With the rise of adolescent smart phone use, concerns about teen online safety are also on the rise. A number of parental control apps are available for mobile devices but adoption of these apps has been markedly low. To address this problem, we have conducted four studies informed by the principles of Value Sensitive Design (VSD).

In Study 1 (Ch. 2), we conducted a web-based survey of 215 parents and their teens (ages 13â€“17) using two separate logistic regression models (parent and teen) to examine the factors that predicted parental use of technical monitoring apps on their teens’ mobile devices. Both parent and teen models confirmed that low autonomy granting (e.g., authoritarian) parents were the most likely to use parental control apps. The teen model revealed additional nuance, indicating that teens who were victimized online and had peer problems were more likely to be monitored by their parents. Overall, increased parental control was associated with more (not fewer) online risks.

In Study 2 (Ch. 3), we conducted a structured, qualitative feature analysis of 75 Android mobile apps designed for the purpose of promoting adolescent online safety. We found that the available apps overwhelmingly supported parental control through restriction and monitoring over teen self-regulation or parental active mediation.

In Study 3 (Ch. 4), we conducted a qualitative analysis of 736 reviews of 37 mobile online safety apps from Google Play that were publicly posted and written by teens. Our results indicate that teen ratings were significantly lower than that of parents with 76% of the teen reviews giving apps a single star. Teens felt that the apps were overly restrictive and invasive of their personal privacy, negatively impacting their relationships with their parents.

For our final study (Ch. 5), we developed a mobile app prototype suggesting alternative designs for keeping teens safe online and conducted a user study which showed that parents and children (ages 10â€“17) both significantly preferred our new app design over existing parental control apps. Both parents and children reported that our VSD informed design is less privacy-invasive for children and would improve communication and trust relationship between them. Yet, more work needs to be done to improve approaches for risk detection and mediation that support online safety. In summary, this research will enable researchers and designers to create more effective solutions for teen online safety that will help promote more positive parent-teen relationships.

Major: Computer Science

Educational Career:
Bachelor's of Information Technology, BS, 2008, West Bengal University of Technology
Master's of Computer Engineering, MS, 2010, University of Central Florida

Committee in Charge:
Pamela J. Wisniewski, Chair, Computer Science
Charles E. Hughes, Computer Science
Gary T. Leavens, Computer Science
Sarita Schoenebeck, School of Information, University of Michigan

Approved for distribution by Pamela J. Wisniewski, Committee Chair, on June 8, 2018.

The public is welcome to attend.