

# Kritički osvrt na istraživanja rizičnih ponašanja adolescenata na društvenim mrežama

## */ A Critical Review of Research into Adolescent Risky Behavior on Social Networks*

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Cilj ovog rada bio je pružiti uvid u neke do sada utvrđene spoznaje o činiteljima rizičnog ponašanja adolescenata na društvenim mrežama, uz kritički osvrt na metodologiju istraživanja u ovom području, kao i preporuke za buduća istraživanja. U radu se razmatraju neki od prediktora rizičnog ponašanja na društvenim mrežama – rod i dob adolescenata, njihova zabrinutost za *online* privatnost, osobine ličnosti, emocionalni i ponašajni problemi te roditeljsko i vršnjačko posredovanje *online* aktivnosti adolescenata. Opisani su i modeli koji su najčešće korišteni u svrhu objašnjenja rizičnog ponašanja adolescenata na društvenim mrežama s naglaskom na model prototipova ili spremnosti na rizično ponašanje koji nastoji objasniti rizična ponašanja koja nisu planirana ni promišljena. Istaknuti su nedostaci dosadašnjih istraživanja koja su se bavila provjerom modela prototipova ili spremnosti na rizično ponašanje za objašnjenje rizičnih ponašanja u *online* kontekstu i obrazložena je potreba za daljnjim istraživanjima. Kao najveća ograničenja navedenih istraživanja ističu se nedostatak razvijenih mjera za procjenu konstrukata, nedostatak longitudinalnih nacrti kao i činjenica da samo mali broj istraživanja uzima u obzir veći broj činitelja potencijalno povezanih s rizičnim *online* ponašanjem adolescenata. Napredak u istraživanjima u ovom području izrazio je važan jer primjena njihovih rezultata može doprinijeti kvaliteti i uspješnosti preventivnih programa namijenjenih sigurnijem *online* ponašanju djece i adolescenata.

*/ The aim of this paper was to provide an insight into some of the previously established findings regarding the factors associated with adolescent risky behavior on social networks, with a critical review of the research methodology in this field, as well as recommendations for future research. The paper examines some of the predictors of risky behavior on social networks - gender and age of adolescents, their concerns about online privacy, their personality traits, emotional and behavioral problems, as well as parental and peer mediation of adolescents' online activities. The models that are most often used in order to explain adolescent risky behavior on social networks, with an emphasis on the Prototype Willingness Model, which attempts to explain risky behaviors that are not planned or rational, are explained as well. The shortcomings of previous research dealing with the verification of the Prototype Willingness Model for the explanation of risky behavior in the online context are highlighted, and the need for further research is explained. The lack of developed measures for assessing relevant constructs, the lack of longitudinal designs, as well as the fact that only a small number of studies take into account a larger number of factors potentially associated with adolescent risky online behavior have been stated as the biggest limitations of the previously mentioned research. Research progress in this field is of extreme importance, since the application of obtained results can contribute to the quality and success of preventive programs aimed at safer online behavior of children and adolescents.*

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**KLJUČNE RIJEČI / KEY WORDS:**Adolescenti / *Adolescents*Društvene mreže / *Social networks*Rizično ponašanje / *Risky Behavior***TO LINK TO THIS ARTICLE:** <https://doi.org/10.24869/spsih.2023.258>**UVOD**

Na temelju opsežnog pregleda literature i statističkih pokazatelja uočava se kako su adolescenti sve češći korisnici različitih društvenih mreža (1-4). Cheung i sur. (5) ističu kako društvene mreže korisnicima omogućavaju druženje, komunikaciju i interakciju vezanu uz određenu temu. Lenhart i sur. (6) definiraju društvene mreže kao *online* mjesto na kojem korisnici mogu stvoriti svoj profil i povezati ga s profilima drugih ljudi te tako stvoriti svoju osobnu mrežu poznanstava, a Karal i Kokoc (7) navode *online* društvene mreže kao alat za stvaranje osobne socijalne mreže koja zauzima središnje mjesto u životima adolescenata. U začetcima istraživanja *online* navika adolescenata interes je bio najviše usmjeren na *Facebook*, tada najpopularniju društvenu mrežu, no istraživanje na reprezentativnom uzorku europskih adolescenata pokazalo je kako adolescenti danas češće koriste *Instagram* i *Snapchat* koji im nude izražavanje prevladavajuće u obliku fotografija i videa (4). Kao najpopularnije društvene mreže među adolescentima u Hrvatskoj trenutno se ističu *Instagram*, *YouTube*, *Snapchat* i *TikTok* (1,3).

Adolescenti svakodnevno provode velik dio svog slobodnog vremena *online* te istraživanja (2-4,6) ukazuju na to kako se često susreću s različitim *online* rizicima i upuštaju u rizična *online* ponašanja. Rizično *online* ponašanje

**INTRODUCTION**

Based on an extensive review of literature and statistical indicators, it can be observed that adolescents are increasingly frequent users of various social networks (1-4). Cheung et al. (5) point out that social networks enable users to socialize, communicate and interact with regard to specific topics. Lenhart et al. (6) define social networks as an online space where users can create their own profile and connect it to other people's profiles, thus creating their personal network of acquaintances, while Karal and Kokoc (7) define online social networks as a tool for creating a personal social network that holds a central place in the lives of adolescents. In the early days of research on the online habits of adolescents, research interest was mostly focused on Facebook, the most popular social network at the time, but research conducted on a representative sample of European adolescents has shown that these days they more often use Instagram and Snapchat, which allow them to express themselves predominantly in the form of photographs and videos (4). The most popular social networks among Croatian adolescents are currently Instagram, YouTube, Snapchat and TikTok (1, 3).

Adolescents spend a large amount of their free time online every day, and various studies (2-4, 6) indicate that they often encounter various online risks and engage in risky online behav-

možemo definirati kao *online* aktivnost koja ima negativne posljedice za osobu koja ga čini, odnosno kao svako *online* ponašanje koje uzrokuje zdravstvenu, profesionalnu, financijsku ili socijalnu štetu (8). Postoje različite definicije i vrste *online* rizika, a prema definiciji autorica Livingstone i Stoilove (9) *online* rizici za djecu i mlade nastaju kada je adolescent izložen potencijalno štetnom *online* sadržaju poput seksualnih ili nasilnih sadržaja; kada je na meti potencijalno ugrožavajućeg *online* kontakta; kada je iskorišten potencijalno štetnim ugovorom poput ugovora o kupnji različitih proizvoda ili sudjeluje u ponašanju koje može biti štetno za njega ili za drugu osobu poput, primjerice, vrijeđanja ili drugih oblika verbalnog nasilja. Budući da istraživanja sugeriraju kako adolescenti većinu vremena kada su *online* provode na društvenim mrežama (1,3,4), istraživanja rizičnog *online* ponašanja adolescenata u svojim počecima fokusirala su se na različite oblike nasilja putem društvenih mreža (npr. vrijeđanje, objavljivanje neistina, slanje neželjenih sadržaja, krađu lozinki, preuzimanje tuđeg identiteta, *online* isključivanje) (6,10,11). U novije vrijeme kao posebni *online* rizici za adolescente ističu se ponašanja kojima oni ugrožavaju svoju *online* privatnost, odnosno privatnost svojih osobnih podataka, a to su komunikacija s nepoznatim osobama i objava sadržaja, osobnih informacija ili fotografija na društvenim mrežama (3,9,12-15). Čini se kako ova ponašanja od strane adolescenata često nisu percipirana kao rizična ponašanja, odnosno adolescenti često nisu svjesni opasnosti koje mogu proizaći iz njih (12-15) te će stoga upravo ona biti predmet ovog rada.

Istraživanja provedena na različitim dobnim skupinama naglašavaju kako su adolescenti populacija najsklonija rizičnom ponašanju na društvenim mrežama, zbog razvojnih obilježja adolescencije kao što su impulzivnost, sklonost podcjenjivanju potencijalnih negativnih posljedica određenog ponašanja te još nedovoljno razvijenih vještina donošenja rizičnih odlu-

iors. Risky online behavior can be defined as an online activity that has negative consequences for the person engaging in it, i.e. as any online behavior that causes health, professional, financial or social damage (8). There are different definitions and types of online risks, and according to the definition of the authors Livingstone and Stoilova (9), online risks for children and young people arise when an adolescent is exposed to potentially harmful online content, such as sexual or violent content; when he/she is the target of a potentially threatening online contact; when he/she is taken advantage of by a potentially harmful contract, such as contract concerning the purchase of certain products or he/she engages in conduct that may be harmful for him/her or another person, such as insults or other forms of verbal violence. Considering that research suggests that adolescents spend most of their online time on social networks (1, 3, 4), studies of adolescent risky online behavior initially focused on different forms of social media violence (e.g., insults, posting falsehoods, sending unwanted content, password theft, identity theft, online exclusion) (6, 10, 11). Nowadays, behaviors that endanger their online privacy, i.e. the privacy of personal data, stand out as particular online risks for adolescents, and these include communication with unknown persons and sharing content, personal information or photographs on social networks (3, 9, 12-15). It seems that these behaviors are often not perceived as risky behaviors by adolescents, that is, adolescents are often unaware of the dangers that can arise from them (12-15), and therefore these behaviors will be the main subject of this paper.

Studies conducted on different age groups emphasize the fact that the adolescent population is the most prone to risky behavior on social networks, due to the developmental characteristics of adolescence such as impulsivity, tendency to underestimate the potential negative consequences of certain behaviors and the

ka (14-16). U istraživanju Steijna i suradnika (14) utvrđeno je kako adolescenti, u usporedbi s ostalim dobnim skupinama, imaju najviše kontakata na profilima društvenih mreža, najskloniji su dodavati nepoznate kontakte na njih, često objavljuju različite sadržaje te rijetko mijenjaju postavke privatnosti svojih profila.

U istraživanjima rizičnih *online* ponašanja adolescenata procjenjuje se povezanost takvih rizičnih ponašanja s individualnim karakteristikama adolescenata; njihovim sociodemografskim karakteristikama (rodom, dobi), osobinama ličnosti, stavovima prema rizičnom ponašanju ili zabrinutosti za privatnost, problemima mentalnog zdravlja (emocionalnim teškoćama, poput depresivnosti i anksioznosti i ponašajnim problemima) te čimbenicima u njihovom socijalnom okruženju (utjecajem roditelja i vršnjaka, usamljenosti i kvalitetom socijalne podrške) (17-22). U ovom radu prikazat ćemo neke rizične čimbenike koji su se najčešće procjenjivali u kontekstu rizičnih ponašanja adolescenata koja podrazumijevaju rizičnu *online* komunikaciju putem društvenih mreža i dijeljenje sadržaja na profilima društvenih mreža. Cilj ovog rada je na temelju pregleda literature dati uvid u neke do sada utvrđene spoznaje o čimbenicima povezanim s rizičnim ponašanjima adolescenata na društvenim mrežama te modelima koji se najčešće koriste u njihovom objašnjenju. U radu se daje kritički osvrt na korištenu metodologiju istraživanja u ovom području, kao i preporuke za buduća istraživanja.

## KOMUNIKACIJA PUTEM DRUŠTVENIH MREŽA KAO POTENCIJALNO RIZIČNO PONAŠANJE ADOLESCENATA

Različiti istraživači (3,14,15,18) ističu kako je komunikacija s vršnjačkom grupom najvažniji motiv adolescenata za korištenje društvenih

insufficiently developed risky decision-making skills (14-16). In a study conducted by Steijn et al. (14), it was determined that adolescents, compared to other age groups, have the highest number of contacts on their social network profiles, they are most inclined to add unknown contacts to them, often publish different online content and rarely change the privacy settings of their profiles.

Studies concerning adolescent risky online behavior examine the connection of such risky behaviors with the individual characteristics of adolescents; their socio-demographic characteristics (gender, age), personality traits, attitudes towards risky behavior or privacy concerns, mental health problems (emotional difficulties such as depression and anxiety, and behavioral problems) and factors in their social environment (influence of parents and peers, loneliness and quality of social support) (17-22). In this paper, we will provide an overview of some risk factors that have been most often examined in the context of adolescent risky behavior, which include risky online communication via social networks and sharing content on social network profiles. The aim of this paper is to provide a literature-based insight into some of the previously established findings regarding the factors associated with adolescent risky behavior on social networks, and the models that are most often used in their explanation. The paper provides a critical review of the research methodology used in this field, as well as recommendations for future research.

## COMMUNICATION THROUGH SOCIAL NETWORKS AS POTENTIALLY RISKY ADOLESCENT BEHAVIOR

Various researchers (3, 14, 15, 18) point out that communication with a peer group is the most important motive for adolescents to use

mreža te kako *online* komunikacija u svrhu održavanja postojećih prijateljstava iz stvarnog života povećava socijalnu povezanost s vršnjacima i psihičku dobrobit adolescenata. Prema istraživanju Buljan Flander i sur. (1) adolescenti u Republici Hrvatskoj kao primarni motiv korištenja većine društvenih mreža navode dopisivanje sa svojim vršnjacima. Postavlja se pitanje na koji način utječe na njih povećano vrijeme koje adolescenti provode u *online* komunikaciji. Pozitivni učinci *online* komunikacije s vršnjacima ostvaruju se kada adolescenti provode kvalitetno vrijeme s tim istim vršnjacima u stvarnom životu, međutim, čini se kako pozitivni učinci *online* komunikacije ne postoje ako adolescenti komuniciraju s nepoznatim osobama te kako su adolescenti koji to čine izloženi većem riziku od elektroničkog nasilja i zloupotrebe osobnih podataka (15,18,23).

Prema Cernikovej i suradnicima (23) adolescenti mogu dodati nepoznatu osobu na svoj profil društvene mreže, mogu se uključiti u *online* komunikaciju s nepoznatom osobom i mogu otići na sastanak uživo s nepoznatom osobom upoznatom *online*. Svaka od navedenih interakcija može biti opasna, posebno sastanci uživo s nepoznatim osobama. Istraživanjem Livingstone i sur. (20) dobiveni su podatci da u Europskoj uniji 9 % djece u dobi od devet do 16 godina odlazi na sastanak uživo s osobom upoznatom putem društvenih mreža, a prema novijim istraživanjima (1,3) to čini 27 %, odnosno 34 % adolescenata u Republici Hrvatskoj. U novijoj literaturi se kao poseban rizik za adolescente ističe i dodavanje nepoznatih kontakata (prijatelja ili pratitelja, engl. *friend / follower*) na profil društvene mreže. Prema jednom istraživanju (3) 11 % adolescenata prihvaća sve zahtjeve za prijateljstvom ili praćenjem (*friend / follow request*) pa i one nepoznatih osoba, dok 44 % adolescenata prihvaća zahtjev za prijateljstvom nepoznate osobe, ako imaju zajedničke prijatelje na društvenoj mreži. Razna istraživanja (6,18,24) ukazuju na rizike koji mogu pro-

social networks, and that online communication for the purpose of maintaining existing real-life friendships increases social connection with peers and the psychological well-being of adolescents. According to a study conducted by Buljan Flander et al. (1), adolescents in the Republic of Croatia cite correspondence with their peers as the primary motive for using most social networks. The question arises as to how the increased time adolescents spend in online communication affects them. The positive effects of online communication with peers are achieved when adolescents spend quality time with the same peers in real life, however, it seems that the positive effects of online communication do not exist if adolescents communicate with unknown persons, and adolescents who do so are exposed to a higher risk of cyberbullying and personal data misuse (15, 18, 23).

According to Cernikova et al. (23), adolescents can add an unknown contact to their social network profile, they can engage in online communication with an unknown person, and can meet in person with an unknown person they had met online. Each of these interactions can be dangerous, especially real-life meetings with strangers. A study conducted by Livingstone et al. (20) provided data that in the European Union, 9% of children between the ages of nine and 16 meet in person with a person they had met through social networks, and according to recent studies (1, 3) 27%, i.e. 34% of adolescents in the Republic of Croatia engage in such behavior. In recent literature, adding unknown contacts (friends or followers) to a social network profile is highlighted as a special risk for adolescents. According to one study (3), 11% of adolescents accept all friend/follow requests, including those from unknown persons, while 44% of adolescents accept a friend request from a stranger if they have mutual friends on a social network. Various studies (6, 18, 24) emphasize the risks that can arise from accepting friend requests from strangers; it increases

izaći iz prihvaćanja zahtjeva za prijateljstvom nepoznatih osoba; ono povećava izloženost adolescenta zlonamjernim porukama, rizičnim *online* sadržajima i krađama identiteta (engl. *phishing attacks*), a adolescenti često nisu svjesni ovih opasnosti.

## DIJELJENJE SADRŽAJA NA PROFILIMA DRUŠTVENIH MREŽA KAO POTENCIJALNO RIZIČNO PONAŠANJE ADOLESCENATA

Osim što često ostvaruju kontakte s nepoznatim osobama *online*, adolescenti često ne vode računa o količini osobnih podataka koje objavljuju na profilima svojih društvenih mreža, niti o broju osoba kojima su njihovi osobni podatci dostupni (20,25). Jedan od temeljnih razvojnih zadataka adolescencije je izgradnja identiteta koja se između ostaloga odvija i samoprezentacijom pred vršnjacima (14), a same stranice društvenih mreža su osmišljene s ciljem samoprezentacije korisnika. Društvene mreže adolescentima mogu pomoći i u stjecanju komunikacijskih vještina (15), a čini se kako je potreba adolescenata za komuniciranjem s vršnjacima jača od njihovog osjećaja opreza i nepovjerenja prema nepoznatim osobama pa adolescenti često nekritički pristupaju *online* situacijama. Brstilo i sur. (25) navode kako adolescenti precjenjuju svoju povezanost sa svojim *online* prijateljima, često su impulzivni, djeluju bez razmišljanja i smatraju se otpornima na različite prijetnje *online* privatnosti, a sposobnosti donošenja odluka u adolescenciji još nisu dovoljno razvijene što ih često čini sklonima rizičnom *online* ponašanju. Također, čini se da adolescenti uglavnom smatraju kako je njihova publika ograničena na vršnjake te nisu svjesni kako postoji drugi dio publike poput njihovih roditelja, nastavnika ili budućih poslodavaca (26). Takva pogrešna percepcija utječe na to da neki adolescenti otkrivaju informacije o sebi koje mogu biti potencijalno kompromitirajuće,

adolescents' exposure to malicious messages, risky online content and identity thefts (or *phishing attacks*), and adolescents are often unaware of these risks.

## SHARING CONTENT ON SOCIAL NETWORK PROFILES AS POTENTIALLY RISKY ADOLESCENT BEHAVIOR

In addition to often making contact with unknown persons online, adolescents often do not pay attention to the amount of personal information they share on their social network profiles, or the number of people to whom their personal information is available (20, 25). One of the main developmental tasks in adolescence is identity development which, among other things, occurs through self-presentation in front of peers (14) and social networking sites are designed for the self-presentation of their users. Social networks can also help adolescents to acquire communication skills (15), and it seems that the adolescents' need for communication with peers is stronger than their sense of caution and mistrust towards strangers, so adolescents often approach online situations uncritically. According to Brstilo et al. (25), adolescents overestimate their connection with their online friends, they are often impulsive, they act without thinking and consider themselves resistant to various online privacy threats. In addition, decision-making abilities in adolescence are not yet sufficiently developed, which often makes them prone to risky online behavior. Furthermore, it seems that adolescents mostly believe that their online audience is limited to their peers and are not aware that there are other participants of online audience such as their parents, teachers or future employers (26). Such misperceptions prompt some adolescents to reveal potentially compromising information about themselves, e.g. they post photographs of themselves while drinking alcohol or present

npr. objavljuju vlastite fotografije za vrijeme konzumacije alkohola i prikazuju se provokativno odjeveni na svojim profilima, čak i kada su im profili javni (26).

## ODREDNICE RIZIČNOG PONAŠANJA ADOLESCENATA NA DRUŠTVENIM MREŽAMA

Istraživanja odrednica rizičnih ponašanja kojima adolescenti na društvenim mrežama ugrožavaju svoju *online* privatnost naglašavaju važnost određenih individualnih karakteristika adolescenata (npr. njihove dobi, roda, zabrinutosti za privatnost, osobina ličnosti i emocionalnih i ponašajnih problema) te čimbenika u njihovom obiteljskom i socijalnom okruženju (primjerice stavova prema rizičnom ponašanju i rizičnog ponašanja roditelja i vršnjaka te kvalitete socijalne podrške) (10-13,21,22). Većina se autora (27) slaže kako jedan čimbenik nije dovoljan za pojavu rizičnog ponašanja, već kako porastom broja rizičnih čimbenika raste i vjerojatnost javljanja rizičnog ponašanja.

Neki najčešće procjenjivani rizični čimbenici:

### Dob i rod

Najčešće ispitivane sociodemografske varijable u kontekstu rizičnog ponašanja na društvenim mrežama su varijable dobi i roda. Postoje podatci kako su stariji adolescenti (u dobi od 15 do 18 godina), u odnosu na mlađe (u dobi od 11 do 14 godina), kao i mladići u odnosu na djevojke skloniji rizičnom ponašanju na društvenim mrežama - otkrivanju osobnih podataka i prihvaćanju nepoznatih zahtjeva za prijateljstvom (28-34). Nadalje, čini se kako djevojke, u usporedbi s mladićima, provode više vremena u *online* komunikaciji s vršnjacima iz stvarnog života, ali je vjerojatnije kako će one biti mete rizičnih kontakata, odnosno mete potencijalno opasnih odraslih osoba. Međutim, čini se kako mladići češće samostalno započnu *online* ko-

themselves provocatively dressed on their profiles, even when their profiles are public (26).

## DETERMINANTS OF ADOLESCENT RISKY BEHAVIOR ON SOCIAL NETWORKS

Studies examining the determinants of adolescent risky behaviors on social networks that jeopardize their online privacy emphasize the importance of certain individual characteristics of adolescents (e.g. their age, gender, privacy concerns, personality traits, emotional and behavioral problems) and factors in their family and social environments (such as their parents' and peers' attitudes towards risky behavior and their risky behavior, and quality of their social support) (10-13, 21, 22). Most authors (27) agree that one factor is not enough for the occurrence of risky behavior, but that a higher number of risk factors increases the likelihood of risky behavior.

Some of the most commonly assessed risk factors:

### Age and gender

The most frequently examined sociodemographic variables in the context of risky behavior on social networks are the variables of age and gender. Certain data shows that older adolescents (aged 15 to 18), compared to younger adolescents (aged 11 to 14), as well as boys compared to girls, are more prone to risky behavior on social networks - revealing personal information and accepting unknown friend requests (28-34). Furthermore, it seems that girls, compared to boys, spend more time in online communication with their real-life peers, but they are also more likely to be targets of risky contacts, i.e. targets of potentially dangerous adults. However, it seems that boys are more likely to initiate online communication with strangers and disclose more personal informa-

munikaciju s nepoznatim osobama i otkrivaju više *online* osobnih informacija od djevojaka, što ih čini izloženijima različitim *online* rizicima (18,29,34).

## Zabrinutost za *online* privatnost i sigurnost

Velik broj istraživanja bavio se zabrinutošću za *online* privatnost i sigurnost, koja se najčešće definira kao vjerovanje pojedinca o rizicima i negativnim posljedicama *online* dijeljenja informacija (29,35-39), kao odrednicom rizičnog *online* ponašanja te su brojni istraživači pretpostavili kako će se pojedinci zabrinuti za svoju *online* privatnost i sigurnost ponašati oprezno u različitim *online* situacijama. Zabrinutost za *online* privatnost (ili sigurnost) često je ispitivana u kontekstu dijeljenja osobnih informacija na društvenim mrežama adolescenata, ali rezultati tih istraživanja su nejednoznačni (29,35-39). Taddicken (37) smatra kako su pojedinci koji nisu zabrinuti za svoju *online* privatnost upravo oni koji su poduzeli sve korake kako bi se zaštitili te se zbog toga osjećaju sigurno. Problem je činjenica kako u literaturi ne postoji konsenzus oko operacionalizacije pojmova poput zabrinutosti za *online* privatnost (engl. *online privacy concerns*), svijesti o *online* privatnosti i sigurnosti (engl. *online privacy / security awareness*), percepcije *online* rizika (engl. *online risk perception*), stavova prema *online* privatnosti i/ili sigurnosti ili rizicima (engl. *attitudes towards online privacy/security/risk*) i sl. te se oni ovisno o istraživanju u većoj ili manjoj mjeri razlikuju.

Postavlja se i pitanje operacionalizacije rizičnog ponašanja specifično na društvenim mrežama. Moguće je kako dijeljenje sadržaja na društvenoj mreži ne mora uvijek biti rizično, posebno ako ono nije javno te zbog toga neki adolescenti nisu zabrinuti za svoju privatnost, iako svakodnevno dijele sadržaje na svojim profilima. Stutzman i sur. (38) proveli su od 2005. do 2011. godine longitudinalno istraživanje te

tion online than girls, which makes them more exposed to various online risks (18, 29, 34).

## Online privacy and security concerns

A large number of studies has addressed online privacy and security concerns, which are most commonly defined as individuals' beliefs about the risks and negative consequences of sharing information online (29,35-39) as a determinant of risky online behavior, and many researchers have hypothesized that individuals concerned about their online privacy and security will act cautiously in different online situations. Online privacy (or security) concerns have often been examined in the context of adolescents sharing their personal information on social networks, but the results of these studies are inconclusive (29, 35-39). Taddicken (37) believes that individuals who are not concerned about their online privacy are precisely those who have taken all the necessary steps to protect themselves, and therefore feel safe. The problem lies in the fact that there is no consensus in literature regarding the operationalization of concepts such as online privacy concerns, online privacy and security awareness, online risk perception, attitudes towards online privacy and/or security or risks etc., and they differ to a greater or lesser extent depending on the study.

There is also an issue of operationalizing risky behavior specifically on social networks. It is possible that sharing content on a social network does not always have to be risky, especially if it is not public, which is why some adolescents are not concerned about their privacy, even though they share content on their profiles on a daily basis. In the period from 2005 to 2011, Stutzman et al. (38) conducted a longitudinal study and concluded that over time students (aged 18 to 24) who are Facebook users increase the amount of personal information they share with their friends, all the while



zaključili kako studenti (u dobi od 18 do 24 godine) koji su korisnici *Facebooka* s vremenom povećavaju broj osobnih informacija koje dijele s prijateljima istovremeno sve više ograničavajući informacije koje su javne i svima vidljive mijenjajući postavke privatnosti svojih profila. Dakle, dijeljenje informacija i zaštita privatnosti nisu nužno povezane ni kontradiktorne. Također, Christofides i suradnici (39) utvrdili su kako otkrivanje osobnih podataka i poduzete mjere zaštite *online* privatnosti nisu u negativnoj korelaciji. Čini se kako objava sadržaja na društvenim mrežama adolescenata sama po sebi nije rizično ponašanje, a razmjena poruka i informacija putem društvenih mreža adolescentima može pomoći u formiranju društvenih odnosa ako paze na privatnost svog profila te na njega ne dodaju nepoznate kontakte (39-42).

## Osobine ličnosti

Čini se kako su određene osobine ličnosti te roditeljsko i vršnjačko posredovanje *online* aktivnosti adolescenata u većoj mjeri povezane s rizičnim ponašanjima adolescenata na društvenim mrežama, nego što je to zabrinutost za privatnost (30,35,42,43). U istraživanjima provedenima na odraslim osobama (44-47) utvrđeno je kako su neke osobine ličnosti (izraženo traženje uzbuđenja, ekstraverzija, neuroticizam te niska savjesnost) povezane s učestalijom *online* objavom osobnih fotografija i informacija te rizičnom *online* komunikacijom. Istraživanja povezanosti osobina ličnosti i rizičnog *online* ponašanja adolescenata su malobrojna (20,43), ali čini se da su rezultati sukladni rezultatima istraživanja provedenima na odrasloj populaciji.

Pregledom literature moguće je uočiti kako se u ulozi prediktora rizičnih ponašanja adolescenata na društvenim mrežama značajnima najčešće pokazuju ekstraverzija i traženje uzbuđenja. Ekstraverzija podrazumijeva osobine poput društvenosti, razgovorljivosti i asertivnosti (48). Postoje nalazi kako će ekstrovertiraniji adoles-

increasingly limiting the information that are publicly available and visible to everyone by changing the privacy settings of their profiles. Information sharing and privacy protection are, therefore, not necessarily connected or contradictory. Furthermore, Christofides et al. (39) determined that there is no negative correlation between disclosure of personal information and measures taken to protect online privacy. It seems that adolescents' content sharing on social networks alone does not represent risky behavior, and exchanging messages and information via social networks can help adolescents to form social relationships, if they pay attention to the privacy of their profiles and do not add strangers to their contacts (39-42).

## Personality traits

It seems that certain personality traits and parental and peer mediation of adolescents' online activities are more closely related to adolescents' risky behavior on social networks than their online privacy concerns (30, 35, 42, 43). In studies conducted on adults (44-47), it was determined that some personality traits (high sensation seeking, extraversion, neuroticism and low conscientiousness) are associated with more frequent online publication of personal photographs and information, as well as risky online communication. Studies addressing the connection between personality traits and risky online behavior in adolescents are rare (20, 43), but the results seem to be consistent with the results of studies conducted on the adult population.

Upon reviewing the literature, it is noticeable that extraversion and sensation seeking are the most common predictors of adolescent risky behavior on social networks. Extraversion includes traits such as sociability, talkativeness and assertiveness (48). Some findings suggest that more extroverted adolescents will share content and information about themselves on

centi na društvenim mrežama češće objavljuju sadržaje i informacije o sebi, u usporedbi s introvertiranijim adolescentima (43). Isto se tako čini kako će ekstroverti biti češće uključeni u *online* komunikaciju, ali s osobama koje poznaju u svakodnevnom životu (18). Međutim, Davidson i sur. (49) navode hipotezu prema kojoj su ekstrovertirani adolescenti komunikativniji i češće preuzimaju rizike u različitim situacijama te su stoga podložniji *online* mamljenju (engl. *online grooming*; uspostavljanju odnosa povjerenja i emocionalne veze odrasle osobe i djeteta, s ciljem iskorištavanja djeteta) od introvertiranih adolescenata. Čini se kako ekstrovertirane odrasle osobe imaju više *online* kontakata na svojim društvenim mrežama, češće komentiraju objave svojih *online* kontakata i općenito su aktivniji na društvenim mrežama od introvertiranih odraslih osoba (45,46) pa bi u budućim istraživanjima bilo potrebno preciznije ispitati postoje li razlike u uključenosti u rizična ponašanja na društvenim mrežama između ekstrovertiranih i introvertiranih adolescenata.

Traženje uzbuđenja je dimenzija ličnosti koju obilježava potreba za traženjem raznovrsnih i intenzivnih podražaja iz okoline. Osobe s izraženom osobinom traženja uzbuđenja sklone su fizičkim, socijalnim i financijskim rizicima (50). Prema nekim nalazima na temelju izraženog traženja uzbuđenja moguće je predvidjeti uključenost adolescenata u *online* komunikaciju s nepoznatim osobama (20,51).

## POVEZANOST RIZIČNIH *ONLINE* PONAŠANJA ADOLESCENATA S NJIHOVIM EMOCIONALNIM I PONAŠAJNIM PROBLEMIMA I RIZIČNIM PONAŠANJEM U STVARNOM ŽIVOTU

U brojnim istraživanjima utvrđeno je kako su različita rizična *online* ponašanja adolescenata međusobno pozitivno povezana, npr. prekomjerno

social networks more often than the more introverted adolescents (43). Furthermore, it seems that extroverts will involve in online communication more often, but with people they know in real life (18). Davidson et al. (49), however, propose a hypothesis according to which extroverted adolescents are more communicative and more likely to take risks in different situations, and are therefore more susceptible to online grooming (establishing a relationship of trust and emotional connection between an adult and a child, with the aim of exploiting the child) than introverted adolescents. Extroverted adults appear to have more online contacts in their social networks, comment more often on the posts of their online contacts, and are generally more active on social networks than introverted adults (45, 46). Future studies should, therefore, examine more precisely whether there are differences in involvement in risky behaviors on social networks between extroverted and introverted adolescents.

Sensation seeking is a personality dimension characterized by the need to seek diverse and intense stimuli from the environment. Individuals with a pronounced sensation seeking trait are prone to physical, social and financial risks (50). According to some findings, it is possible to predict the involvement of adolescents in online communication with strangers based on their pronounced sensation seeking traits (20, 51).

## CONNECTION BETWEEN ADOLESCENT RISKY *ONLINE* BEHAVIOR, THEIR EMOTIONAL AND BEHAVIORAL PROBLEMS AND RISKY BEHAVIOR IN REAL LIFE

Numerous studies have found that there is a mutual positive connection between various risky online behaviors of adolescents, e.g. ex-

korištenje interneta, uključenost u *online* komunikaciju s nepoznatim osobama i sudjelovanje u *online* nasilju (11,13,20). Stoga se postavlja pitanje je li opravdano pretpostaviti pozitivnu povezanost rizičnih ponašanja adolescenata na društvenim mrežama s njihovim problemima mentalnog zdravlja, odnosno emocionalnim i ponašajnim problemima te rizičnim ponašanjima u stvarnom životu. U istraživanju Livingstone i Helsper (52) utvrđeno je kako je u populaciji adolescenata nezadovoljstvo vlastitim životom povezano sa češćim odavanjem osobnih podataka i *online* komunikacijom s nepoznatim osobama. Čini se kako nedostatak otvorene komunikacije adolescenata s roditeljima povećava njihovo traženje intimnosti od nepoznatih osoba *online* (52), a adolescenti koji doživljavaju manje socijalne podrške u svakodnevnom životu u riziku su da se uključuju u više rizičnih ponašanja na društvenim mrežama (29). Prema nekim nalazima adolescenti skloni depresivnosti češće stupaju u kontakt s nepoznatim osobama *online*, češće im odaju svoje osobne informacije, nalaze se s njima u stvarnom životu te češće traže osobu za razgovor o seksualnim temama *online* (18,20-22,49,53). Nadalje, prema nekim nalazima adolescenti koji sudjeluju u *online* komunikaciji s nepoznatim osobama, u usporedbi s onima koji ne sudjeluju u njoj, uključeni su u više rizičnih ponašanja u stvarnom životu – u više seksualno rizičnih ponašanja, nasilja i češću konzumaciju psihoaktivnih tvari (51,54). Isto se tako čini da je konzumacija alkohola pozitivno povezana s prekomjernom uporabom interneta adolescenata (47).

## VRŠNJAČKO I RODITELJSKO POSREDOVANJE RIZIČNOG ONLINE PONAŠANJA ADOLESCENATA

Neka istraživanja ukazuju na to kako rizična *online* ponašanja često nisu namjerna i planirana (55,56). Postoji određena razlika između

excessive Internet use, online communication with strangers and participation in cyberbullying (11, 13, 20). The question, therefore, arises of whether it is justified to assume that there is a positive connection between adolescent risky behavior on social networks, their mental health issues, i.e. emotional and behavioral problems, and their risky behaviors in real life. In a study conducted by Livingstone and Helsper (52), it was determined that among adolescents, dissatisfaction with one's own life is associated with more frequent disclosure of personal information and online communication with strangers. A lack of open communication between adolescents and their parents seems to increase their intimacy seeking from strangers online (52), and adolescents who experience less social support in everyday life are at risk of engaging in riskier behavior on social networks (29). According to some findings, adolescents prone to depression come into contact with strangers online more often, they reveal their personal information more often, meet them in real life and more often look for someone to talk to about sexual topics online (18, 20-22, 49, 53). Furthermore, according to some findings, adolescents who participate in online communication with strangers, compared to those who do not participate in such communication, are involved in more instances of risky behavior in real life - in more sexually risky behaviors, more violence and more frequent consumption of psychoactive substances (51, 54). It also seems that adolescent alcohol consumption is positively related to their excessive Internet use (47).

## PEER AND PARENTAL MEDIATION OF ADOLESCENT RISKY ONLINE BEHAVIOR

Some studies indicate that adolescent risky online behavior is often not intentional and planned (55, 56). There is a certain difference between attitudes towards online behavior, which

stavova prema *online* ponašanju, koji se često definiraju kao zabrinutost za *online* privatnost i sigurnost i ponašanja vezanih uz *online* privatnost i sigurnost, a s ponašanjem su osim kognitivne komponente stava prema ponašanju, povezani i socijalni čimbenici i trenutne emocije. I odavanje osobnih podataka ili dodavanje nepoznatih kontakata na profil društvene mreže nisu uvijek isključivo rizična ponašanja već donose određene dobiti, kao što su povećanje samopoštovanja adolescenta ili njegove popularnosti među vršnjacima. Dakle, adolescenti na neki način analiziraju moguće dobiti (prednosti) i gubitke (rizike) kada odlučuju o tome trebaju li se upustiti u određeno ponašanje na društvenim mrežama ili ne trebaju. Adolescenti imaju veću potrebu za uspostavljanjem socijalnih odnosa i razvojem identiteta od odraslih osoba, kako u stvarnom, tako i u *online* svijetu (15). Za njih je važno naučiti vještine potrebne za formiranje i održavanje intimnih veza, a te vještine mogu usavršiti i *online* interakcijom. Rezultati meta-analize Stoilove i suradnika (41) ukazuju kako tijekom adolescencije društvene posljedice za koje adolescenti predviđaju da će uslijediti nakon ponašanja utječu na upuštanje ili neupuštanje u neko ponašanje, možda i više od stavova prema određenom ponašanju. U istraživanju Heirmana i sur. (24) utvrđeno je kako su pretpostavljene vršnjačke norme adolescenata snažni prediktor njihovom prihvaćanja zahtjeva za prijateljstvom od nepoznatih osoba na društvenim mrežama.

Osim vršnjačkih utjecaja, u istraživanjima je često ispitan utjecaj različitih strategija roditeljskog posredovanja *online* aktivnosti adolescenata na njihovo *online* ponašanje (20,29,35,57,58). Strategije roditeljskog posredovanja dječje *online* aktivnosti odnose se na načine kojima roditelji pokušavaju upravljati *online* aktivnostima djece i objasniti *online* sadržaje svojoj djeci (20). Čini se kako komponenta roditeljskog posredovanja koja se odnosi na roditeljski nadzor nad dječjom *online* aktivnosti ima zaštitno djelova-

are often defined as concerns about online privacy and security, and behaviors related to online privacy and security. In addition to the cognitive component of the attitude towards behavior, behavior is also influenced by social factors and individuals' current emotional state. Furthermore, sharing personal information or adding unknown contacts to a social network profile are not always exclusively risky behaviors, but can bring certain benefits, such as increased self-esteem or popularity of adolescents among peers. Therefore, in a way, adolescents analyse the possible gains (advantages) and losses (disadvantages) when they decide whether or not they should engage in certain behavior on social networks. Compared to adults, adolescents have a greater need to establish social relationships and develop their identity, both in real life and online (15). It is important for them to learn the skills necessary to form and maintain intimate relationships, and they can perfect these skills through online interactions as well. The results of a meta-analysis conducted by Stoilova et al. (41) indicate that during adolescence, the social consequences that adolescents predict will occur after certain behavior influence whether or not they will engage in such behavior, perhaps even more than their attitudes towards this behavior. In a study conducted by Heirman et al. (24) it was determined that the assumed adolescents' subjective peer norms are a strong predictor when it comes to their acceptance of friend requests from strangers on social networks.

In addition to peer influences, studies have often examined the influence of various strategies of parental mediation of adolescents' online activities on their risky online behavior (20, 29, 35, 57, 58). Strategies of parental mediation of their children's online activity refer to the ways in which parents try to manage the children's online activities and explain online content to them (20). The component of parental mediation that refers to parental supervision of children's online activity appears to

nje na djecu kada se ona susretu s uznemirujućim *online* sadržajem (57). U novije vrijeme najčešće se koristi podjela na aktivno roditeljsko posredovanje *online* aktivnosti, koje uključuje razgovor roditelja s djetetom i poticanje djeteta na sigurnu upotrebu *online* sadržaja i restriktivno roditeljsko posredovanje *online* aktivnosti, koje uključuje zabranu određenih *online* aktivnosti ili sadržaja, a istraživanja uglavnom ukazuju na aktivno posredovanje kao učinkovitijoj metodi utjecanja na *online* ponašanje adolescenata (20,57,58).

## PREGLED PREVLAĐAVAJUĆIH TEORIJSKIH MODELA KORIŠTENIH U SVRHU OBJAŠNJENJA RIZIČNOG ONLINE PONAŠANJA ADOLESCENATA

Brojne teorije objašnjavaju razvoj rizičnog ponašanja adolescenata u stvarnom životu, no teorije koje bi pokušale objasniti rizično ponašanje adolescenata na društvenim mrežama tek su u začetcima. U objašnjenju rizičnog ponašanja adolescenata u stvarnom životu naglašavaju se individualne karakteristike pojedinca, čimbenici u njihovom obiteljskom i širem socijalnom okruženju te koriste modeli i teorije poput Bronfenbrennerovog ekološkog modela (59). U kontekstu rizičnog *online* ponašanja u tu se svrhu uglavnom koriste Teorija motivacije za zaštitom (60), Teorija planiranog ponašanja (61,62) i Model prototipova ili spremnosti na rizično ponašanje (63). Teorija planiranog ponašanja i Teorija motivacije za zaštitom ubrajaju se u teorije usklađenosti stavova o ponašanju, ponašajne namjere i ponašanja (61-63), ali čini se kako je upuštanje adolescenata u rizično ponašanje često rezultat spontane odluke te se adolescenti upuštaju u rizična ponašanja unatoč svojim negativnim stavovima prema takvom ponašanju (63-70). Stoga se u novije vrijeme u objašnjenju rizičnog *online* ponašanja dominantno koristi Model prototipova ili

have a protective effect on the children when they encounter disturbing online content (57). Recently, the ones most often used are the division into active parental mediation of online activities, which includes parents having conversations with their child and encouraging the child to safely use online content, and restrictive parental mediation, which includes the prohibition of certain online activities or content. Studies mainly indicate that active mediation is the more effective method of influencing adolescent online behavior (20, 57, 58).

## OVERVIEW OF THE PREVAILING THEORETICAL MODELS USED TO EXPLAIN ADOLESCENT RISKY ONLINE BEHAVIOR

Numerous theories explain the development of adolescent risky behavior in real life, however theories that would explain adolescent risky behavior on social networks are still being developed. When explaining adolescent risky behavior in real life, adolescents' individual characteristics, as well as factors in their family and wider social environment are emphasized, and models such as Bronfenbrenner's ecological model are used (59). In the context of risky online behavior, the Protection Motivation Theory (60), the Theory of Planned Behavior (61, 62) and the Prototype Willingness Model (63) are mainly used for this purpose. The Theory of Planned Behavior and the Protection Motivation Theory are among the theories explaining the concordance of attitudes towards behavior, behavioral intention and behavior (61-63), however, it seems that adolescents' engagement in risky behavior is often the result of a spontaneous decision, and adolescents engage in risky behaviors despite their negative attitudes towards such behavior (63-70). Therefore, in recent studies the Prototype Willingness Model is predominantly used when it comes to explaining risky online behavior, and its specificity is that it tries to explain

spremnosti na ponašanje čija je specifičnost da nastoji objasniti ponašanja adolescenata koja nisu potpuno planirana i racionalna i zbog toga ćemo ovaj model u nastavku opisati detaljnije od ostalih.

## TEORIJA MOTIVACIJE ZA ZAŠTITOM I TEORIJA PLANIRANOG PONAŠANJA

Teorija motivacije za zaštitom (60) i Teorija planiranog ponašanja (61) koje se pretežno koriste za objašnjenje nekih rizičnih ponašanja adolescenata u stvarnom životu, a koriste se i u objašnjenju rizičnog *online* ponašanja adolescenata (64-66). Ove teorije temelje se na pretpostavci da je odluka o upuštanju u određeno ponašanje rezultat racionalnog procesa koji uključuje logičku procjenu i evaluaciju posljedica ponašanja. Autori ovih teorija navode kako osoba razmatra posljedice različitih ponašanja, donosi odluku o postupanju te takvu odluku nazivaju ponašajnom namjerom, a ona je najbolji prediktor ponašanja. Istraživanja ukazuju na to kako Teorija planiranog ponašanja i Teorija motivacije za zaštitom dobro predviđaju zaštitna ponašanja vezana uz zdravlje (npr. preventivne zdravstvene preglede), ali loša rizična ponašanja kao što su rizični spolni odnosi ili prekomjerna konzumacija alkohola (63). Neki nalazi ukazuju na to kako je povezanost ponašajne namjere i rizičnog ponašanja slabija u uzorcima adolescenata u usporedbi s uzorcima odraslih osoba (63) te kako općenito postoji neusklađenost stavova o rizičnom ponašanju i rizičnog ponašanja, posebno u populaciji adolescenata. Youn (66) smatra kako svijest o posljedicama i apstraktno razmišljanje adolescenata nisu još razvijeni kao kod odraslih te kako njihova *online* ponašanja nisu isključivo pod utjecajem kognitivnih, već i socijalnih i emocionalnih čimbenika. Čini se kako je upuštanje adolescenata u rizično *online* ponašanje često rezultat spontane odluke. Brojni nalazi ukazuju

adolescent behaviors that are not completely planned and rational. For this reason, we will describe this model in more detail than the others.

## PROTECTION MOTIVATION THEORY AND THEORY OF PLANNED BEHAVIOR

The Protection Motivation Theory (60) and the Theory of Planned Behavior (61) are generally used to explain certain adolescent risky behaviors in real life, and are also used to explain adolescent risky online behavior (64-66). These theories are based on the assumption that the decision to engage in certain behavior is the result of a rational process which includes a logical assessment and evaluation of the consequences of behavior. The authors of these theories state that a person considers the consequences of different behaviors and makes a decision on behavior, and they refer to such a decision as behavioral intention, which is the best predictor of behavior. Studies indicate that the Theory of Planned Behavior and the Protection Motivation Theory are good at predicting health-related protective behaviors (e.g. preventive health check-ups), but are not good at predicting risky behaviors such as risky sexual relations or excessive alcohol consumption (63). Some findings indicate that the connection between behavioral intention and risky behavior is weaker in adolescent samples, compared to adult samples (63), and that there is generally a mismatch between attitudes towards risky behavior and actual risky behavior, especially in the adolescent population. Youn (66) suggests that the awareness of consequences and abstract thinking of adolescents are not yet as developed as in adults, and that their online behavior is not only influenced by cognitive, but also by social and emotional factors. It seems that adolescent involvement in risky behavior is often the result of a spontaneous decision. Numerous findings indicate that adolescents underestimate their personal vulnerability to

da adolescenti podcjenjuju svoju osobnu ranjivost na posljedice, smatraju da se mogu "izvući" s određenim rizičnim aktivnostima te su skloni obraditi informacije o riziku na površan način, npr. fokusirajući se na neposredne prednosti određenog ponašanja, a ne i na potencijalne dugoročnije rizike (67-69). Prema nekim autorima (67-69) adolescenti više razmišljaju o posljedicama nekog rizičnog ponašanja nakon što su se u njega upustili, a vrlo malo prije upuštanja u rizično ponašanje.

## MODEL PROTOTIPOVA ILI SPREMNOSTI NA RIZIČNO PONAŠANJE

U kontekstu rizičnog *online* ponašanja se u novije vrijeme koristi Model prototipova ili spremnosti na ponašanje (engl. *Prototype Willingness Model*, u nastavku skraćeno: Model prototipova) (63). Model prototipova pokušava objasniti rizična ponašanja adolescenata koja nisu promišljena i racionalna (npr. vožnja pod utjecajem alkohola ili spolni odnos bez zaštite), već reaktivna, a karakteristična su za adolescente. Prema autorima ovog modela postoje tri obilježja rizičnog ponašanja adolescenata: 1) rizična ponašanja su često nenamjerna i reaktivna, 2) rizična ponašanja su za adolescente socijalni događaj i 3) kada se adolescent nađe u situaciji u kojoj se pruža prilika za sudjelovanje u rizičnom ponašanju, socijalne slike odnosno zamišljeni prototipovi vršnjaka koji su povezani s rizičnim ponašanjem imaju utjecaja na njegovo ponašanje (63). U model su uključeni: a) stavovi adolescenata prema rizičnom ponašanju koji predstavljaju procjenu osobne ranjivosti na negativne posljedice rizičnog ponašanja, b) subjektivne socijalne norme adolescenata koje se odnose na percepciju adolescenata da se njima bliske osobe (najčešće roditelji i vršnjaci) rizično ponašaju i odobravaju njihovo rizično ponašanje te c) percepcija prototipa koja se sastoji od procjene prototipa (engl. *prototype favorability*),

consequences, believe that they can "get away" with certain risky activities, and tend to process information about risk in a superficial way, for example, by focusing on the immediate benefits of certain behaviors rather than on potential long-term risks (67-69). According to some authors (67-69), adolescents think more about the consequences of risky behavior after engaging in it, and very little before engaging in it.

## PROTOTYPE WILLINGNESS MODEL

Recently, the Prototype Willingness model has been used in the context of risky online behavior (63). The objective of the Prototype Willingness Model is to explain the risky behaviors of adolescents that are not premeditated and rational (e.g. driving under the influence of alcohol or unprotected intercourse), but are reactive and typical for adolescents. According to the authors of this model, there are three characteristics of adolescent risky behavior: 1) risky behavior is often unintentional and reactive, 2) risky behavior represents a social event for adolescents, and 3) when an adolescent finds himself/herself in a situation in which there is an opportunity to participate in risky behavior, the social images or imagined prototypes of peers that are associated with risky behavior have an influence on his/her behavior (63). The model includes the following: a) adolescents' attitudes towards risky behavior, which represent an assessment of personal vulnerability to the negative consequences of risky behavior, b) adolescents' subjective social norms, which refer to the adolescents' perception that people close to them (most often parents and peers) behave in a risky manner and approve their risky behavior, and c) perception of the prototype, which consists of the evaluation of the prototype (*prototype favorability*), i.e. the cognitive representation of a typical person engaging in certain risky behavior and the perceived similarity of adolescents to the imagined prototype (*prototype similarity*) (63).

odnosno kognitivne reprezentacije tipične osobe koja se upušta u određeno rizično ponašanje i percipirane sličnosti adolescenata zamišljenom prototipu (engl. *prototype similarity*) (63). Osnovicu Modela prototipova čine spremnost na rizično ponašanje i ponašajna namjera koje zajedno vode k rizičnom ponašanju. Spremnost na rizično ponašanje definira se kao otvorenost prema rizičnim situacijama, vjerojatnost da se osoba u određenoj situaciji ponaša rizično bez razmišljanja o mogućim posljedicama rizičnog ponašanja (68). Autori Modela prototipova naglašavaju kako donošenje odluka o (ne)upuštanju u ponašanje može biti rezultat dvaju kvalitativno različitih procesa – racionalnog, analitičkog procesa (puta) koji se temelji na logičkom rezoniranju te socijalno reaktivnog procesa (puta) koji se temelji na heuristicima. Stavovi prema ponašanju, percepcija socijalnih normi i prototipa osobe uključene u rizično ponašanje te percipirana sličnost prototipu povezani su sa spremnošću na rizično ponašanje i socijalno reaktivni su put do odluke o ponašanju (68). Za socijalno reaktivni put autori modela (68) navode kako je automatski, nesvjestan, impulzivan, spontan i afektivan. Ponašajna namjera je kognitivna varijabla, a odnosi se na procjenu mogućih posljedica određenog ponašanja i donošenje odluke o postupanju (68). Ponašajna namjera određena je stavovima prema ponašanju i subjektivnim socijalnim normama koje su racionalni put modela. Za racionalni put do rizičnog ponašanja autori navode kako je razuman, analitičan, sistematičan i planiran (68).

## EMPIRIJSKE PROVJERE MODELA PROTOTIPOVA ZA OBJAŠNJENJE RIZIČNIH PONAŠANJA ADOLESCENATA NA DRUŠTVENIM MREŽAMA

Novija istraživanja testirala su Model prototipova u kontekstu *sextinga*, dijeljenja seksualno sugestivnih fotografija, dijeljenja rizičnih sel-

The basis of the Prototype Willingness Model includes behavioral willingness and behavioral intention, which together lead to risky behavior. Behavioral willingness is defined as openness to risky situations, the probability that in a certain situation a person will behave in a risky manner without thinking about the possible consequences of risky behavior (68). The authors of the Prototype Willingness Model emphasize that making a decision about engaging or not engaging in a certain type of behavior can be the result of two qualitatively different processes – a rational, analytical process (path) based on logical reasoning, and a socially reactive process (path) based on heuristics. Attitudes towards behavior, perception of the social norms and the prototype of the person engaging in risky behavior, as well as perceived prototype similarity, are associated with behavioral willingness for risky behavior and represent a socially reactive path leading to a decision on behavior. With regard to the socially reactive path, the authors of the model (68) state that it is automatic, unconscious, impulsive, spontaneous and affective. Behavioral intention is a cognitive variable, and it refers to the assessment of the possible consequences of certain behavior and the process of making a decision regarding the behavior (68). Behavioral intention is determined by attitudes towards certain behavior and the subjective social norms that represent the rational path of the model. The authors state that the rational path to risky behavior is reasonable, analytical, systematic and planned (68).

## EMPIRICAL VERIFICATION OF THE PROTOTYPE WILLINGNESS MODEL FOR THE PURPOSE OF EXPLAINING ADOLESCENT RISKY BEHAVIOR ON SOCIAL NETWORKS

More recent studies have tested the Prototype Willingness Model in the context of *sexting*, sharing sexually suggestive photographs, risky



fija (fotografija na kojima se osoba sama fotografirala za vrijeme rizičnih aktivnosti poput neoprezne vožnje automobila) i informacija na društvenim mrežama adolescenata (70-74). Nalazi Ouytsela i sur. (70) pokazuju kako su vršnjačke norme percipirane od adolescenata, njihova spremnost na ponašanje, percepcija prototipa i stavovi prediktori njihove objave vlastitih seksualno sugestivnih fotografija na društvenim mrežama, dok se njihova percepcija roditeljskih normi nije pokazala značajnim prediktorom takvog ponašanja. Prema istraživanju Goola i sur. (71) roditeljske i vršnjačke norme percipirane od strane adolescenta prediktori su njihove objave informacija o vršnjačkim vezama na društvenim mrežama, dok se njihov stav prema dijeljenju informacija o vršnjačkim vezama na društvenim mrežama pokazao najznačajnijim prediktorom dijeljenja takvih informacija. Također, čini se kako stavovi adolescenata o dijeljenju rizičnih selfija nisu značajni prediktori, dok su njihove subjektivne, percipirane vršnjačke norme i spremnost na ponašanje značajni prediktori njihove namjere za dijeljenjem takvih selfija (72). Dakle, čini se kako značajnost pojedinog konstrukta modela ovisi o vrsti rizičnog ponašanja, no rezultati istraživanja općenito potvrđuju ovaj model te idu u prilog pretpostavke kako je odluka o upuštanju u rizično *online* ponašanje adolescenata dijelom rezultat racionalnog procesa, a dijelom reaktivna i spontana.

## OSVRT NA METODOLOGIJU ISTRAŽIVANJA RIZIČNIH PONAŠANJA ADOLESCENATA NA DRUŠTVENIM MREŽAMA

U nastavku će kratko biti opisana najčešće korištena metodologija navedenih istraživanja rizičnog ponašanja adolescenata na društvenim mrežama. Bit će navedena najčešće korištena operacionalizacija takvog ponašanja, opisani najčešće korišteni nacrti, metode prikuplja-

selfies (photographs which a person has taken while engaging in a risky activity such as reckless driving) and information on adolescents' social networks (70-74). The findings presented by Ouytsel et al. (70) suggest that adolescents' subjective peer norms, their behavioral willingness, prototype favorability and attitudes are predictors of sharing own sexually suggestive photographs on social networks, while their perception of parental norms did not prove to be a significant predictor of such behavior. According to a study conducted by Gool et al. (71), the parental and peer norms perceived by adolescents represent predictors when it comes to sharing information about their peer relationships on social networks, while their attitude towards sharing information about peer relationships on social networks proved to be the strongest predictor of sharing such information. Furthermore, it seems that adolescents' attitudes towards sharing risky selfies do not represent significant predictors, while their subjective, perceived peer norms and behavioral willingness are significant predictors of their intention to share such selfies (72). It seems, therefore, that the significance of each construct of the model depends on the type of risky behavior, but the results generally confirm this model and support the hypothesis that the adolescents' decision about engaging in risky online behavior is partially the result of a rational process, and is partially reactive and spontaneous.

## A REVIEW OF THE RESEARCH METHODOLOGY REGARDING ADOLESCENT RISKY BEHAVIOR ON SOCIAL NETWORKS

In the text that follows, we will briefly describe the methodology most frequently used in the aforementioned studies on adolescent risky behavior on social networks. The most commonly used operationalization of such behavior will be described, as well as the most commonly used

nja podataka i izvori informacija, s posebnim naglaskom na nedostatke istraživanja u ovom području. Istraživanja rizičnih ponašanja adolescenata najčešće nude deskriptivne podatke o tome koje osobne podatke (npr. datum rođenja, adresu stanovanja, e-mail adresu) ili kakve osobne fotografije adolescenti dijele na svojim profilima društvenih mreža, uz eventualno uključivanje čimbenika koji su potencijalno povezani s takvim ponašanjem (npr. zabrinutosti za privatnost, osobina ličnosti ili strategija vršnjačkog ili roditeljskog posredovanja *online* aktivnosti adolescenata). Podatci su uglavnom dobiveni upitničkim mjerama samoprocjene *online* ponašanja adolescenata koje su konstruirane za potrebe svakog pojedinog istraživanja i primijenjene u jednoj vremenskoj točki.

Dosadašnja istraživanja rizično ponašanje adolescenata na društvenim mrežama najčešće operacionaliziraju kao dijeljenje sadržaja na društvenim mrežama (25,37,70,72), a bavila su se uglavnom količinom osobnih informacija ili fotografija koje adolescenti dijele te nisu ispitala čine li oni to isključivo privatno ili javno te ako i imaju isključivo privatne profile koliko često na profil društvene mreže dodaju nepoznate kontakte kojima na taj način podijeljeni sadržaj postaje dostupan. Dakle, prvi metodološki problem istraživanja u ovom području je sama operacionalizacija rizičnog ponašanja na društvenim mrežama. U budućim bi istraživanjima trebalo ispitati koje sadržaje adolescenti dijele javno, a koje privatno te koliko su svjesni privatnosti svog profila. Važno je razmotriti i njihove motive javnog i privatnog dijeljenja sadržaja te u istraživanja uključiti varijable poput sklonosti dosadi i želje za popularnosti među vršnjacima (75,76). Jedan je od većih nedostataka u području istraživanja rizičnog ponašanja adolescenata na društvenim mrežama nedostatak validiranih instrumenata za mjerenje takvog ponašanja, ali i konstrukata povezanih s njim, npr. zabrinutosti za *online* privatnost (36-38).

designs, data collection methods and sources of information, with a special emphasis on the shortcomings of studies conducted in this field. Studies addressing adolescent risky behaviors generally offer descriptive data on what personal information (e.g. date of birth, residential address, e-mail address) or what personal photographs adolescents share on their social network profiles, sometimes with the inclusion of factors that are potentially associated with such behavior (e.g. privacy concerns, personality traits, or strategies of peer or parental mediation of adolescents' online activities). The data were mainly obtained through questionnaire measures of self-assessment of adolescent online behavior, which were constructed for the purpose of each individual study, and applied at one point in time.

Previous studies mostly operationalized adolescent risky behavior on social networks as sharing content on social networks (25, 37, 70, 72), and mainly focused on the amount of personal information or photographs that adolescents share on their profiles, but did not examine whether they do so privately or publicly, or if they have exclusively private profiles, how often they add unknown contacts to their profiles to whom the content shared in this way becomes available. Therefore, the first methodological problem of research in this field is the very operationalization of risky behavior on social networks. Future studies should examine which content adolescents share publicly and which content they share privately, and how aware they are of the privacy of their profiles. It is important to consider their motives for public and private content sharing and to include variables such as the boredom tendency and the desire for popularity among peers in the research (75, 76). Furthermore, one of the major shortcomings in the field of research of adolescent risky behavior on social networks is the lack of validated instruments for measuring such behavior, as well as constructs related to it, for example online privacy concerns (36-38).

Drugi problem čine nacrti istraživanja koji vrlo rijetko uključuju longitudinalne podatke (13,78) što onemogućuje zaključivanje o uzrocima i posljedicama rizičnog *online* ponašanja. Istraživanja u ovom području su najčešće deskriptivna i korelacijska. Uglavnom su korištene upitničke mjere samoprocjene ponašanja adolescenata, a istraživanja su provedena *online* (15,37) ili metodom papir-olovka u školama (36,70,74) te su ponekad provedeni i intervjui s roditeljima i adolescentima uživo (20) i telefonskim putem (29). Iako je *online* istraživanjem moguće u kratkom razdoblju doći do velikog uzorka, njihov je nedostatak samoselekcija sudionika koja može dovesti do nereprezentativnog uzorka; npr. vjerojatnije je da će *online* upitnik ispuniti adolescenti koji više vremena provode *online* pa se stoga možda i susreću s više *online* rizika, kao i činjenica da ne možemo biti sigurni jesu li upitnike zaista ispunili adolescenti (77). Zbog toga bi prednost trebalo dati provedbi istraživanja uživo. Kada se radi o osjetljivim temama kao što je rizično ponašanje, prisutnost istraživača koja je nužna za provođenja intervjua može dovesti do socijalno poželjnog odgovaranja (78). Naravno, postavlja se pitanje točnosti samoprocjene ponašanja, budući da su takve mjere pod utjecajem socijalno poželjnog odgovaranja. Međutim, u prilog mjerama samoprocjene *online* ponašanja ide istraživanje Acquistija i Grossa (55), koji su usporedbom izjava studenata (u dobi od 17 do 24 godine) o vlastitom *online* ponašanju i opažanja njihova stvarnog *online* ponašanja utvrdili kako ih 80 % daje točne procjene svog ponašanja. Većina istraživanja u području *online* ponašanja ne koristi izravno opažanje ponašanja iz praktičnih razloga – ovu metodu teško je provesti, a postavlja se i pitanje etičnosti takvih istraživanja. Nadalje, vrlo su rijetka istraživanja koja su koristila više izvora informacija – npr. ispitala stavove prema rizičnom *online* ponašanju adolescenata, njihovih vršnjaka i roditelja. Buduća bi istraživanja svakako trebala uključiti

Another problem are research designs that rarely include longitudinal data (13,78), which makes it impossible to draw conclusions about the causes and consequences of risky online behavior. Research in this field is mostly descriptive and correlational. Questionnaire measures of self-assessment of adolescent behavior were mainly used, research was conducted online (15,37) or using the paper-pencil method in schools (36,70,74), and sometimes interviews with parents and adolescents were conducted live (20) or via telephone (29). Although it is possible to obtain a large sample in a short period of time through online research, the disadvantage of such research is the self-selection of participants which can lead to an unrepresentative sample; for example, the online questionnaire is more likely to be completed by adolescents who spend more time online, and therefore may encounter more online risks, and there is also the fact that we cannot be sure whether the questionnaires were actually completed by adolescents (77). For this reason, priority should be given to the implementation of live research. Furthermore, when dealing with sensitive topics such as risky behavior, the presence of the researcher, which is necessary for conducting interviews, can lead to socially desirable responding (78). Of course, the question of the accuracy of self-assessment of behavior arises, since such measures are influenced by socially desirable responding. However, a study conducted by Acquisti and Gross (55) supports the measures of self-assessment of online behavior. These authors (55) compared the students' statements (aged 17 to 24 years) about their own online behavior with their observed actual online behavior and found that 80% of them gave accurate assessments of their behavior. Most studies in the field of risky online behavior do not use direct observation of behavior for practical reasons - this method is difficult to implement and the question of the ethics of such research also arises. Furthermore, there are very few studies that used multiple sources of information - for

mjere socijalno poželjnog odgovaranja i različite izvore podataka, npr. metodu dnevnog bilježenja vlastitog ponašanja.

## OSVRT NA ISTRAŽIVANJA PROVJERE MODELA PROTOTIPOVA ZA OBJAŠNJENJE RIZIČNIH PONAŠANJA ADOLESCENATA NA DRUŠTVENIM MREŽAMA

Navedena istraživanja provjere Modela prototipova za objašnjenje rizičnih ponašanja adolescenata na društvenim mrežama (70-74) imaju određene nedostatke i ograničenja. Sva-ko od navedenih istraživanja bavilo se samo jednom vrstom rizičnog ponašanja; uglavnom objavom određenih sadržaja na društvenim mrežama te, koliko je nama poznato, ni jedno istraživanje nije ponudilo usporedbu sklonosti riziku za različite vrste rizičnog ponašanja niti uključilo kontakte s nepoznatim osobama putem društvenih mreža kao rizično ponašanje. Zbog složenosti modela u istraživanjima rizičnih ponašanja u *online* kontekstu korišteni su samo njegovi dijelovi, odnosno nismo uspjeli pronaći istraživanje koje originalni model testira u cijelosti. Navedena istraživanja (70-74) stav su mjerila općenitim tvrdnjama o predmetnom rizičnom ponašanju, npr. „Sexting je loš“, „Sexting je negativan“ ili „Sexting je rizičan“, odnosno potencijalne rizične posljedice nisu bile dovoljno specifično opisane. Istraživanja ukazuju na to kako mlade osobe često vjeruju u „osobnu bajku“ odnosno da je neka *online* aktivnost općenito opasna za druge pojedince te kako postoji velika vjerojatnost da se neki negativni događaj dogodi drugima, dok smatraju kako oni osobno nisu ranjivi na moguće posljedice te podcjenjuju vjerojatnost da se negativni događaj dogodi upravo njima (79). Adolescenti često ne uočavaju specifične negativne posljedice nekog rizičnog *online* ponašanja, npr. ne uočavaju da je *sexting* rizičan jer

example, examining the attitudes towards risky online behavior of adolescents, their peers and parents. Future studies should certainly include measures of socially desirable responding and more diverse sources of data, for example, the method of daily recording of one's own behavior.

## A REVIEW OF STUDIES USING THE PROTOTYPE WILLINGNESS MODEL FOR THE PURPOSE OF EXPLAINING ADOLESCENT RISKY BEHAVIOR ON SOCIAL NETWORKS

The aforementioned studies in which the Prototype Willingness Model was used for the purpose of explaining adolescent risky behavior on social networks (70-74) have some shortcomings and limitations. Each of these studies assessed only one type of risky behavior; mainly sharing certain content on social networks, and as far as we know, no research has offered a comparison of risk vulnerability for different types of risky behavior or included contacts with strangers via social networks as risky behavior. Also, due to the complexity of the model employed in the research on risky behavior in the online context, only parts of it were used, that is, we were unable to find a study that examines the original model in its entirety. Furthermore, these studies (70-74) measured the attitudes toward risky behavior using general statements about the subject risky behavior, e.g. “Sexting is bad”, “Sexting is negative” or “Sexting is risky”, i.e. the potential risky consequences were not described specifically enough. Studies have shown that young people often believe in the “personal fairy tale”, i.e. that some online activity is generally dangerous for other individuals and that there is a high probability that a negative event will happen to others, however, they believe that they are not personally vulnerable to the possible consequences and underestimate the probability that a negative event will

može naškoditi slici o sebi ili slici koju vršnjaci imaju o adolescentu, da sadržaj poruke razmijenjene u *sextingu* može biti zlouporabljjen itd. Zbog toga smatramo da je u budućim istraživanjima u upitnicima stavova prema rizičnom ponašanju potrebno naglasiti komponentu osobne ranjivosti na negativne posljedice rizičnog ponašanja te potencijalne pozitivne i negativne posljedice takvog ponašanja jasnije odrediti.

Sljedeća kritika odnosi se na način procjene percepcije prototipa ili slike tipičnih osoba koje se ponašaju rizično. Percepcija prototipa vršnjaka koji se rizično ponaša u dosadašnjim istraživanjima ispitivala se tako da je adolescentima rečeno da sami zamisle tipičnog vršnjaka koji se ponaša rizično i ponuđena im je lista pridjeva (osobina), a njihov zadatak je bio procijeniti koliko se navedene osobine odnose na zamišljenog vršnjaka. Iako se originalni Upitnik prototipova (63) korišten u istraživanjima rizičnih ponašanja u stvarnom životu sastoji od dvanaest pozitivnih i negativnih osobina osobe uključene u rizično ponašanje, pri ispitivanju rizičnih ponašanja na društvenim mrežama u procjeni prototipova korišten je samo manji broj osobina (uglavnom tri do maksimalno šest) te su pouzdanosti takvih skraćenih ljestvica bile nezadovoljavajuće (70-74). U nekim istraživanjima (70,72) korištene osobine prototipova bile su isključivo pozitivne (npr. uzbudljiv, privlačan, popularan), odnosno nisu bile uključene negativne osobine te bi u budućim istraživanjima u upitnike prototipa trebalo uključiti veći broj pozitivnih i negativnih osobina.

Iako različiti autori (70,73) naglašavaju važnost procjene konstrukata Modela prototipova u više vremenskih točaka, ni jedno navedeno istraživanje u kojemu se ovaj model testirao u kontekstu rizičnog *online* ponašanja nije uključivalo longitudinalni nacrt. Dakle, ponašajna namjera i spremnost na ponašanja, koje se odnose na namjeru i spremnost

happen to them (79). Adolescents often do not notice the specific negative consequences of certain risky online behavior, for example, they do not perceive that sexting is risky because it can harm their self-image or the image that peers have of the adolescent, that the content of the sexting message can be misused, etc. For this reason, we believe that the questionnaires assessing the attitudes towards risky behavior included in future studies should emphasize the component of personal vulnerability to the negative consequences of risky behavior, as well as define the potential positive and negative consequences of such behavior more clearly.

The following criticism refers to the method of assessing the prototype favorability or the images of typical individuals engaging in risky behavior. In previous studies the prototype favorability of a peer engaging in risky behavior was examined in a way that the adolescents were told to imagine a typical peer behaving in a risky manner, and were offered a list of adjectives (traits). Their task was to assess how much the provided characteristics refer to the imaginary peer. Although the original Prototype Questionnaire (63) used in research on risky behavior in real life consists of twelve positive and negative traits of a person involved in risky behavior, when examining risky behavior on social networks, only a smaller number of traits was used in the prototype assessment (mainly three, up to a maximum of six) and the reliability of such abbreviated scales was unsatisfactory (70-74). In some studies (70,72), the used characteristics of the prototypes were exclusively positive (e.g. exciting, attractive, popular), i.e. the negative characteristics were not included, and in future studies a larger number of positive and negative characteristics should be included in the Prototype Questionnaire.

Although various authors (70,73) emphasize the importance of assessing the constructs of the Prototype Willingness Model at multiple time points, none of the cited studies in which

da se osoba upusti u rizično ponašanje u budućnosti bili su prediktori rizičnog ponašanja te su mjereni u istoj vremenskoj točki kao i rizično ponašanje, koje se odnosilo na prošlo ponašanje u koje su adolescenti bili uključeni u zadnjih dva do šest mjeseci, što vjerojatno rezultira precijenjenom povezanošću ovih konstrukata u navedenim istraživanjima. Postavlja se pitanje s kolikom je preciznošću na temelju ponašajne namjere i spremnosti na ponašanje uistinu moguće predvidjeti buduću uključenost adolescenata u rizično *online* ponašanje. Nameće se potreba za istraživanjem koje će obuhvatiti sve konstrukte Modela prototipova i uz longitudinalni nacrt omogućiti donošenje pouzdanijih zaključaka o ulozi ponašajne namjere i spremnosti na ponašanje odnosno racionalnog i socijalno reaktivnog puta u procesu donošenja odluka o upuštanju u rizično *online* ponašanje adolescenata. Takvi podatci dali bi jasniju sliku o tome u kojoj je mjeri rizično ponašanje *online* adolescenata promišljeno i planirano, a u kojoj mjeri reaktivno i spontano.

## ZAKLJUČAK

Dosadašnja istraživanja rizičnog ponašanja adolescenata na društvenim mrežama dovede takvo ponašanje u vezu s individualnim činiteljima (npr. dobi, rodom, osobinama ličnosti, zabrinutosti za privatnost, emocionalnim i ponašajnim problemima adolescenta) te činiteljima u socijalnom okruženju adolescenta, najčešće percipiranim vršnjačkim i roditeljskim normama vezanima uz rizično ponašanje. Ipak, spoznaje o rizičnom ponašanju adolescenata na društvenim mrežama još uvijek nisu potpune, a dosadašnja istraživanja imaju određene nedostatke. Kao prvo, ističe se problem operacionalizacije rizičnog ponašanja na društvenim mrežama, koje se razlikuje u različitim istraživanjima. Takva istraživanja uglavnom su fokusirana na manji broj činitelja

this model was examined in the context of risky online behavior included a longitudinal design. Therefore, behavioral intention and willingness, which refer to the intention and willingness of a person to engage in risky behavior in the future, were predictors of risky behavior and were measured at the same time point as risky behavior, which referred to past behavior in which adolescents were involved in the last two to six months, which probably resulted in an overestimated correlation of these constructs in the aforementioned studies. The question arises as to how accurately it is possible to predict future involvement of adolescents in risky online behavior on the basis of their behavioral intention and behavioral willingness. There is a need for research that will include all the Prototype Willingness Model constructs, and will utilize the longitudinal design in order to derive more reliable conclusions about the role of behavioral intention and willingness, i.e. the rational and socially reactive path, in the process of making decisions about engaging in risky online behavior among adolescents. Such data would provide a clearer picture of the extent to which adolescent risky online behavior is deliberate and planned, and to which extent it is reactive and spontaneous.

## CONCLUSION

Previous studies addressing adolescent risky behavior on social networks link such behavior to individual factors (e.g. age, gender, personality traits, privacy concerns, emotional and behavioral problems of adolescents) and factors in the adolescents' social environment, most often the perceived peer and parental norms relating to risky behavior. However, knowledge about the risky behavior of adolescents on social networks is still not complete, and studies conducted so far have certain shortcomings. First of all, the problem of operationalizing risky behavior on social networks, which is different in various studies, is highlighted in

koji potencijalno utječu na takvo ponašanje, a uočava se i nedostatak istraživanja koja bi ispitala moderatorske i medijatorske učinke pojedinih varijabli. Kao dodatno ograničenje navedenih istraživanja ističe se nedostatak longitudinalnih nacrti i razvijenih mjera za procjenu konstrukta rizičnog ponašanja na društvenim mrežama, kao i konstrukata povezanih s njima (npr. zabrinutosti na privatnost). U ovom području ima prostora za nova, kvalitetnija istraživanja koja će jasnije operacionalizirati takvo ponašanje, uključiti reprezentativne uzorke sudionika te longitudinalne podatke koji će omogućiti zaključivane o uzrocima i posljedicama rizičnog *online* ponašanja adolescenata. Napredak u istraživanjima u ovom području izrazito je važan jer primjena njihovih rezultata može doprinijeti kvaliteti i uspješnosti preventivnih programa namijenjenima sigurnijem *online* ponašanju djece i adolescenata.

this paper. Such studies are mainly focused on a smaller number of factors that potentially influence such behavior, and there is also a lack of research that would examine the moderating and mediating effects of individual variables. An additional limitation is the lack of longitudinal designs and developed measures for assessing the construct of risky behavior on social networks, as well as related constructs (e.g. privacy concerns). In this area, there is room for new, better studies that will operationalize risky behavior more clearly, and will include representative samples of participants, as well as longitudinal data that will allow for conclusions to be drawn about the causes and consequences of adolescent risky online behavior. It is extremely important to make progress in this area of research, because the application of obtained results can contribute to the quality and success of preventive programs aimed at safer online behavior of children and adolescents.

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