation like Cheyenne's might want to share that shaving her head was a useful tactic to make her less desirable, thus effectively delaying her marriage, or a man may have a question about how to hide his homosexuality from his parents. There is potential value to be gleaned by learning from each other's first-hand experiences and knowing that others have gone through similar difficulties. Of particular importance is the fact that these communities embody crucial information that is culturally and contextually specific, thus potentially enabling people in need of help to receive culturally-informed assistance. For example, the information that may be helpful to an American fundamentalist Mormon woman attempting to leave a forced marriage may be different from that needed by a Pakistani Muslim woman who fears her parents will send her to Pakistan to be married against her will.

We considered how to design technology that can leverage the diversity of knowledge and experience within the community to foster access to culturally and contextually appropriate information. There is, however, the issue that direct communication and information disclosure with other affected people could put all parties at disclosure risk; someone who has managed to leave a forced marriage could potentially be identified and tracked down by family members, or someone who is secretly trying to access resources to avoid a forced marriage could be inadvertently revealed through information disclosure. Therefore, we propose a community forum feature, illustrated in Figure 2, serving as a digital knowledge base to which people can contribute culturally relevant knowledge, experience, and questions to serve as a community self-help tool while also minimizing the possibility of disclosures that could put contributors at risk.

When evaluating this wireframe, we concluded that a critical aspect of the design of the service would be the ability to organize and search for information specific to particular cultural contexts or stages of the leaving process. Another important design issue will be the integration of expert forum supervision or moderation mechanisms to ensure that the information shared or people participating will not be identifiable. A web application will also help to alleviate some of the risks that accompany the use of smartphone apps. Overall this idea was very welcomed by the CoCFM and the affected due to the balance of shared knowledge and the need for anonymity. In the future, we will also investigate other approaches for ensuring the safety of participants within an online community.

6.3 Tools for Self-help and Awareness

Based on our interviews, it became obvious that many affected do not realize that their treatment by the families or spouses is *wrong* given that they have been conditioned from an early age to see it as normal and expected. They are missing valuable knowledge of their rights. The identification of key signs, such as a change in behaviour or dependency on their spouse or parents, and providing information based on those signs could help the affected to gain awareness,

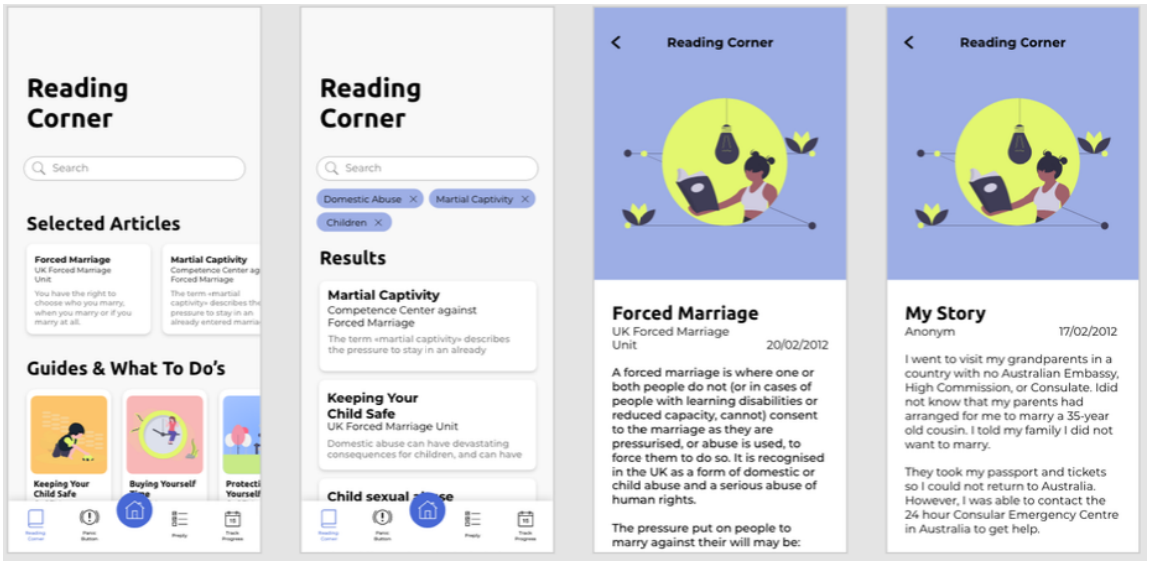

Fig. 2. Wireframe of the community forum consists of various articles, guidelines and other resources that are curated by affected or experts.

allowing them to take small incremental steps to improve their situation. It is important in such a case that information and recommendations for action be appropriate for the individual's stage of awareness and readiness for action, easing gradually into change rather than being pushed to make intimidating, high-stakes decisions (e.g., to cut ties with their family). We created a questionnaire for affected individuals with the intention of gauging their current situation and recommending appropriate readings, resources or help organisations based on the severity of their situation or the stage of their awareness. The initial sketch, incorporating input from Huma and Durime, can be found in Figure 3. MyPlan [16], and BrightSky [1] have implemented similar ideas as well.

However, when evaluating the idea with the CoCFM, it was met with substantial criticism due to the difficulty and riskiness of attempting to determine an affected individual's situation. The CoCFM explained that their manual assessment process consists of 47 initial criteria and other subsequent evolving criteria. Additionally, formulating appropriate questions in the form of a questionnaire would be quite challenging as the CoCFM often does not inquire about each criterion outright but instead derives them from the conversation. The CoCFM stated that such a self-evaluation is not feasible since the questions could not possibly cover the whole range of experiences and their complexity. Even though the affected feel more comfortable and less hesitant to answer questions if they have a sense of anonymity and a low barrier to entry, due to the complexity of the questions, there is also the risk that the affected are not able to evaluate themselves as objectively and accurately as the expert advisors. Furthermore, where in a manual assessment process, the advisors can adjust their questions in the course of the conversation with the affected, it is much more challenging to do so flexibly and sensitively in a questionnaire or application. Therefore, there is the risk that technology may communicate an inaccurate assessment to an affected individual, in the worst case giving the affected a false sense of security or deflated depiction of the severity of their situation, possibly leading to the affected ceasing help-seeking activities.

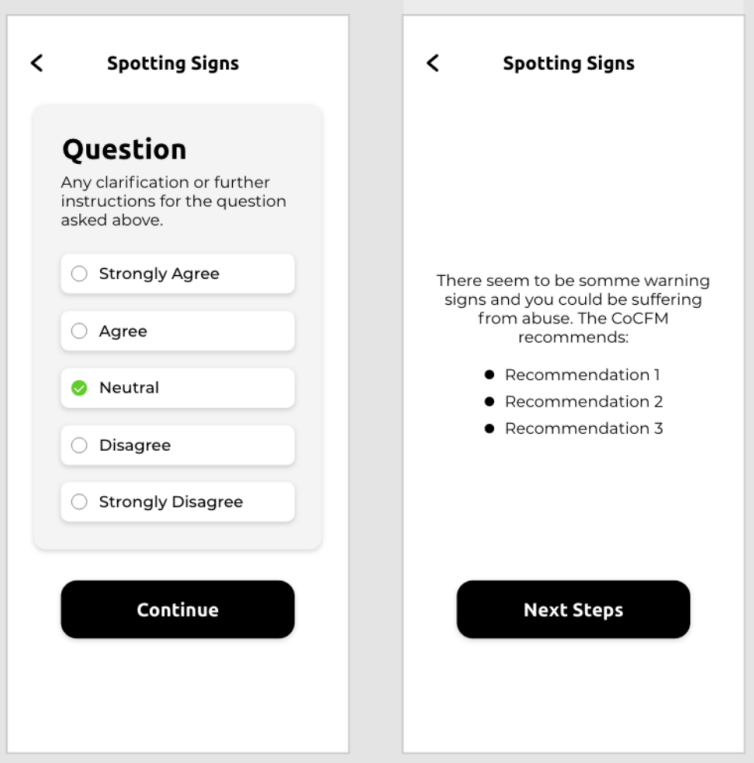

Fig. 3. Wireframe of the self-evaluation tool, showing the question and final screens.

The CoCFM suggested in their feedback to replace the Self- Evaluation/Assessment with something that could help affected individuals realize that they are experiencing abuse without creating a complex questionnaire. BrightSky [1] and the Freedom App[7], as well as other pages on the internet such as National Society for the Prevention of Cruelty to Children (NSPCC)[8] or the National Health Service (NHS)[9], offer an overview of how to spot signs of abuse. With the help of such a guide, signs can be pointed out to the user and other concerned third persons. This stresses the importance of including experts in creating such tools and incorporating the situational context, specifically the cultural acclimation and acceptance of various situations. Furthermore, cultural experts could advise in the creation and formulation of these resources to make them more relevant and informative for people affected by forced marriage.

[7] http://freedomcharity.org.uk/resources/freedom-mobile-app/
[8] https://www.nspcc.org.uk/what-is-child-abuse/spotting-signs-child-abuse/
[9] https://www.nhs.uk/live-well/spotting-signs-of-child-sexual-abuse/

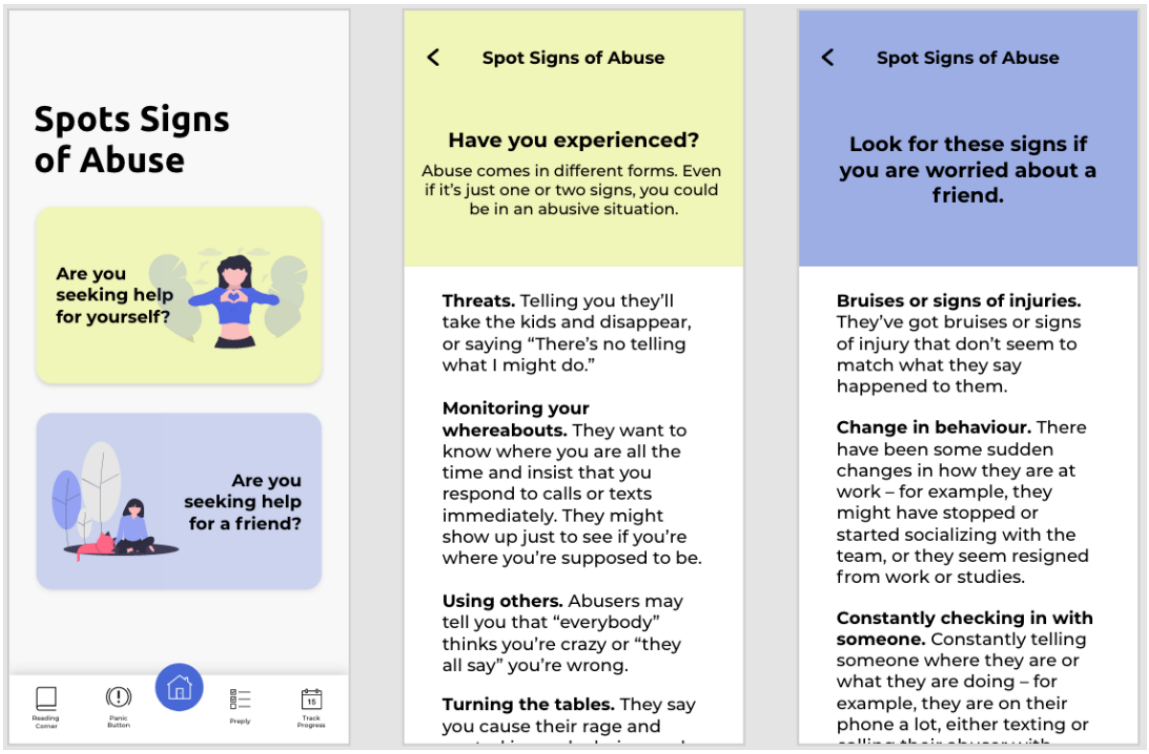

Fig. 4. High-fidelity prototype of the Spotting Signs of Abuse-section. For this prototype, we reused text from BrightSky [1] simply for illustrative purposes. In an actual deployment, this text could be adapted to address the specific issue of forced marriage and be adapted to the affected's language and culture

7 DISCUSSION

With this research, we aim to call attention to an important problem and vulnerable population whom we believe could benefit from the engagement of fields of the HCI and CSCW. Although forced marriage is not an inherently technical problem, its practice and its potential solutions point to socio-technical complexities that could be addressed in part with the expertise of these communities, potentially with the effect of helping to reduce or eliminate the practice and incidence of forced marriage. Although forced marriage can affect people of any gender, a disproportionate number of people affected are female. For this reason, forced marriage poses a challenge to gender equality and freedom from gender-based violence and discrimination. By addressing this topic, we contribute to gender equality efforts in HCI, and CSCW [11, 76] to empower and support marginalized individuals.

Our work builds upon previous related studies from social sciences, medicine, and political science [37, 38, 64, 70, 75]. Although substantial research on forced marriage exists in the political and social sciences, the topic is little known in HCI. We, therefore, drew from the findings of HCI research on two topics closely related to forced marriages: DV and IPV. Our findings often corroborate with findings from DV and IPV research while also identifying challenges specific to forced marriage, and further highlighting the need for technological interventions and support for individuals affected by abuse. Similar to related research efforts [33, 55, 77, 86], our participants welcomed the idea of technological intervention if their safety could be ensured. Our findings also point to the need for HCI and CSCW to consider the

importance of culture and context in research on DV, IPV, and forced marriages. Our findings point to how social and cultural context influences the use of technology by vulnerable individuals and can shape the pathway to help.

Furthermore, our findings extend prior research on technology-mediated abuse [24, 30, 48, 65]. The lived experiences of our participants confirm previous findings of Southworth et al. [73] that the technologies our participants relied on to access information were the same ones enabling their family members to monitor or control them. Even though they engaged in digital privacy and security practices, similar to the study of Matthews et al. [48], almost all our participants reported their phones being supervised and controlled. This finding highlights how the nature of forced marriage is such that people affected may have little privacy in their everyday communications. Certain certain basic assumptions regarding the privacy of digital interactions and devices may not apply to individuals in forced marriage situations and may require a fundamental rethinking of how to support communication through design. Our findings demonstrate that the CoCFM's vision and positionality towards the use of technology are also aligned with those of Tseng et al. [78], arguing for trade-offs in functionality in favor of safety and privacy, as well as being in line with Arief et al.'s [8] call for sensible privacy in designing for sensitive circumstances. We extend their work by illustrating its relationship and relevance to the experiences of individuals facing forced marriages and offer design explorations that embody these privacy-sensitive concepts. Scheuerman et al. [67] highlighted transgender individuals' experience with technology-mediated safe spaces using technology. Their participants, like ours, experienced manifestations of harm through technology. However, the internet provided their participants with a source of personal and social liberation. Individuals affected by forced marriages could also potentially benefit from similar online safe spaces, particularly if they could be designed in the culturally-relevant and context-sensitive ways that affected individuals, such as Cheyenne, found to be nonexistent. Interestingly, Huma highlighted at the end of the interview that working on this project helped her on her pathway to closure and gain a sense of agency and ownership in the wireframes that emerged from this study.

Finally, our study also points to how research in such sensitive environments requires comprehensive preparation in order not to put affected individuals at risk of further harm. When engaging with marginalized or vulnerable communities, it is important for researchers to maintain consciousness of their group memberships, identities and potential lack of knowledge about that group's lived experiences. We suggest researchers be mindful of ethical and social challenges when employing research methods in HCI with vulnerable populations [4] (e.g. ensuring privacy by opting out of audio or video recording, consenting to supervised interviews).

7.1 Limitations

The work presented in this paper is not free of limitations. It is important to note that the study was restricted to one help organisation (CoCFM) and their contacts. Additionally, we could only conduct interviews with those affected individuals the CoCFM deemed safe and who had already fled from their abusive situation. Whereas this measure was vital for the safety of all participants, it created a bias in the participant demography; important perspectives within the scope of forced marriage, such as those of people who are unwilling to take the risks of help-seeking activities, or of people who tried and were unable to escape forced marriage are not represented in this research. Furthermore, we were not able to recruit male individuals who often face different pressures and expectations in the context of forced marriage. As we have learned from the interviews, an individual's background greatly impacts their situation. It could be that the experience of male individuals varies from females. The specificity of the location in which we conducted this research also has a significant impact on its findings and scope. The cases of forced marriage to which we access concerned individuals from immigrant families; this has certain implications for the findings, such as the affected individuals' fear

of being sent away to the family's country of origin and then ongoing tension between the local culture and customs and the family's culture and customs. The tensions and challenges faced by affected individuals would certainly be at least somewhat different if this research were conducted in a country in which forced marriage is more endemic to the local culture, and the affected are less likely to be immigrants. The findings of this research, while important for considering the role that HCI can play in addressing forced marriage, cannot be assumed to generalize to forced marriage situations worldwide; further research in other communities and locations, and with other help organizations and participant demographics will be necessary for furthering our understanding.

8 FUTURE WORK AND CONCLUSION

Our initial findings suggest several areas for future research and design. As mentioned, we would like to further enrich our understanding of the space by conducting additional research with participants associated with other help organizations and from other backgrounds. Given the interdisciplinary nature of the problem, we are in the process of building collaborations with researchers from other fields, including law, sociology, cultural anthropology, psychology, and education. We are planning workshops with experts from these various areas that could help us better understand the potential role of HCI and CSCW, and design more informed resources for affected individuals, particularly in regard to cultural and contextual appropriateness.

Additionally, as part of our future research, we are collaborating with the CoCFM to create additional technology interventions using human-centred approaches to help with communication, access to resources and information, and foster independence. Our next step in this process is to create technologies that will be put into practice for use by the CoCFM and the people whom they help; this will entail an iterative, participatory design process with the potential users of the technologies. Participatory approaches have proven to be valuable in our work, and thus we are continuing to create designs and tools alongside the CoCFM and affected individuals. We will deploy these technologies to people in forced marriage situations and help organizations and conduct qualitative and quantitative evaluations to understand their impact on the lives of people in forced marriage situations.

Despite national and international regulations, the freedom to choose their spouse is a fundamental human right that many people, disproportionately women and girls, are restrained from exercising. This work presents an exploration of the practice of forced marriage through interviews with people affected by forced marriage and an organization that is working to eliminate it with an eye towards the role that HCI design and research can play in this objective. We present an empirical account of the lived experiences of those affected by forced marriages of various backgrounds and situations and offer a contextualized and situated understanding of the problem space, and explore preliminary opportunities for technology interventions. We highlight key needs and challenges expressed by the individuals, particularly those regarding trust and risk, access to resources and information, and social difficulties such as feelings of disloyalty and helplessness, which inform and shape the future avenues for HCI research on this topic. Most importantly, this work builds upon existing knowledge on domestic violence and intimate partner violence in HCI and aims to build awareness within the HCI and CSCW community of the need for research and design to help improve awareness of forced marriage, support help efforts and foster the empowerment and independence of people in forced marriage situations.

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