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The influence of social media on mediating gender identity and psychosocial values in the student population of Kazakhstan

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ABSTRACT

With the increasing influence of social media on identity formation, especially among youth, understanding its impact on psychosocial development is essential. This study investigated how social media mediates gender identity and psychosocial values among 437 youths (mean age = 21.9), comprising 27.1% males, 69.4% females, 2.9% non-binary/others, and 0.6% undisclosed. Participants completed a Likert-scale questionnaire, and data were analyzed using IBM SPSS 22 and AMOS 26.0. Structural equation modeling supported the study's hypotheses, with four fit indices rated as good and one as fair. Although some indices (chi-square, significance probability, RMSEA) did not meet ideal benchmarks, the overall model fit was acceptable. All psychosocial variables; peer influence, self-esteem, social anxiety, and social support; were positively and significantly associated with gender identity. Peer influence emerged as the strongest predictor, followed by social media use, self-esteem, and social support. Social media also showed a significant moderating effect, enhancing the influence of these psychosocial variables on gender identity. These findings suggest that social media plays a powerful role in shaping gender identity, either amplifying or moderating other influences. The study calls for attention from educators, mental health professionals, and policymakers, and recommends further research using longitudinal and culturally diverse data.

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Introduction

As 2030 approaches, achieving Goal 5 of the Sustainable Development Goals (SDGs), which aims to promote gender equality, is becoming increasingly challenging due to high levels of social stereotypes and cultural factors, including social norms, social expectations, family beliefs, and values. Interestingly, the campaign for gender equality mainly focuses on the emancipation of women and girls, without adequately addressing individual and societal perceptions of gender. Consequently, the increasing awareness of gender diversity and the prominence of human rights campaigns have continued to influence how an individual's gender is perceived. Moon et al. (2016) noted that building a sense of personal identity and resolving gender disparity, stemming from increased concerns over social judgment, remains a fundamental struggle, especially among young people. While gender identity is central to the psychosocial development of adolescents, youths are predominantly affected and concerned about their gender, ethnic, collective, and social identity, as these aspects define both individuals and societal relations.

Thus, Erickson (1982) alludes to the establishment of a sense of personal identity in young people as fundamental to their overall well-being. Failure to form an identity can result in social role confusion, social isolation, and manifest as increased psychosocio-emotional risks such as antisocial behaviours, gender-based violence, depression, alcoholism, drug abuse, internalized and externalized behaviour

problems, and suicide (Burke et al., 2010; Carney, 2000; Lawrence, 2021; Woodward & Fergusson, 2000). These behaviours detrimentally affect the cognitive, emotional, and social developmental of young individuals, as well as the collective well-being of society. They have been linked to several psychosocial factors including self-esteem, self-efficacy, social media use, social anxiety, peer pressure, social support, and self-consciousness (Bussey, 2011; Carver et al., 2003; Lawrence et al., 2023; Odo et al., 2015). In the same vein, this study examined the relationships between peer influence, self-esteem, social anxiety, social media, social support, and gender identity.

Literature

Concept of gender identity

Gender identity has been used interchangeably with sexual orientation, gender role, gender schemas, and gender preference. It is widely described as a person's deep feeling of an inherent sense of being a male, female, or an alternative gender (e.g. genderqueer, gender non-conforming, boy girl), irrespective of their assigned sex at birth or to a person's primary or secondary sex characteristics (Barbir et al., 2017). Similarly, Bauer (2017) perceives gender identity as an individual's self-understanding of being male, female, or otherwise, without positing any necessary connection to the initial sexual assignment. Wood and Eagly (2015) defined gender identity as a set of cognitions encompassing a person's appraisals of compatibility with, and motivation to fit in with, a gender collective. In line with Wood and Eagly's definition, this study considered gender identity not as sexual orientation (sexual identity) but as a psychological and social construct of thoughts and feelings that one has about one's gender category and a fundamental sense of acceptance of, and belonging to one's gender (Ashley, 2023; Carver et al., 2003; Zitelny et al., 2022). That is, the individual's preferences for and engagement in multiple socially-informed tasks in relation to a preferred gender group. Gender identity is often shaped by an individual's social connections. Among youths, in particular, social media plays a significant role in influencing their sense of gender identity.

Social media stands out as a key element deeply intertwined in the daily routines of young individuals. It undoubtedly offers avenues for social interaction, shaping self-image regarding gender identity, and crafting strategic profiles to align with societal norms and expectations (Seidman, 2014; Zeitzoff, 2018). As per uses and gratifications theories, individuals use social media for various purposes, driven by their distinct needs (Katz et al., 1973; Sundar & Limperos, 2013). Similarly, youths may engage in social media use for reasons such as identity formation and exploration, information sharing or seeking, self-expression, entertainment, establishing social connections, pursuing social status, marketing, and monitoring activities (Sundar & Limperos, 2013; Vannucci & Ohannessian, 2019). Hence, to advance gender equality towards a healthy society that will be free of all forms of discrimination and promote general well-being, the mediating power of social media on gender identity requires research attention. It has been assumed that social media may function as an explanatory intermediary mechanism of gender identity in youths, linking to some psychosocial factors. It is on this premise that this study was conducted to examine the mediating effect of social media on the relationship between gender identity and psychosocial factors including self-esteem, social anxiety, peer pressure, and social support.

Psychosocial factors

Self-esteem is commonly understood as an individuals' perception of their own worth and value, which can vary from low to high (Rosenberg, 1965). In essence, self-esteem is the perception an individual forms regarding their own value, influenced by emotions like success, disappointment, satisfaction, embarrassment, and their beliefs regarding their role or performance in various life situations (Lawrence et al., 2023). The assessment of self-esteem can create either a positive or negative psychological climate. The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is frequently used to gauge self-esteem, primarily capturing an individuals' overall feelings of self-acceptance (Rosenberg et al., 1995). Over the past 40 years, self-esteem has garnered significant attention in social and psychological research, with high self-esteem generally associated with positive attitudes and beneficial outcomes, while low self-esteem is often linked to personal, emotional, and social difficulties (Stets & Burke, 2014). In a related study,

Westaway et al. (2015) discovered a correlation between high self-esteem and intellectual abilities, physical appearance, and social competence. Previous research on the relationship between self-esteem and gender identity has predominantly focused on comparing the self-esteem levels of males and females as either high or low, with females typically found to have lower self-esteem than males (Lim, 2009; McKay et al., 2014; Zuckerman et al., 2016), although Bhattacharya and Shukla (2014) found females to have higher self-esteem than males. However, few studies have explored the connection between self-esteem and gender identity concerning acceptance, emotions, and a sense of belonging to a preferred gender group. For instance, van den Brink et al. (2020) discovered that acceptance of gender identity is linked to higher levels of self-esteem.

Social anxiety (SA) is another psychological factor that can influence the gender identity of youths. SA is defined as persistent fears of being negatively evaluated in social situations due to one's behaviour (American Psychiatric Association, 2013). It is also characterised by a fear of social situations, driven by the fear of rejection and humiliation (Cathey et al., 2014). Social discrimination is considered one of the mechanisms through which individuals experience social anxiety, often leading to discomfort in social settings. Research examining the relationship between social anxiety and gender identity are limited, though a few pertinent studies have found a significant association between social anxiety and gender differences (Asher et al., 2017), with females more likely to exhibit social anxiety symptoms than males (APA, 2013; Asher et al., 2017). Individuals with social anxiety have reported lower levels of psychosocial functioning (Xu et al., 2012). Howell and Weeks (2017) found that highly socially anxious women perceived their gender identity as less feminine and more masculine, predominantly in social tasks. Another study noted that gender role identification has a significant effect on social anxiety (Barnett et al., 2021).

In this study, peer influence is considered another social factor that can shape the gender identity of young people. The role of peer influence in adolescent and youth socialisation and identity formation has been well-documented in research endeavours, often with negative consequences (Brechwald & Prinstein, 2011; Quimby, 2015; Wentzel, 2014). Peer influence occurs when an individual is impacted by peers of similar age. Another scholarly perspective on peer influence is that it serves as a prominent source of socialisation (Brechwald & Prinstein, 2011; Dishion & Tipsord, 2011), with peers acting as social influencers seeking social and group approval according to Normative Social Theory (Laursen, 2018). This may stem from curiosity, desire to fit into a peer group, insecurity and pressure from friends (Zulkifly et al., 2022). Previous studies have established the significant impact of peer influence on various outcomes or endogenous variables. For example, Stevenson (2017) found a strong correlation between peer influence and the likelihood of committing another crime. Obsuth et al. (2017) revealed that peer influence can increase the risk of truancy among secondary school students. Other studies have indicated the importance of peer influence in relation to social media (Nesi et al., 2017; Sherman et al., 2016) and gender identity (Giletta et al., 2021; Kornienko et al., 2016; Quimby, 2015). Similarly, Halimi et al. (2021) revealed that peer influence is linked with gender acceptance. In other words, young individuals feel accepted by their peers when their gender norms of masculinity and femininity align. Thus, peer influence is a crucial factor that could affect gender identity.

Social support has consistently been associated with several positive constructs, including psychological well-being, resilience, high self-esteem, motivation, and quality of life (Başar et al., 2016; Trujillo et al., 2017). It is described as both tangible and intangible resources perceived to be accessible and available to an individual from significant others, friends, or family (Gorman et al., 2022; Zimet et al., 1988). Akosile et al. (2018) viewed social support as resources that help individuals reduce social, emotional, and behavioural strains, enhancing physical, emotional, and psychological health and well-being (Thoits, 2011). Given its importance, social support plays a crucial role in determining gender identity by providing the necessary help for emotional, physical, mental and social functioning. Social support is typically categorized into informational, emotional, appraisal, and instrumental categories (Guruge et al., 2015), all of which are important in gender identity formation; a lack of which could lead to gender identity confusion and social rejection (Budge et al., 2014; Kaptan et al., 2021). Although few studies have directly linked social support to gender identity, Budge et al. (2013) reported its benefits for some transgender individuals, increasing affirmative emotions and feelings of well-being. Other related studies have established a significant association between social support and mental health (Ellrich, 2016; Lawrence, 2021;

Lee & Yun, 2014; Moody & Smith, 2013). Collectively, these studies indicate that social support, or its absence, may directly or indirectly influence the gender identity of young individuals.

Theoretical lens

To precisely contextualise this study, Social Cognitive Theory (SCT) was adopted as the theoretical framework. This choice was made due to its ability to integrate social, psychological and technological factors in explaining gender identity development. As proposed by Bandura (1986), SCT suggests that individuals construct gender identity based on a broad network of social influences such as social media, parents, peers, and other social systems (Bussey, 2011). SCT addresses various human attributes that help understand the social and psychological environments, including affective, cognitive, motivational, and social processes throughout the life course. The theory emphasizes observational learning, allowing people to acquire knowledge and skills through modelling influences without experiencing the potentially risky process of learning through response consequences.

SCT emphasizes that individuals contribute to social changes through self-development, shaping gender relationships through their agentic actions within interrelated systems of influence (Bussey & Bandura, 1999). This means that people are not merely products of the social and psychological systems they encounter but actively contribute to their own gender conception transformation and societal change. Bussey (2011) argues that gender roles change through individuals' actions, which impact the social subsystems influencing the development and transformation of gender identity. In light of the above, this study hypothesised that youths' gender identity could be influenced by factors such as self-esteem, perceived social support, peer influence, social anxiety, and social media.

Current study

The driving force behind this study originates from the broader push for gender equality, with a focus on empowering women and girls as its central objective. However, it neglects to address how individuals and society conceptualise gender identity in relation to sociological and psychological mechanisms. This neglect may hinder progress toward gender equality and contribute to increased rates of gender-based violence, depression, mental health problems, internalized and externalized behavioural issues, and suicide. Given that the current generation is digitally driven and uses social media for various purposes such as identity formation, information sharing, self-expression, and entertainment, their sense of personal and gender identity is influenced by multiple factors. Social media plays a pivotal role in shaping their overall well-being and identity. Failure to achieve an identity can result in social role confusion, social isolation, alcoholism, depression, and domestic violence among other social vices (Lawrence, 2021). Unfortunately, there is a significant gap in the literature regarding the social and psychological factors that could influence the gender identity of youths with the interference of social media. Therefore, the main goal of this study is to examine the psychosocial factors (self-esteem, social anxiety, peer influence and social support) that influence the gender identity of youths, mediated by social media. Based on this, it is hypothesised that there is significant predictive association between psychosocial factors and gender identity and the mediated role of social media use of the youths. This research anticipates that the results of this study will pave the way for new research opportunities, exploring the effectiveness of psychosocial interventions in promoting the development of gender identity among young individuals and, by extension, advancing gender equality.

Method

This study employed a quantitative survey design to collect data from youths aged between 18 and 25 years. The choice of this design was influenced by the positivistic paradigm (Neuman, 2014), aiming to gather robust perspectives from participants through surveys. The goal was to understand the impact of each variable on the outcome variable.

The population consists of all university students in Astana, the capital of the Republic of Kazakhstan. Five public universities were purposively selected for the study. Participation was voluntary, and all students were given the opportunity to participate across all faculties and departments. Using the convenience sampling method, 100 students were recruited from each of the selected universities. The inclusion criteria were: (1) participants must be registered students of the university, and (2) participants must sign the informed consent forms. Those who returned the informed consent forms unsigned were excluded from the study. In total, 437 out of the 500 recruited students indicated their interest in participating in the study.

To achieve this, the study adopted a predictive design implemented through a structural equation model (SEM). The participants comprised 437 youths selected from five universities in Astana, Kazakhstan. The gender distribution was as follows: Male = 27.1%, Female = 69.4%, Non-binary/Others = 2.9%, Not Indicated = 0.6%. The convenience sampling method was used for this purpose. Convenience sampling is a non-probability sampling technique that involves selecting a sample from a readily available population (Elfil & Negida, 2017; Jagers et al., 2017).

Instruments

Data collection utilized a self-structured questionnaire comprising two sections, labelled as A and B. Section A focused on demographic information, including age, gender, and year of study, while section B addressed psychosocial factors. Details of the instruments used are specified below.

Gender identity was assessed using the Multidimensional Gender Identity Scale (MGIS) developed by Egan and Perry (2001). This scale comprises 30 items measuring four dimensions of gender identity in young individuals (Baiocco et al., 2022): Gender Typicality, Gender Contentedness, Felt Pressure for Gender Conformity, and Intergroup Bias. Each dimension consists of a different number of items aimed at capturing various aspects of gender identity.

The Technology Use Questionnaire (TUQ) by Ohannessian (2009) was employed to evaluate social media usage. This questionnaire includes contemporary social media platforms such as Discussion Boards, Google +, Facebook, Instagram, Pin Boards, Snapchat, Tumblr, and Twitter. Participants were asked to indicate their usage frequency for each platform on a scale ranging from 'never' to 'almost constantly'. While the original publication does not provide detailed psychometric properties such as internal consistency, the current study conducted a test-retest analysis to establish its reliability. A Cronbach's alpha coefficient of 0.87 was reported, indicating strong internal consistency.

General self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965), which assesses an individual's overall sense of self-worth. Five items were selected from the original 10-item scale to prevent participant fatigue. Responses were recorded on a 4-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. The validity of the scale was appropriate and the test-retest reliability using Cronbach's α coefficient of 0.88 was accounted for.

Peer influence was assessed using a scale adapted from Santor et al. (2000), which measures the perceived pressure from peers to engage in specific behaviours. The scale consists of 8 items rated on a 5-point Likert scale ranging from 'never' to 'almost always'. The scale showed a mean internal consistency (Cronbach's alpha) of 0.86.

Social anxiety symptoms were evaluated using a modified version of the Social Anxiety Symptoms (SAS) scale developed by La Greca and Lopez (1998). This scale comprises 18 items rated on a 5-point Likert scale, with higher scores indicating greater social anxiety. The Cronbach's alpha coefficient for the scale was 0.86, indicating strong reliability.

Perceived social support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS) developed by Zimet et al. (1988). This 12-item scale assesses perceived support from family, friends, and significant others on a 7-point Likert scale ranging from 'strongly disagree' to 'strongly agree'. These measures were selected to comprehensively assess the psychosocial factors influencing gender identity among youths in our study. The internal consistency of this scale was evaluated using Cronbach's alpha, yielding a coefficient of 0.84, indicating strong reliability across all 12 items.

Ethical approval statement

The research team followed the guidelines as approved by L N Gumiloyov Eurasian National University ethical committee with with ethical number FSSRECNU05-09-22 throughout the data collection process. Potential participants received a detailed informed consent document, which they had a week to consider before deciding whether to take part. Those who opted in signed and returned the form, and their responses were kept strictly confidential. Participants were informed that their data would be used exclusively for research purposes and were reminded of their right to withdraw from the study at any time without any repercussions. During a four-week data collection period, 500 questionnaires were distributed, resulting in 437 completed responses, achieving a response rate of 87.4%.

Data analysis

Descriptive statistics, including frequency counts, were utilized to determine participants' demographic characteristics. Inferential statistics, specifically Structural Equation Modelling (SEM), were employed to assess the direct predictive influence of psychosocial factors on gender identity and to determine their predictive power when moderated by social media. Each factor was regressed onto the moderating factor to estimate direct effects between measures. IBM AMOS 26.0 was used to conduct the correlation analysis. SEM is a statistical technique that evaluates the directional effects of predictive variables (latent or exogenous/independent) and observed/endogenous/dependent factors, akin to multiple regression and path analysis. SEM terminology includes model fit indices such as chi-square statistic (χ^2), comparative fit index (CFI), Tucker Lewis index (TLI), goodness-of-fit (GFI) index, adjusted goodness-of-fit (AGFI) index, and root mean square error of approximation (RMSEA). **Table 1** presents acceptable norms for these model indices.

Results

The demographic characteristics of the participants show that 118 (27.1%) were males, 303 (69.4%) were females, 13 (2.9%) were non-binary, and 3 (0.6%) did not indicate their gender category. The age distribution of the participants indicates that the majority were between 21 and 23 years old (262 participants, 60.0%), followed by those aged 18-20 years (95 participants, 21.7%), and 23-25 years (80 participants, 18.3%). The distribution by year of study reveals that 131 (30.1%) were in their first year, 87 (19.8%) were in their second year, 91 (20.9%) were in their third year, and 128 (29.2%) were in their fourth year.

The results in **Table 1** indicate that four indices were good, one was fair (adjusted goodness-of-fit), while three were poor, namely, chi-squared, sigma, and Root Mean Square Error of Approximation (RMSEA). One plausible explanation for this is that the chi-square test is susceptible to large sample sizes (more than 200) (Hair et al., 2018). This study included 437 youths. Consequently, the chi-square test, significance probability, and RMSEA value in this study did not meet these criteria for fit model. However, it was deemed acceptable as four of the criteria were tested to satisfy the specifications and one was partially satisfied.

The results in **Table 2** reveal the predictive power of the psychosocial factors. As shown in the model, the regression weight for self-esteem in predicting social media was significant but very low ($\beta=0.053$,

Table 1. Modified goodness of fit statistics model.

Goodness of fit index	Cut off value	Results obtained	Information
Absolute fit measures			
Chi-square / df	$< = 0.05$	17.260	Poor
Sig. probability	$p > 0.05$	00.00	Poor
Goodness-of-fit (GFI)	$> = 0.90$	.995	Good
Root mean square error of approx. (RMSEA)	$< = 0.08 - 0.10$	.120	Poor
Incremental fits measures			
Normed fit index (NFI)	$> = 0.90$	.995	Good
Tucker-Lewis Index (TLI)	$> = 0.90$	.925	Good
Comparative fit index (CFI)	$> = 0.90$	.995	good

Source: Authors.

Table 2. Regression and standardized weights model.

	Variables	Estimate	S.E.	C.R.	P	β	R^2
Social media	<---	Self esteem	.029	.012	2.441	.015	.053
Social media	<---	Peer influence	.613	.025	24.829	***	.556
Social media	<---	Social anxiety	.124	.015	8.527	***	.155
Social media	<---	Social support	.240	.021	11.167	***	.240
Gender identity	<---	Social media	.381	.091	4.195	***	.179
Gender identity	<---	Peer influence	.532	.097	5.507	***	.227
Gender identity	<---	Self esteem	.206	.038	5.468	***	.177
Gender identity	<---	Social support	.219	.071	3.087	.002	.104

Source: Authors.

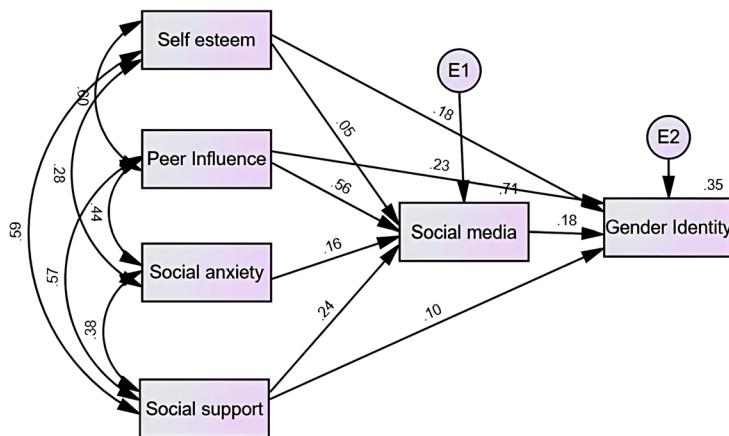


Figure 1. Path diagram for psychosocial factors of gender identity when moderated by social media use of the participants.

$p < 0.001$), while peer influence showed a significant and high effect on social media ($\beta = 0.556, p < 0.05$). Additionally, social anxiety ($\beta = 0.155, p < 0.001$) and social support ($\beta = 0.240, p < 0.001$) were significant predictors of social media use. Similarly, the prediction of the factors on gender identity was also significant: social media ($\beta = 0.179, p < 0.001$), peer influence ($\beta = 0.227, p < 0.001$), self-esteem ($\beta = 0.177, p < 0.001$), and social support ($\beta = 0.104, p < 0.05$). Furthermore, the table illustrates the collective contribution of all the factors to both social media use and gender identity. It was estimated that the predictors of social media accounted for 70.5 percent of its variance ($R^2 = 0.705$), while gender identity was 27.9 percent ($R^2 = 0.279$). In other words, factors outside the model explained 29.5 percent of the variation in social media use and 72.1 percent of the variation in gender identity.

In describing the predictive association of all the psychosocial factors with gender identity when mediated by social media use, Figure 1 illustrates that all psychosocial factors exhibit a positive and statistically significant relationship with social media. Peer influence demonstrates the strongest relationship ($r = 0.56; p < 0.05$), followed by social support ($r = 0.24; p < 0.05$), social anxiety ($r = 0.14; p < 0.05$), and self-esteem ($r = 0.05; p < 0.05$). However, considering the moderating role of social media in predicting gender identity, a positive and significant relationship accounted for 18 percent. This suggests that the gender identity of youths depends on their use of social media.

Discussion

Understanding the predictive power of psychological and social factors on gender identity is crucial for achieving gender equality, especially when considering the influence of social media. The findings of this study confirm that social and psychological factors play a role in predicting the gender identity of youths (the regression weight for self-esteem in predicting social media was significant but very low, while peer influence showed a significant and high effect on social media, social anxiety and social support were significant predictors of social media use, similarly, the prediction of the factors on gender identity was also significant: social media, peer influence, self-esteem, and social support). This aligns with the

theoretical framework of social cognitive theory proposed by Bandura (Bussey & Bandura, 1999), which was employed in this study. Specifically, peer influence was found to make the most significant prediction of gender identity. This suggests that young individuals' sense of gender identity may be primarily influenced by their peers. One plausible explanation for this is the stage of development of the participants, which is often preoccupied with socialisation, acceptance, and identity formation. This finding is consistent with previous research indicating that adolescent and youth identity is influenced by peer relationships (Brechwald & Prinstein, 2011; Quimby, 2015; Wentzel, 2014). In essence, young individuals are often curious and feel pressure to seek approval from peers or significant others, a process crucial in gender identity development (Dishion & Tipsord, 2011; Laursen, 2018; Zulkifly et al., 2022). The study by Halimi et al. (2021) further strengthens the link between peer influence and gender acceptance.

Furthermore, the results indicated that social media use and self-esteem made equal contributions to predicting gender identity. This implies that both social media usage and the self-esteem of participants are significant determinants of youths' gender identity. This outcome is not surprising, as young individuals are frequently engaged in one or more social media platforms for various purposes, including learning, socialisation, self-expression, entertainment, religious activities, and information sharing (Sundar & Limperos, 2013; Vannucci et al. 2019). These results support the findings of Flores and Antunes (2023), who investigated the relationships between digital media platforms and gender identity among young adults in Portugal. Although their study did not find any significant differences in social media usage among different genders, it can be deduced from the outcome of the study that gender identity can be freely expressed in digital spaces, including social media. Another piece of evidence provided by this study is the significant contribution of self-esteem to gender identity. Although only a limited number of studies have validated this correlation, other research indicates that there is variability in self-esteem levels between males and females. Generally, females tend to demonstrate lower self-esteem compared to males (Lim, 2009; McKay et al., 2014; Zuckerman et al., 2016). However, Bhattacharya and Shukla (2014) discovered that females exhibited higher self-esteem than males. In a cross-sectional study conducted by van den Brink et al. (2020) on the relationships between transgender congruence, gender identity rumination, and self-esteem among 323 transgender and gender-nonconforming individuals, it was discovered that acceptance of gender identity was linked to higher levels of self-esteem.

As revealed in the results, social support directly predicted the gender identity of youths. Social support plays an important role in gender identity development, as it serves, among other things, as a mechanism to access emotional, physical, and social resources needed to achieve gender identity acceptance, gender equality and to eliminate social rejection and gender-based violence. This finding lends credence to prior studies on the link between social support and gender identity (Budge et al., 2014; Kaptan et al., 2021). Other studies that can be used to substantiate this present outcome include Ansara and Hegarty (2014), Coulter and Rankin (2020), Gorman et al. (2020), and Rood et al. (2017), which highlight that social support can serve as a coping strategy to mitigate the struggles and stresses related to gender identity expression among transgender individuals. It was further asserted that communities could provide social support to bolster people with different gender constellations of identities (Coulter & Rankin, 2020).

Lastly, novel revelation from this study is that while peer influence, self- esteem, social anxiety and social support contribute to the gender identity of youth, the result of the moderating effect of social media shows that there was significant predictive contribution of peer influence, self- esteem, social anxiety and social support on gender identity. This denotes that the social media use of youths is a strong factor that can halt the influence of any other factors in predicting their gender identity. In other words, this finding puts forward the notion that despite the influence of peer influence, self- esteem, social anxiety and social support, the role of social media is crucial in determining gender identity, thus gender equality is sensitive to social media. These findings confirm a new empirical model of the relationship between psychosocial factors and gender identity, mediated by social media. The model, verified and justified through SEM analysis, was found to be both fit and significant. This evidence is consistent with previous studies that have identified social media as an influencer of gender identity (Cannito et al., 2021; Cerqueira et al., 2017; Cousineau, 2021; Ging, 2019; Semenzin, 2022). Similarly, it was found that social media platforms offer tools for the dissemination of misogynistic ideals and ideologies, contributing to toxic understandings of masculinity, femininity, and gender (Simões et al., 2021).

To further strengthen this finding, a quantitative exploration of Portuguese young adults' use of M-Apps from a gender perspective by Antunes et al. (2022) revealed that gender roles of young Portuguese individuals are reinforced by their engagement with social media.

Conclusion

The findings of this study further support the Social Cognitive Theory of gender identity, which integrates social, psychological, and technological factors in explaining gender identity development. Beyond the theoretical justification that social and psychological mechanisms contribute to individuals' gender identity, this study has highlighted the positive predictive power of all the psychosocial factors considered, with particular emphasis on the mediating role of social media. Therefore, it can be concluded that the study's hypothesis, which posited that youths' gender identity could be influenced by factors such as self-esteem, perceived social support, peer influence, and social anxiety, with the mediation of social media, is valid. Therefore, it is reasonable that in order to attain gender equality as specified in SDG target 5, it is essential to focus on factors such as self-esteem, perceived social support, peer influence, and social anxiety, while also taking into account the impact of social media. The implication of this is that campaigns for gender equality should place special emphasis on psychosocial factors while utilizing social media as a tool to promote gender identity expression among the younger generation.

Limitations of the study and suggestions for future studies

Acknowledgment of limitations is warranted for this study. Firstly, the adoption of a quantitative survey design limits the depth of understanding of participants and restricts the ability to draw causal inferences. Future studies may benefit from employing mixed-method approaches to provide a more comprehensive understanding of the research topic, allowing for both qualitative and quantitative data to be integrated. Secondly, although this study examined five psychological variables concerning gender identity, it's crucial to acknowledge the potential impact of various other factors, including family values, culture, religion, resilience, and personality traits, which were not investigated. Future research should consider incorporating a broader range of variables to capture the complexity of gender identity formation. Thirdly, gender differences were not specifically examined in relation to gender identity in this study. Considering the potential differences on how gender identity is experienced and expressed among different genders could provide valuable insights. Future studies should explore gender differences to gain a more detailed understanding of gender identity development. Given these limitations, caution should be exercised when generalizing the findings of this study. Longitudinal research studies or quasi-experimental designs are recommended to further investigate the effectiveness of psychosocial interventions on gender identity among youths.

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Bakhyt S. Tusupbekova: conceptualization. Mambetalina S. Aliya: organisation and structure, and writing—original draft preparation. Nuradinov Almat Sabitovich: formal analysis, resources, and supervision. Lawrence C. Kehinde: methodology, investigation, language editing and corresponding author. Ilieva Snezhana Evlogieva and Bakhyt S. Tusupbekova: data collection. All authors have read and approved the final work.

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Data availability statement

The data used in this study is not publicly accessible, but the author can provide it upon request, subject to reasonable conditions.

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