

PASSING THE TORCH: HOW PARENTAL PRIVACY CONCERNS AFFECT ADOLESCENT SELF-DISCLOSURE ON SOCIAL NETWORKING SITES¹

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Drawing upon the literatures in information privacy, developmental psychology, and family science, this research investigates how parental online privacy concerns can be passed on to adolescents and affect their self-disclosure on social networking sites. We propose that parental privacy concerns decrease adolescents' self-disclosure both directly (i.e., compliance) and indirectly through adolescents' privacy concerns (i.e., internalization) and that such effects are moderated by parent-child privacy dissonance, parental internet evaluative mediation, and adolescents' gender. To test the research model, we collected matched parent-child data from 726 families in China. The results show the indirect effect of parental privacy concerns on adolescents' self-disclosure via their influence on adolescents' privacy concerns. In addition, parent-child privacy dissonance weakens the effect of adolescents' privacy concerns on self-disclosure. The extent to which parents employ internet evaluative mediation to guide adolescents' online activities reinforces the effect of parental privacy concerns on adolescents' privacy concerns. Statistical analyses further revealed that the mediating effect of adolescents' privacy concerns is weakened by parent-child privacy dissonance but strengthened by internet evaluative mediation. We also found that parental privacy concerns affect sons and daughters through different paths, especially when parents employ high internet evaluative mediation. Under high internet evaluative mediation, parental privacy concerns affect sons' self-disclosure primarily through an indirect path (via sons' privacy concerns), but influence daughters' self-disclosure both directly and indirectly via daughters' privacy concerns. We conclude by discussing theoretical contributions and practical implications.

Keywords: Information privacy, online privacy concerns, parental influence, internalization, compliance, adolescent self-disclosure, parental internet evaluative mediation, intergenerational transmission, parent-child privacy dissonance, social networking sites

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Introduction

Growing up in the internet era, many adolescents view social media and social networking sites (SNSs) as inseparable parts of their personal lives and the default means for social interaction (Shapiro & Margolin, 2014). Through disclosing personal information, they seek to gain others' approval and acceptance (Christofides et al., 2012) and create opportunities for self-enhancement and relationship building (De Souza & Dick, 2009; Liu & Brown, 2014).

Adolescents between 13-17 years old experience rapid mental and behavioral development but their cognitive abilities are still immature (Costello et al., 2016). Such cognitive immaturity limits their capability to understand the implications of online disclosure and the associated privacy risks. Compared to adults, adolescents disclose more personal information on SNSs but express fewer privacy concerns about third-party access (Costello et al., 2016). They also tend to apply less strict settings to protect their privacy (Christofides et al., 2012).

The availability of personal information makes adolescents potential targets of cyberbullying, including verbal abuse and rumor-spreading (Aizenkot, 2020; Tynes et al., 2010). Researchers have long recognized the association between adolescents' self-disclosure and online victimization, especially among girls (Erickson et al., 2016; Swirsky et al., 2021). A survey by the Cyberbullying Research Centre showed that 33.8% of U.S. adolescents have been bullied on SNSs, while another survey reported a 46% victimization rate (Chan et al., 2021).

The privacy literature primarily takes an adult's perspective to study self-disclosure on SNSs, with less attention devoted to the factors unique to adolescents, whose privacy knowledge and concerns are underdeveloped (Ji et al., 2014; Liu et al., 2013). This is reflected in existing theoretical models such as APCO (i.e., antecedents-privacy concerns-outcomes; Smith et al., 2011) and enhanced APCO (Dinev et al., 2015), in which the antecedents of privacy concerns (e.g., privacy experience, privacy awareness, personality, culture) may not be applicable or capable of fully characterizing adolescents who do not have sufficient knowledge or experience with privacy and are still developing their personalities and cultural thinking (Yang & Laroche, 2011). Further, the models assume that a person is cognitively sophisticated in gathering information and making deliberate and fully informed privacy decisions (Dinev et al., 2015). However, such mental activities may be too demanding for adolescents and, in some cases, their privacy concerns may not relate to self-disclosure (Shin & Kang, 2016). Therefore, studies that take a developmental perspective are needed to understand the formation of adolescents' online privacy concerns and behavior.

The socialization theory in developmental psychology and family science suggests that parents are the first and most important socialization agents and role models for adolescents (Erickson et al., 2016; Moore et al., 2002; Youn, 2008). Adolescents are in a period of transition; they seek autonomy, independence, and control, but they are also influenced by their parents, who can help amend cognitive immaturity (Costello et al., 2016; Erickson et al., 2016). Via socialization, parents pass down their attitudes and beliefs to adolescents, a phenomenon known as *intergenerational transmission* (Liga et al., 2020; Necker & Voskort, 2014), affecting the development of adolescents' beliefs and their subsequent behavior. This has been observed in several areas such as stress coping (Liga et al., 2020), risk attitudes (Necker & Voskort, 2014), and cultural values (Yang & Laroche, 2011), which have demonstrated the prominent impact of parents in shaping adolescents' beliefs and behavior. The privacy literature has yet to examine the phenomenon (see Appendix A for a review).

Extending the privacy literature, this study examines intergenerational transmission in the context of online privacy. Our research question is: *How do parental online privacy concerns affect adolescents' online privacy concerns and self-disclosure on SNSs?* Given privacy risks and adolescents' immaturity in handling personal information, it is necessary to study how parents can influence adolescents' privacy perceptions and shape their privacy behavior. Understanding how parental online privacy concerns are conveyed to adolescents and affect their behavior will make it possible to develop effective educational and technological interventions for both parents and adolescents to safeguard adolescents' online privacy. In addition, realizing how adolescents are influenced by parents in the context of online privacy, parents can adjust their own behavior and parenting strategies to enhance adolescents' acceptance of their privacy beliefs. Protecting adolescents from online risks requires a collective family effort.

Drawing upon developmental psychology and family science, we argue that parental online privacy concerns influence adolescents' self-disclosure on SNSs via two socialization mechanisms: internalization and compliance. The *internalization of parental beliefs* (*internalization* for short) means that adolescents internalize parental privacy concerns when developing their own, which consequently affects their self-disclosure. *Compliance* means that adolescents comply with parental privacy concerns in self-disclosure without changing their own privacy concerns. Both mechanisms work in tandem to influence adolescents' privacy behavior. In addition, we propose that the effectiveness of socialization and the success of parental influence in changing adolescents' privacy behavior may depend on three factors: (1) the dissonance between parents' and adolescents' privacy concerns, (2) the mediation strategy parents use to guide adolescents' online activities, and (3) adolescents' gender.

To test our research model, we collected data from 726 families in China, matching responses from adolescents and their parents. Collecting data from both adolescents and parents better reflects the perceptions and behavior of both sides than using a single source of data, as prior studies have done (see Appendix A). It also helps to alleviate the common method bias caused by responses collected from a single source (Podsakoff et al., 2003).

Our findings show that parental privacy concerns change adolescents' self-disclosure behavior by influencing adolescents' privacy concerns. In addition, parent-child privacy dissonance (i.e., the level of discrepancy between parents' and adolescents' online privacy concerns) weakens the effect of adolescents' privacy concerns on self-disclosure. The extent to which parents employ internet evaluative mediation (i.e., the degree to which parents and adolescents are involved in discussions to reach mutually agreed-upon terms and set up rules for adolescents' online activities; Nathanson, 2001) reinforces the effect of parental privacy concerns on adolescents' privacy concerns. Statistical analyses further revealed that the mediating effect of adolescents' privacy concerns is diminished by parent-child privacy dissonance but boosted by internet evaluative mediation. We also found that parental privacy concerns affect sons and daughters through different paths, especially when parents employ high internet evaluative mediation. Under high internet evaluative mediation, parental privacy concerns affect sons' self-disclosure primarily through an indirect path (via son's privacy concerns), but influence daughters' self-disclosure both directly and indirectly via daughters' privacy concerns.

We attempted to replicate the findings through a supplemental study of 366 U.S. adolescents with their self-reported data. Consistent with our findings above, we found that parental privacy concerns increase adolescents' privacy concerns and thereby reduce adolescents' self-disclosure on SNSs. However, the moderating effects of parent-child privacy dissonance, internet evaluative mediation, and adolescents' gender are insignificant given the high correlation between parents' and adolescents' privacy concerns. The nuanced differences between the two studies demonstrate the importance of gathering matched parent-child data when studying privacy socialization in families.

The remainder of the paper is organized as follows. We first review previous research on adolescents' online privacy concerns and self-disclosure on SNSs and introduce the theoretical background for the present research. Next, we develop our research model and then present our data collection process and the results of hypothesis testing. Lastly, we discuss theoretical contributions and practical implications and conclude the study.

Research Background and Theories

Adolescents' Self-Disclosure on SNSs and Online Privacy Concerns

Appendix A summarizes studies on adolescents' self-disclosure on SNSs and their online privacy concerns. Privacy calculus (Dinev et al., 2015; Smith et al., 2011) is a foundational framework in these studies, which represents a consequentialist trade-off between the perceived risks and perceived benefits of information disclosure (Smith et al., 2011). It suggests that an individual is likely to disclose personal information if the perceived benefits outweigh the perceived privacy risks.

Consistent with privacy calculus, adolescents' self-disclosure on SNSs is determined by their perceived benefits and risks (see Table A1 in Appendix A). A main benefit of self-disclosure is seeking, establishing, and maintaining social interaction on SNSs (Liu & Brown, 2014). Another benefit is self-enhancement (Christofides et al., 2012; De Souza & Dick, 2009), that is, using social media to present themselves, impress others, and enhance self-image and popularity. Social interaction and self-enhancement expectations lead adolescents to disclose more personal information on social media.

On the perceived risk side, privacy concerns represent a major force that discourages adolescents' self-disclosure. Studies show that adolescents are concerned about sharing information on websites that may be accessed by others (Chen et al., 2016), about what websites might do with their personal data (Walrave & Heirman, 2013), and about how their online data can be collected by marketers (Feng & Xie, 2014). Privacy concerns reduce the likelihood of adolescents disclosing personal information on social media (Walrave & Heirman, 2013) and make it more likely that they will apply privacy settings to limit the visibility of and access to their personal information (Feng & Xie, 2014). However, there are exceptions in the literature. For example, a study on Singaporean adolescents showed that their online privacy concerns had no effect on self-disclosure (Shin & Kang, 2016). Prior literature has provided no explanation for such discrepancies.

Further, adolescents' negative experiences on SNSs may affect their privacy concerns and self-disclosure behavior. Cyberbullying victimization is a common negative experience faced by adolescents (Chen et al., 2016; Wright, 2018) that has attracted much attention in the family science literature (Aizenkot, 2020). Cyberbullying victimization experiences often result in elevated privacy concerns (Chen et al., 2016) and self-disclosure restraint (Wright, 2018).

In addition, prior studies have explored how the means used by parents in guiding adolescents' online activities may affect adolescents' privacy concerns, albeit with mixed findings. For example, Liu et al. (2013) showed that parenting means (e.g., teaching teens to limit online activities, setting rules regarding the time of day they are allowed to go online) are effective in changing adolescents' privacy concerns. However, Chen et al. (2016) and Shin and Kang (2016) did not find similar effects, questioning the role of parenting means in influencing adolescents' privacy concerns.

The findings on the effect of parenting means on adolescents' self-disclosure have also been mixed. Chen et al. (2016), for example, found a negative effect of parenting means (e.g., reading privacy policies for teens, intervening in teens' online activities, helping teens establish their privacy settings) on adolescents' self-disclosure. However, Liu et al. (2013) showed that teaching adolescents to discontinue online experiences (e.g., if they feel uncomfortable or afraid) results in a negative effect on online disclosure, but setting rules regarding the time of day they are allowed to go online produces no direct effect.

The above review highlights four gaps that we intend to address through this study. First, as Appendix A shows, no research thus far has investigated how parental online privacy concerns influence adolescents' online privacy concerns and their self-disclosure on SNSs, even though parents obviously play a critical role in adolescents' development (Erickson et al., 2016; Moore et al., 2002; Youn, 2008). We extend the privacy research by investigating how parental online privacy concerns may shape adolescents' privacy concerns and influence their self-disclosure.

Second, there is no theoretical explanation for the inconsistency between adolescents' privacy concerns and their self-disclosure (Shin & Kang, 2016). The family science literature shows that parent-child dissonance may arise when there is a discrepancy between parents' and adolescents' beliefs (Choi et al., 2008; Wu & Chao, 2011). Parent-child dissonance may introduce strain into the parent-child relationship and disrupt the socialization process (Choi et al., 2008), complicating adolescents' decision-making such that their behavior may not be aligned with their own beliefs or those of their parents. We suggest that parent-child dissonance provides a novel perspective that can reconcile the previous findings on the relationship between adolescents' privacy concerns and self-disclosure.

Third, prior studies on privacy have explored the direct effects of various parenting means on adolescents' privacy concerns or behavior but have paid little attention to the fact that parents serve as role models for their children. If parents themselves are not concerned about online privacy, parenting means, regardless of the form, may not influence adolescents' privacy

beliefs and behavior. This may provide an explanation for the conflicting results in the aforementioned studies on the effect of parenting means. Parenting means could be facilitators or inhibitors of the process through which parents pass down their beliefs to their children rather than a direct cause of adolescents' privacy concerns or behavior. In line with this reasoning, we focus on *internet evaluative mediation*, which has been established as the most relevant strategy regarding adolescents (Elsaesser et al., 2017; Navarro et al., 2013), and investigate how it might promote the success of parental influence in changing adolescents' self-disclosure behavior.

Fourth, daughters and sons may respond differently to parental influence (Perry & Pauletti, 2011). Most studies on privacy have used gender as a control variable in their analyses (Feng & Xie, 2014; Shin & Kang, 2016; Walrave & Heirman, 2013). Whether and how daughters and sons react differently to parental influence has not been theorized or tested in the privacy literature. Without a good understanding of the differential effects across daughters and sons, the aggregated results may be misleading and may fail to provide adequate guidance for parenting. This extension of the literature is particularly important for girls, who have been shown to be more vulnerable to online risks (Swirsky et al., 2021).

Parental Influence and Adolescents' Behavioral Changes

Parents play important roles in shaping adolescents' growth and learning. Because the socialization process generally begins in early childhood, parents are usually the first and most influential socialization agents for adolescents (Moore et al., 2002). During this process, adolescents learn social norms, values, and motivations (Youn, 2008), as well as attitudes and skills (Mangleburg et al., 1997), from their parents.

There are three modes through which adolescents learn from their parents: modeling, social interaction, and reinforcement (Moore et al., 2002; Moschis & Churchill, 1978). Modeling involves adolescents' observation and imitation of their parents—for example, adolescents observe and mimic parents' behavior to cope with stress (Liga et al., 2020). Social interaction involves parent-child interactions (e.g., discussions), which reflects the fact that adolescents are not merely passive recipients of socialization but also active participants in the process. Reinforcement involves rewards or punishment (e.g., limited media use) and is used by parents to motivate adolescents to adopt the desired behavior.

As outcomes of learning, adolescents may adopt behavioral changes. There are two possible mechanisms that lead to adolescents' behavioral changes. One is *internalization*, in which adolescents adopt their parents' attitudes and beliefs

and integrate them to change their own behavior. The other is *compliance*, in which adolescents may not actually adopt parents' attitudes and beliefs but behave in a way that is consistent with parents' expectations. Appendix B presents some sample studies on the links between modes of learning and the two mechanisms of adolescent behavioral change.

First, adolescents may internalize parental attitudes and beliefs in developing their own attitudes and beliefs (Moore et al., 2002; Yang & Laroche, 2011). Through internalization, the attitudes and beliefs that parents have endorsed or modeled are passed to their children. For example, parents pass down their religious values to adolescents through discussions, a form of social interaction (Flor & Knapp, 2001). Youths whose parents express traditional attitudes toward gender roles are more likely to hold the same attitudes themselves (Perry & Pauletti, 2011). Research has shown that parents and children have similar attitudes toward risk in terms of their choice of occupation (Necker & Voskort, 2014).

Second, adolescents may comply with parental attitudes and beliefs as guidance for their own behavior. In such cases, they may not wholeheartedly accept their parents' attitudes or beliefs (Kochanska, 2002); rather, they adopt their parent's views as heuristic guidance for their own behavior (Halberstadt et al., 2016) to manage uncertainties, fill knowledge gaps, obtain approval from their parents, or simply because they believe in their parents. In this way, parents' beliefs can help adolescents establish desired behavior such as healthy eating (Ma & Hample, 2018) or reduce undesired behavior such as unhealthy eating (Fu et al., 2021).

In addition, the success of parental influence may be dependent on the consistency of beliefs between parents and adolescents (Laroche et al., 2007; Wu & Chao, 2011), the parenting strategy used to guide adolescents' online activities (Venkatesh et al., 2019; Warren et al., 2002), and the receptiveness of adolescents to parental influence (Perry & Pauletti, 2011). As discussed next, we focus on three conditional factors: parent-child dissonance in beliefs, internet evaluative mediation, and gender differences in the response to parental influence. Figure 1 depicts our conceptual model.

Parent-Child Dissonance

Adolescents' attitudes and beliefs may differ from those of their parents due to the influence of other socialization agents (e.g., peers, media) or their own experience, resulting in parent-child dissonance (Laroche et al., 2007; Wu & Chao, 2011). Such dissonance may cause strained family relationships, intensify family conflicts, and lead to declines in the parent-child relationship quality (Laroche et al., 2007). Parent-child dissonance may cause adolescents to experience

anxiety or resentment regarding anticipated negative parental responses to their decisions (Higgins, 1987; Moretti & Wiebe, 1999). In contrast, parent-child consonance leads to family cohesion (Laroche et al., 2007) and leads adolescents to experience greater self-acceptance (Wyer, 1965). Such families have stronger parent-child bonds and endow adolescents with a sense of support from their parents (Choi et al., 2008).

Prior studies have shown that parent-child dissonance in cultural values causes problematic behavior among adolescents, such as rule-breaking and aggressive behavior (Wu & Chao, 2011). Adolescents in dissonant families are more likely to rebel against their parents when they are pressured to comply (Laroche et al., 2007). Parent-child dissonance also weakens adolescents' roles in family decisions; further, in families with higher levels of parent-child dissonance, adolescents are less likely to follow their own thoughts to form product evaluations, which in turn drives their consumption behavior (Laroche et al., 2007). When adolescents have attitudes and beliefs that conflict with those of their parents, they are more likely to be influenced by their peers (Yang, 2008; Yang & Laroche, 2011). Extending this stream of research, we expect parent-child dissonance to be a moderating condition for intergenerational transmission in the context of privacy concerns such that the influence of parents on adolescents' behavior is weaker among dissonant (vs. consonant) families.

Evaluative Mediation

Evaluative mediation is a parenting strategy that involves adolescent participation in making rules to guide their behavior (Elsaesser et al., 2017; Lwin et al., 2008; Navarro et al., 2013). Interactive rule-making demonstrates parents' respect for their children (Shin & Kang, 2016) and encourages parents to explain to their children why rules are needed (Venkatesh et al., 2019; Warren et al., 2002). Evaluative mediation enables parents to convey their attitudes and beliefs to adolescents, thus facilitating adolescents' learning (Yang & Laroche, 2011).

With evaluative mediation, adolescents are more likely to learn their parents' attitudes and beliefs and think about why their parents have certain attitudes and beliefs, thus leading them to develop a better understanding of parental concerns. Research on television viewing, for example, has shown that adolescents whose parents use evaluative mediation are more likely to improve their understanding of their parents' concerns about media content (Austin, 1993). In this regard, parents provide guidance to help adolescents better understand content such as that promoting materialistic values and product purchases (Valkenburg & Buijzen, 2005).

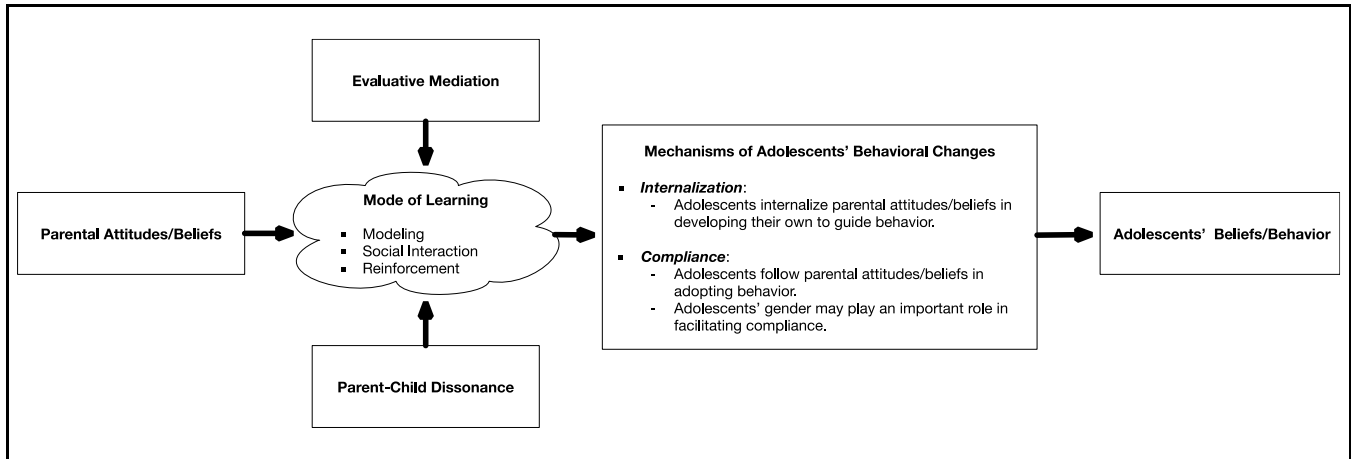


Figure 1. Parental Influence on Adolescents

Drawing upon this line of research, we examine how evaluative mediation can affect the success of parental influence on changing adolescents' privacy concerns and their subsequent self-disclosure behavior.

Gender Difference in Response to Parental Influence

Compared to sons, daughters are more sensitive to parents' expectations, and their behavior is more likely to be shaped by parents' opinions and feelings (Tenenbaum & Leaper, 2003). One possible reason for parents' greater influence on daughters is daughters' greater need for intimacy and family ties (Ohannessian, 2013; Perry & Pauletti, 2011). At adolescence, daughters are more likely to maintain family bonds with parents (Jessor et al., 1995), whereas sons tend to be more self-reliant and defiant (Perry & Pauletti, 2011). They often seek to emulate masculine ideals and show their maturity through risky behaviors and through noncompliance with parents (McCoy et al., 2019).

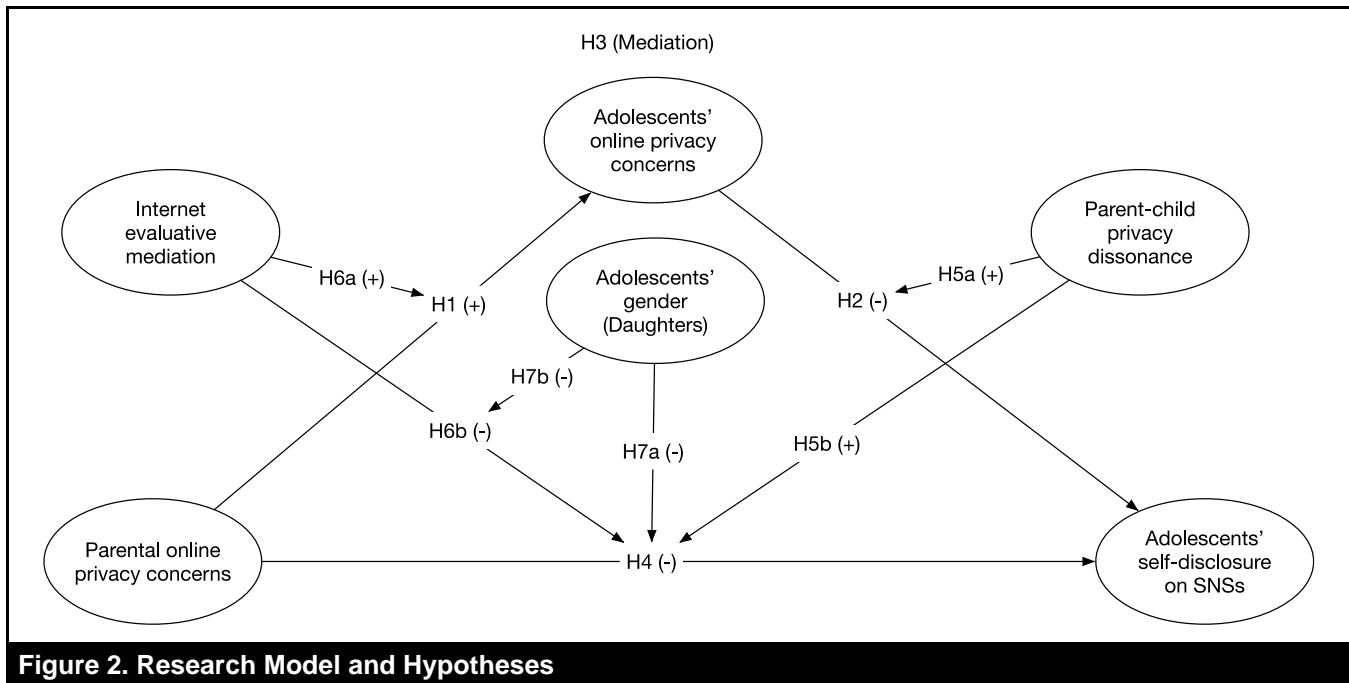
Parents' attitudes and cautionary statements tend to have stronger effects on daughters. For instance, daughters often exhibit more dissatisfaction with themselves if they perceive that their parents do not accept them (Barker & Galambos, 2003). Unlike sons, daughters are more likely to forego risky or undesired behaviors (e.g., smoking) if their parents express disapproval toward such behavior (Ellickson et al., 2001; Kong et al., 2011).

Daughters' susceptibility to parental influence may be further improved with a better understanding of parents' attitudes and expectations (Perry & Pauletti, 2011). As mentioned earlier, evaluative mediation provides a venue for adolescents and parents to make rules together. With this

strategy, parental beliefs about what is allowed or disallowed become more visible to adolescents. Given the sensitivity of daughters to parental influence, daughters' behavioral changes are more likely to be induced if parents engage in a higher level of evaluative mediation. Adopting this line of research, we examine gender differences in response to parental influences on privacy.

Research Model and Hypothesis Development

Figure 2 presents our research model. We expect that adolescents' self-disclosure on SNSs is influenced by parental online privacy concerns through internalization and compliance. With respect to internalization, we argue that parental online privacy concerns increase adolescents' privacy concerns (H1) and thereby reduce their self-disclosure (H2). Taken together, we argue that adolescents' privacy concerns mediate the effect of parental privacy concerns on self-disclosure (H3). Regarding compliance, parental privacy concerns may decrease adolescents' self-disclosure directly (H4). Furthermore, parent-child privacy dissonance is likely to weaken the associations between adolescents' privacy concerns and self-disclosure (H5a) and between parental privacy concerns and adolescents' self-disclosure (H5b). Internet evaluative mediation may facilitate both internalization (H6a) and compliance (H6b). Finally, parental privacy concerns are more likely to reduce daughters' (vs. sons') self-disclosure through compliance (H7a). The difference between daughters and sons in their response to parental influences is expected to be more salient under high internet evaluative mediation (H7b). These hypotheses are developed as follows.



Parental Online Privacy Concerns and Adolescents' Self-Disclosure on SNSs

Family is a catalyst for the development of adolescents' privacy perceptions (Petronio, 2010). Through socialization in the family, adolescents learn privacy rules regarding when, how, with whom, and in what way others should be granted or denied access to their private information. Specifically, adolescents learn through the observation of informative cues from their parents (Edgerly et al., 2018): When parents have stronger concerns about online privacy, they may exhibit those concerns through protective behaviors such as refraining from social media use or by verbalizing their concerns during family interactions. By listening to and observing their parents, adolescents may internalize their parents' views about the risks of information misuse and the importance of privacy protection in developing their own privacy concerns. Therefore, we hypothesize:

H1: *Parental online privacy concerns are positively related to adolescents' online privacy concerns.*

Adolescents' online privacy concerns reflect worries that their personal information may be collected, accessed, and/or misused by others on the internet without their consent. For example, online marketers may collect teens' personal information and find opportunities to market games to them (Youn, 2008). Some textual information such as birth date, home address, school name, and recent activities may also be used by online predators to identify or locate an adolescent

(Liu et al., 2016). Concerns regarding the possible misuse of personal information might cause adolescents to refrain from disclosing too much information online in order to minimize the potential risks. Consistent with this argument, previous research has shown a negative effect of adolescents' privacy concerns on their self-disclosure on SNSs (Chen et al., 2016; Feng & Xie, 2014; Walrave & Heirman, 2013). Therefore, we hypothesize:

H2: *Adolescents' online privacy concerns are negatively related to their self-disclosure on SNSs.*

The foregoing discussion on H1 and H2 suggests that adolescents' privacy concerns play an intermediate role in determining the extent to which parental privacy concerns are passed down to adolescents and influence their privacy behavior. It reflects the internalization mechanism, in which adolescents adopt their parents' privacy concerns and integrate them into their own, and subsequently use them to guide their self-disclosure on SNSs. Formally, we hypothesize:

H3: *Adolescents' online privacy concerns mediate the relationship between parental online privacy concerns and adolescents' self-disclosure on SNSs.*

In addition to internalization, adolescents' self-disclosure behavior on SNSs may be subject to their parents' direct influence, exhibiting compliance. Especially in our study context, because adolescents' privacy perceptions are still under

development, following their parents' beliefs would be a reliable and heuristic way to guide their behavior. Further, according to Chen et al. (2016), when adolescents perceive pressure from their parents regarding their online activities, they may respond to their parents' requests even if they have not internalized their parents' concerns. Studies on adolescents' choice of the information systems (IS) major have also shown that their choice of this major is subject to parental influence and may not always reflect their own interest in the subject (Downey, 2011). Therefore, we hypothesize:

H4: *Parental online privacy concerns are negatively related to adolescents' self-disclosure on SNSs.*

The Moderating Role of Parent-Child Privacy Dissonance

We expect that dissonance between parents and adolescents in terms of privacy concerns may discourage adolescents from carrying out privacy-related decisions on their own, thereby weakening the impact of adolescents' privacy concerns on their self-disclosure on SNSs. In families with higher parent-child privacy dissonance, when adolescents disagree with their parents on privacy concerns, adolescents may struggle to decide which opinions they should follow in making their privacy decisions (in our case, adolescents' self-disclosure on SNSs): their own or their parents'. The strain between parents' and adolescents' privacy concerns can challenge adolescents' privacy-related decision-making and undermine the relationship between their privacy concerns and their self-disclosure. In contrast, parent-child consonance may endow adolescents with higher self-acceptance and confidence in their privacy judgments, thus leading to consistency between their privacy concerns and their self-disclosure. Therefore, we hypothesize:

H5a: *Parent-child privacy dissonance moderates the relationship between adolescents' online privacy concerns and their self-disclosure on SNSs such that the relationship is weaker (i.e., less negative) when parent-child privacy dissonance is higher.*

In addition, we anticipate that parent-child privacy dissonance also moderates the association between parental online privacy concerns and adolescents' self-disclosure. In dissonant families, adolescents may be less likely to understand or share their parents' privacy concerns. As a result, adolescents may be less likely to follow their parents' beliefs and adopt the behavior desired by their parents. In addition, given the possible strain and the feeling of disapproval due to privacy dissonance, adolescents may even rebel against their parents by ignoring their parents' concerns about their self-disclosure behavior. In contrast, in families where adolescents and parents have shared privacy concerns,

adolescents are more likely to understand and respect their parents' privacy beliefs. Subsequently, they are more willing to adopt behavior desired by their parents (Choi et al., 2008). Thus, we hypothesize:

H5b: *Parent-child privacy dissonance moderates the relationship between parental online privacy concerns and adolescents' self-disclosure on SNSs such that the relationship is weaker (i.e., less negative) when parent-child privacy dissonance is higher.*

The Moderating Role of Internet Evaluative Mediation

Internet evaluative mediation involves active, conversational, and interactive communication between parents and adolescents for rule-making regarding adolescents' online activities (e.g., what websites they are allowed to visit, what information can be posted on SNSs). Such explicit communication increases the effectiveness of adolescents' learning because it makes parental online privacy concerns more observable and salient to children (Edgerly et al., 2018; Wright, 2018). In addition, open communication and the clarification of rules demonstrate mutual respect between parents and adolescents (Orbuch et al., 2005) and help improve parents' efforts to educate adolescents (Venkatesh et al., 2019). Thus, we predict that when parents engage in a higher level of internet evaluative mediation, adolescents will be more likely to internalize parental online privacy concerns. In contrast, when parents engage in low levels of internet evaluative mediation, their privacy concerns may be less observed and understood by their teenage child. Therefore, we hypothesize:

H6a: *Internet evaluative mediation moderates the relationship between parental online privacy concerns and adolescents' online privacy concerns such that the relationship is stronger (i.e., more positive) when parents use more internet evaluative mediation.*

Adolescents may not necessarily agree with their parents or integrate parental online privacy concerns since they may have a different understanding of what constitutes risky behavior in social media (Jia et al., 2015). However, internet evaluative mediation creates a better environment for adolescents to meet their parents' expectations. When adolescents exhibit undesirable online behavior, high-quality parent-child interactions can help parents effectively express their concerns and reduce undesired behavior such as online addiction (Venkatesh et al., 2019). In the context of self-disclosure on SNSs, although adolescents may not hold the same view as their parents regarding the importance of online privacy, internet evaluative mediation can help adolescents better understand

their parents' views regarding online privacy and remind them that compliance behavior may alleviate their parents' concerns, signifying mutual trust and respect. In other words, with a higher level of internet evaluative mediation, adolescents are more likely to meet their parents' expectations even if they are not ready to incorporate parental concerns into their own belief systems. Therefore, we hypothesize:

H6b: *Internet evaluative mediation moderates the relationship between parental online privacy concerns and adolescents' self-disclosure on SNSs such that the relationship is stronger (i.e., more negative) when parents use more internet evaluative mediation.*

Gender Difference in Response to Parental Influence

We expect that daughters, relative to sons, are more likely to comply with parental online privacy concerns. Since self-disclosure on SNSs is associated with different forms of privacy risks in the long run, parents who are more concerned about online privacy tend to be more proactive in influencing their children's self-disclosure behavior, as specified in H4. Such influence would be expected to more readily induce daughters' compliance behavior in terms of reducing their self-disclosure on SNSs because of their generally greater sensitivity to parental expectations (Harter, 2000) and need for intimacy and family ties (Ohannessian, 2013; Perry & Pauletti, 2011). Sons, compared to daughters, tend to be more autonomous, defiant, and self-reliant (Perry & Pauletti, 2011); thus, their compliance with parental privacy concerns regarding self-disclosure on SNSs is expected to be weaker.

In addition, daughters' compliance with parental online privacy concerns may be more strongly influenced by internet evaluative mediation than sons'. Internet evaluative mediation tends to make parental privacy concerns more observable and acceptable at home. With a better understanding and awareness of parental privacy concerns, daughters may be more likely to follow their parents' lead, owing to their greater sensitivity and willingness to manage their relationship with their parents. However, this may not work equally well for sons, even though sons may have a good understanding of parental privacy concerns due to internet evaluative mediation. As a result, internet evaluative mediation is anticipated to have a more pronounced effect on daughters' (vs. sons') compliance with parental online privacy concerns. Therefore, we propose:

H7a: *Parental online privacy concerns have a stronger (i.e., more negative) effect on daughters' self-disclosure on SNSs than on sons'.*

H7b: *The moderating role of internet evaluative mediation in the relationship between parental online privacy concerns and adolescents' self-disclosure on SNSs is stronger (i.e., more negative) for daughters than for sons.*

Control Variables

We included several control variables for adolescents' online privacy concerns and self-disclosure on SNSs following prior literature. Adolescents' perceived social and self-enhancement benefits are facilitators of self-disclosure (Chen et al., 2016; Christofides et al., 2012; De Souza & Dick, 2009), while cyberbullying victimization experience is an inhibitor (Wright, 2018). We also included cyberbullying victimization experience as a control variable for adolescents' privacy concerns, as it elevates individuals' privacy concerns (Chen et al., 2016). Finally, we treated adolescents' gender and age, fathers' and mothers' age and education, and household income as control variables for both adolescents' online privacy concerns and self-disclosure on SNSs.

Research Methodology and Results

Survey Procedure

To test the research model, we collected data from a sample of families living in China using matched surveys: one for adolescent children, one for fathers, and one for mothers. Adolescents between 13 and 17 years old and their parents were recruited for the study. The back-translation method, in which the original surveys were translated from English to Chinese and then back to English, was used to ensure the idiomatic equivalence of these three survey versions. We pre-tested the self-administered survey questionnaires with six Chinese families to ensure clarity, comprehension, and ease of completion. The surveys were anonymous.

Before the study, two regular public high schools in eastern China showed an interest in integrating our surveys into their syllabi, one using it as a part of a student self-awareness course and the other adding it into their family study program.² In return, we offered a copy of the research

² Institutional Review Board (IRB) approval for the study was obtained from the office of research integrity at a university affiliated with one of the co-authors. Then, the two high schools in China were contacted again, with

a formal application to their external affairs office for approval. The two high schools approved our application after a thorough review process and

results to these schools and to the participating families who were interested in our research findings. In addition, we made a monetary contribution to these schools: RMB ¥30 (about \$4.40) for each complete set of triadic data (father, mother, and the adolescent) and RMB ¥10 (about \$1.50) for each complete set of dyadic data (father or mother and the adolescent). This money was intended to benefit students in whatever way the school saw fit. Following the IRB protocol, we obtained parental permission for minor consent, as well as the adolescents' and parents' consent to the data collection.

We distributed 1,500 sets of questionnaires to the teachers at both schools. The teachers then handed out the packages to their students in class. Each package contained three envelopes: one containing a survey for the student, another containing a survey for the student's father, and a third envelope containing the survey for the student's mother. Students were asked to fill out their survey during class, seal it in the envelope, and place it in a box at the entrance of the classroom. All the students who participated in the survey took the other two envelopes home for their parents to complete. After parents completed their survey, they sealed it in the envelope provided. Then, the students brought the sealed envelopes back to campus and placed them in a box designated for collecting the surveys. A unique number was assigned to the three questionnaires in each package to match the anonymous responses from the same family.

A total of 726 survey packages, including 25 from single-parent families, were returned with complete responses. A detailed profile of the sample is presented in Appendix C. Nonresponse bias was checked by first comparing the responding families to the nonresponding families (i.e., packages containing only the students' responses) based on adolescents' age, gender, birth order, and family structure. The Pearson χ^2 tests (all p -values > 0.10) indicate that these factors were the same across these two groups. We then compared the principal constructs of the research model across the nonresponding and responding families based on the student responses. The t -tests showed no significant differences in the mean levels of these constructs (all p values > 0.50). The results suggest that nonresponse bias was not an issue in this study.

In addition, we examined potential differences in the responses between the schools. As in the nonresponse bias tests, we compared both demographic factors and research constructs between the two schools. Neither the Pearson χ^2

tests nor the ANOVA tests revealed any significant differences (all p values > 0.10); therefore, we pooled these data together for analysis.

Measurements

Other than demographic information, all items in the questionnaires were assessed via a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) adapted from prior literature (see Appendix D). The *online privacy concerns* of adolescents, fathers, and mothers were assessed separately using four items adopted from Dinev and Hart (2006). We performed invariance tests on fathers' and mothers' privacy concerns via SPSS Amos 21, following the recommended procedure by Hair et al. (2019). Specifically, we prepared two data sets, one with a mother-child match, and the other with a father-child match. We first tested configural invariance between the two data sets. The results showed a good fit ($\chi^2(602) = 1384.59, p < 0.001, \chi^2/df = 2.30, CFI = 0.95, RMSEA = 0.03$). We then tested metric invariance ($\chi^2(20) = 11.49, p = 0.93$) and scalar invariance ($\chi^2(47) = 20.54, p = 0.99; \chi^2(75) = 32.61, p = 0.99$). The tests did not show any significant difference between the two data sets. Thus, for the simplicity of hypothesis testing, we averaged the parents' scores based on their responses to each question about online privacy concerns and used the average scores to represent parental privacy concerns for each family.

Adolescents' self-disclosure on SNSs was measured by items adapted from Chen (2013) and Blau (2011). The measure of *internet evaluative mediation* was adapted from Navarro et al. (2013) and reported by the adolescents. For the control variables, we adopted the items from Tynes et al. (2010) to measure *cyberbullying victimization experience*. The measures of *perceived social* and *perceived self-enhancement* benefits were adapted from VanMeter et al. (2015). Table 1 presents descriptive statistics and correlations of the principal constructs.

Parent-child privacy dissonance was calculated through the degree symmetric value (DSV) between parental and adolescents' online privacy concerns (Klein et al., 2007). DSV holistically reflects the congruence of a perspective between two parties (Guo et al., 2021). Following previous research (Guo et al., 2021; Klein et al., 2007), we calculated the degree value and the symmetric value first and then used their division (i.e., DSV) to reflect parent-child privacy dissonance, with a lower value indicating higher dissonance.

several rounds of interactions with both the school administration and parental committee representatives.

Table 1. Means, Standard Deviations, Correlations, and Discriminant Validity of Principal Constructs

Variable	M	SD	Composite reliability	1	2	3	4	5	6	7
1. Parental privacy concerns	5.70	1.32	0.92	0.86						
2. Adolescents' privacy concerns	5.60	1.67	0.90	0.15*	0.83					
3. Internet evaluative mediation	4.20	2.12	0.84	0.14**	0.21*	0.79				
4. Self-disclosure	1.98	1.05	0.84	-0.05	-0.13**	-0.08*	0.79			
5. Self-enhancement benefits	4.25	1.54	0.83	0.03	0.12*	0.08*	0.20**	0.78		
6. Social benefits	4.11	1.88	0.84	0.01	0.09*	0.11*	0.11*	0.31**	0.86	
7. Cyberbullying victimization	1.76	1.06	0.87	-0.03	0.10*	0.01	0.20**	0.12**	0.16**	0.70

Note: $N = 726$. ** $p < 0.01$; * $p < 0.05$. The square roots of the average variance extracted (AVE) values are on the diagonal in bold. The square roots of AVE must be greater than the correlations between constructs to show discriminant validity, which was the case in the current study.

Measurement Validation

Reliability and Validity

A confirmatory factor analysis was performed on the latent constructs using SPSS Amos 21. The analysis showed a satisfactory measurement model, with $\chi^2(300) = 644.37$, $p < 0.001$, $\chi^2/df = 2.15$, RMSEA = 0.04, and CFI = 0.96. We then assessed the reliability, convergent validity, and discriminant validity of the constructs (Churchill, 1979). All constructs were reliable, with Cronbach's α (Appendix D) and composite reliability (Table 1) greater than 0.70. The loadings were acceptable (see Appendix D). The convergent validity of the constructs was confirmed, with the average variance extracted (AVE) all above 0.70 (see Table 1), exceeding the 0.50 cut-off value (Fornell & Larcker, 1981). Discriminant validity was also established: First, the square root of the AVE of each construct was larger than the correlation coefficients with other constructs (Fornell & Larcker, 1981). Second, we tested the heterotrait-monotrait (HTMT) ratios of the correlations to verify the discriminant validity (Henseler et al., 2015). The ratios ranged between 0.035 and 0.464, far below the threshold of 0.85, indicating sufficient discriminant validity.

Tests of Common Method Bias

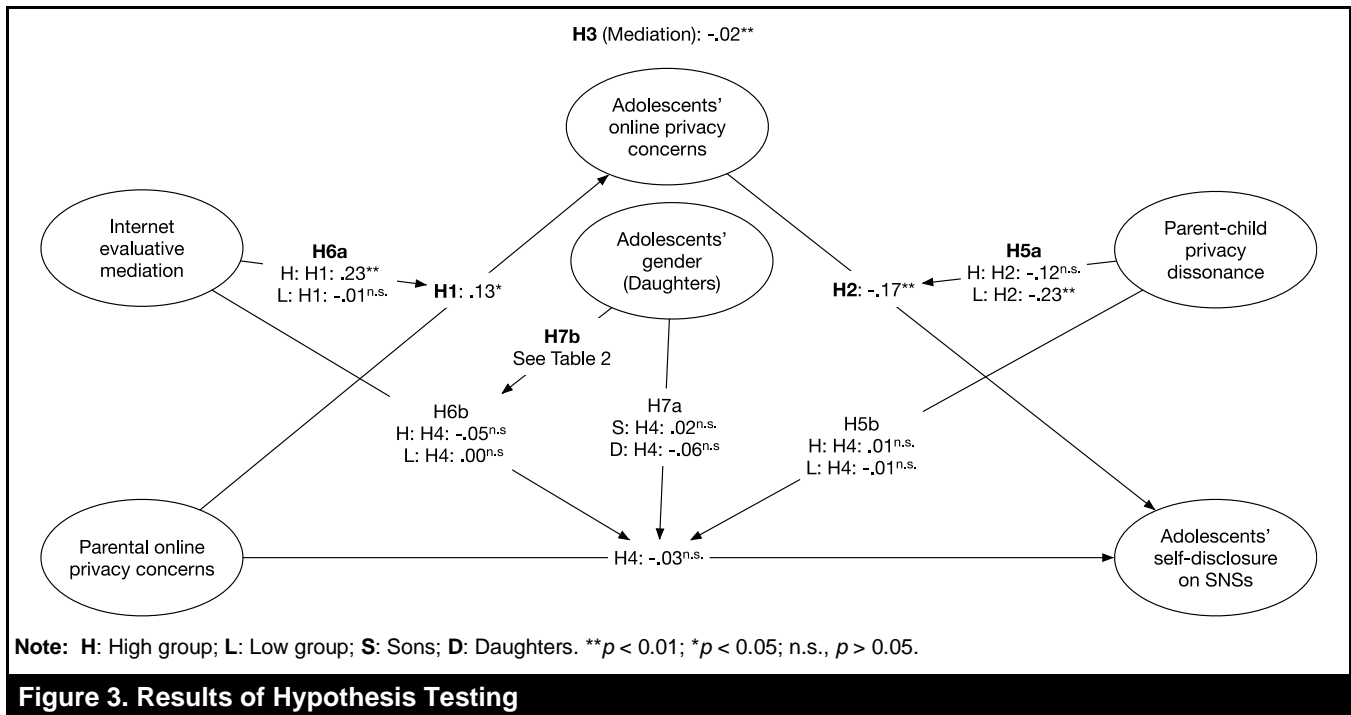
We collected data from different informants (i.e., fathers, mothers, and adolescents) to minimize common method bias (Podsakoff et al., 2003). We also performed two tests to measure the potential threat of the bias. First, to perform the marker variable test (Malhotra et al., 2006), we averaged the frequency and time of adolescents playing educational games (e.g., Math Fight, Sudoku, each item measured using a 7-point scale) and used the average as the marker variable. This variable was chosen because educational games were encouraged by the teachers of the participants but irrelevant to self-disclosure on SNSs. The correlations between the marker variable and the research constructs ranged between 0.04 and 0.11. We estimated two models: the baseline model and the constrained model, where the marker variable was linked to

all the items of the principal constructs with the coefficients set to be equal. The χ^2 difference between the baseline model and the constrained model showed no significant difference ($p > 0.05$), indicating the lack of common method bias in the data.

Second, we performed the common method variance test, using the unmeasured common method factor with all measurement items loaded to examine the potential impact of common method bias (Podsakoff et al., 2003). We found no significant difference between the constrained model and the unconstrained model ($p > 0.10$), indicating that common method bias was not a concern. Taken together, both tests yielded consistent evidence that common method bias did not pose a threat to the validity of our data.

Results of Hypothesis Testing

An estimation of the research model (see Figure 3) generated an acceptable fit: $\chi^2(240) = 541.37$, $p < 0.001$, $\chi^2/df = 2.26$, CFI = 0.96, and RMSEA = 0.04. As predicted, the relationship between parental online privacy concerns and adolescents' privacy concerns is significant ($\beta = 0.13$, $p < 0.05$), supporting H1. The relationship between adolescents' online privacy concerns and self-disclosure is also significant ($\beta = -0.17$, $p < 0.01$), supporting H2. To test H3, we conducted a bootstrapping test with Amos 21 (Hayes, 2018; Zhao et al., 2010). Bootstrapping is a more powerful method to test the mediating effect than the traditional method by Baron and Kenny (1986) because it accounts for competitive mediation (Peukert et al., 2019) and indirect-only mediation (Zhao et al., 2010). With 5,000 bootstrapping samples, the result shows that the mediating effect of adolescents' online privacy concerns on the relationship between parental privacy concerns and adolescents' self-disclosure is significant with an effect size of -0.02 (95% CI = [-0.04, -0.01]). This supports H3. H4 posits that parental privacy concerns are negatively related to adolescents' self-disclosure. The results show that the direct effect is not significant ($\beta = -0.03$, $p = 0.55$). Thus, H4 is not supported.



To explore potential differences in the effects of mothers' and fathers' privacy concerns on adolescents, we entered mothers' and fathers' privacy concerns as two constructs into the model. The differences between the two paths to adolescents' privacy concerns ($\chi^2(1) = 0.04, p = 0.84$) and between the two paths to adolescents' self-disclosure ($\chi^2(1) = 0.13, p = 0.72$) are both insignificant. Thus, there is no significant difference between mothers and fathers regarding their influence on adolescents in our data.

In terms of the control variables, adolescents' cyberbullying victimization experience is positively related to their online privacy concerns ($\beta = 0.09, p < 0.05$) but is not related to their self-disclosure ($\beta = 0.07, p = 0.09$). Adolescents' perceived self-enhancement is positively related to self-disclosure ($\beta = 0.11, p < 0.05$). However, the relationship between perceived social benefits and self-disclosure is not significant ($\beta = -0.01, p = 0.85$).

Regarding the demographic factors, our findings show that adolescents' gender ($\beta = -0.14, p < 0.05$) and fathers' age ($\beta = -0.09, p < 0.05$) have significant effects on adolescents' self-disclosure, indicating that daughters exhibit less self-disclosure than sons, and adolescents with older fathers exhibit less self-disclosure. However, the results indicate that the demographic factors, including adolescents' age and

gender, fathers' and mothers' age and education, and household income, have no significant impact on adolescents' privacy concerns (all p values > 0.05).

To test the moderating effects of parent-child privacy dissonance (H5a and H5b), we first defined high/low privacy dissonance based on 0.25 standard deviation (SD) above/below its mean value to generate a sufficient sample for each group for multigroup analyses.³ We then used nested χ^2 tests to compare two models (Hair et al., 2019) in order to examine the moderating effects—in one, the effects of adolescents' privacy concerns (or parental privacy concerns) on self-disclosure were freely estimated; in the other, the effects were constrained to be equal across the two groups.

Regarding the moderating effect on the relationship between adolescents' privacy concerns and self-disclosure (H5a), for the low parent-child privacy dissonance group, adolescents' privacy concerns are significantly associated with self-disclosure ($\beta = -0.23, p < 0.01$); for the high parent-child privacy dissonance group, the relationship is insignificant ($\beta = -0.12, p > 0.05$). The χ^2 test shows a significant difference between the two coefficients ($\chi^2(1) = 7.71, p < 0.01$). Therefore, H5a is supported.

Regarding the moderating effect on the relationship between scalar invariances (Hair et al., 2019). None of the tests revealed violations of the invariance.

³ Before testing the moderating effects in our model, we conducted invariance tests to ensure all split groups exhibit configural, metric, and

parental privacy concerns and adolescents' self-disclosure (H5b), for the low parent-child privacy dissonance group, the relationship between parental privacy concerns and adolescents' self-disclosure is not significant ($\beta = -0.01, p > 0.05$); for the high parent-child privacy dissonance group, the relationship is also insignificant ($\beta = 0.01, p > 0.05$). The χ^2 test shows no significant difference between these two coefficients ($\chi^2(1) = 0.04, p = 0.83$); thus H5b is not supported.

Our results show a mediating effect of adolescents' privacy concerns (H3) and a moderating effect of parent-child privacy dissonance (H5a) between parental privacy concerns and adolescents' self-disclosure. This implies a moderated-mediation effect (Muller et al., 2005). We tested the effect with Model 14 in PROCESS (Hayes, 2018). A bootstrapping procedure with 5,000 iterations shows that the indirect effect of parental privacy concerns on adolescents' self-disclosure, mediated by adolescents' privacy concerns, is significant in the low dissonance group ($-0.06, 95\% \text{ CI} = [-0.12, -0.02]$) but not significant in the high dissonance group ($-0.01, 95\% \text{ CI} = [-0.05, 0.02]$). The index of moderated mediation confirms the effect ($-0.03, 95\% \text{ CI} = [-0.05, -0.01]$). The result suggests that a lower level of parent-child privacy dissonance may lead to more internalization.

To test the moderating effects of internet evaluative mediation (H6a and H6b), we split the data for multigroup analyses based on 0.25 *SD* above/below the means of the construct and tested the moderating effects using nested χ^2 tests. The results show that internet evaluative mediation has a significant moderating effect on the relationship between parental privacy concerns and adolescents' privacy concerns (high internet evaluative mediation: $\beta = 0.23, p < 0.01$; low internet evaluative mediation: $\beta = -0.01, p > 0.05$; $\chi^2(1) = 10.57, p < 0.01$). However, it is not significant in the relationship between parental privacy concerns and adolescents' self-disclosure (high internet evaluative mediation: $\beta = -0.05, p > 0.05$; low internet evaluative mediation: $\beta = 0.00, p > 0.05$; $\chi^2(1) = 0.34, p = 0.56$). Therefore, H6a is supported, but H6b is not.

We further tested moderated mediation via PROCESS Model 7 (Hayes, 2018), with adolescents' privacy concerns as the mediator and internet evaluative mediation as the moderator. The indirect effect of parental privacy concerns on adolescents' self-disclosure via their own privacy concerns is significant in high internet evaluative mediation ($-0.03, 95\% \text{ CI} = [-0.06, -0.01]$), but not in low internet evaluative mediation ($-0.01, 95\% \text{ CI} = [-0.03, 0.01]$). The index of moderated mediation confirmed the effect ($-0.01, 95\% \text{ CI} = [-0.03, -0.01]$). The result suggests that, when there is a higher level of internet evaluative mediation, internalization is more likely to occur. We further conducted a moderated-mediation test using Model 21, including both moderators of internet evaluative mediation and parent-child privacy dissonance. The results support the

existence of moderated mediation ($-0.01, 95\% \text{ CI} = [-0.03, -0.00]$), suggesting that a combination of a higher level of internet evaluative mediation and a lower level of parent-child privacy dissonance boosts the internalization process.

H7a proposes that parental privacy concerns have a stronger effect on daughters' self-disclosure than on sons' self-disclosure. We conducted a multigroup analysis between the genders using nested χ^2 tests with two models: an unconstrained model in which the effects of parental online privacy concerns were freely estimated, and a constrained model in which the effects were set to be equal between sons and daughters. The test did not show a significant difference ($\chi^2(1) = 0.44, p > 0.10$) (see Table 2). Thus, H7a is not supported.

We found that internet evaluative mediation has a significant moderating effect on the relationship between parental privacy concerns and daughters' self-disclosure ($\chi^2(1) = 6.06, p < 0.01$) but not sons' ($\chi^2(1) = 3.10, p = 0.08$), as shown in Table 2. Specifically, for the high internet evaluative mediation group, the path from parental privacy concerns to daughters' self-disclosure is significant ($\beta = -0.23, p < 0.05$), yet the path is insignificant for the low internet evaluative mediation group ($\beta = 0.10, p = 0.27$). Neither path is significant for sons ($\beta = 0.13, p = 0.11$ for high internet evaluative mediation; $\beta = -0.06, p = 0.47$ for low internet evaluative mediation). In addition, for the high internet evaluative mediation group, there is a significant difference between daughters ($\beta = -0.23, p < 0.05$) and sons ($\beta = 0.13, p = 0.11$; $\chi^2(1) = 8.76, p < 0.01$) in complying with their parents' wishes. But, for the low internet evaluative mediation group, there is no difference between daughters ($\beta = 0.10, p = 0.27$) and sons ($\beta = -0.06, p = 0.47$; $\chi^2(1) = 1.63, p = 0.20$). Thus, H7b is supported, suggesting that the moderating role of internet evaluative mediation in the relationship between parental online privacy concerns and adolescents' self-disclosure is stronger for daughters than for sons.

We further performed post hoc analyses to explore gender differences in the moderating effect of internet evaluative mediation on the internalization of parental influence. Table 2 shows that internet evaluative mediation has a significant moderating effect on internalization for both sons ($\chi^2(1) = 3.89, p < 0.05$) and daughters ($\chi^2(1) = 10.71, p < 0.01$). Specifically, for the high internet evaluative mediation group, the relationship between parental privacy concerns and adolescents' privacy concerns is significant for both sons ($\beta = 0.26, p < 0.01$) and daughters ($\beta = 0.27, p < 0.05$). However, for the low internet evaluative mediation group, the relationship diminishes for both sons ($\beta = 0.07, p = 0.37$) and daughters ($\beta = -0.15, p = 0.09$). However, there is no significant difference between sons and daughters in the moderating effect of internet evaluative mediation on the relationship between parents' and adolescents' privacy concerns.

Table 2. Analyses on the Moderating Effects of Internet Evaluative Mediation with Sons and Daughters

	Compliance: <i>Parental online privacy concerns → Adolescents' self-disclosure (H7a)</i>	Internalization: <i>Parental online privacy concerns → Adolescents' online privacy concerns (for post hoc comparison)</i>
Sons	0.02 n.s.	-
Daughters	-0.06 n.s.	-
$\chi^2(1)$	0.44 n.s.	-
Moderator: Internet evaluative mediation	<i>Parental online privacy concerns → Adolescents' self-disclosure (H7b)</i>	<i>Parental online privacy concerns → Adolescents' online privacy concerns (for post hoc comparison)</i>
Sons		
High	0.13 n.s.	0.26 **
Low	-0.06 n.s.	0.07 n.s.
$\chi^2(1)$	3.10 n.s.	3.89 *
Daughters		
High	-0.23 *	0.27 *
Low	0.10 n.s.	-0.15 n.s.
$\chi^2(1)$	6.06 **	10.71 **

Note: ** $p < 0.01$; * $p < 0.05$; n.s. $p > 0.05$

Table 3 Results of Hypothesis Testing

Hypotheses	Results
H1: Parental online privacy concerns are positively related to adolescents' online privacy concerns.	Supported
H2: Adolescents' online privacy concerns are negatively related to their self-disclosure on SNSs.	Supported
H3: Adolescents' online privacy concerns mediate the relationship between parental online privacy concerns and adolescents' self-disclosure on SNSs.	Supported
H4: Parental online privacy concerns are negatively related to adolescents' self-disclosure on SNSs.	Not Supported
H5a: Parent-child privacy dissonance in online privacy concerns moderates the relationship between adolescents' online privacy concerns and their self-disclosure on SNSs.	Supported
H5b: Parent-child privacy dissonance in online privacy concerns moderates the relationship between parental online privacy concerns and adolescents' self-disclosure on SNSs.	Not Supported
H6a: Internet evaluative mediation moderates the relationship between parental online privacy concerns and adolescents' online privacy concerns.	Supported
H6b: Internet evaluative mediation moderates the relationship between parental online privacy concerns and adolescents' self-disclosure on SNSs.	Supported for daughters
H7a: Parental online privacy concerns have a stronger (i.e., more negative) effect on daughters' self-disclosure on SNSs than on sons'.	Not supported
H7b: The moderating role of internet evaluative mediation in the relationship between parental online privacy concerns and adolescents' self-disclosure on SNSs is stronger (i.e., more negative) for daughters than for sons.	Supported

To summarize, the difference between sons and daughters in their self-disclosure centers on the ways in which they are influenced by parental online privacy concerns when a high level of internet evaluative mediation is employed: For sons, only internalization occurs; for daughters, both internalization and compliance occur. When a low level of internet evaluative mediation is employed, neither internalization nor compliance was found for sons or daughters. Table 3 summarizes the results of hypothesis testing.

Supplemental Study

We conducted a supplemental study in an attempt to replicate our findings with adolescents' self-reported data. A sample of 385 U.S. adolescents (13-17 years old) was recruited via the Qualtrics panel, resulting in 366 valid responses. The participants were first asked questions about their perceptions of parental online privacy concerns and their own privacy concerns and then questions about parental evaluative

mediation. To address the concern that parents may use different levels of evaluative mediation for online activities in general, for mobile device use, and for SNS use,⁴ and to assess whether these mediations have differential effects, we measured parental evaluative mediation for the three scenarios separately. Next, participants were directed to the second part of the survey regarding their online behavior. At this stage, they were asked to select their most frequently used SNS over the past 12 months and to indicate the devices they used most to post on that site. Based on their selection, participants then answered questions about their self-disclosure on that site. Following this, the same control variables were measured as in the main study. Appendix E presents the details of the study.

We found that the adolescents in our sample mostly posted on Instagram and Snapchat via mobile devices. The correlation between self-disclosure in general and on Instagram is 0.64, between self-disclosure in general and on Snapchat is 0.49, and between Instagram and Snapchat is 0.57. We estimated the model using self-disclosure on social media in general (as in the main study), self-disclosure on Instagram, and self-disclosure on Snapchat as the dependent variable separately. Across SNSs in general, Instagram, and Snapchat, parental online privacy concerns impact adolescents' self-disclosure similarly, with adolescents' privacy concerns being the mediator (Table E1); this is consistent with the main study.

Evaluative mediations for online activities, mobile devices, and SNSs are highly correlated (all r values > 0.80 , $p < 0.001$). Further, we did not find significant differences in their moderating effects. Thus, Appendix E only presents the results of evaluative mediation for online activities as in the hypothesis testing of the main study.

We did not find the moderating effects of parent-child privacy dissonance, internet evaluative mediation, or gender to be statistically significant in the models. This may be due to the high correlation between parental and adolescents' privacy concerns in this data set ($r = 0.50$ with all respondents), compared to that in the main study ($r = 0.15$; see Table 1). As the data were self-reported by adolescents, parental privacy concerns might be biased by adolescents' own perceptions. Prior literature shows that adolescents' perceptions regarding their parents have more predictive power over their behavior than their parents' reports (Bush et al., 2002). Such strong correlations between parental and adolescents' privacy concerns overshadow the effect of other covariates (Greene, 2000; Wooldridge, 2010). Thus, parental privacy concerns explain most of the variance in adolescents' privacy concerns, leaving little room to detect the moderating effects of parent-child privacy dissonance, evaluative mediation, or gender.

While the supplemental study replicates the mediating effect of adolescents' privacy concerns, the nuanced differences in results between the two studies suggest the importance of using matched parent-child data in examining parental influence on adolescents' privacy behavior.

Discussion and Conclusion

This research examines how parental online privacy concerns affect adolescents' self-disclosure on SNSs through the theoretical lens of privacy socialization. It yields four important findings. First, adolescents' online privacy concerns are influenced by those of their parents and subsequently guide their self-disclosure, exhibiting adolescents' internalization of parental privacy concerns (H1-H3). Second, parent-child privacy dissonance weakens the relationship between adolescents' privacy concerns and self-disclosure and diminishes the mediating effect of adolescents' privacy concerns (H5a), highlighting the importance of parent-child consonance for successful internalization. Third, internet evaluative mediation strengthens the relationship between parental privacy concerns and adolescents' privacy concerns and boosts the mediating effect of adolescents' privacy concerns (H6a), emphasizing the importance of applying the strategy in privacy socialization. Fourth, sons and daughters show similarities as well as differences in privacy socialization. On one hand, internet evaluative mediation facilitates internalization for both sons and daughters. On the other hand, internet evaluative mediation enhances daughters' compliance with parents (H7b) but has little effect on sons' compliance. To the best of our knowledge, this is the first study in the information privacy literature to address adolescents' privacy and behavior from an intergenerational transmission perspective.

Contributions to Theory

Our research offers significant contributions to the information privacy and family science literatures. First, our research extends the information privacy literature by showing how parental online privacy concerns influence adolescents' online privacy concerns and self-disclosure on SNSs. Parental influence has been investigated in family science to understand how parents impact adolescents' mental and behavioral development (Yang et al., 2014). A recent study in the IS literature (Venkatesh et al., 2019) also investigated the effect of parenting behavior (e.g., parental

⁴ We thank an anonymous reviewer for this suggestion.

monitoring, control, dissuasion, rationalization) on children's internet addiction. While parents play a critical role in adolescents' development, it is unknown how parental privacy concerns affect adolescents' self-disclosure on SNSs and help them avoid online risks. Our research fills this void by providing a theoretical explanation based on the intergenerational transmission of privacy concerns. Notably, parental privacy concerns in our research differ from prior studies on parents' concerns about adolescents' online privacy (Chen et al., 2016; Feng & Xie, 2014). While our study investigates parents' own privacy concerns, prior studies examined parents' worries about their children's privacy protection and thus did not employ the perspective of intergenerational transmission and socialization.

Our research represents the first attempt to show how parental privacy concerns can result in adolescents' behavioral changes. It highlights the direct (i.e., compliance) and indirect (i.e., internalization) impact of parental privacy concerns on adolescents' self-disclosure. By examining the intergenerational transmission of privacy concerns, we improve the understanding of how adolescents' privacy concerns and online behavior are developed.

We also extend the privacy literature by showing that privacy concerns are not solely developed from a person's own standpoint, as has been considered in most prior studies. Rather, adolescents' privacy concerns and self-disclosure behavior can be modified by important others, such as their parents. Parental privacy concerns exert additional impacts, above and beyond the well-known factors specified in the APCO and enhanced APCO models, on adolescents' privacy decision-making. This discovery is important because it opens a new avenue to examine the critical role of socialization in influencing adolescents' safe online behavior. Future researchers could further investigate the impact of other socialization agents—such as teachers and peer groups—on adolescents' privacy attitudes and online behavior.

Second, our research contributes to the privacy literature by examining the facilitating conditions for the internalization process to occur. We illustrate the moderating role of parent-child privacy dissonance in the effect of adolescents' privacy concerns on self-disclosure and that of internet evaluative mediation in the effect of parental privacy concerns on adolescents' concerns. For parental privacy concerns to take effect on adolescents' self-disclosure, not only are proper parental meditation strategies necessary but also family consonance regarding privacy concerns. If either of these conditions is lacking, adolescents' internalization process may be obstructed.

The findings not only suggest the importance of moderating effects for the impact of parental privacy concerns on adolescents' self-disclosure but also help to explain the conflicting findings in the prior literature. Our finding on the moderating effect of parent-child privacy dissonance offers a novel explanation for adolescents' privacy paradox from the developmental perspective. *Privacy paradox*, known as the discrepancy between users' privacy concerns and self-disclosure behavior, has been observed in the privacy literature (Li et al., 2017). Research has explored individuals' psychological and motivational factors in understanding the paradox (Kokolakis, 2017). Our study suggests that the discrepancy of privacy concerns between the self and important others (in our case, parents) could play an important role in determining the linkage between adolescents' privacy concerns and behavior.

Our findings on the moderating effect of internet evaluative mediation may help explain the mixed findings regarding the effect of parenting means on adolescents' online activities. As indicated earlier, prior studies on the direct effect of parenting means on adolescents' online activities have yielded mixed findings. Our research helps to resolve this conflict by showing that the proper utilization of internet evaluative mediation can enhance parental influence on adolescents' privacy concerns. It thus presents a theoretical explanation of the conflicting results in past research and suggests an alternative perspective by examining the effect of parental mediation as a moderator of the socialization process.

Third, our study is among the first to theorize the difference between sons and daughters in their development of privacy concerns and self-disclosure on SNSs in terms of their response to parental influence. Prior literature on information privacy has mainly treated gender as a control variable, overlooking gender differences in the socialization and development of privacy perceptions and behavior. By systematically examining gender differences in response to parental influence, we show that the complexity of gender differences is superior to a consideration of direct effects only. The gender differences, coupled with parental internet evaluative mediation, offer insights into how parents might influence daughters and sons differently in developing their privacy concerns and adopting online behavior.

Notably, our research shows that fathers' and mothers' influences on adolescents' privacy concerns are similar. This is somewhat surprising since a great deal of family research has shown that fathers and mothers have different impacts on children—for example, in terms of their psychological well-being and health (McElwain et al., 2007). Our findings suggest that regarding adolescents' privacy concerns and behavior, fathers and mothers may exert similar influence.

Implications for Practice

Our findings are closely tied to the current societal focus on understanding adolescents' activities in digital environments (Venkatesh et al., 2019). The potential issues associated with adolescents' self-disclosure on SNSs have captured the attention of both parents and educators (Lwin et al., 2008) because of the unanticipated privacy risks adolescents may face when using social media. As our research shows, socialization within the family plays a critical role in shaping adolescents' online behavior, as parental privacy concerns may directly and/or indirectly restrict adolescents' self-disclosure behavior. To educate adolescents about privacy risks and change their online behavior, parents themselves must become good role models so that they can "prevent teens from posting regrettable material in the first place" (Costello et al., 2016, p. 319). Parents are an important source of information for adolescents seeking to understand privacy and learn about online risks. This puts parents at the center of privacy education.

Our research also shows that parent-child privacy dissonance weakens the effect of adolescents' privacy concerns on their self-disclosure behavior. It thus highlights the importance of achieving congruence between parents and adolescents in their privacy perceptions. To align privacy concerns within a family, parents and their adolescent children could attend the same learning sessions on online activities and privacy protection. They might also engage in open dialogue to exchange opinions about current topics related to online privacy. In addition, resources such as counselors could be used to help identify the discrepancies between parents' and adolescents' privacy concerns so that proper interventions can be introduced to minimize the discrepancies.

Moreover, our research shows that employing internet evaluative mediation can facilitate "passing the torch." The gist of internet evaluative mediation is that parents and adolescents make rules together regarding adolescents' online activities. Such a co-creation process places adolescents and parents in an equal position in discussing important matters regarding adolescents' online activities. With a more participative and interactive co-creation of rules, adolescents are more likely to recognize and appreciate their parents' values and perceptions. Armed with this information, educators and social workers could develop workshops for parents to promote effective parenting strategies to strengthen parental influence on their adolescent children's privacy behavior.

Internet evaluative mediation is equally effective for helping both sons and daughters understand and integrate their parents' privacy concerns (i.e., internalization). It may be the only approach available to parents for influencing sons and changing their self-disclosure behavior due to a pervasive lack

of compliance among sons. Thus, it is especially important to give sons the opportunity to reflect on their own and become vigilant about privacy risks. In addition to internalization, daughters may also comply with parental privacy concerns under conditions of high internet evaluative mediation. Thus, parents need to make an effort to clearly understand the situations and issues their daughters are confronting in order to provide timely and effective guidance to help their daughters make sound privacy-related choices.

While the above implications are all from a behavioral perspective, our findings also have implications for the design of technologies such as online safety apps that can help protect adolescents from online threats. Wisniewski et al. (2017) showed that despite the availability of many mobile apps designed to promote adolescents' online safety, their level of adoption is very low. One potential explanation they offer is that parents and adolescents do not always share the same values (e.g., parents want safety but adolescents want freedom), and this divergence influences the design of app features. According to our findings, the design (and use) of online safety apps should reconcile the needs of both parents and adolescents instead of choosing one over the other. Such apps should allow parents and adolescents to make rules together (e.g., parents and adolescents agreeing on the same privacy settings in the apps). In addition, such apps should also expand their function to identify and minimize the discrepancies between parents and adolescents regarding privacy concerns in order to facilitate constructive dialogue between parents and adolescents on related topics.

It should be noted that although adolescents are native to social media and may believe that they have control of their information, such control might be illusionary (Hertlein, 2012). Parents need to actively safeguard their adolescents from being harmed due to self-disclosure on social media. Our findings provide useful guidelines for parents to effectively enhance information privacy socialization at home. In addition, we also provide insights for developers of online safety apps that could be used for app design.

Limitations and Future Research

Our research has several limitations that could be overcome by future studies. First, in this research, to rule out parents' personal traits as alternative explanations for our findings, we examined the effects of several parental traits, including parental attitude towards self-control (i.e., limited mindset on self-control, fixed mindset on self-control), and decision-making style (i.e., instinctive decision-making vs. deliberate decision-making). We did not find significant effects of these parental traits on adolescents' privacy concerns. However, as we only measured a limited number of parental traits due to

concerns about the length of the survey and because a systemic exploration is beyond the scope of this study, future researchers could investigate whether other parental traits are linked to adolescents' self-disclosure.

Second, our research focused on evaluative mediation only. Other types of mediation strategies also exist, including *restriction* and *co-using* (Nathanson, 2001). The main reason we focused on evaluative mediation in this research is that restriction and co-using are more suitable for younger children and become less effective for adolescents (Elsaesser et al., 2017; Lwin et al., 2008; Navarro et al., 2013). Besides home computers, adolescents have access to social media through other devices (e.g., their own mobile phones), including those outside the home. Further, these strategies require parents to monitor their adolescents, which invades their privacy (Petronio, 2010). Thus, the implementation of restriction and co-using could be problematic for this age group. It has been observed that parents tend to reduce restrictive control of adolescents in order to give them more freedom (Mastrotheodoros et al., 2019)⁵. However, future research on younger children could include these mediation strategies.

Third, we tested the model in the context of adolescents' self-disclosure on SNSs. How parental online privacy concerns affect adolescents' online self-disclosure in other contexts or types of online behavior could also be explored. In addition, future research might test how applicable our research model is to the offline context (Nguyen et al., 2012).

Fourth, the support of our research model comes mostly from triadic data from China. Cultural differences between Western and Eastern countries should be further examined (Chu et al., 2019). Future researchers could explore the influence of espoused and contextual cultural values, and specific cultural dimensions (e.g., individualism-collectivism, power distance, uncertainty avoidance, masculinity) on adolescents' response to parental influence regarding online disclosure behavior.

Fifth, given the small number of single-parent families in our matched data set in the main study, we could not test whether single parenthood influences adolescents' online behavior differently. Further research is needed to explore this issue.

Lastly, we measured adolescents' general rather than context-specific cyberbullying victimization experience. Future research could conduct a more contextualized investigation (Xu & Zhang, 2022) to examine whether the victimization experience affects adolescents' self-disclosure on SNSs.

⁵ We measured restrictive and co-using mediation strategies in our main study to verify our conjectures. Consistent with our expectations, parents engaged more in the internet evaluative mediation strategy (Mean = 4.20, *SD* = 2.12) than in the restrictive (Mean = 2.20, *SD* = 1.72) and co-using

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(Mean = 3.60, *SD* = 2.12) strategies. Also, we did not find significant moderating effects of restrictive and co-using mediation strategies in enhancing the influence of parental privacy concerns on adolescents' self-disclosure behavior.

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Appendix A

Review of Studies on Adolescents' Online Self-Disclosure

Table A1. Studies on Adolescents' Online Self-Disclosure						
Study	Subjects (source of data)	SNS	Antecedents to privacy concerns	Influence of privacy concerns on behavior	Benefits (or facilitators) of self-disclosure	Risks (or inhibitors) of self-disclosure
Chen et al. (2016)	622 teen-parent pairs with teens aged 12-17 years in the U.S.	N/A	Parental concerns about teen online privacy and parental interpersonal trust have a positive effect on teen privacy concerns. Parent-child interaction does not have an impact.	Teen privacy concerns have a negative effect on information disclosure, mediated by teen fabrication.	Teen benefits (e.g., meeting new friends) have a positive effect on disclosure.	Teen fabrication and parent-child interaction have a negative effect on information disclosure. Teen cost has no direct effect.
Christofides et al. (2012)	288 adolescents aged 9-18 years, and 285 adults	Facebook	N/A	N/A	Time on Facebook per day, age, and need for popularity increase information disclosure.	Awareness of consequences has a negative effect on information disclosure.
De Souza and Dick (2009)	263 students from a high school in Australia	MySpace (discontinued)	N/A	N/A	Peer pressure, web interface design and self-presentation positively influence information disclosure.	Age has a negative effect on disclosure, but gender has no effect.
Feng and Xie (2014)	622 teen Facebook users in the U.S.	Facebook	Teens' level of SNS use and parental concerns about teen online privacy have positive effects on teens' privacy concerns.	Teens' privacy concerns have a positive effect on their privacy-settings and Facebook profile visibility (private versus public).	N/A	N/A
Jia et al. (2015)	588 teens aged 12-17 years in the U.S.	Facebook	SNS frequency and privacy risk-taking experiences have positive effects on privacy concerns, while ease of privacy control has a negative effect.	Privacy concerns have a positive effect on privacy risk-coping behavior such as correction and advice-seeking.	N/A	N/A
Liu and Brown (2014)	264 freshmen at 3 universities in China	Renren (discontinued)	N/A	N/A	Social skill has a positive effect on disclosure on SNSs.	N/A
Liu et al. (2013)	780 adolescents aged 13-18 years	Facebook	Social anxiety and parent-child interaction increase teens' privacy concerns; narcissism has no significant impact.	Privacy concerns decrease the disclosure of personally identifiable information (PII).	Narcissism has a positive effect on PII disclosure.	Active parent-child interaction has a negative effect on PII disclosure; restrictive interaction has no direct effect.

Liu et al. (2016)	780 secondary school students aged 13-18 years	Facebook	N/A	N/A	Narcissism increases the disclosure of both textual and visual information; age has a positive effect on the disclosure of visual information.	The frequency of parent-child interaction decreases the disclosure of textual and visual information.
Shin and Kang (2016)	746 Singaporean adolescents aged 12-18 years	N/A	Age, chatting with people, and disclosure to parents increase adolescents' privacy concerns. Parent-child interactions do not have a significant effect on adolescents' privacy concerns.	Adolescents' privacy concerns are not significantly associated with willingness to disclose PII.	Age and SNS use are positively associated with willingness to disclose PII.	Gender (female) and instructive mediation have a negative effect on willingness to disclose PII.
Walrave and Heirman (2013)	1,318 pupils in 28 Belgian schools aged 12-18 years	N/A	N/A	Privacy concerns have a negative effect on willingness to provide contact and profile data.	Disclosure benefit increases the willingness to disclose contact and profile data; online frequency increases the disclosure of contact data; gender (female) increases the disclosure of profile data.	Gender (female) has a negative effect on providing contact data; parent-child interactions have a negative effect on providing contact data, but not on profile data.
Youn (2009)	144 middle school students aged 12-13 years in the U.S.	N/A	Gender (female) and vulnerability have a positive effect on privacy concerns. Perceived benefit of information disclosure has a negative effect. Privacy self-efficacy has no effect.	Privacy concerns have a positive effect on privacy protection behavior such as fabrication, seeking out information, and refraining.	N/A	N/A

Appendix B

Associations between Modes of Learning and Adolescents' Behavioral Change

Table B1 lists example studies on the association between modes of learning (i.e., modeling, social interaction, and reinforcement) (Moore et al., 2002; Moschis & Churchill, 1978) and mechanisms of adolescents' behavioral changes (i.e., internalization and compliance). Five of the studies tie modes of learning to both internalization and compliance, whereas the others show connection to one mechanism. Further, the modes of learning are likely to have differential effects on the mechanisms, with reinforcement (i.e., reward/punishment) being a major force of compliance and the other two (i.e., modeling and social interaction) being primary drivers of internalization. Edgerly et al. (2018), for example, reported that parents' news reading habits are passed down to their children through children's observation of their parents (i.e., internalization) and parents' rewarding their children's news consumption (i.e., compliance). Fu et al. (2021) found that parents' healthy eating helps children develop a healthy diet and reduces unhealthy eating behaviors via (1) being a role model for their children (i.e., internalization), (2) communicating with their children about the benefit of the healthy diet (i.e., internalization), and (3) imposing strict control on their children's food consumption via reward/punishment (i.e., compliance).

Table B1. Associations between Modes of Learning and Adolescents' Behavioral Change			
Study	Internalization	Compliance	Modeling, social interaction, reinforcement
Beidel and Turner (1998)	<ul style="list-style-type: none"> Children take their parent's interpretation of safety and well-being into their own. 		<ul style="list-style-type: none"> Parents communicate with their children regarding safety and well-being (e.g., "be careful," "don't climb too high"). These messages are interpreted by children, stick in their mind, and become their own attitudes regarding safety and well-being. The social interaction between parents and children leads to internalization.
Cobham and Dadds (1999)	<ul style="list-style-type: none"> Parental avoidant behavior may lead to children's maintenance of anxiety. 	<ul style="list-style-type: none"> Parents' reinforcement of children's avoidant behavior may worsen children's anxiety and social incompetence. 	<ul style="list-style-type: none"> The avoidance behavior of anxious parents is observed by children and perceived as the "proper" response to anxious situations. Children use similar avoidance behavior when they have anxiety, which then becomes an internalization. Rewarding behavior from parents, such as removing children from anxiety-inducing situations, may provide approval for children and encourage them to withdraw from similar social events. This reinforcement of avoidance behavior leads to compliance with parental views.
Edgerly et al. (2018)	<ul style="list-style-type: none"> Children are likely to follow their parent's news reading habits. 	<ul style="list-style-type: none"> Parents' requirement that children read news may help them form a reading habit. 	<ul style="list-style-type: none"> Parents' news reading habits and reinforcement of news consumption are positively associated with adolescents' news consumption.
Flor and Knapp (2001)	<ul style="list-style-type: none"> Religious parents can pass their religious values to children through an effective discussion. 		<ul style="list-style-type: none"> Social interaction, such as dyadic discussion of faith between parents and adolescents, facilitates the passing down of parents' religious values to their children, including increased religious practice and perceived importance of religion.
Fu et al. (2021)	<ul style="list-style-type: none"> Parents' modeling of healthy eating helps children build a healthy diet, reducing unhealthy eating. Parent's communication with children about what food they should consume helps 	<ul style="list-style-type: none"> Strict parental control regarding children's food consumption can foster a healthy diet and reduce the consumption of unhealthy food. 	<ul style="list-style-type: none"> Parent's modeling and social interaction regarding children's healthy food consumption helps children understand why they should eat healthier food and reduce their consumption of unhealthy food. It helps children complete the internalization of their parents' views on food consumption.

	children understand the reasons for a healthy diet and improves their diet.		<ul style="list-style-type: none"> Parents' control regarding food consumption serves as a reinforcement. It may lead to children's behavioral compliance but not necessarily the actual adoption of parents' views about food consumption.
Kochanska (2002)		<ul style="list-style-type: none"> Parents' approval of prosocial behavior increases children's prosocial conduct. 	<ul style="list-style-type: none"> Parent's reinforcement of children's prosocial behavior drives children to engage in more prosocial behavior to maintain this praise or encouragement.
Ma and Hample (2018)	<ul style="list-style-type: none"> The modeling of parents' fruit and vegetable consumption leads children to adopt the same diet. Parents' discussion with children about the purpose of fruit and vegetable consumption motivates greater consumption among children. 	<ul style="list-style-type: none"> Parents' requirement that children consume healthy food drives children to consume more fruit and vegetables. 	<ul style="list-style-type: none"> Modeling and social interaction, such as discussion with children about healthy food, help children understand and accept parents' perspectives and make them more likely to intrinsically consume more fruit and vegetables. This completes the internalization process. Parent's direct control of fruit and vegetable consumption may also lead to the same end result, but children may only consume them because they are facing either reward/punishment and they feel compelled to comply with their parents' wishes.
Mangleburg and Bristol (1998)	<ul style="list-style-type: none"> Proper family communication and interaction help children to develop skepticism toward advertising. 		<ul style="list-style-type: none"> Children of parents who encourage them to develop their own views and consider alternative perspectives are more likely to have a skeptical attitude toward advertising content. Interactions between parents and children while viewing advertising serve as a learning process to help children integrate parental perspectives into their own.
Martin and Bush (2000)	<ul style="list-style-type: none"> Children learn from their parents about how to make purchases as a consumer. 		<ul style="list-style-type: none"> Parents, as important role models, have a direct impact on children's purchase intentions and brand attitudes. Daily observations of parents' purchase decision-making process give children the opportunity to learn and integrate parents' decision-making process and attitudes into their own perspective.
Peterson et al. (1985)	<ul style="list-style-type: none"> Parents' opinion sharing with children may drive children to carefully think about their parents' attitudes and adopt them as their own. 	<ul style="list-style-type: none"> Parents' praise and encouragement may lead to adolescents' compliance regarding their parents' opinions regarding career planning. 	<ul style="list-style-type: none"> Parents' reinforcement, such as praise, causes children to conform regarding career planning, because they want to meet parents' expectations in order to earn approval. Parental support, in the form of interacting with children regarding their career planning, can help children carefully consider their parents' views and integrate them into their own views.
Vaala and Bleakley (2015)	<ul style="list-style-type: none"> Parents who exhibit control over the time they spend online are more likely to have children who can exhibit self-control regarding time spent online. 		<ul style="list-style-type: none"> Parents act as role models for their children in terms of time spent online. What parents do will be perceived as the right behavior by children. Children mimic their parents' behavior, accepting it as a norm of time spent online.

Appendix C

The Sample Profile for the Main Study

Age (mean)	Age (SD)	Gender	Percentage	Possession of personal computers	Percentage
16.5	1.17	Male	50.5%	Adolescents' own computer	25.2%
		Female	49.5%	Family shared computer	45.7%
				No computers in family	30.1%

Age	Percentage		Education	Percentage		Family annual income	Percentage
	Father	Mother		Father	Mother		
31-40	32.8%	36.7%	Less than high school	21.2%	43.7%	less than 40,000 RMB	21.2%
41-50	62.7%	60.6%	High school	18.3%	35.0%	40,001-60,000 RMB	18.3%
>51	4.5%	2.70%	2-year college degree	23.6%	9.2%	60,001-80,000 RMB	23.6%
			Undergraduate or higher	36.9%	12.1%	80,001-100,000 RMB	14.2%
						more than 100,000 RMB	22.7%

Appendix D

Measurement Items and Psychometric Properties

Table D1. Measurement Items and Psychometric Properties	
Measurement Items	Reliability/ Loadings
Parent Online Privacy Concerns (parent-reported) (Dinev & Hart, 2006)	$\alpha = 0.92$
I am concerned that the information I submit on the internet could be misused.	0.89
I am concerned that a person can find private information about me on the internet.	0.89
I am concerned about submitting information on the internet, because of what others might do with it.	0.92
I am concerned about submitting information on the internet, because it could be used in a way I did not foresee.	0.88
Adolescents' Online Privacy Concerns (adolescent-reported) (Dinev & Hart, 2006)	$\alpha = 0.90$
I am concerned that the information I submit on the internet could be misused.	0.86
I am concerned that a person can find private information about me on the internet.	0.87
I am concerned about submitting information on the internet, because of what others might do with it.	0.90
I am concerned about submitting information on the internet, because it could be used in a way I did not foresee.	0.84
Internet Evaluative Mediation (adolescent-reported) (Navarro et al., 2013)	$\alpha = 0.82$
My parents and I have agreed upon the rules about the amount of time I spend online.	0.70
My parents and I have agreed upon the websites that I can or cannot visit.	0.77
My parents and I have agreed upon the rules about the personal information that I can or cannot share online.	0.80
Adolescents' Self-disclosure on SNSs (adolescent-reported) (Blau, 2011; Chen, 2013)	$\alpha = 0.83$
I have a detailed profile on social networking sites.	0.81
My profile tells a lot about me.	0.81
I reveal much of my information on social networking sites.	0.84
I often disclose intimate, personal things about myself online without hesitation.	0.72
Perceived Self-Enhancement Benefits (adolescent-reported) (VanMeter et al., 2015)	$\alpha = 0.72$
The postings I made on social media allow me to communicate to others something about me.	0.76
I believe other people can form an impression of me based on the postings I made on social media.	0.84
I feel that the postings help me show others who I am or who I'd like to be.	0.75
Perceived Social Benefits (adolescent-reported) (VanMeter et al., 2015)	$\alpha = 0.78$
Through the postings on social media I can connect with other people.	0.86
The postings I made on social media help me associate with certain groups of people.	0.87
Cyberbullying Victimization Experience (adolescent-reported) (Tynes et al., 2010)	$\alpha = 0.82$
People have said negative things (like rumors or name calling) about how I look, act, or dress online.	0.63
People have said mean or rude things about the way that I talk (write) online.	0.74
People have posted mean or rude things about me on the internet.	0.79
I have been harassed or bothered online because of something that happened at school.	0.71
I have been embarrassed or humiliated online.	0.70
I have been bullied online.	0.70
I was threatened online because of the way I look, act or dress.	0.63

Appendix E

Supplemental Study

Survey Procedure, Sample, and Measurement

A sample of 385 U.S. adolescents in the age group of 13-17 years were recruited via the Qualtrics panel with a 50:50 gender split. Out of the 385 participants, 19 failed the attention check and thus were removed, yielding a sample of 366 valid responses from 46 states in the U.S. (50.1% male, $M_{\text{age}} = 15.5$, $SD_{\text{age}} = 1.33$).

We first asked participants about their perceived parental privacy concerns, their own privacy concerns, and their self-disclosure online. The items for these constructs are the same as in the main study. To address concerns about the potential of parents using different levels of internet evaluative mediation for online activities in general, for mobile device use, and for SNS use, and to evaluate whether there were differential effects, we measured parental evaluative mediation for the three scenarios separately, starting with the instruction: “Please indicate how strongly you agree or disagree that each statement describes the rules in your family with respect to [online activities, such as social networking, website browsing, and online shopping]/[your mobile device use, such as mobile phones or tablets]/[your use of social networking sites, such as Facebook, Twitter, Instagram, etc.]” An example item for evaluative mediation for the online activities in general was: “My parents and I have agreed upon rules about the amount of time I spend online.” An example item for mobile device use was: “My parents and I have agreed upon rules about the amount of time I spent on mobile device(s).” An example item for SNS use was “My parents and I have agreed upon rules about the amount of time I spent on social networking sites.”

Participants were then directed to the second part regarding their online/social media behaviors. They were also asked to select their most frequently used SNS in the past 12 months from a list of popular SNSs that included *Instagram*, *Snapchat*, *TikTok*, *YouTube*, *Twitter*, and *Facebook* (Aizenkot, 2020), and the devices they usually used to post on that site (from a list of computers, tablets, and mobile phones). Based on their selection, participants answered questions about their self-disclosure on that site. For instance, when *Instagram* was selected, an example question they would see was “I have a detailed profile on *Instagram*.” Finally, we measured the control variables, including cyberbullying victimization experience, perceived self-enhancement benefits, and perceived social benefits as in our main study.

Data Analysis and Results

Three structural models (see Table E1) were tested. The first model “Online Disclosure” contains adolescents’ self-disclosure on the internet as the dependent variable, parental privacy concerns as the independent variable, and adolescents’ privacy concerns as the mediator. The second model and the third model used self-disclosure on *Instagram* ($n = 227$) and *Snapchat* ($n = 196$) via mobile devices, respectively, as the dependent variable.

All three models in Table E1 show that parental privacy concerns significantly impact adolescents’ privacy concerns and thereby reduce their self-disclosure on SNSs. We also tested the mediating effect using parental privacy concerns as the independent variable, adolescents’ privacy concerns as the mediator, and adolescents’ self-disclosure as the dependent variable. A bootstrapping procedure with 5,000 iterations shows that the mediating effect is significant for all three models, including the internet (-0.10 ; 95% CI = $[-0.18, -0.03]$), *Instagram* (-0.09 ; 95% CI = $[-0.19, -0.01]$), and *Snapchat* (-0.13 ; 95% CI = $[-0.28, -0.01]$). We did not find a significant difference in adolescents’ response to parental influence among the three models.

We further tested the moderating effects as in hypothesis testing. Although we found a similar pattern (i.e., a weakening effect), the moderating effect of parent-child privacy dissonance between adolescents’ privacy concerns and their self-disclosure is not significant across the three models (online disclosure: $\chi^2(1) = 0.01$, $p = 0.94$; *Instagram*: $\chi^2(1) = 0.00$, $p = 0.98$; *Snapchat*: $\chi^2(1) = 3.22$, $p = 0.07$). The moderating effects of privacy dissonance on the relationship between parental privacy concerns and adolescents’ self-disclosure across the three models are also not significant (online disclosure: $\chi^2(1) = 1.62$, $p = .20$; *Instagram*: $\chi^2(1) = 0.41$, $p = 0.52$; *Snapchat*: $\chi^2(1) = 0.84$, $p = 0.36$).

Table E1. Model Testing for the Supplemental Study

Causal paths	Models and path coefficients		
	Online disclosure ($n = 366$)	<i>Instagram</i> via mobile device ($n = 227$)	<i>Snapchat</i> via mobile device ($n = 196$)
(Hypothesis testing) Parental online privacy concerns → Adolescents’ online privacy concerns (H1)	0.53**	0.52**	0.64**

Adolescents' online privacy concerns → Adolescents' self-disclosure on SNSs (H2)	-0.21**	-0.17*	-0.19*
Parental privacy concerns → Adolescents' self-disclosure on SNSs (H4)	0.11 ^{n.s.}	-0.01 ^{n.s.}	0.17 ^{n.s.}
Fit indices	$\chi^2(240)=465.75, p < .001, \chi^2/df=1.94, CFI=.96, RMSEA=.051$	$\chi^2(240)=420.47, p < .001, \chi^2/df=1.75, CFI=.95, RMSEA=.058$	$\chi^2(240)=411.32, p < .001, \chi^2/df=1.46, CFI=.96, RMSEA=.049$

Note: ** $p < 0.01$; * $p < 0.05$; ^{n.s.} $p > 0.05$

Evaluative mediations for online activities, for mobile devices, and for SNSs are highly correlated (all r values $> 0.80, p < 0.001$). Further, we did not find significant differences in their moderating effects. Thus, we only report the results regarding evaluative mediation for online activities (i.e., internet evaluative mediation) that we tested in the main study. The results show that internet evaluative mediation does not have significant moderating effects between parental privacy concerns and adolescents' privacy concerns, but the signs are in the hypothesized directions (i.e., a positive moderating effect) across the models (online disclosure: $\chi^2(1) = 1.33, p = 0.25$; *Instagram*: $\chi^2(1) = 2.92, p = 0.09$; *Snapchat*: $\chi^2(1) = 0.19, p = 0.66$). The moderating effects of evaluative mediation on the relationship between parental privacy concerns and adolescents' online disclosure are also not significant (online disclosure: $\chi^2(1) = 0.87, p = 0.35$; *Instagram*: $\chi^2(1) = 0.85, p = 0.36$; *Snapchat*: $\chi^2(1) = 1.51, p = 0.22$).

Furthermore, we tested if there is any gender difference in the relationship between parental privacy concerns and adolescent's self-disclosure. As expected, sons and daughters do not have significant differences in terms of the link between parental privacy concerns and adolescents' self-disclosure ($\chi^2(1) = 0.89, p = 0.35$). However, the moderating effects of evaluative mediation are not significant on the same link for daughters ($\chi^2(1) = 2.91, p = 0.09$) or sons ($\chi^2(1) = 0.20, p = 0.65$).

For the control variables, perceived self-enhancement has a significant positive influence (β values ranging from 0.34 to 0.63, all p values < 0.05) on adolescents' self-disclosure across all three models. Neither perceived social benefits nor cyberbullying victimization experience had a significant effect on adolescents' self-disclosure (β values ranging from -0.28 to 0.10, all p values > 0.05). A comparison of the findings of the main study and the supplemental study is presented in Table E2.

	Main study (Chinese sample)	Supplemental study (U.S. sample)
Data source	<i>Matched parent-adolescent triadic data</i>	<i>Single-source data by adolescents only</i>
Measures	<p><i>Parent survey:</i></p> <ul style="list-style-type: none"> • Parental online privacy concerns <p><i>Adolescent survey:</i></p> <ul style="list-style-type: none"> • Adolescents' online privacy concerns • Evaluative mediation for online activities • Adolescents' self-disclosure on SNSs in general • Adolescents' perceived self-enhancement benefits • Adolescents' perceived social benefits • Adolescents' cyberbully victimization experience 	<p><i>Adolescent survey:</i></p> <ul style="list-style-type: none"> • Parental online privacy concerns • Adolescents' online privacy concerns • Evaluative mediation for online activities, for mobile devices, and for SNSs respectively. • Adolescents' self-disclosure on SNSs in general, and on a specific SNS (e.g., Instagram, Snapchat) • Adolescents' perceived self-enhancement benefits • Adolescents' perceived social benefits • Adolescents' cyberbullying victimization experience
Findings	<ul style="list-style-type: none"> • Parental online privacy concerns reduce adolescents' self-disclosure on SNSs by increasing adolescents' online privacy concerns. • Parent-child privacy dissonance weakens the effect of adolescents' online privacy concerns on self-disclosure on SNSs. • Evaluative mediation strengthens the effect of parental online privacy concerns on adolescents' concerns. • With a high level of internet evaluative mediation, sons' self-disclosure is influenced by internalization, while daughters' self-disclosure is affected by both internalization and compliance. 	<ul style="list-style-type: none"> • Parental online privacy concerns reduce adolescents' self-disclosure on SNSs by increasing adolescents' online privacy concerns. • This effect is consistent across different platforms, with no difference across the internet, Instagram, and Snapchat. • Evaluative mediation for online activities, for mobile devices, and for SNSs is highly correlated, and there are no significant differences in their moderating effects.

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