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Being kicked out of a WhatsApp group: Frequency and association with adolescents' psychosocial well-being and School Achievement

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Abstract

In the era of the mobile Internet, online groups, which often serve as a primary form of communication and socialization and provide support within personal networks, have become an important cyberspace for adolescents. While the prevalence of being kicked out from online groups is relatively high, the influence of such online exclusion and its underlying mechanisms have been less studied. This study examined the relationship between being kicked out (BKO) from WhatsApp groups and students' school achievement was explored. Valid participants were 858 students (M_{age} = 14.01 years, SD_{age} = 2.23) from middle schools and high schools. A negative relationship was found between BKO and students' grade point average. Fear of missing out, problematic social media use, and internalizing symptoms played mediating roles in this association. This study may provide valuable insights for programs aimed at improving students' academic performance and well-being.

Keywords

Externalizing symptoms, fear of missing out, internalizing symptoms, online exclusion, problematic social media use, school achievement, WhatsApp

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Introduction

Use of social media and online groups among adolescents

Social media use has become highly integrated into the daily lives of young people. Social media platforms offer adolescents the opportunity to connect with friends, families, and peers in novel ways and to build and maintain relationships across geographic boundaries and time zones (Fabris et al., 2022; Nesi et al., 2018). This trend and development has led to changes in the way adolescents build and maintain relationships, navigate social contexts, and develop their identities, and it also raises concerns about the potential risks and benefits of these online social interactions (Koutamanis et al., 2015; Nesi et al., 2018; Valkenburg et al., 2006). In particular, informal online groups, which often function as the primary medium for communication, socialization, and support within peer networks (Subrahmanyam et al., 2008; Uhls et al., 2017), have become an important form of adolescent social experiences. Online peer interactions can influence adolescents' development in several ways, including the development of their social skills, self-esteem, and coping strategies in response to stress or adversity (Uhls et al., 2017). These online peer groups allow adolescents to maintain connections with peers beyond the physical confines of the school or neighborhood and foster a sense of belonging and group identity that can be critical to their psychological well-being and development (Marengo et al., 2021, 2022; Subrahmanyam et al., 2008).

Given the centrality of these groups in young people's lives (Valkenburg & Piotrowski, 2017), it is of great importance to consider the potential consequences of online social exclusion (e.g., being kicked out, BKO) from these groups, particularly in the context of WhatsApp, as WhatsApp has emerged as the predominant platform for social interaction among Italian adolescents (Marengo et al., 2021) and due to the relatively high prevalence of BKO from WhatsApp groups among Italian adolescents (Andreassen et al., 2016; Lin et al., 2023, 2024; Marengo et al., 2021).

Whatsapp is a free IM service that allows users to send and receive texts, photos, videos and links in groups of up to 1024 people. Group administrators can add or remove members without the member being excluded. The excluded person can neither see group content nor communicate online, resulting in total social ostracism. Unlike Facebook, exclusion from Whatsapp groups does not allow teens to access specific social groups they are members of or wish to join. Messaging groups, especially those related to school, such as class Whatsapp groups, can be so important in teens' lives that their exclusion can have a significant impact on their overall wellbeing. Whatsapp is more personal and private than public social media, making exclusion a serious form of social ostracism because these groups often involve close-knit relationships and more intimate, personal interactions. In contrast to public platforms like Facebook or Instagram, where interactions are more visible and less personalized, exclusion from a WhatsApp group can feel like being excluded from a private conversation or close social circle, amplifying the emotional impact. Research has shown that platforms like WhatsApp, which are centered on more direct and private communication, foster stronger social bonds and a heightened

sense of belonging, making exclusion particularly painful (Kashy-Rosenbaum & Aizenkot, 2020; Marengo et al., 2021).

The concept of ostracism, rather than social exclusion in general, is especially relevant here because it refers specifically to being ignored or excluded, which aligns with the experience of being removed from WhatsApp groups (Williams, 2007). This study looks at the impact of exclusion from Whatsapp groups on academic performance and the underlying mechanisms. Ostracism has been thoroughly investigated in terms of its psychological and social consequences and is recognized as a significant form of social marginalization that can have serious consequences for basic human desires, such as a sense of belonging and well-being. Williams' (2007) work highlights how even minor ostracism can cause significant emotional distress, especially during adolescence, a critical period for social development.

In this sense, BKO would emphasize the need to belong to a group and, in this sense, could trigger a greater sensitivity to FoMO (which usually characterizes adolescents with a high need for belonging) and problematic social media use, probably to try to reduce loneliness or increase the likelihood of connecting with others in the online world. In this way, high levels of FoMO and a greater tendency towards dysregulated social media use could be a factor that impairs learning and therefore reduces GPA. Furthermore, considering that the need to belong when unmet puts adolescents at higher risk of reporting psychological problems, it is possible that the experience of exclusion from the online group is associated with an increase in psychological symptoms, which in turn correlate with lower academic engagement and poorer academic performance. By focusing on BKO from WhatsApp groups, this study can provide a contemporary and context-specific understanding of the prevalence, impact, and mechanisms of online social exclusion, which can help address an understudied aspect of adolescents' digital lives that deserves attention in today's connected world (Livingstone & Third, 2017).

The relationship between BKO and school achievement

BKO in WhatsApp groups is a cyberbullying-like behavior or online ostracism that can negatively impact adolescents' school achievement (i.e., lower grade point average). Theoretically, according to the social identity model of de-individuation effects (Lea & Spears, 1991), the anonymity and reduced social cues associated with online interactions may lead to an increased focus on group identities and a heightened sense of belonging. For adolescents, this can lead to a stronger attachment to their peer groups and the development of a more cohesive social identity (Valkenburg et al., 2006). Therefore, the sense of belonging to an online group is relatively important for adolescents' adjustment. Exclusion from online groups can be detrimental to adolescents' development and adjustment (e.g., in the form of poorer academic performance). Empirically, there are many previous studies that indicate a link between social exclusion and poorer school achievement (e.g., Arslan, 2021; Hawes et al., 2012; Véronneau et al., 2010). In particular, Arslan (2021) found that social exclusion in the school environment has a significant impact on adolescents' academic self-concept, which in turn may affect their academic performance. In an experimental study, Hawes et al. (2012) showed that girls who

suffered from social exclusion (simulated by the cyberball paradigm) showed poorer cognitive performance. Longitudinal studies have also shown that deterioration in academic performance was predicted by peer rejection, suggesting that peer rejection may affect future academic performance. Based on the theoretical and empirical findings, we hypothesized that BKO through WhatsApp would negatively affect adolescents' academic performance.

The mediating role of fear of missing out and problematic social media use

In addition to the direct relationship between BKO and school achievement, indirect mediating mechanisms were also investigated. Fear of missing out (FoMO) and problematic social media use (PSMU) could be possible mediators underlying this direct relationship. FoMO is defined as "a pervasive fear of others having rewarding experiences from which one is absent (Przybylski et al., 2013)" and is characterized by "a desire to remain constantly connected to what others are doing (Przybylski et al., 2013)." Previous studies have found mixed results regarding the relationship between FoMO and school achievement. Some research has shown that FoMO has a negative impact on attention and cognitive resources, which can affect academic performance (Mallari et al., 2023). However, other work has shown non-significant or even positive associations between FoMO and school performance (Lenny et al., 2019; Çatiker et al., 2022). The relationship appears to be complex, with possible different effects of FoMO depending on level and interaction with other social-emotional factors. In this vein, for example, Qutishat and colleagues (2019) found in samples of Omani students that those who reported higher FoMO also had higher emotional intelligence and academic adjustment, suggesting adaptive aspects of FoMO in certain contexts. Given the mixed results in this area, the present study does not assume a direct positive or negative relationship between FoMO and GPA, but rather examines the mediating role of FoMO. In particular, we expect BKO to correlate with increased FoMO, which in turn is related to school achievement (Qutishat & Abu Sharour, 2019).

Regarding problematic social media use (PSMU), although there is no direct evidence of a mediating role between BKO from WhatsApp group and GPA, there is some indirect evidence. On the one hand, many literatures point to the association between social media exclusion and behavioral addiction (e.g., Taş, 2023; Turan et al., 2023), problematic smartphone (e.g., Yue et al., 2022) and Internet use (e.g., Taş & Öztosun, 2018), suggesting a possible link between BKO from online groups (online exclusion) and PSMU. On the other hand, numerous literatures indicate that PSMU is negatively associated with academic performance (e.g., Al-Menayes, 2015; Azizi et al., 2019; Malak et al., 2022; Pa et al., 2021; Zhao, 2023). Therefore, it was hypothesized that PSMU plays the mediating role in the relationship between BKO from WhatsApp group and GPA. Considering the solid relationship between FoMO and PSMU, which was discovered in previous studies (for a meta-analysis, see Fioravanti et al., 2021), we also hypothesized that FoMO and PSMU play the mediating role in the chain of BKO-PSMU association.

The mediating role of internalizing and externalizing symptoms

As two clusters of disorders, internalizing symptoms (e.g., depression, anxiety) and externalizing symptoms (e.g., behavior problems, inattention symptoms) could also play a mediating role in the association between BKO from WhatsApp groups and school achievement. According to need-to-belong theory (Baumeister & Leary, 1995), the need for belonging is a fundamental, powerful, and pervasive motivation, and belonging has diverse and robust effects on emotional states, cognitive functioning, adjustments, and well-being. Being excluded from online groups that undermines this need (Schneider et al., 2017) may be associated with more internalizing and externalizing symptoms. Empirically, this relationship between social ostracism/exclusion and internalizing/externalizing symptoms has also been demonstrated in a variety of research (Ding et al., 2022; Jiang & Chen, 2020; Liu et al., 2018; Niu et al., 2018; Reich et al., 2023; Reiter-Scheidl et al., 2018; Ren et al., 2018).

For example, Niu et al. (2018) found that cyber-ostracism was a risk factor for depression in adolescents aged 12–18 years. The relationship between ostracism and aggression has been consistently confirmed in numerous well-designed experiments (for details, see Ren et al., 2018). For the pathway between internalizing/externalizing symptoms and GPA, the negative association between externalizing symptoms and lower school performance has been well supported in previous longitudinal studies (e.g., Masten et al., 2005; van Lier et al., 2012), whereas results on the relationship between internalizing symptoms and school performance have been mixed. Some studies found a nonsignificant association between internalizing symptoms and school performance (e.g., Wu et al., 2014), while Pedersen et al. (2019) showed that both internalizing symptoms (teacher-reported) and depression (self-reported by children) were associated with poorer school performance. To address this question, the explosive hypothesis was made that both internalizing and externalizing symptoms play a mediating role in the link between BKO and GPA.

The current study

This study is exploratory and therefore not pre-registered. The main aim of this study is to investigate the initial associations and underlying mechanisms of BKO from Whatsapp groups on adolescents' psychosocial well-being and academic performance. The study is exploratory, it is a topic that is under-researched and still emerging, it is a complex topic. In summary, the hypothesis and expectation we have based on the theoretical considerations and review of the above literature are that BKO from WhatsApp group is negatively associated with adolescents' school achievement and that this relationship is mediated by: 1. FoMO and PSMU, which we expect to be higher in individuals who have experienced BKO; and 2. Internalizing and externalizing symptoms. Specifically, as shown in Figure 1, we expect GPA to be negatively affected by the experience of BKO and that this association (i.e., BKO → GPA) is mediated by FoMO and PSMU (i.e., BKO → FoMO → GPA, BKO → PSMU → GPA, and BKO → FoMO → PSMU → GPA), and by internalizing/externalizing symptoms (i.e., BKO → Internalizing → GPA, and BKO

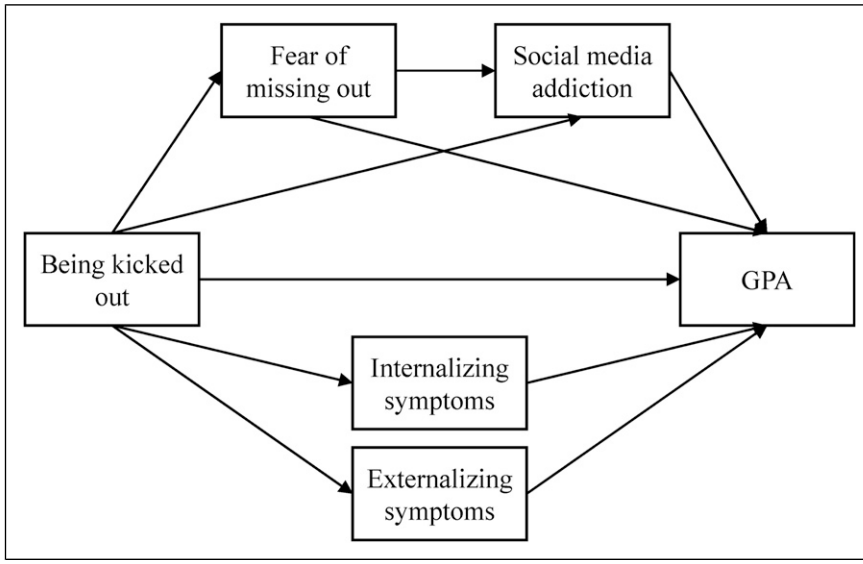

Figure 1. The hypothesized model.

→ Externalizing → GPA). Although this paper is primarily concerned with the phenomenon of exclusion from WhatsApp groups, it is important to recognize that similar cases of blocking or removal from digital social circles are not limited to this platform. Indeed, the experience of cyberostracism is pervasive across various online messaging services, affecting adolescents' social interactions and mental health. For example, Li et al. (2022) have documented similar experiences of cyberostracism in adolescents utilizing other online messaging apps such as Weibo, QQ, and WeChat. These findings suggest that the dynamics of digital exclusion may go beyond specific technologies or platforms and represent a broader, more systemic problem within online social networks.

Method

Participants and procedure

Data were collected from schools in northern Italy. Trained research assistants went into classrooms to collect questionnaire data. Participants signed an informed consent form and were informed of the objectives before completing the questionnaire. For minors, participation in the study was contingent on parental permission. Participation in the study was voluntary and not rewarded. Ethical approval was obtained from the ethics committee. Valid participants were 858 students from middle and high schools, including 520 middle school students (M_{age} = 12.49, SD_{age} = 1.02, range = 11–14 years) and 338 high school students (M_{age} = 16.40, SD_{age} = 1.33, range = 14–20 years). The mean age of comprehensive high school students was 14.01 years (SD = 2.23), and the range was

from 11 to 20 years. Participants included 442 female (51.5%) and 416 male (48,5%) students. Most participants were of Italian nationality (93%), with smaller percentages of students from other nationalities, such as Albanian (1.2%), Nigerian (0.6%), Romanian (0.7%), and others.

Instruments

Sociodemographic variables. Participants were asked to indicate their age, gender, and social media platforms currently used. We also asked them to answer some questions about their experience with WhatsApp groups. Specifically, the following questions were used: "In the past three months, have you been kicked out of a peer WhatsApp group (groups of friends and/or classmates) relevant to you against your will?"

Fear of missing out (FoMO). The Italian adaptation of the Fear of Missing Out (FoMO) scale (Casale & Fioravanti, 2020; Przybylski et al., 2013) was used. The FoMO scale includes 10 items that capture concerns, fears, and anxieties adolescents may have about being excluded from events, experiences, and discussions with peers. Some sample items are: "I worry about others having more rewarding experiences than I do," "I get anxious when I do not hear about my friends' activities," and "I get anxious when I miss an opportunity to get together with friends". The final score was calculated by summing the individual item scores, with higher total scores representing higher FoMO levels. The reliability of the scale estimated by Cronbach's alpha was good ($\alpha = 0.80$).

Problematic social media use. We used the Italian version (Monacis et al., 2017) of the Bergen Social Media Addiction Scale (BSMAS; Andreassen et al., 2016). The BSMAS consists of six items assessing salience, tolerance, mood change, relapse, withdrawal symptoms, and conflict. The items are scored on a 5-point scale (1 = never, 5 = very often), and the total score is the sum of the items. The scale had reasonable reliability as estimated by Cronbach's alpha ($\alpha = 0.71$).

Students' strengths and difficulties. To assess children's emotional and behavioral characteristics, teachers were asked to complete the Italian version of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997; Tobia et al., 2011). The SDQ consists of 25 items that capture positive and negative aspects of a child's behavior in the classroom. Items are rated on a three-point scale (0 = Not True, 1 = Somewhat True, 2 = Certainly True) and five dimensions of children's emotional and behavioral characteristics are captured: Conduct problems, emotional symptoms, hyperactivity and inattention, prosocial behavior, and relationship problems with peers. Following the recommendations of Goodman et al. (2010), we combined the items to form two scores representing students' internalizing symptoms (sum of emotional symptoms and peer relationship problems, $\alpha = 0.77$) and externalizing symptoms (sum of behavior problems and hyperactivity and inattention symptoms, $\alpha = 0.83$) for this study.

School achievement. Students' academic performance in Italian middle and high school was assessed using self-reported GPA data. GPA scores were reported on a 10-point scale, with a minimum grade of 6. Students were asked to report their official GPA scores in 10 subjects, including Italian, mathematics, English, geography, and others. The final score, representing the average grade point average in the 10 subjects, ranged from 4 to 10, with a higher score indicating better academic performance and success in school.

Data analysis strategy

The first step of the analysis was to calculate and report descriptive statistics and correlations among the variables in the study. Then, the corresponding contingency tables were analyzed and chi-square tests were performed to examine the occurrence of the BKO phenomenon in different genders and school levels. Finally, to assess the direct and indirect associations between BKO and school performance (measured as GPA), we tested a multiple mediation model (as shown in Figure 1). Previous research has shown that school level and gender can influence both the outcome (GPA) and the mediating variables. For this reason, we included gender and school level as covariates in the model.

Results

The incidence of BKO from WhatsApp groups

The experience of BKO in WhatsApp groups at least once was considered fairly common in the studied sample (31.9% in the last 3 months). There was no statistically significant difference in the incidence of this phenomenon when comparing males and females, χ^2 (1) = 0.01, p = .92, or between different school levels, χ^2 (1) = 0.07, p = .79 (see Table 1).

Descriptive, correlative, and inferred results

For describing correlation sizes, we follow guidelines: 0.1 to 0.3 as small, 0.3 to 0.5 as moderate, and 0.5 or greater as large. The analysis reported in Table 2 shows that BKO

Table 1. The incidence of being kicked out across genders and school levels (N = 858).

	Being kicked out in the past 3 months	
	No	Yes, at least once
Gender		
Female	69.0%	31.0%
Male	68.0%	32.0%
School level		
Middle school	68.5%	31.5%
High school	68.6%	31.4%

Table 2. Descriptive statistics and correlations between study variables (N = 858).

Variables	1	2	3	4	5	6	7	8
1. Gender	—							
2. School level	−.05	—						
3. Being kicked out	.01	−.01	—					
4. FoMO	−.14***	.11**	.14***	—				
5. SMA	−.18***	.13***	.16***	.45***	—			
6. SDQ_Internalizing	−.27***	.12**	.19***	.22***	.26***	—		
7. SDQ_Externalizing	−.04	.02	.22***	.28***	.39***	.40***	—	
8. GPA	−.13***	−.24***	−.13***	−.04	−.22***	−.04	−.31***	—
M (*SD*)	1.48 (0.50)	1.39 (0.49)	0.31 (0.47)	1.39 (0.88)	2.16 (0.78)	5.88 (3.70)	6.32 (3.53)	7.44 (0.94)

Note. Gender (0 = Female; 1 = Male), School level (0 = Middle school; 1 = High school), Being kicked out (0 = No, 1 = Yes, at least once); **p < .01, ***p < .001.

experience in a peer WhatsApp group is significantly positively correlated with FoMO scores (r = .14, $p < .001$), PSMU (r = .16, $p < .001$), internalizing symptoms (r = .19, $p < .001$) and externalizing symptoms (r = .22, $p < .001$). It is also negatively correlated with GPA (r = −.13, $p < .001$). The correlation between FoMO and PSMU scores is quite large (r = .45, $p < .001$). Moreover, PSMU was negatively associated with GPA (r = −.22, $p < .001$). Externalizing symptoms (r = −.31, $p < .001$) were negatively associated with GPA, whereas FoMO (r = −.04, $p = .25$) and Internalizing symptoms (r = −.04, $p = .31$) were not significantly associated with GPA.

The direct and indirect relationships between BKO and GPA

To evaluate the hypothesized model of the relationship between BKO, FoMO, PSMU, internalizing and externalizing symptoms, and GPA (Table 3), we tested the model shown in Figure 1. The results of the mediation analysis are shown in Table 4. As can be seen in Table 4, the overall effect of BKO on GPA is negative and statistically significant

Table 3. Testing the multiple mediation model: predictive power and standardized regression coefficients.

Outcome	Predictors	R^2	F	β	T	LLCI	ULCL
FoMO	Gender	.05	14.76***	−0.24	−4.03***	−0.35	−0.12
	School level			0.18	3.02***	0.06	0.30
	BKO			0.27	4.23***	0.14	0.39
BSMAS	Gender	.24	65.64***	−0.19	−3.97***	−0.28	−0.09
	School level			0.13	2.71**	0.04	0.22
	FoMO			0.36	13.47***	0.31	0.42
	BKO			0.17	3.29**	0.07	0.27
SDQ_Int	Gender	.12	37.97***	−1.99	−8.29***	−2.47	−1.52
	School level			−0.25	1.02	−0.23	0.73
	BKO			1.72	6.65***	1.21	2.23
SDQ_Ext	Gender	.05	14.80***	−0.27	−1.14	−0.73	0.19
	School level			0.11	0.45	−0.36	0.58
	BKO			1.66	6.56***	1.16	2.16
GPA	Gender	.20	30.10***	−.30	−5.00	−.42	−.19
	School level			−.45	−7.56***	−.56	−.34
	FoMO			.12	3.44***	.05	.20
	BSMAS			−.20	−4.46***	−.29	−.11
	SDQ_Int			.01	0.31	−.01	.02
	SDQ_Ext			−.07	−7.34***	−.09	−.05
	BKO			−.13	−2.03*	−.26	−.01

Note. $N = 858$. BKO = Being kicked out from WhatsApp group in the last 3 months (dichotomous variable: 1 = yes); FoMO = fear of missing out; BSMAS = Bergen social media addiction scale; SDQ_Int = Strength and difficulties questionnaire – Internalizing symptoms; SDQ_Ext = Strength and difficulties questionnaire – Externalizing symptoms; GPA = Grade point average. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 4. Total, direct, and indirect effects of BKO on GPA through FoMO, social media addiction, and internalizing and externalizing symptoms.

	Path	β	SE	LLCI	ULCI
Total effect		−0.26	0.07	−0.39	−0.13
Direct effect	BKO→GPA	−0.13	0.06	−0.26	−0.01
Indirect effect	BKO→FoMO→GPA	0.04	0.01	0.01	0.06
	BKO→BSMAS→GPA	−0.05	0.02	−0.09	−0.02
	BKO→FoMO→BSMAS→GPA	−0.03	0.01	−0.05	−0.01
	BKO→SDQ_Int→GPA	.02	0.01	−0.03	0.04
	BKO→SDQ_Ext→GPA	−.12	0.03	−0.17	−0.07
Total indirect effect		−0.13	0.02	−0.21	−0.09

Note. N = 858. BKO, Being kicked out from WhatsApp group in the last 3 months (dichotomous variable: 1 = yes); FoMO, fear of missing out; BSMAS, Bergen social media addiction scale; SDQ_Int, Strength and difficulties questionnaire – Internalizing symptoms; SDQ_Ext, Strength and difficulties questionnaire – Externalizing symptoms; GPA, Grade point average.

(β = −0.26, 95% CI [−0.39, −0.13]). Thus, BKO experience is associated with significantly lower overall GPA. Examination of the direct effect and indirect effects shows that they are always significant, except for the effect mediated by the internalization symptom score. The ratio of the indirect effects to the total effect is 0.52, which means that 52% of the effect of BKO on GPA is mediated by the mediating variables included in the model. The remaining direct effect of BKO on GPA remains significant even in the presence of the mediators. The simultaneous presence of significant direct and indirect effects suggests that we are dealing with a partial mediation model. As a last step we also ran the multiple mediation model without including age and gender as covariates (see Supplemental Table S1). The results were largely similar to those obtained when controlling for age and gender. The overall effect of BKO on GPA remained negative and significant, and the pattern of direct and indirect effects was consistent with the main analysis. This supplementary analysis suggests that the findings are robust and not substantially influenced by the inclusion of age and gender as covariates.

Discussion

In the current study, a relatively high incidence of BKO in WhatsApp groups was found in both girls and boys in different grades of middle and high school. A direct relationship between BKO and GPA was found. The simple mediating roles of FoMO, PSMU, and externalizing symptoms as well as the chain mediating roles of FoMO and PSMU were discovered. By identifying the potential risks associated with being kicked out of online groups and the underlying mechanisms, the findings of this study could not only improve our understanding of adolescents' digital social experiences, but also contribute to the development of targeted interventions aimed at promoting school achievement and mitigating the negative effects of online exclusion.

This study is an extension of previous research, as Whatsapp groups offer a more personal and private way of communicating than other social media such as Facebook. Ostracism, as Williams found in 2007, affects basic human needs such as feeling connected and feeling good, and this is why. Exclusion via Whatsapp is a severe form of social exclusion that can have a significant impact on young people's emotional health and academic performance. Using these patterns, we can understand digital exclusion and the psychological consequences of being excluded in these personal digital spaces.

The mediating role of FoMO and PSMU

Consistent with our hypothesis, the mediating role of FoMO and PSMU was found in the relationship between BKO from WhatsApp groups and adolescents' lower GPA. BKO may influence adolescents' GPA not only directly but also indirectly through the effects of FoMO and PSMU. Although this possible mediating process has been suggested by many previous studies (Lenny et al., 2019; Mallari et al., 2023; Marengo et al., 2021), no study has directly examined this model. Based on our findings, being socially excluded from online groups may increase levels of unnecessary anxiety and problematic social media use, which in turn affects adolescents' academic performance. In addition to the general mediating process, the specific pathway from FoMO to GPA in the model is relatively noteworthy. In our model, FoMO positively predicted students' GPA. This result is counterintuitive and contrasts with the view that students with high FoMO levels have limited attentional resources for academic tasks (Mallari et al., 2023). One possible explanation for this positive pathway is that FoMO can be viewed as an environmental dysregulation and therefore individuals with high levels of FoMO are more likely to be driven by extrinsic motivation (Ryan & Deci, 2000) and more focused on achievement, which could ultimately lead to better academic performance (Lenny et al., 2019).

The mediating role of internalizing and externalizing symptoms

Furthermore, in this study, the mediating role of externalizing symptoms was found between BKO and GPA, while the mediating role of internalizing symptoms was not found. This is partially consistent with our hypothesis. In the first stage of the mediating model, the BKO positively predicted both internalizing and externalizing symptoms to the WhatsApp group. This result is consistent with need-to-belong theory (Baumeister & Leary, 1995). Being excluded from online social groups undermines the sense of belonging (Schneider et al., 2017) and ultimately affects adolescents' adjustment and well-being. This finding is also consistent with many previous empirical studies (e.g., Niu et al., 2018; Reich et al., 2023; Reiter-Scheidl et al., 2018).

In the second stage of the mediating model, externalizing symptoms continued to predict lower GPA, whereas internalizing symptoms did not significantly predict GPA. The negative association between externalizing symptoms and GPA was congruent with many previous robust studies (e.g., Palmu et al., 2018; Willcutt et al., 2013; Zhou et al., 2010). Externalizing symptoms affect adolescents' school achievement. This could be due

to the fact that these adolescents show higher levels of school disengagement, which includes behavioral, emotional, and cognitive disengagement (Zhou et al., 2010).

Our findings confirm the potential negative effects of social exclusion in an online context, particularly in social media groups, on adolescents' externalizing symptoms. This in turn affects their academic performance.

However, internalizing symptoms did not predict adolescents' GPA in the final model. This result is inconsistent with some previous studies (e.g., Pedersen et al., 2019). Possible explanations are as follows: First, there might be some significant moderators in the relationship between internalizing symptoms and academic achievement (e.g., cognitive ability); second, the reciprocal relationship between internalizing symptoms and academic achievement is a long-term relationship that is difficult to capture through cross-cultural data. Third, teachers may have difficulty identifying the true extent of adolescents' internalizing symptoms because correlations between teacher-rated internalizing problems and children's self-reports of depression and anxiety have been weak and nonsignificant in previous studies (e.g., Pedersen et al., 2019). Future studies may further explore these possibilities with better designs (e.g., experimental or longitudinal studies).

Limitations and future directions

The current study has produced some interesting results and makes some contributions to the field of social media and adolescent development. However, the current study has some notable limitations. First, while we reported participants' biological sex and nationality, we did not collect detailed data on race, ethnicity, gender identity beyond a binary classification, or sexual orientation. These aspects are important for understanding the full diversity of the sample and should be explored in future research. Additionally, socioeconomic status, and disability status were not recorded, which may have influenced the findings. Including these variables in future studies could provide a more comprehensive understanding of how different demographic factors interact with online exclusion experiences.

Besides, although it is based on solid theoretical and empirical findings, the cross-sectional nature of our study does not allow us to replicate the casual relationships among variables in the mediation model. Future studies should use experimental/longitudinal methods to confirm the directionality of the variables in the model.

Third, our measure of being kicked out (BKO) from a WhatsApp group was a single, dichotomous item. This crude assessment limits our ability to capture the nuances of students' experiences with online social exclusion. We were unable to determine the frequency, regency, or emotional impact of BKO incidents, as students who encountered a single instance of BKO were grouped together with those who faced repeated rejection. Future research should employ multi-item measures that assess the degree of exclusion and students' affective responses to provide a more comprehensive understanding of the BKO phenomenon and its psychological correlates.

Lastly, although a multi-informant method was used (both teacher- and student-reported data), more informants (e.g., parents, peers) should be included and different

methods of data collection (e.g., observation, interview) should be used. Finally, we focused on only one social media platform (i.e., WhatsApp) and one culture (i.e., Italian). Future studies could explore a similar model in a more general and cross-cultural manner. Indeed, despite its wide global reach, WhatsApp is not the most popular messaging app in other countries where local platforms such as WeChat (in China) and VKontakte or Telegram (in Russia and other Eastern European countries) are preferred for reasons of greater privacy and functionality. In addition, we need to consider that adolescents resort to multiple online platforms and that the type of social media used might modulate the relationship between the constructs. For example, WhatsApp allows for more private and direct interactions, while other platforms such as Instagram, which place more emphasis on posting content and the perception of a large social network, could influence feelings of exclusion and FoMO differently. Finally, it is plausible that cultural norms and social values influence both the perception of social exclusion and the intensity of FoMO. In this sense, it is possible that in cultures with a strong emphasis on collectivity and interdependence, such as in Asia, feelings of exclusion and FoMO are perceived with greater intensity than in cultures that value independence and the individual, such as in Western countries.

Practical implication

Our study offers some insights for those who work as teachers, educators, or school counsellors with youth in educational settings. For example, BKO should be discussed in the context of interventions to promote positive student adjustment to school. Preventing BKO experiences could help adolescents increase their emotional well-being and, in this way, also improve their academic performance and prevent school failure. In addition, BKO could be considered in the assessment of students with psychological adjustment difficulties in school or poor academic performance. Considering such experiences in the overall assessment of an adolescent's school adjustment could help professionals take appropriate steps to support the student to improve school adjustment and promote better academic performance.

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Open research statement

As part of IARR's encouragement of open research practices, the author(s) have provided the following information: This research was not pre-registered. The research was approved by University of Turin, Italy Ethical Board (IRB n. 0592463). The data used in the research are available. The data can be obtained via email by the corresponding author. The materials used in the research are available. The materials can be obtained via email by the corresponding author.

Ethical statement

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

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Supplemental Material

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