

The influence of ideological and interpersonal identity and gender on externalizing problems and social media addiction in young adults

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ABSTRACT

Objective: Identity development is a critical task during young adulthood, influencing various psychological and behavioral outcomes. This study explored the effects of ideological and interpersonal identity status and gender on externalizing problems and social media addiction in young adults. **Method:** The sample consisted of 175 participants (aged 18 to 22 years), who completed the Extended Objective Measure of Ego Identity Status-2, the Externalizing Spectrum Inventory, and the Social Media Addiction Scale. **Results:** Results indicated that individuals with diffuse identity reported higher levels of externalizing problems, while those with achieved identity showed the lowest levels. Men exhibited significantly more externalizing problems than women. Regarding social media addiction, only interpersonal identity status had an effect, suggesting that individuals in the process of constructing their identity are more likely to engage with social media. **Conclusions:** These findings underline the complex relationship between identity development, gender, and behavioral outcomes, contributing to a deeper understanding of the challenges faced by young adults in the digital age.

Keywords: Identity development; externalizing behaviors; behavioral addiction; gender differences; psychological adjustment

Estado de identidad y diferencias de género sobre problemas de exteriorización y adicción a las redes sociales

RESUMEN

Objetivo: El desarrollo de la identidad es una tarea fundamental durante la adultez joven, que influye en diversos resultados psicológicos. Este estudio exploró los efectos del estado de identidad ideológica e interpersonal y el género en los problemas de exteriorización y la adicción a las redes sociales en adultos jóvenes. **Método:** La muestra estuvo compuesta por 175 participantes (de entre 18 y 22 años), quienes completaron la Medida Objetiva Extendida del Estado de Identidad del Ego-2, el Inventario del Espectro Externalizante y la Escala de Adicción a las Redes Sociales. **Resultados:** Los resultados indicaron que las personas con identidad difusa reportaron niveles más altos de problemas de exteriorización, mientras que aquellas con identidad lograda mostraron los niveles más bajos. Los hombres presentaron significativamente más problemas de exteriorización que las mujeres. En cuanto a la adicción a las redes sociales, solo el estado de identidad interpersonal tuvo un efecto, lo que sugiere que las personas en proceso de construir su identidad tienen mayor probabilidad de involucrarse en el uso de redes sociales. **Conclusiones:** Estos hallazgos destacan la compleja relación entre el desarrollo de la identidad, el género y los resultados conductuales, contribuyendo a una comprensión más profunda de los desafíos que enfrentan los adultos jóvenes en la era digital.

Palabras clave: Desarrollo de la identidad; conductas de exteriorización; adicción conductual; diferencias de género; ajuste psicológico

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Introduction

Adolescence is a developmental period where psychological issues that undermine the well-being

of individuals are more likely to appear (Odgers & Jensen, 2020). According to Erikson (1968), during adolescence, young people struggle with psychological discomfort going through an “identity crisis” that is related to psychological problems (Ng et al., 2021) and the problematic use of social media (Riehm et al., 2019; Van den Eijnden et al., 2018). Youth mental health is a serious global public health issue that has a significant negative social and economic impact (Patton & Borschmann, 2017), and young people with mental health issues are more likely to experience poor mental health later in life (Auerbach et al., 2018). Moreover, these challenges become even more pressing considering that young people now predominantly communicate through social media (Odgers & Jensen, 2020), amplifying the potential impact on their identity development and psychological well-being.

Based on the theoretical work of Erikson’s identity construct, Marcia et al. (1993) proposed and developed the identity status paradigm that describes different ways of forming one’s identity. This was operationalized in two different aspects of identity: ideological and interpersonal status (Adams et al., 1989). The main difference between the statuses lies in the focus of exploration and commitment. Interpersonal status involves exploration and commitment to social roles and relationships, while ideological status involves exploration and commitment to beliefs, values, and ideological perspectives. Both interpersonal and ideological statuses are essential components of identity development, and individuals may vary in their levels of exploration and commitment in each of these domains (Marcia et al., 1993). Ideological and interpersonal statuses form four statuses: identity achievement, moratorium, foreclosure, and identity diffusion. These identity statuses are in play during adolescence and can extend to early and middle adulthood. Developmental assumptions suggest that individuals typically achieve a higher level of identity with age, and that relatively few late adolescents should be in a state of diffusion (Adams et al., 1989; Waterman, 1993).

Young adults who have attained identity achievement have undergone a phase of self-discovery and have established definitive identity commitments (Clancy & Dollinger, 1993; Marcia et al., 1993). The exploration of moratoriums and their commitments is currently ongoing, with such commitments either being poorly defined or entirely absent (Marcia et al., 1993). Youths in moratorium identity exhibit significant difficulty in reaching clear commitments, oscillating between rebellious and conformist behavior (Lucas, 1997). Foreclosures exhibit strong dedication to their beliefs, yet these commitments have not been

developed through introspective examination. Instead, their goals, values, and beliefs have been adopted by authoritative figures, such as parents, without undergoing substantial critical analysis (Berzonsky, 1992). The diffusion position has been shown to be the most diverse and heterogeneous group (Marcia et al., 1993). Youths classified as identity-diffused may have engaged in some form of exploration, but their approach is often characterized by aimlessness rather than active investigation (Adams et al., 1989). Commitment is lacking among these individuals, with some exhibiting a “playboy/playgirl” mentality and appearing to drift through life carefree (Clancy & Dollinger, 1993). Others may exhibit severe psychopathology, including social isolation and unhappiness (Verschuere et al., 2020). The identity statuses are typically viewed as reflecting varying levels of development, with diffusion being considered the least advanced, followed by foreclosure, moratorium, and identity achievement (Adams et al., 1989). Youths who lack identity development, and identity integration, or have poor self-concept tend to experience low self-esteem and life satisfaction (Ng et al., 2021). They are in a psychological and developmental “cross-road”, battling between a clear identity development and an identity confusion, struggling to identify personal characteristics that are unique to themselves, in other words, to form their ego identity. “Ego identity then, in its subjective aspect, is the awareness of the fact that there is a self-sameness and continuity to the ego’s synthesizing methods, the style of one’s individuality, and that this style coincides with the sameness and continuity of one’s meaning for significant others in the immediate community” (Erikson, 1968, p. 50).

One of the main psychological problems associated with identity problems in youths have been externalizing problems, specifically substance and drug abuse (Hokm Abadi et al., 2018; Rosenkranz et al. 2023), impulsive-aggression (Coccaro, 2012) and the excessive use of social media (Alzahrani & Bach, 2014; Kuss & Griffiths, 2017; Leménager et al., 2018; Restrepo-Castro et al., 2024). Externalizing problems refer to behavioral and emotional symptoms that are directed outward and manifest as aggression, impulsivity, and non-compliance. These symptoms are associated with distress or impairment in personal, social, academic, or occupational functioning (American Psychiatric Association, 2022; Fairchild et al., 2019) and are often associated with different psychological problems and disorders (e.g., attention deficit hyperactivity disorder, disruptive behavior disorder, impulse control disorder; American Psychiatric Association, 2022; Krueger et al.,

2007), including substance and drug abuse (Chan et al., 2008; Krueger et al., 2007) and social media use (Ra et al., 2018; Riehm et al., 2019).

Adolescents and young adults are reportedly the most active social media users (Lenhart, 2015) for a variety of purposes, e.g., maintaining social connections, communicating with friends and family, seeking information (Kircaburun et al., 2020). At times, this usage can become problematic, leading to addiction or dependency in pursuit of goals. This can result in an inability to control the use of social media, functional impairment, and persistent engagement in the behavior (Caldiroli et al., 2018; Chamberlain et al., 2016; Van den Eijnden et al., 2018). Some studies have found social media use plays a central role in the mental and social well-being of young users. Disordered use of social media predicts a decrease in the general psychological well-being and school performances of adolescents (Van den Eijnden et al., 2018) and different externalizing behaviors in youths (Riehm et al., 2019). More recently, Huang (2020) conducted a meta-analysis and found that social media use is negatively associated with adolescent mental health (i.e., life satisfaction, self-esteem, well-being, anxiety, loneliness, and depression). At the same time, research has found that excessive social media use is associated with a lack of identity development, poor self-concept and anxiety (Alzahrani & Bach, 2014; Kuss & Griffiths, 2017; Leménager et al., 2018).

The achievement identity is an important developmental factor and seems to be a main process that led adolescents to be more self-conscious about who they are as they transition into adulthood (Eriksson et al., 2020). It helps to comprehend the idea of integrating into society while preserving one's individuality, the positive self-concept, and psychological adjustment (Alzahrani & Bach, 2014; Eriksson et al., 2020). Ideological and interpersonal identity may lead to different difficulties, and social and psychological issues, which directly affect externalizing behaviors. Ideological identity is related to cognitive dissonance, ideological polarization, or extreme beliefs, like radicalization, among others. Moreover, it can increase anxiety, feelings of vulnerability, intolerance, and social exclusion, conforming to group ideologies, limiting independence, and leading to feelings of detachment (Eibach, 2021; Seyle & Besaw, 2020). Interpersonal identity is linked to feelings of social isolation, struggles to develop meaningful relationships, rejection sensitivity, social anxiety, and negative impacts on one's self-worth. In addition, interpersonal conflicts can lead to chronic stress and emotional strain, while difficulties in defining roles within relationships can result in

confusion and unhappiness. Furthermore, attachment issues, particularly related to insecure attachment styles, can further complicate the development of healthy interpersonal bonds (Girard et al., 2017; Meehan, 2019). It is important to consider that ideological and interpersonal identities are interconnected and can affect each other. However, there has been evidence that externalizing behaviors and a lack of a coherent sense of identity might reinforce each other (Crocetti et al., 2013). Also, influence by peers can lead to externalizing behaviors, especially during the identity formation and individuation of adolescents (Kauten & Barry, 2020).

In terms of gender, there are differences between men and women in different psychological and social behaviors. For instance, women tend to show more internalizing symptoms, prosocial behavior, kindness, and conscientiousness, while men tend to show more externalizing problems, aggressive, delinquent behaviors, and hyperactivity (Matos et al., 2017). For social media, gender differences are inconclusive. Several studies have shown that women have higher social media interaction than men while men are more likely to be involved in gaming, via computer or console. However, gaming has become as interactive as social media for men and women (Booker et al., 2018). Specifically, a recent meta-analysis that comprised data from 21 countries has shown that men are more likely to exhibit internet gaming disorder while women are more likely to exhibit social media addiction (Su et al., 2020).

The aforementioned antecedents underscore the role of identity development in the psychological adjustment of adolescents and young adults. Externalizing problems and social network addiction seem to be linked to difficulties in the identity process. The present study aimed to further explore the contemporary relationship between the personal identity process (specifically, ideological versus interpersonal) in late adolescents and young adults, and externalizing problems such as impulsivity, risk aggression, substance abuse, and social network addiction. Participants from the different ideological and interpersonal identity groups were expected to show statistically significant differences in externalizing problems and social network addiction. Achieved identity participants were expected to show better control over externalizing problems and social network addiction compared to other identity groups, particularly those with diffuse identity. Given the gender differences in psychological and social behaviors demonstrated in previous studies, it was expected that men would exhibit more externalizing behaviors and problems than women. Regarding social media addiction, it was expected that women would be more addicted than men.

Method

Participants

Participants were selected through convenience sampling from undergraduate English-speaking students in the exclusively English departments of Athens Metropolitan College in Greece. These students came from a variety of different disciplines, including psychology, architecture, and physiotherapy. The participants ranged in age from 18 to 22 years ($M_{age} = 19.81$, $SD_{age} = 1.40$). The total sample size was 175, with 49.1% men ($n = 86$) and 50.9% women ($n = 89$). The vast majority of the sample was Caucasian (94.3%; $n = 165$) with the remaining participants ($n = 10$) being Asian, African, or of mixed ethnicity. The annual family income of the participants was as follows: 29.7% from the lower economic class, 22.8% from the middle class, 29.1% from the upper middle class, and 17.8% from the upper economic class. Participants resided throughout Athens and its surrounding areas. Convenience sampling was employed as it is the most common non-probabilistic sampling strategy (Jager et al., 2017).

Instruments

Extended Objective Measure of Ego Identity Status – 2 (EOMEIS-2; Bennion & Adams, 1986). The EOMEIS-2 is a self-report 64-item questionnaire rated on a 6-point scale. It has been used to classify the participants concerning the ego identity status. The instrument was designed to measure ego identity regarding occupational, religious, political, philosophical, and social contexts along ideological and interpersonal dimensions (Bennion & Adams, 1986). The questions are divided into 2 main ideological and interpersonal identity-status, and each one has 4 subscales, namely achievement, moratorium, foreclosure and diffusion. To classify each participant in each identity status, cutoff points for each status have been used. To calculate the cutoff point for each status for both ideological and interpersonal identity, the instructions of the EOMEIS-2 manual have been followed (Adams et al., 1989). First, the mean value is calculated and then the standard deviation for each status, one standard deviation above the mean value is the cutoff point value that is being used to classify each participant in the respective status for both ideological and interpersonal identity. The original version showed good internal consistency with Cronbach alfa of the subscales for three consecutive years showed the following ranges: diffusion .69 to .73, foreclosure .81 to .86, moratorium .70 to .77, and achieved .84 to .89.

(Adams et al., 1989). It is shown excellent reliability for this study ($\alpha = .92$, $\omega = .91$).

Externalizing Spectrum Inventory (ESI; Hall et al., 2007). The ESI is a 4-point Likert-type scale consisting of 100 items. This 100-item version is derived from the Externalizing Inventory, a 415-item self-report measure developed by Krueger et al. (2007). The 415-item version assesses a broad range of behavioral and personality characteristics associated with the externalizing spectrum of psychopathology. It includes 23 subscales ($\alpha = .87$, $\omega = .90$) designed to measure facet-level indicators of the externalizing construct, including physical-relational-destructive aggression, boredom proneness, irresponsibility, problematic impulsivity, drug and alcohol use and problems, theft, fraud, rebelliousness, blame externalization, alienation, excitement seeking, marijuana use and problems, lack of empathy, dependability, honesty and planful control. For the purpose of this study, 4 dimensions were obtained through exploratory factor analysis, with oblimin rotation (KMO measure of sampling adequacy = .87):

(1) *Impulsivity, risk-taking and antisocial behavior*: This dimension includes problematic impulsivity, fraud, physical aggression, relational aggression, theft, rebelliousness, irresponsibility, destructive aggression, lack of empathy, alcohol problems, excitement seeking, boredom proneness, blame externalization, alienation, and impatient urgency. It measures psychological maladjustment characterized by impaired self-control, acting without thinking, difficulty delaying gratification, ignoring or underestimating potential risks, engaging in activities that may lead to negative consequences, and disregarding personal safety or well-being. It measures the proneness to exhibit aggression and hostility towards others, lack empathy or remorse for harm caused to others, violate societal norms and rules, and have difficulty forming and maintaining positive relationships. (2) *Substance abuse and addiction*: It measures the tendency to use psychoactive substances, including illicit drugs (e.g., marijuana, LSD, or magic mushrooms), addiction to substances, neglect of responsibilities (e.g., work, school, or family), social impairment caused by substance use, continuation of use despite awareness of physical or psychological health issues or legal problems, and loss of control over substances. (3) *Personality disfunction*: This dimension includes honesty, dependability, and planful control. (4) *Alcohol and drug use*: This dimension evaluates drug and alcohol use. The last two dimensions (personality dysfunction and alcohol and drug use) do not show good reliability ($\alpha = .48$, $\omega = .49$ and $\alpha = .34$, respectively) and are therefore not considered for further analysis.

Additionally, these factors measure behaviors and traits that are theoretically and practically overlapping and covered by the measurements of the first two factors.

Social Media Addiction Scale Student Form (SMAS-SF; Sahin, 2018), The SMAS-SF is a 5-point Likert-type scale consisting of 29 items with four dimensions: virtual tolerance (Items 1-5), virtual communication (Items 6-14), virtual problem (Items 15-23), and virtual information (Items 24-29). Scores on the scale range from 29 to 145, with higher scores indicating that the participant perceives themselves as a social media addict (Sahin, 2018). The original version demonstrated good internal consistency ($\alpha = .91$; Sahin, 2018). For this study, the SMAS-SF showed excellent reliability ($\alpha = .90$, $\omega = .90$) and acceptable reliability for the virtual tolerance subdimension ($\alpha = .71$, $\omega = .72$), virtual communication subdimension ($\alpha = .71$, $\omega = .71$), virtual problem subdimension ($\alpha = .83$, $\omega = .83$), and virtual information subdimension ($\alpha = .73$, $\omega = .73$).

Procedure

Prior to participating in the study, the participants provided their informed consent through a form adapted for this study with the assistance of the Ethics Committee of the Universidad Nacional de Educación a Distancia (UNED). The Ethics Commission of UNED authorized the study (Reference: 01-SEC-PSI-2023) and ensured its compliance with the ethical and data protection standards required by European legislation. The median time for survey completion was 30 minutes. Participants did not receive any compensation for their participation. Confidentiality and anonymity of the data were always maintained, and participation in the study was voluntary. Data collection took place in the classrooms of the university campus. The researcher shared data links

with the participants via QR codes. Additionally, the importance of responding honestly and answering all questions in the questionnaires was emphasized.

Statistical analysis

For the purpose of this study and its variables, an ex-post facto prospective design was used (Fontes de Gracia et al., 2001). The dependent variables were ESI-100 and SMAS-SF, while the independent or predictor variables were EOMEIS-2 and gender (men vs. women). All statistical analyses were performed using SPSS, version 21.0 for Windows. A multivariate analysis of variance (MANOVA) was conducted using identity status (ideological and interpersonal) and gender as predictors. Subsequently, a multivariate analysis of covariance (MANCOVA) was performed to assess the effect of EOMEIS-2 while controlling for gender and age. To interpret the magnitude of the effect size, $\eta^2 = .01$ indicates a small effect, $\eta^2 = .06$ indicates a medium effect, and $\eta^2 = .14$ indicates a large effect.

Results

Descriptive Analysis

Regarding the frequency of ideological and interpersonal status among participants, it is worth noting that for both men and women, the vast majority fall into the moratorium identity category for both ideological and interpersonal identity status. Foreclosure and achievement statuses are the least frequent categories for both identities. Table 1 presents the basic descriptive statistics for the study variables, both for the total sample and by gender.

Table 1. Descriptive statistics on externalizing problems (ESI-100) and social media addiction subdimensions (SMAS-SF) as a function of gender

	Total		Men		Women	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
ESI-100						
Impulsivity risk aggression	3.30	1.81	3.76	2.03	2.86	1.43
Substance abuse	14.07	4.63	5.05	5.15	3.13	3.86
SMAS-SF						
Virtual tolerance	14.31	4.00	13.69	3.86	14.91	4.06
Virtual communication	21.90	5.51	21.89	6.06	21.91	4.95
Virtual problem	20.96	6.61	20.92	6.49	21.00	6.76
Virtual information	17.42	4.38	16.78	4.55	18.04	4.14

Note. ESI-100: Externalizing Spectrum Inventory-100 items; SMAS-SF: Social Media Addiction Scale Student Form

Gender, ideological and interpersonal identity effects on externalizing problems

A MANOVA was conducted to analyze the effects of gender, ideological identity, and interpersonal identity on impulsivity, risk aggression, and substance abuse. Table 2 presents the main effects of gender, ideological identity, and interpersonal identity on impulsivity, risk aggression, and substance abuse and addiction. For the variable of gender on the ESI-100 factors, the MANOVA analysis indicated significant results (Wilks' $\Lambda = 0.91$, $F = 4.15$, $p = .003$). The tests of between-subjects effects showed a significant effect of gender for the impulsivity risk aggression factor ($F = 11.6$, $p < .01$, $\eta^2 = .06$) and for the substance abuse factor ($F = 7.88$, $p < .01$, $\eta^2 = .044$). The effect sizes for both variables were medium. Men showed significantly higher impulsivity, risk aggression, and substance abuse and addiction than women. Additionally, participants with diffused identities showed significantly higher risk aggression and substance abuse addiction than those with achieved identities, for both ideological and interpersonal statuses. The MANOVA results also showed significant effects of ideological identity on ESI-100 factors (Wilks' $\Lambda = 0.80$, $F = 3.13$, $p < .001$, $\eta^2 = .07$) and of interpersonal identity on ESI-100 factors (Wilks' $\Lambda = 0.83$, $F = 2.69$, $p = .002$, $\eta^2 = .06$), both with medium effect sizes. The interaction between gender, ideological identity, and interpersonal identity on ESI-100 factors was tested, and no significant results were found (ideological: $F = 1.70$, $p = .06$; interpersonal: $F = 1.06$, $p = .38$).

The results showed that identity status, both ideological and interpersonal, has a significant effect on externalizing problems, as well as gender differences. However, gender had no significant effect on the impact of identity status on externalizing problems. The pairwise comparison of ideological status indicated that for the impulsivity risk and aggression factor, participants with diffused ideological identities had higher scores than all other groups, while those with achieved ideological identities had the lowest scores. Similarly, for the substance abuse and addiction factor, participants with diffused ideological identities had higher scores than all other groups, and those with achieved ideological identities had the lowest scores. A similar pattern was observed in the pairwise comparison for interpersonal status. For the impulsivity risk and aggression factor, participants with diffused interpersonal identities also had higher scores than all other groups, while those with achieved interpersonal identities had the lowest scores. Likewise, for the substance abuse and addiction factor, participants with diffused interpersonal identities had higher scores than all other groups, and those with achieved interpersonal identities had the lowest scores.

Gender, ideological and interpersonal identity effects on social media addiction

A second MANOVA was conducted to explore the effects of gender, ideological identity, and interpersonal identity on social media addiction (SMAS-SF). Table 3 presents the main effects of interpersonal status for the

Table 2. Main effects of gender, ideological and interpersonal status (EOMEIS-2) on externalizing problems (ESI-100)

	<i>n</i>	Impulsivity risk aggression					Substance abuse addiction				
		<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	η²	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	η²
Gender											
Men	86	3.76	2.03	11.63	<.01	.06	5.05	5.15	7.88	<.01	.044
Women	89	2.85	1.43				3.12	3.85			
Ideological status											
Diffusion	25	4.33	2.69	4.10	<.01	.07	6.49	5.45	3.6	.014	.06
Foreclosure	18	3.06	1.55				4.80	4.99			
Moratorium	115	3.22	1.61				3.69	4.44			
Achievement	17	2.53	.97				2.33	2.68			
Interpersonal status											
Diffusion	25	4.48	2.89	4.90	<.01	.08	6.55	6.12	3.53	.016	.06
Foreclosure	13	3.17	1.47				3.56	4.44			
Moratorium	120	3.16	1.47				3.86	4.38			
Achievement	17	2.64	1.53				2.27	2.35			

SMAS-SF subdimensions, virtual tolerance, and virtual information. The MANOVA indicated that interpersonal identity had a significant effect on the SMAS-SF subcategories (Wilks' $\Lambda = .85$, $F = 2.46$, $p = .009$). Gender and ideological identity were also tested, but neither had a significant effect on the SMAS-SF (ideological: $F = 1.36$, $p = .17$; gender: $F = 2.09$, $p = .08$).

The pairwise comparison for interpersonal status indicated that, for the virtual tolerance subdimension, participants with diffused interpersonal identities had lower scores than all other groups, but the only significant difference was with the interpersonal moratorium group. The same differences were observed for the virtual information subdimension; again, participants with diffused interpersonal identities had lower scores than all other groups, but the only significant difference was with the interpersonal moratorium group.

Discussion

Identity plays a crucial role in adolescent development, serving as a central process that enhances self-awareness during the transition to adulthood (Eriksson et al., 2020) and achieving psychological adjustment (Alzahrani & Bach, 2014; Eriksson et al., 2020). This is why it is important to study the process of identity in adolescents and young people. The main aim of the present study was to explore the effect of ideological and interpersonal identity, as well as gender, on externalizing problems and social media addiction. More specifically, we aim to analyze how young people in different groups of ideological and interpersonal identities show statistically significant differences in externalizing problems and social media addiction.

In relation to externalizing problems, as expected, the different identity groups of participants for both ideological and interpersonal identities showed statistically significant differences on ESI-100's impulsivity risk and aggression and substance abuse factors. Participants with diffused identities scored higher than the other groups in both factors, while those

with achieved identities scored lower. These results are consistent with previous studies showing that personality development plays a central role in the presence and expression of externalizing and effort control problems (Coccaro, 2012; Hokm Abadi et al., 2018; Krueger et al., 2007; Rosenkranz et al., 2023). The relationship between substance abuse and identity and personality is also well documented and replicated (Hokm Abadi et al., 2018; Rosenkranz et al., 2023). The results of this study also show a general tendency: as participants' identities (ideological or interpersonal) evolve from a status of diffusion to a more stable and coherent status of identity achievement, they display fewer externalizing problems. As far as social media addiction is concerned, interestingly, no significant results were found for the different ideological identity statuses. Nevertheless, participants with different interpersonal identity statuses showed significant differences in social media addiction problems.

Specifically, participants with an interpersonal moratorium identity had significantly higher scores than those with a diffused interpersonal identity on the virtual tolerance and virtual information subdimensions. However, all types of identity statuses, except for diffused identity, showed higher scores in virtual tolerance and information. This finding could reflect the different needs and processes being carried out in the various phases of identity construction. Participants with a diffused identity did not have a clear commitment to a life project and were not actively trying to construct one. Therefore, they may not be using social media for that purpose as much as the other identity groups who are actively trying to construct their identity (Adams et al., 1989). In the other two subcategories (virtual communication and virtual problem), although the results weren't significant, participants with an achieved interpersonal identity had lower scores than all the other groups. These results support the notion that better identity formation is associated with better social media addiction scores in participants. The non-significance of these results might be due to the specific actions that

Table 3. Main effects of interpersonal status (ESI-100) on the SMAS-SF

Interpersonal status	<i>n</i>	Virtual tolerance		<i>F/p/η</i> ²	Virtual information		<i>F/p/η</i> ²
		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	
Diffusion	25	12.72	4.48	2.84/.03/.04	15.19	5.75	2.99/.03/.05
Foreclosure	13	13.07	3.25		16.97	3.96	
Moratorium	120	14.87	3.96		17.98	4.02	
Achievement	17	13.52	3.24		17.05	3.99	

these two subscales are measuring. Regarding gender and social media addiction, no significant results were found. However, in all categories, women had higher scores than men. This is probably because this effect should be investigated in a larger sample, and because the social media addiction scale is not specific enough to demonstrate and distinguish between men and women. Therefore, our results are not consistent with previous studies indicating that men tend to use internet games more than women, and women tend to use social media more than men (Booker et al., 2018; Su et al., 2020). Regarding ideological versus interpersonal identity, it should be noted that ideological and interpersonal aspects of identity may not measure the same construct (Adams et al., 1989).

Consistent with many other studies (Alzahrani & Bach, 2014; Kuss & Griffiths, 2017; Leménager et al., 2018), the results show that better interpersonal (not ideological) identity construction leads to better and more controlled use of social media among young adults. It stands out that participants with a moratorium identity score higher or very close on all dimensions of social media addiction compared to participants with diffused or achieved identity statuses. This can be explained by considering the identity construction phase in which the participants forming the moratorium group are in. As mentioned by Adams et al. (1989, p.10), the moratorium category “includes youths who are currently experiencing the identity consciousness of an identity crisis and are actively exploring but have not yet arrived at their own self-defined commitments.” That is, their exploration to construct and define their identities is now more conscious and active compared to participants with a diffused or foreclosure identity, which might lead them to use social media more. Once they have experienced the psychological moratorium and have made explorations, they identify personal and unique commitments, thus the scores on social media addiction are lower in participants with an achieved identity. Nevertheless, participants with an achieved identity, in general, showed high scores on social media addiction. This might occur because, in the long process of constructing their identities, they have used social media extensively, making it a central and integrated part of their social and psychological functioning (Kircaburun et al., 2020; Lenhart, 2015; Odgers & Jensen, 2020).

As far as gender differences are concerned, men showed significantly more externalizing behaviors in both impulsivity risk aggression and substance abuse and addiction than women, which is an anticipated and well-replicated result in previous studies (Keyes et al., 2015; Lau et al., 2021). In the identity-building and socializing

process, men express more externalizing behaviors than women, which may be attributed to gender differences in identity development.

This study has several limitations. First, the sample size is small, and data collection was conducted only in Athens, Greece, so the findings should be generalized with caution to other cultures or countries. Additionally, the measurements were conducted in English, and the participants used English as a second language, although all of them are university-level English speakers and can read and understand the statements of the items. Second, the age range of participants was small, and it would be interesting to compare their results with those of a wider age range to allow for comparisons of the identity process across younger and older age groups. It would also be beneficial to use longitudinal data instead of cross-sectional data. Third, the students who participated were from a private university with mainly medium-high socioeconomic status, which might exclude certain socioeconomic groups from participating. Fourth, the results may be affected by social desirability, especially in the self-reports of externalizing behaviors. Finally, the role that culture, beliefs, and attitudes play in externalizing behavior should be considered. The interpretation of externalizing behavior could differ between adults and adolescents. For example, in this context, studies on gender violence show that many young people even justify the use of aggression to resolve conflicts, and violence is often a normalized practice, a normal part of adolescent relationships (Galende et al., 2020).

Despite its limitations, the present study sheds light in the identity construction in both interpersonal and ideological level and how it is connected to externalizing behaviors and social media use. The findings can be used to strengthen the current scientific knowledge on the area of identity development and externalizing behaviors and help to better understand the underlying mechanism of vast array of behaviors, symptoms and conditions. The results of the study, may also be used on clinical interventions on young adults, to form educational programs and interventions to improve the academic achievement, which will be gender specific. Also, these findings may contribute to the design of prevention programs for different disorders or behavior problems. The findings of this study highlight the significant relationship between social media addiction, identity development, and externalizing behaviors in young individuals. These results emphasize the psychological dimensions of excessive social media use, offering deeper insights into how it overlaps with personal and social development. By advancing our understanding of

these dynamics, this research contributes to the existing literature on the psychological impacts of social media addiction.

Despite its limitations, the present study sheds light on identity construction at both the interpersonal and ideological levels and how it is connected to externalizing behaviors and social media use. The findings can strengthen the current scientific knowledge in the area of identity development and externalizing behaviors, helping to better understand the underlying mechanisms of a vast array of behaviors, symptoms, and conditions. The results of the study may also be used in clinical interventions for young adults, to form educational programs and interventions to improve academic achievement, which will be gender specific. Additionally, these findings may contribute to the design of prevention programs for different disorders or behavior problems. The findings of this study highlight the significant relationship between social media addiction, identity development, and externalizing behaviors in young individuals. These results emphasize the psychological dimensions of excessive social media use, offering deeper insights into how it overlaps with personal and social development. By advancing our understanding of these dynamics, this research...

Conflicts of interest

The authors have no conflicts of interest to declare.

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