

Facebook Addiction and Its Associations with Active and Passive Use Patterns, Facebook Use Intensity, and Depressive Symptoms among Algerian Adolescents.

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Received: 2026-02-10 | Accepted: 2026-06-28 | Published: 2026-07-22

Abstract

Background: This study aimed to examine the relationships between Facebook addiction, active and passive Facebook use, Facebook intensity, and depressive symptoms among Algerian adolescents. It also sought to investigate the indirect association between Facebook addiction and depressive symptoms through Facebook intensity and passive Facebook use.

Methods: A descriptive correlational design was employed, involving a sample of 314 male and female adolescents recruited from middle and secondary schools in Sidi Bel Abbès, Algeria. Data were collected using the Bergen Facebook Addiction Scale (BFAS), the Facebook Intensity Scale (FIS), the Passive and Active Use Measure (PAUM), and the Center for Epidemiologic Studies Depression Scale (CES-D). Data were analysed using correlation coefficients, between-group comparisons, and path analysis.

Results: The findings revealed significant positive correlations between Facebook addiction and Facebook intensity ($r = .806, p < .001$), passive Facebook use ($r = .237, p < .001$), and depressive symptoms ($r = .160, p = .004$). Passive Facebook use was also significantly and positively associated with depressive symptoms ($r = .210, p < .001$), whereas active Facebook use showed no statistically significant association with depressive symptoms ($r = -.044, p > .05$). Furthermore, statistically significant differences were observed between middle and late adolescents in Facebook addiction, Facebook intensity, passive Facebook use, and depressive symptoms, with higher mean scores among late adolescents. Path analysis also revealed a statistically significant overall indirect association between Facebook addiction and depressive symptoms through Facebook intensity and passive Facebook use ($B = 0.049, 95\% \text{ CI } [0.020, 0.080], p = .001$).

Conclusion: These findings highlight the importance of distinguishing between Facebook intensity and active and passive patterns of Facebook use when examining the relationship between Facebook engagement and adolescent mental health. They also suggest that the association between Facebook addiction and depressive symptoms may involve indirect pathways through Facebook intensity and passive Facebook use. However, given the cross-sectional correlational design of the study, these findings should not be interpreted as evidence of causal relationships between the variables.

Keywords: Facebook addiction; active Facebook use; passive Facebook use; Facebook intensity; depressive symptoms; adolescents; Algeria.

1. Introduction

The use of social networking sites has become an integral part of adolescents' everyday social environment. However, the psychological consequences of such use do not appear to be determined simply by having an account on a social networking platform or by the overall frequency of use. Rather, they may vary according to the nature of the behaviours individuals engage in while using these platforms. The distinction between active use, which involves content creation and direct interaction with others, and passive use, which involves browsing, viewing, and reading others' content without direct interaction, has become an important approach in research examining the relationship between social networking use and mental health (Frison & Eggermont, 2016; Godard & Holtzman, 2024).

Previous studies have shown that these patterns are not necessarily associated with psychological outcomes in the same way. In a large-scale study of adolescents, Frison and Eggermont (2016) distinguished between several forms of Facebook use and found that the associations between Facebook use and depressed mood varied according to usage patterns, gender, and perceived social support. A subsequent longitudinal study further demonstrated that the relationships between loneliness, Facebook use patterns, and depressed mood become more apparent when Facebook use is conceptualised as a set of distinct behaviours rather than as a single variable (Frison & Eggermont, 2020).

Passive Facebook use has attracted particular attention because of its nature, which may place users in a position of continuously monitoring content produced by others without engaging in direct social interaction. An experimental and longitudinal study found that passive Facebook use was associated with reduced affective well-being, highlighting social comparison and envy as potential mechanisms underlying this relationship (Verduyn et al., 2015). Nevertheless, the evidence is not entirely consistent. A recent meta-analysis encompassing 141 studies and approximately 145,000 participants indicated that most associations between active or passive social media use and mental health indicators were small or negligible. The findings also highlighted the importance of contextual factors, age, and the type of use in explaining variations across studies (Godard & Holtzman, 2024).

Scientific interest has also extended beyond the frequency of Facebook use to include problematic or addictive use. Andreassen et al. (2012) developed the Bergen Facebook Addiction Scale based on indicators derived from the core components of addictive behaviour: salience, mood modification, tolerance, withdrawal, conflict, and relapse. It is important to distinguish between Facebook intensity and Facebook addiction, as frequent or intensive use does not necessarily indicate an addictive pattern. Rather, addictive use represents a more complex behavioural pattern than simply spending more time on the platform or using it more frequently.

Several studies have supported associations between problematic Facebook use and depressive symptoms, although the direction of these relationships and the mechanisms underlying them remain subjects of debate. In a three-month longitudinal study, Brailovskaia and Margraf (2022) found an association between depressive symptoms and Facebook addiction. However, passive Facebook use was not significantly associated with Facebook addiction at follow-up, whereas active use emerged as a correlate of Facebook addiction. These findings highlight the importance of avoiding the assumption that active and passive Facebook use always have similar psychological implications and underscore the need to examine these relationships within specific population contexts.

This issue is particularly relevant during adolescence, a developmental period characterised by rapid social and emotional changes, during which peer acceptance, social comparison, and identity formation become increasingly important. Research focusing on adolescents indicates that depressive symptoms are associated with a broad range of psychological and social risk factors. Consequently, interpreting any association between social networking use and depressive symptoms requires caution, and such

relationships should not be reduced to a single explanatory factor (Wahid et al., 2021; Shorey et al., 2022).

Despite the growing body of research on social networking use, an important proportion of the literature combines different usage patterns into a single indicator, focuses exclusively on active or passive use, or examines addiction and depressive symptoms without integrating Facebook intensity and behavioural patterns within a single analytical model. Furthermore, the available evidence remains inconsistent. While some studies have identified associations between passive use and adverse psychological indicators, others have reported weak or non-significant relationships. Similarly, findings concerning active Facebook use have also varied across studies (Frison & Eggermont, 2016; Brailovskaia & Margraf, 2022; Godard & Holtzman, 2024).

Against this background, there is a need to examine these variables within the context of Algerian adolescents, distinguishing between active and passive Facebook use rather than reducing Facebook engagement to a single indicator. Accordingly, the present study aims to investigate the relationships between Facebook addiction, Facebook intensity, active and passive Facebook use, and depressive symptoms. It also seeks to examine the mediating roles of Facebook intensity and passive Facebook use in the association between Facebook addiction and depressive symptoms.

Research Questions

- What are the nature and patterns of the correlations between Facebook addiction, Facebook intensity, active and passive Facebook use, and depressive symptoms among adolescents?
- Do Facebook intensity, passive Facebook use, and Facebook addiction differ according to stage of adolescence?
- Do Facebook intensity and passive Facebook use contribute to explaining the association between Facebook addiction and depressive symptoms?
- Does active Facebook use represent a pathway associated with depressive symptoms among the participants?

2. Materials and Methods

2.1. Study Sample

The study was conducted during the 2022–2023 academic year among adolescents enrolled in middle and secondary schools in Sidi Bel Abbès, Algeria. A purposive sampling approach was adopted, with participants recruited from four middle schools and five secondary schools. The final sample consisted of 314 adolescents aged between 11 and 18 years. For analytical purposes, participants were classified into two age groups representing middle adolescence (11–14 years) and late adolescence (15–18 years).

2.2. Study Instruments

2.2.1. Bergen Facebook Addiction Scale (BFAS)

The Bergen Facebook Addiction Scale (BFAS), developed by Andreassen et al. (2012), was used to assess indicators of addictive Facebook use. The scale is based on six core components of addictive behaviour: salience, tolerance, mood modification, relapse, withdrawal, and conflict.

2.2.2. Facebook Intensity Scale (FIS)

Facebook intensity was assessed using the Facebook Intensity Scale (FIS), developed by Ellison et al. (2007). The scale consists of eight items, six of which assess the behavioural aspects of Facebook use, such as the extent to which Facebook is integrated into an individual's daily activities. The remaining two items assess the estimated time spent on Facebook and the number of friends on the platform.

Responses were structured using a five-point scale ranging from 1 to 5. The six attitudinal items range from "strongly disagree" to "strongly agree", whereas the time categories range from less than 10 minutes to more than 3 hours, and the number-of-friends categories range from fewer than 50 to more than

300 friends (Lee et al., 2023).

2.2.3. Passive and Active Facebook Use Measure (PAUM)

The Passive and Active Facebook Use Measure (PAUM) was used to assess the frequency of active and passive Facebook use, based on the measure employed in the study by Brailovskaia and Margraf (2022). The scale consists of 13 items, rated on a five-point Likert scale ranging from 1 = Never to 5 = Very frequently.

Items 1, 2, 3, 5, 6, 7, 9, 10, and 12 assess active Facebook use and include activities such as posting status updates and photographs, commenting on other users' posts, participating in discussion groups, sending private messages, and playing games.

In contrast, items 4, 8, 11, and 13 assess passive Facebook use, primarily involving browsing and monitoring other users' status updates, photographs, and profiles, as well as reading content without direct interaction. Responses to the items were aggregated separately to obtain a composite active-use score and a composite passive-use score, allowing each usage pattern to be examined as an independent dimension.

2.2.4. Center for Epidemiologic Studies Depression Scale (CES-D)

Depressive symptoms were assessed using the Center for Epidemiologic Studies Depression Scale (CES-D), developed by Radloff (1977), using the Arabic version translated by Abdel-Khalek (2003). The scale consists of 20 items, with responses rated on a four-point scale ranging from 0 = Not at all to 3 = Most or all of the time.

Based on Rahal (2024), which examined the preliminary psychometric properties of the measurement instruments in the Algerian context, the instruments underwent a pilot evaluation involving 30 adolescents and were reviewed by 17 expert judges. Internal consistency and item discrimination were also examined. The study yielded Cronbach's alpha coefficients of 0.855 for the Bergen Facebook Addiction Scale (BFAS), 0.999 for the Facebook Intensity Scale (FIS), 0.936 for the Passive and Active Facebook Use Measure (PAUM), and 0.811 for the Center for Epidemiologic Studies Depression Scale (CES-D).

2.3. Statistical Analysis

Statistical analyses were conducted to examine the relationships among the study variables and assess differences according to gender and age group, as well as to investigate the direct and indirect pathways within the proposed model.

The analyses included the calculation of correlation coefficients between the study variables and the use of independent-samples t-tests to examine differences according to gender and stage of adolescence. Path analysis was also employed to estimate the direct and indirect associations between Facebook addiction, Facebook intensity, passive Facebook use, and depressive symptoms, alongside an examination of the model's goodness-of-fit indices.

The statistical significance level was set at $p < .05$.

3. Results

3.1. Demographic and Developmental Characteristics of Participants

The demographic distribution of participants showed a difference in gender representation, with females accounting for 59.24% of the total sample, compared with 40.76% for males. In contrast, the distribution across developmental stages was relatively balanced, with 49.68% of participants classified as being in middle adolescence and 50.32% in late adolescence. Table 1 presents the detailed distribution of participants according to these two variables.

3.2. Descriptive Statistics of the Study Variables

Means and standard deviations were calculated for the study variables to provide a quantitative description of Facebook use patterns, addiction indicators, and depressive symptoms among the participants.

Table 1. Demographic and developmental characteristics of participants (N = 314)

Characteristic	n	%
Gender		
Male	128	40.76
Female	186	59.24
Developmental stage		
Middle adolescence (11–14 years)	156	49.68
Late adolescence (15–18 years)	158	50.32

Table 2. Descriptive statistics of the study variables

Study variables	M	SD
Facebook addiction	85.13	4.947
Facebook intensity	4.82	0.380
Passive Facebook use	3.38	1.441
Active Facebook use	2.52	0.940
Depressive symptoms	58.69	1.731

Note. M = Mean; SD = Standard Deviation.

The descriptive statistics presented in Table 2 indicate variations in Facebook use patterns among the participating adolescents. Regarding the two dimensions of Facebook use, passive use recorded a mean score of 3.38 (SD = 1.441), whereas active use showed a lower mean score of 2.52 (SD = 0.940). Descriptively, these findings suggest a greater prevalence of passive Facebook behaviours compared with active Facebook behaviours among the participants.

Regarding the remaining study variables, the mean score for Facebook addiction was 85.13 (SD = 4.947), while the mean score for Facebook intensity was 4.82 (SD = 0.380). The mean score for depressive symptoms was 58.69 (SD = 1.731).

3.3. Correlation Analysis

Pearson's correlation coefficients were used to examine the bivariate relationships between Facebook addiction, Facebook intensity, active and passive Facebook use, and depressive symptoms.

Table 3. Pearson correlations among the study variables

Variables	1	2	3	4	5
1. Facebook addiction	—				
2. Facebook intensity	.806**	—			
3. Passive Facebook use	.237**	.130	—		
4. Active Facebook use	-.115*	-.044	-.740**	—	
5. Depressive symptoms	.160**	.165**	.210**	-.044	—

Note. Values represent Pearson's correlation coefficients. $p < .05$; $p < .01$.

The correlation analysis revealed a significant positive association between Facebook addiction and passive Facebook use ($r = .237$, $p < .001$).

In contrast, a weak negative correlation was observed between Facebook addiction and active use ($r = -.115$, $p < .05$). The path analysis also revealed a positive association between Facebook addiction and passive use ($\beta = .24$, $p < .001$). These findings suggest that manifestations of problematic Facebook use among the participants were more strongly associated with browsing, following, and monitoring others' content without direct interaction than with active behaviours involving posting, commenting, messaging,

and sharing. Nevertheless, the weak negative correlation between active use and Facebook addiction does not justify considering active activities a protective factor against depressive symptoms. Rather, it merely indicates a limited negative association between the two variables in the study sample.

3.4 Differences in Study Variables According to Gender and Stage of Adolescence

Differences in the study variables according to gender and stage of adolescence were examined using the independent-samples t-test. The results revealed statistically significant gender differences in Facebook addiction, passive Facebook use, and depressive symptoms, with females reporting higher mean scores than males. However, no statistically significant gender differences were observed in Facebook exposure intensity.

Comparisons according to stage of adolescence also revealed statistically significant differences in Facebook addiction, Facebook exposure intensity, passive Facebook use, and depressive symptoms, with higher mean scores observed among participants in late adolescence compared with those in middle adolescence. Detailed statistical results of these comparisons are presented in Table 3.

Table 3. Differences in Study Variables According to Gender and Stage of Adolescence (N = 314)

Variables	Gender: Males M (SD)	Gender: Females M (SD)	t	p	Middle Adolescence M (SD)	Late Adolescence M (SD)	t	p
Facebook addiction	84.09 (4.80)	85.64 (4.95)	2.622	.009	83.84 (4.90)	86.41 (4.67)	4.762	.000
Facebook exposure intensity	4.81 (0.39)	4.83 (0.38)	0.324	.746	4.76 (0.43)	4.89 (0.32)	2.954	.000
Passive Facebook use	2.95 (1.46)	3.59 (1.39)	3.767	.000	2.63 (1.43)	4.12 (1.01)	10.688	.003
Depressive symptoms	58.39 (1.74)	58.84 (1.71)	2.157	.032	58.26 (1.80)	59.12 (1.55)	4.521	.000

Note. M = Mean; SD = Standard Deviation; t = Independent-samples t-test; df = Degrees of Freedom; p = Statistical significance level. Degrees of freedom were 312 for all comparisons. Statistical significance was set at $p < .05$. Values reported as .000 in the original SPSS output are presented as $p < .001$.

3.5. Direct Paths in the Path Analysis Model

Following the examination of correlational relationships, the direct paths specified in the path analysis model were tested using AMOS. Active Facebook use was included in the correlational analysis but was not incorporated into the final specified path model of the study.

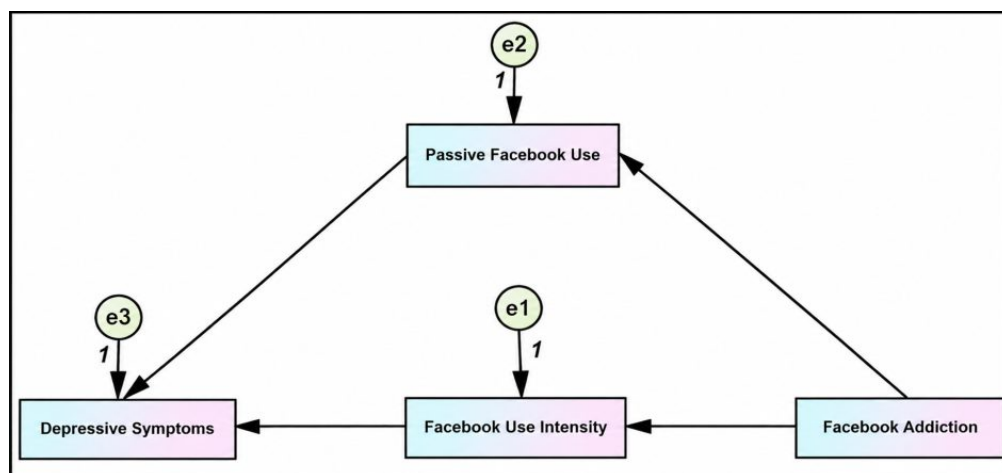


Figure 1. Hypothesized Model of the Indirect Relationships Between Facebook Addiction and Depressive Symptoms Through Facebook Use Intensity and Passive Facebook Use.

Note. The figure illustrates a parallel indirect-effects path model in which Facebook addiction is associated with both Facebook use intensity and passive Facebook use, and each of these variables is, in turn, associated with depressive symptoms. The terms (e1, e2, and e3) represent the error terms associated with the endogenous variables in the model.

Table 4. Direct Paths in the Path Analysis Model

Direct Path	B	SE	CR	β	p
Facebook addiction → Facebook use intensity	1.117	0.046	24.123	.81	< .001
Facebook addiction → Passive Facebook use	1.243	0.288	4.314	.24	< .001
Facebook use intensity → Depressive symptoms	0.032	0.013	2.487	.14	.013
Passive Facebook use → Depressive symptoms	0.011	0.003	3.415	.19	< .001

Note. B = unstandardized path coefficient; SE = standard error; CR = critical ratio; β = standardized path coefficient. $p < .05$ indicates statistical significance.

All four direct paths were statistically significant. The strongest standardized path coefficient was observed for the relationship between Facebook addiction and Facebook exposure intensity ($\beta = .81$), followed by the path between passive Facebook use and depressive symptoms ($\beta = .19$).

3.6. The Indirect Effect of Facebook Addiction on Depressive Symptoms

The indirect effect of Facebook addiction on depressive symptoms was examined through two parallel mediating pathways: Facebook exposure intensity and passive Facebook use.

Table 5. Indirect Effect of Facebook Addiction on Depressive Symptoms

Indirect Path	B	95% Confidence Interval	p
Facebook addiction → Facebook use intensity → Depressive symptoms	0.049	[0.020, 0.080]	.001
Total indirect effect	0.049	[0.020, 0.080]	.001

Note. B = unstandardized indirect effect; CI = confidence interval. The indirect effect of Facebook addiction on depressive symptoms through Facebook use intensity was statistically significant ($B = 0.049$, 95% CI [0.020, 0.080], $p = .001$).

3.7. Goodness-of-Fit Indices for the Path Analysis Model

The goodness-of-fit of the path analysis model to the data was evaluated using fit indices obtained from AMOS.

A value of (1) indicates that the path coefficient associated with each error term was fixed for model identification purposes.

Table 6. Goodness-of-Fit Indices for the Path Analysis Model

Fit Index	Value
χ^2	2.553
df	2
p	.279
χ^2/df	1.276
GFI	.996
AGFI	.980
CFI	.998
TLI	.995
NFI	.993
RMSEA	.030

Note. χ^2 = Chi-square; df = Degrees of Freedom; GFI = Goodness-of-Fit Index; AGFI = Adjusted Goodness-of-Fit Index; CFI = Comparative Fit Index; TLI = Tucker–Lewis Index; NFI = Normed Fit Index; RMSEA = Root Mean Square Error of Approximation. Values were obtained from the AMOS output.

The path analysis model demonstrated good fit indices, with $\chi^2(2) = 2.553$, $p = .279$, and $\chi^2/df = 1.276$. In addition, the model yielded high values for GFI, AGFI, CFI, TLI, and NFI, together with a low RMSEA value (.030). These indices indicate that the specified model provides a good fit to the data.

4. Discussion

The present study aimed to examine the relationships between Facebook addiction, Facebook use intensity, active and passive use patterns, and depressive symptoms among a sample of Algerian adolescents. It also sought to investigate the potential indirect roles of use intensity and passive use in the relationship between Facebook addiction and depressive symptoms. The significance of this approach lies in its distinction between different dimensions of platform use, rather than treating Facebook use as a homogeneous behavior that can be reduced to the duration of use or frequency of access. Facebook addiction reflects manifestations of problematic use and difficulties in controlling use, whereas Facebook use intensity refers to the extent to which the platform is integrated into daily life. Active and passive use, in turn, reflect the nature of the activities users engage in on the platform. The findings indicated that these dimensions, although interrelated, do not exhibit identical associations with depressive symptoms. Specifically, passive Facebook use was positively and significantly associated with depressive symptoms, whereas active use did not demonstrate a significant association with these symptoms. These findings are discussed in light of previous literature, while taking into consideration the characteristics of the sample and the cross-sectional design of the study, which precludes causal inferences or the determination of the temporal direction of the observed relationships.

4.1. Descriptive Patterns of Facebook Use and Depressive Symptoms

The descriptive statistics indicated that the mean score for passive use ($M = 3.38$, $SD = 1.441$) was higher than that for active use ($M = 2.52$, $SD = 0.940$). This suggests that participants reported engaging more frequently in browsing and monitoring behaviors without direct interaction than in activities such as posting, commenting, messaging, and sharing. The importance of this finding becomes apparent in light of the distinction established in the literature between different patterns of engagement with social networking platforms. Digital use is not a unidimensional behavior; rather, it encompasses activities that differ in nature and in their potential associations with psychological indicators (Frison & Eggermont, 2016, 2020; Godard & Holtzman, 2024).

Nevertheless, these mean scores should be interpreted within the psychometric properties of the instruments employed, as a higher arithmetic mean alone is insufficient to establish the presence of a clinically elevated level or a psychological problem. The same consideration applies to Facebook addiction and depressive symptoms. The CES-D measures self-reported depressive symptoms and does not constitute an independent clinical diagnostic instrument for depressive disorder (Radloff, 1977). Accordingly, the descriptive findings provide indicators of response patterns within the sample but do not, on their own, allow for the determination of the clinical prevalence of psychological disorders.

The distinction between Facebook use intensity and Facebook addiction is particularly important in this context. The Facebook Intensity Scale does not merely assess the frequency of access or duration of use; rather, it addresses the extent to which the platform is integrated into daily life and the degree of psychological connection users have with it. In contrast, the Bergen Facebook Addiction Scale is based on six components of addictive behavior: salience, mood modification, tolerance, withdrawal, conflict, and relapse (Andreassen et al., 2012; Ellison et al., 2007). Consequently, intensive Facebook use does not necessarily indicate addictive use, and the frequency of platform engagement alone is insufficient to determine whether such use is problematic.

4.2. Relationships Between Facebook Addiction, Use Intensity, and Usage Patterns

The strongest correlation in the Pearson correlation matrix was observed between Facebook addiction and Facebook use intensity ($r = .806$, $p < .001$). Similarly, the path analysis revealed a strong positive direct association between the two variables ($\beta = .81$, $p < .001$). This finding suggests that adolescents who obtained higher scores on indicators of problematic use also tended to demonstrate greater integration of

the platform into their daily activities.

This association may be interpreted in light of the potential behavioral overlap between the two constructs. Problematic use may be accompanied by frequent preoccupation with the platform, difficulties in limiting its use, and repeated returns to it, whereas use intensity reflects the extent to which the platform is embedded in daily life and the degree of psychological and social attachment to it. This interpretation is consistent with the theoretical framework adopted by Andreassen et al. (2012) in developing the Bergen Facebook Addiction Scale, according to which addictive use is associated with a set of psychological and behavioral components that extend beyond mere frequency of use. Similarly, Ellison et al. (2007) explain that Facebook intensity encompasses emotional attachment and the integration of the platform into everyday life, rather than simply measuring exposure time.

Accordingly, the strong association identified in the present study may reflect the convergence between intensive engagement with the platform and manifestations of problematic use, without implying that the two constructs are conceptually or psychometrically identical. This distinction is important because the assessment of digital use among adolescents should not be limited to measuring usage duration. Rather, it should also consider the degree of preoccupation with the platform, its impact on daily routines, difficulties in controlling its use, and the extent to which it is involved in mood regulation.

Regarding usage patterns, the findings revealed a positive association between Facebook addiction and passive use ($r = .237, p < .01$), in contrast to a weak negative association between Facebook addiction and active use ($r = -.115, p < .05$). Path analysis also revealed a positive association between Facebook addiction and passive use ($\beta = .24, p < .001$). These findings suggest that indicators of problematic use in the current sample were more strongly associated with browsing, monitoring, and observing activities without direct interaction than with active behaviors involving posting, commenting, messaging, and sharing.

This pattern may be related to the nature of passive engagement with the platform, which allows users to repeatedly follow social content and other people's activities without necessarily engaging in reciprocal interactions. Such a pattern may create greater opportunities for exposure to social comparisons and preoccupation with what others share about their lives, particularly when users are repeatedly exposed to content presenting selectively curated portrayals of achievements, relationships, and personal experiences.

In this regard, Verduyn et al. (2015) provided a potential explanation for the relationship between passive use and emotional well-being, demonstrating that passive Facebook use was associated with reduced emotional well-being, with envy identified as one of the mechanisms that may account for this relationship. Similarly, Frison and Eggermont (2016) highlighted that the relationships between Facebook use, depressed mood, and perceived social support vary according to the nature of use and the social context of interaction. These findings underscore the importance of not treating active and passive use as a single indicator of digital engagement.

Nevertheless, caution is warranted when interpreting the negative association between Facebook addiction and active use. The correlation coefficient is weak and does not justify considering active engagement a protective factor against addiction or an indicator of lower levels of problematic use. Furthermore, the strong negative correlation between active and passive use ($r = -.740, p < .01$) warrants particular attention when interpreting them as entirely independent dimensions. It also highlights the importance of examining the factorial structure of the usage-patterns scale and the method used to calculate its scores before drawing more definitive psychological conclusions.

4.3. Facebook Usage Patterns and Their Relationship with Depressive Symptoms

The findings of the present study revealed a positive and statistically significant correlation between passive Facebook use and depressive symptoms ($r = .210, p < .01$), whereas active use was not

significantly correlated with depressive symptoms ($r = -.044$, $p > .05$). This finding suggests that the relationship between Facebook use and depressive symptoms in the current sample was not simply associated with engagement with the platform itself, but appeared to be more closely related to the nature of the activities adolescents engage in while using it.

The absence of a statistically significant association between active use and depressive symptoms may be explained by the nature of the activities encompassed by this usage pattern, as not all forms of direct interaction serve the same psychological functions. Private communication and exchanging messages with friends may provide opportunities for social closeness, maintaining interpersonal relationships, and obtaining social support, whereas posting, commenting, and public sharing may, in some cases, be associated with seeking social approval or anticipating responses from others. Therefore, combining these different activities into a single dimension may obscure potential differences in their psychological functions, such that overall active use does not demonstrate a clear association with depressive symptoms, despite the possibility that its individual activities may have different relationships with these symptoms. This interpretation remains a hypothesis that requires direct examination through studies distinguishing between private and public forms of active interaction and assessing the psychological and social functions associated with each.

Passive use, on the other hand, may be associated with depressive symptoms through the nature of exposure to social content shared by others, particularly when browsing occurs repeatedly without direct participation or reciprocal interaction. This pattern may provide greater opportunities to monitor other people's lives and compare personal circumstances with the experiences, achievements, and social relationships presented online. Such exposure may be associated, among some adolescents, with negative self-evaluations or reduced life satisfaction. Nevertheless, this association does not imply that passive use necessarily leads to the development of depressive symptoms, as it is also possible that depressive symptoms themselves are associated with a greater tendency among some adolescents to withdraw from direct interaction and prefer observing the activities of others without participating.

Accordingly, the findings should not be interpreted as indicating that active use is universally positive and passive use universally negative. Rather, they highlight the importance of distinguishing between the nature of digital activities and the social and emotional contexts in which they occur. Furthermore, the absence of a significant association between active use and depressive symptoms does not establish the absence of any psychological relationship between them; it merely indicates that no statistically significant linear association was detected using the measures and analytical approach employed in the present study.

The association between passive use and depressive symptoms can be understood in light of the mechanism of social comparison. Following other people's posts, photographs, and representations of their lives without direct participation may place users in a recurring context in which they compare their personal circumstances with those presented by others. Among some individuals, such comparisons may be associated with negative self-evaluations or reduced satisfaction with personal life, particularly when users are repeatedly exposed to selective social content that does not necessarily reflect the full reality of other people's lives.

The study by Verduyn et al. (2015) provides a potential explanatory basis for this pathway, as it indicated an association between passive use and reduced emotional well-being, with envy playing a possible role in explaining this relationship. Similarly, Appel et al. (2016) discussed the interplay between Facebook use, social comparison, envy, and depression. However, the present study did not directly measure social comparison, envy, or self-esteem. Therefore, these processes should be regarded as potential explanatory mechanisms supported by previous literature rather than variables whose contributions to the current findings have been empirically established.

This interpretation is also consistent with Frison and Eggermont (2016), who highlighted differences in the relationships between Facebook usage patterns and depressed mood according to the type of activity and social context. In the same vein, the meta-analysis conducted by Godard and Holtzman (2024), which included 141 studies and approximately 145,000 participants, concluded that associations between active or passive use and indicators of mental health and well-being are neither necessarily homogeneous nor consistently strong. Rather, they vary according to the type of use, psychological outcome, age, and context. Accordingly, the positive association observed in the present study does not justify generalizing that passive use is harmful in all circumstances; instead, it identifies an associative pattern observed among the participants in the sample under investigation.

The absence of a significant association between active use and depressive symptoms indicates that the active activities assessed by the scale were not linearly associated with depressive symptoms among the participants. This does not necessarily mean that active use constitutes a protective factor or that it is free from negative psychological consequences. This category encompasses diverse activities, including private messaging, commenting, posting, and participating in groups, whose psychological functions may differ depending on the nature and quality of interaction and whether it provides actual social support.

Combining these different activities into a single score may conceal internal variations that an overall analysis cannot detect. This interpretation is consistent with the findings of Frison and Eggermont (2016, 2020), which emphasize the importance of considering the nature of interaction and its social context, as well as the findings of Godard and Holtzman (2024), which do not support the assumption that active use is always positive or that passive use is always negative.

It is also important to consider the potential reverse direction of the relationship. Adolescents experiencing depressive symptoms may be more inclined to reduce direct interaction and turn toward observing others without participating. Other factors, such as loneliness, self-esteem, social support, and academic stress, may also interact in explaining this association. Therefore, the most balanced conclusion is that a positive association was observed between passive Facebook use and depressive symptoms in the current sample, while the direction of this relationship and its potential psychological mechanisms remain to be investigated through longitudinal and experimental studies.

4.4. The Relationship Between Facebook Addiction and Depressive Symptoms

The findings of the present study revealed a positive and statistically significant, albeit weak, correlation between Facebook addiction and depressive symptoms ($r = .160$, $p < .01$). This finding suggests that higher levels of problematic Facebook use were associated with a modest increase in depressive symptoms among the participating adolescents. Although the strength of this association does not justify considering Facebook addiction a major explanatory factor for depressive symptoms, its statistical significance indicates the presence of an association that warrants further investigation in light of the potential interplay between digital behavior and mental health during adolescence.

This relationship may be understood in light of the components assessed by the Bergen Facebook Addiction Scale, which include salience, mood modification, tolerance, withdrawal, conflict, and relapse (Andreassen et al., 2012). Some of these manifestations may be accompanied by difficulties in emotional regulation, time management, or maintaining social and academic activities outside the digital environment. Nevertheless, the present study did not examine these components separately; therefore, it is not possible to determine which of them is more strongly associated with depressive symptoms.

This finding should also be considered within the multifactorial conceptualization of depressive symptoms during adolescence. Such symptoms cannot be explained by a single digital behavior, given the interplay of individual, psychological, social, and family-related factors. In this regard, Shorey et al. (2022), in their systematic review and meta-analysis, reported a substantial prevalence of self-reported

depressive symptoms among adolescents worldwide, with estimates varying according to geographical region, gender, and the measurement instruments employed.

Accordingly, the present finding supports the existence of an association between Facebook addiction and depressive symptoms, but it does not establish that addictive use precedes or causes the development of these symptoms. The possibility that emotional difficulties may themselves increase reliance on the platform or contribute to more problematic patterns of use also remains plausible, further highlighting the need for studies examining both potential directions of this relationship.

4.5. Differences According to Gender and Stage of Adolescence

Comparisons according to gender revealed statistically significant differences in Facebook addiction, passive use, and depressive symptoms, with females reporting higher mean scores. Specifically, the mean Facebook addiction score was 85.64 among females, compared with 84.09 among males. The mean passive use score was 3.59 versus 2.95, while the mean depressive symptoms score was 58.84 versus 58.39. In contrast, no statistically significant gender differences were observed in Facebook use intensity ($p = .746$).

This pattern reveals a distinction between use intensity, usage patterns, and their associated psychological indicators. Gender differences in the intensity of platform use did not correspond to those observed in problematic use, passive use, and depressive symptoms. This may suggest that differences between males and females in the current sample are not necessarily related to the extent to which Facebook is integrated into daily life, but may instead be associated with certain patterns of engagement and the accompanying social and emotional experiences.

The study by Frison and Eggermont (2016) provides an interpretative context for this finding, as it demonstrated that the relationships between certain patterns of Facebook use and depressed mood differ according to gender. Specifically, some forms of passive use were associated with depressed mood among girls, whereas different associations emerged for certain forms of active use among boys. Similarly, Shorey et al. (2022) reported gender differences in the prevalence of depressive symptoms among adolescent boys and girls across the studies included in their meta-analysis.

In the Algerian context, a previous study conducted by the researcher in collaboration with Kelfah (Rahal & Kelfah, 2023), examining insomnia among adolescent Facebook users, provides a local context for comparison, as it addressed differences related to gender and daily Facebook use duration. This study further supports the importance of considering individual and demographic differences when examining psychological indicators associated with platform use among adolescents.

Regarding age group, participants in late adolescence (15–18 years) reported higher mean scores than those in middle adolescence (11–14 years) in Facebook addiction (86.41 versus 83.84), use intensity (4.89 versus 4.76), passive use (4.12 versus 2.63), and depressive symptoms (59.12 versus 58.26).

These differences may be understood in light of the social and emotional transitions accompanying the progression toward late adolescence, during which peer relationships, identity formation, relative independence, and concerns about self-evaluation and social status become increasingly important. Digital platforms may become an additional space for maintaining social relationships, sustaining visibility among peers, and monitoring the activities of others. When such engagement involves repeated passive behaviors, opportunities for exposure to social comparisons and preoccupation with evaluations of oneself and others may increase.

This finding is consistent with the observations of Godard and Holtzman (2024) regarding the importance of age as a contextual factor in interpreting associations between patterns of platform use and mental health indicators. Nevertheless, a cross-sectional comparison between two age groups does not allow the conclusion that Facebook addiction or depressive symptoms necessarily increase within the

same individual as they grow older. Rather, the findings indicate that the group classified as being in late adolescence reported higher mean scores at the time of data collection. Furthermore, the effect of age cannot be isolated from potential differences in social and educational circumstances and opportunities for accessing the platform between the two groups.

4.6. Interpretation of the Direct Paths and Indirect Effect in the Path Analysis Model

The path analysis model revealed four statistically significant direct paths. The strongest path was observed between Facebook addiction and Facebook use intensity ($B = 1.117$, $\beta = .81$, $p < .001$), followed by the path between Facebook addiction and passive use ($B = 1.243$, $\beta = .24$, $p < .001$). Facebook use intensity was also associated with depressive symptoms ($B = 0.032$, $\beta = .14$, $p = .013$), as was passive use ($B = 0.011$, $\beta = .19$, $p < .001$).

The first path is consistent with the strong correlation observed between Facebook addiction and Facebook use intensity in the Pearson correlation analysis, thereby reinforcing the consistency between the correlational findings and the results of the path analysis model within the current sample. Furthermore, the differences between the path coefficients leading to depressive symptoms highlight the importance of distinguishing between the extent of engagement with the platform and the nature of the activities performed on it. Specifically, the standardized path coefficient for passive use ($\beta = .19$) was higher than that for use intensity ($\beta = .14$). This pattern may suggest that passive engagement is relatively more strongly associated with depressive symptoms than the measure of use intensity within the specified model.

This finding is consistent with the research perspective advocating a move beyond measuring use intensity alone and emphasizing the need to consider the nature of digital activities and the psychological and social contexts in which they occur (Frison & Eggermont, 2016; Godard & Holtzman, 2024). Nevertheless, the difference between the two coefficients should not be interpreted as a statistically significant difference unless a direct comparison test has been conducted. Moreover, path coefficients do not constitute independent evidence of causal effects.

It is important to note that active use was included in the initial correlational analysis but was not incorporated into the final path analysis model. Consequently, the current model does not provide an estimate of either the direct or indirect path from active use to depressive symptoms. Its omission should not be interpreted as evidence of its theoretical or psychological irrelevance. Rather, conclusions regarding active use are limited to the bivariate correlation findings, which indicated no statistically significant association between active use and depressive symptoms.

Furthermore, this effect should not be described as an established causal mediation effect. The cross-sectional design does not establish the temporal ordering of Facebook addiction, use intensity, passive use, and depressive symptoms, nor does it rule out alternative explanations, including the possibility that depressive symptoms may, in turn, be associated with increased preoccupation with the platform or changes in patterns of use. This cautious interpretation is consistent with the literature highlighting the reciprocal relationship between problematic digital platform use and psychological distress (Marino et al., 2018; Shannon et al., 2022).

Finally, good model fit does not establish that the model represents the only theoretically plausible explanation of the relationships among the variables, nor does it confirm the causal ordering of the specified paths. Accordingly, these indices support the adequacy of the model's fit to the data in the current sample, without extending the conclusions beyond the inferential limits imposed by the study design.

4.7. Theoretical and Practical Implications

The main contribution of the present study lies in bringing together four dimensions that are often examined separately—Facebook addiction, Facebook use intensity, active and passive usage patterns, and depressive symptoms—within a single analytical framework involving a sample of Algerian adolescents. The findings indicate that these dimensions are interrelated but not interchangeable. The strong association between addiction and use intensity does not eliminate the conceptual distinction between them. Similarly, the association between passive use and depressive symptoms, in contrast to the absence of a statistically significant association involving active use, highlights the importance of distinguishing between the nature of digital activities when examining their relationship with mental health.

These findings support research perspectives advocating a move beyond reducing digital engagement to the duration of exposure or frequency of platform access, and emphasize the importance of considering the psychological and social functions of users' online activities (Frison & Eggermont, 2016, 2020; Godard & Holtzman, 2024).

At the practical level, school-based awareness programmes and psychological counseling services targeting adolescents may benefit from addressing digital self-regulation skills, maintaining a balance between online and offline activities, developing critical thinking toward displayed content, and promoting mindful responses to social comparison. Psychological counseling services may also contribute to identifying indicators of problematic Facebook use and recognizing depressive symptoms that warrant appropriate psychological assessment.

In light of the differences observed according to gender and age group, preventive programmes may take into account variations in adolescents' digital and social experiences, without making assumptions about all female adolescents or all individuals in late adolescence. These recommendations should be regarded as practical implications derived from the study findings and relevant literature, rather than interventions whose effectiveness has been empirically established by the present study.

5. Study Limitations and Future Research Directions

The findings of the present study should be interpreted in light of several methodological considerations. First, the cross-sectional design precludes establishing the temporal ordering of the relationships among Facebook addiction, Facebook use intensity, passive Facebook use, and depressive symptoms. Although the correlational and path analyses identified statistically significant associations consistent with the hypothesized model, they do not establish causal relationships or determine the direction of the observed associations. Longitudinal research is therefore needed to examine how these variables relate to one another over time and to clarify their potential temporal and reciprocal relationships.

Second, the study relied on a purposive sample of 314 adolescents recruited from middle and secondary schools in Sidi Bel Abbès, Algeria. The non-probability sampling approach and the geographical concentration of participants limit the generalizability of the findings to the wider population of Algerian adolescents. Differences in educational, social, and cultural contexts may also influence patterns of Facebook engagement and their psychological correlates. Future studies should therefore include larger and more geographically diverse samples to assess the extent to which the present findings can be replicated across different adolescent populations.

Third, all study variables were assessed using self-report measures. Although the instruments demonstrated internal consistency coefficients ranging from .811 to .999 in the preliminary assessment, self-reported responses may remain susceptible to recall difficulties, differences in item interpretation, and social desirability bias. Moreover, internal consistency alone does not establish the full psychometric validity of a measure. Future research would benefit from combining self-report instruments with complementary assessment methods, including behavioral indicators of Facebook use and, where

appropriate, clinical or observational measures of psychological functioning.

Fourth, the eligibility criteria restricted participation to adolescents who had maintained a personal Facebook account for more than one year, owned a personal smartphone, and met the specified criterion on the Bergen Facebook Addiction Scale. Consequently, the sample represents adolescents with an established history of Facebook use rather than the full range of adolescent Facebook engagement. In particular, non-users, occasional users, and adolescents who did not meet the specified inclusion criterion were not represented. This selection should be considered when interpreting the findings, particularly when comparing the present sample with adolescent populations characterized by different levels or patterns of digital engagement.

Finally, although the study distinguished between active and passive Facebook use, active use was examined in the correlational analyses but was not included in the final path model. Accordingly, the findings concerning active use should be interpreted within the scope of the bivariate associations examined, and no conclusions can be drawn regarding its indirect or mediating role in the proposed model. In addition, the analytical model focused on a specific set of Facebook-related variables and depressive symptoms, without incorporating other potentially relevant psychological and contextual factors. Future research could extend this framework by examining additional theoretically relevant variables and assessing whether their inclusion provides a more comprehensive account of the associations between Facebook engagement and adolescent depressive symptoms.

Taken together, these limitations define the scope within which the findings should be interpreted rather than invalidate the observed statistical associations. The results provide evidence concerning the relationships among the variables examined in the present sample and should be regarded as context-specific findings requiring further investigation. Replication using longitudinal designs, more diverse sampling strategies, and complementary assessment methods would help establish the robustness, generalizability, and temporal dynamics of these associations.

Declarations

Ethical Considerations: The study was conducted within the Department of Psychology and Speech and Language Therapy, under the supervision of the Research Laboratory in Psychology and Educational Sciences. Administrative authorization was obtained from the Directorate of Education of the Wilaya of Sidi Bel Abbès, Algeria, to conduct the study in the selected educational institutions. Data were collected in accordance with the applicable administrative procedures, while ensuring the confidentiality of participants' information and respecting their

Conflicts of Interest: The author declares that there are no conflicts of interest related to this

Funding: This study received no specific funding from any governmental, commercial, or non-profit funding cy.

Author Contributions: The sole author was responsible for the conceptualization and design of the study, data collection procedures, statistical analysis, interpretation of the findings, manuscript preparation and revision, and approval of the final

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