

# International Journal Research Publication Analysis

Page: 01-12

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## PROBLEMATIC SOCIAL MEDIA SCROLLING AMONG ADOLESCENTS AND YOUNG ADULTS: A DESCRIPTIVE AND ANALYTICAL STUDY OF PSYCHOLOGICAL MECHANISMS AND DETERMINANTS

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### ABSTRACT

**Introduction:** Problematic social media scrolling is an emerging public health concern among adolescents and young adults. Although it is not yet recognized as a formal diagnostic category by the DSM-5-TR or the ICD-11, this behavior is increasingly studied through the lens of behavioral addiction models. This study aimed to describe scrolling habits in adolescents and young adults and to examine their psychological correlates and their association with sleep and life satisfaction.

**Methods:** This descriptive and analytical, quantitative study included 110 participants aged 15 to 22 years, recruited online through social media platforms. Data were collected using the Bergen Social Media Addiction Scale (BSMAS), the Fear of Missing Out Scale (FoMO), the Insomnia Severity Index (ISI), the Satisfaction With Life Scale (SWLS), and study-specific self-control and post-scrolling satisfaction scales. Pearson correlation coefficients were used to examine associations among variables, with significance set at  $P < 0.05$ .

**Results:** The mean BSMAS score was 19.7 (SD 4.8), close to the commonly used cut-off of 19 for problematic use. Ninety percent of participants reported at least mild insomnia, and a majority reported low to average life satisfaction. FoMO, BSMAS, and self-control scores all decreased with age. Significant correlations were found between BSMAS scores, FoMO, self-control, sleep difficulties, and life satisfaction (all  $P < 0.05$ ). An at-risk profile emerged,

characterized by younger age (15-17 years), high FoMO, low self-control, use of more than three platforms, and scrolling distributed throughout the day.

**Conclusions:** Problematic scrolling among adolescents and young adults is closely associated with fear of missing out, poor self-control, sleep disturbance, and reduced life satisfaction, consistent with mechanisms described in behavioral addiction frameworks, particularly the developmental mismatch between reward sensitivity and prefrontal control. These findings support targeted screening of younger adolescents and routine clinical assessment of scrolling habits when sleep complaints or life dissatisfaction are reported.

**KEYWORDS:** Problematic Scrolling, Social Media, Adolescents, Fear Of Missing Out, Dopamine, Sleep, Life Satisfaction.

## INTRODUCTION

The digital era has profoundly transformed patterns of media consumption, giving rise to new forms of compulsive behavior. The terms scrolling and doomscrolling have become common, the latter having been widely popularized as emblematic of the year 2020, reflecting the emergence of a major societal phenomenon associated with intensive social media use.

It should be stated at the outset that, to date, neither the DSM-5-TR nor the ICD-11 recognizes problematic social media or scrolling use as a distinct diagnostic entity; only gaming disorder is currently recognized as a behavioral addiction in the ICD-11. Problematic scrolling therefore remains an emerging construct, studied by analogy with behavioral and substance addictions on the basis of shared criteria such as loss of control, increasing tolerance, and continuation of the behavior despite negative consequences. This heuristic, non-diagnostic framework is the one adopted in this article.

This issue nonetheless raises genuine public health concerns across several domains: cognitive (fragmented attention, impaired working memory), psychological (increased anxiety, depression, and sleep disturbance), and socioeconomic (reduced productivity and broader mental health repercussions). Adolescents and young adults, being in a critical developmental period, are particularly exposed.

Epidemiologically, 5.24 billion people currently use social media, representing 64% of the world's population; 93-97% of adolescents aged 13-17 years use at least one social platform; average daily online time reaches six hours and 38 minutes, close to 40% of waking time; and young people spend three times more time scrolling than older generations (DataReportal, Digital 2025: Global Overview Report).

Unlike substance addictions, scrolling has a distinctive feature: stimulation is constant and omnipresent, with nearly unlimited access around the clock, favoring repeated consumption and the rapid establishment of neurobehavioral patterns resembling those observed in addiction. Frequent engagement with social media alters dopaminergic circuits and favors a dependence analogous to that observed in substance addiction [1].

This study aimed to describe scrolling habits in a sample of Moroccan adolescents and young adults, to assess the severity of problematic social media use and its psychological correlates (FoMO, self-control), and to analyze the relationships between these variables, sleep, and life satisfaction.

## **MATERIALS AND METHODS**

### **Population and study design**

This was a descriptive and analytical, quantitative study conducted among adolescents and young adults aged 15-22 years ( $n = 110$ ).

### **Data collection procedure**

Data were collected online through social media platforms, using standardized questionnaires distributed within groups frequented by adolescents and young adults, in order to reach a broad and diverse audience. Prior to participation, each respondent was informed of the study objectives, anonymity, and confidentiality, and provided electronic informed consent (checkbox: "I agree to participate").

### **Measurement tools**

Bergen Social Media Addiction Scale (BSMAS): a six-item scale assessing the severity of problematic social media use through criteria drawn from behavioral addiction models (salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse), each item corresponding to one component of this model [2]. A validated French version exists and was validated in a sample of 247 adolescents, including both hospitalized patients and high school students [8]. The scale's original name is retained without implying an established addiction diagnosis.

Personal satisfaction-after-scrolling and self-control scales (study-specific, non-standardized questionnaires).

Insomnia Severity Index (ISI).

Fear of Missing Out Scale (FoMO).

Satisfaction With Life Scale (SWLS).

## Statistical analysis

Data were analyzed descriptively (means, standard deviations, and age-group distributions) and then correlationally using Pearson correlation coefficients, with statistical significance set at  $P < 0.05$ .

## RESULTS

### Sample characteristics

The sample ( $n = 110$ ) comprised 58% male and 42% female participants, with an age distribution spanning the full 15-22 year range, with peaks around ages 17 and 20.

### Scrolling habits

Analysis of consumption habits revealed intensive use spread throughout the day. Regarding daily time spent on social media, a clear majority of participants (60%) reported spending more than four hours per day, compared with 26% spending 2-4 hours and only 14% spending 1-2 hours - placing most of the sample well above the global average reported in the general population (six hours 38 minutes per day, see Introduction).

Regarding the distribution of use across platforms (multiple-choice item), WhatsApp ranked first among reported uses (52%), followed by Instagram (40%), TikTok (30%), Snapchat (26%), and YouTube (19%)\*. The number of platforms used simultaneously showed that a substantial proportion of participants were not limited to a single platform, with a notable share reporting use of more than three different platforms - consistent with the at-risk profile identified in the analytical section (use of more than three platforms as an associated factor).

Regarding the time-of-day distribution of scrolling, the behavior was not concentrated at a single time of day: a substantial share of participants scrolled throughout the day or mainly in the evening (each around 40%), compared with a smaller share in the afternoon (15%) and in the morning (5%)\*, reflecting an anchoring of the behavior across the entire daily routine rather than a one-off activity.

Finally, regarding the proportion of online time actually spent scrolling (as opposed to messaging, calling, or creating content), reported categories ranged from "less than 25%" to "more than 75%" of total time, with a notable proportion of participants in the higher brackets (50-75% and more than 75%)\* - confirming that passive scrolling constitutes, for most of the sample, the predominant mode of social media use rather than a secondary activity.

*\*Exact platform/percentage and time-slot/percentage pairings should be visually re-verified against the source presentation before final submission.*

### **Self-control**

Mean score: 8.4 (SD 2.9; range 3-12). The score decreased with age: 9.1 in the 15-16 age group, 8.6 in the 17-18 age group, 7.9 in the 19-20 age group, and 7.2 in the 21-22 age group, suggesting a progressive improvement in self-control with maturation.

### **Fear of missing out**

Mean score: 28.6 (SD 5.2; range 17-45). As with self-control, the score decreased with age: 31.2 (ages 15-16), 28.4 (ages 17-18), 26.7 (ages 19-20), and 24.9 (ages 21-22).

### **Problematic social media use (BSMAS)**

Mean score: 19.7 (SD 4.8; range 8-29), close to the threshold of 19 commonly proposed as an indicator of problematic use; a score of 19 or higher is generally considered indicative of problematic social media use [9]. Here again, the score decreased with age (21.3, 19.8, 18.2, and 17.5 across the same age groups).

### **Sleep (Insomnia Severity Index)**

Mean score: 14.2 (SD 4.6; range 6-23). Distribution: no insomnia 10%, mild insomnia 45%, moderate insomnia 35%, severe insomnia 10% - meaning that 90% of participants reported at least mild insomnia.

### **Life satisfaction (Satisfaction With Life Scale)**

No participant fell into the "very high" satisfaction category; 3.7% reported high satisfaction, 31.5% average satisfaction, 38.9% low satisfaction, and 25.9% very low satisfaction. Most participants therefore reported low to average life satisfaction, with a quarter reporting very low satisfaction.

### **At-risk profiles (analytical component)**

The identified at-risk profile combined: high FoMO together with low self-control, use of more than three platforms, age between 15 and 17 years, and scrolling distributed throughout the day.

## Correlations

| Variable 1              | Variable 2         | P-value | Significance |
|-------------------------|--------------------|---------|--------------|
| Problematic use (BSMAS) | FoMO               | < 0.001 | **           |
| FoMO                    | Self-control       | 0.003   | **           |
| FoMO                    | Life satisfaction  | 0.014   | *            |
| FoMO                    | Sleep difficulties | 0.006   | **           |
| Problematic use (BSMAS) | Self-control       | < 0.001 | **           |
| Problematic use (BSMAS) | Life satisfaction  | 0.002   | **           |
| Problematic use (BSMAS) | Sleep difficulties | < 0.001 | **           |
| Self-control            | Life satisfaction  | 0.021   | *            |
| Self-control            | Sleep difficulties | 0.008   | **           |
| Life satisfaction       | Sleep difficulties | 0.037   | *            |

Pearson correlations. \* $P < 0.05$ ; \*\* $P < 0.01$

## Summary of results

| Domain           | Variable                              | Result                                                                    |
|------------------|---------------------------------------|---------------------------------------------------------------------------|
| Sample           | Sample size                           | n = 110                                                                   |
| Sample           | Sex                                   | 58% male / 42% female                                                     |
| Sample           | Age                                   | 15-22 years (peaks at 17 and 20 years)                                    |
| Scrolling habits | Daily time spent on social media      | >4 hours: 60% - 2-4 hours: 26% - 1-2 hours: 14%                           |
| Scrolling habits | Most used platforms*                  | WhatsApp 52% - Instagram 40% - TikTok 30% - Snapchat 26% - YouTube 19%    |
| Scrolling habits | Number of platforms used              | Frequent multi-platform use (>3 platforms in a notable share)             |
| Scrolling habits | Time-of-day distribution*             | Throughout the day / evening approx 40% each - afternoon 15% - morning 5% |
| Scrolling habits | Share of online time spent scrolling* | Majority in the higher brackets (50-75% and >75%)                         |
| Self-control     | Mean score (SD)                       | 8.4 (2.9) - from 9.1 (ages 15-16) to 7.2 (ages 21-22)                     |
| FoMO             | Mean score (SD)                       | 28.6 (5.2) - from 31.2 (ages 15-16) to 24.9 (ages 21-22)                  |
| Problematic use  | Mean score (SD)                       | 19.7 (4.8) - from 21.3 (ages 15-16) to 17.5                               |

|                                    |                 |                                                                                      |
|------------------------------------|-----------------|--------------------------------------------------------------------------------------|
| (BSMAS)                            |                 | (ages 21-22)                                                                         |
| Sleep (ISI)                        | Mean score (SD) | 14.2 (4.6)                                                                           |
| Sleep (ISI)                        | Distribution    | No insomnia 10% - mild 45% - moderate 35% - severe 10%                               |
| Life satisfaction (SWLS)           | Distribution    | Very high 0% - high 3.7% - average 31.5% - low 38.9% - very low 25.9%                |
| At-risk profile                    | Characteristics | High FoMO + low self-control, >3 platforms, ages 15-17, scrolling throughout the day |
| Significant correlations (Pearson) | All pairs       | See correlation table (Section 3.9) - all $P < 0.05$                                 |

## DISCUSSION

### Neurobiological mechanisms

Repeated scrolling triggers dopamine release within the mesolimbic circuit, associated with activation of the reward system (ventral striatum, ventral tegmental area); frequent engagement with social media alters these dopaminergic circuits and favors a dependence analogous to that observed in substance addiction [1]. This mechanism is reinforced by the unpredictable nature of the reward (new content, notification, like): each exposure to enjoyable content strengthens the associative learning between the scrolling gesture and dopamine release, creating an anticipation of reward that drives repetition of the behavior - a variable-interval reinforcement schedule well known for being particularly resistant to extinction. This mechanism echoes, without being fully equivalent to, those described in substance addictions, where mesolimbic dopaminergic circuits play a central role [2] - hence the heuristic value of the addiction model, without implying an established diagnostic equivalence.

### Developmental vulnerability of young people

Our results show a decrease in FoMO and BSMAS scores and an improvement in self-control with age, consistent with the literature on adolescent brain development. Reward sensitivity increases from childhood through adolescence, peaks in late adolescence, and then declines, whereas cognitive control develops linearly and progressively into early adulthood, owing to later maturation of the dorsolateral prefrontal cortex and dorsal anterior cingulate cortex relative to the ventral striatum and ventromedial prefrontal cortex [3]. This developmental mismatch - an early-maturing reward system confronted with a still-immature cognitive

control system - may explain the increased vulnerability of the youngest adolescents in our sample (ages 15-17), identified as an at-risk subgroup in the analytical component. It also helps explain why the at-risk profile in our study combines a young age, high FoMO, and low self-control: these three elements point to the same developmental window of vulnerability rather than to independent factors.

### **Role of fear of missing out**

Fear of missing out proved to be a pivotal variable in our study, correlated with problematic use, self-control, sleep, and life satisfaction alike - a pattern suggesting that FoMO may act as a cross-cutting factor linking several of these dimensions rather than as an isolated variable. This finding is consistent with the literature: FoMO can lead to sleep disturbance, emotional tension, and anxiety, and can affect overall well-being [4]. Regarding sleep in particular, FoMO appears to act through both a behavioral mechanism (nighttime use delaying bedtime) and a cognitive mechanism (heightened pre-sleep cognitive arousal delaying sleep onset) [5], which helps explain the statistical association found between FoMO and sleep difficulties in our study. FoMO can also be understood as a response to a need for social belonging: by continuously confronting adolescents with others' social experiences, social media sustains ongoing social vigilance that makes disengagement subjectively costly, even when it would benefit sleep or well-being.

### **Role of recommendation algorithms**

Social platforms rely on algorithms designed to maximize engagement time by continuously offering content correlated with the user's interests. These artificial-intelligence-driven algorithms are designed to capture attention for commercial purposes by personalizing content to reinforce engagement [1]. The infinite-scroll format also removes the natural stopping points (end of page, end of content) that, in older media, offered spontaneous opportunities for disengagement; combined with algorithmic personalization, this format contributes to the establishment and maintenance of the compulsive behavior observed in our sample, independent of any pre-existing individual vulnerability - which has led some authors to speak of an architectural design of addiction rather than a simple user preference.

### **Impact on sleep**

Our results show a high prevalence of sleep disturbance (90% of participants reporting at least mild insomnia) and a significant correlation between problematic social media use and sleep difficulties, consistent with existing data on nighttime screen use among adolescents.

Beyond the cognitive effect of FoMO described above, this link may also involve more direct physiological mechanisms: evening exposure to screen light delays melatonin secretion and desynchronizes the circadian rhythm, compounding the delayed bedtime associated with the scrolling behavior itself. The fact that, in our sample, evening scrolling accounted for a share as large as scrolling spread throughout the day reinforces the clinical plausibility of this sleep-dependence pathway.

### **Impact on life satisfaction**

Intensive scrolling was associated with lower life satisfaction in our sample, with most participants reporting low to average satisfaction. This finding fits within a still-debated area of the literature: while some studies report a negative association between social media use and life satisfaction [6], other large-scale studies find only a trivial association once covariates are controlled for, warranting caution in interpreting this link causally. A plausible explanation for the association observed here involves the mechanism of upward social comparison: scrolling repeatedly exposes users to content carefully curated by others, which may foster a sense of inferiority or dissatisfaction by contrast with one's own daily life - a mechanism distinct from, but potentially additive to, the effect of screen time itself.

### **Comparison with the Moroccan and regional context**

Our results fit within a still limited but converging body of data from the Middle East and North Africa (MENA) region. A recent Moroccan study of 2,202 adolescents and young adults (ages 14-23) using the BSMAS estimated the prevalence of problematic social media use at 25.5%, with higher rates among girls, older participants, urban residents, and those of lower socioeconomic status; FoMO also played a mediating role between psychological distress and problematic use in that study [7]. This national prevalence figure, obtained using the same BSMAS cut-off of 19 used in our study, is consistent with the mean score of 19.7 found in our sample, which sits precisely at that threshold. Other Moroccan studies, conducted in student or school populations using varied methodologies, likewise converge toward high levels of problematic use. These regional data support the clinical relevance of our findings in the Moroccan context and suggest that the phenomenon is not specific to the Western populations on which most of the international literature has been built.

### **Clinical implications**

Clinically, these findings support systematic assessment of scrolling habits in adolescents presenting with sleep complaints, anxiety, or diffuse dissatisfaction with life, rather than

waiting for social media use to be spontaneously raised by the patient or family. The at-risk profile identified in the analytical component (age 15-17 years, high FoMO, low self-control, multi-platform use spread throughout the day) could serve as a rapid screening framework in child and adolescent psychiatry or adolescent medicine consultations. Potential intervention avenues, by analogy with approaches validated in other behavioral addictions, include strengthening self-control and emotional regulation (approaches inspired by cognitive behavioral therapy), education about algorithmic mechanisms and persuasive platform design (digital literacy), and parental involvement in regulating nighttime use in particular. These avenues nonetheless remain to be validated specifically for scrolling behavior, as most available data come from studies on broader internet or video game addiction.

### **Limitations**

This study has several limitations: online recruitment introduces a self-selection bias (heavier social media users are likely overrepresented); the cross-sectional design does not allow causal relationships to be established between the variables studied, nor does it resolve the direction of the observed associations (for example, between life dissatisfaction and scrolling); the personal satisfaction-after-scrolling and self-control scales used were not validated instruments; self-reported screen time is subject to recall and social desirability bias; the absence of a non-user control group limits interpretation of the observed scores; and finally, the absence of formal nosographic recognition of "scrolling addiction" requires that our findings be considered as reflecting an at-risk use pattern rather than an established diagnosis.

### **CONCLUSIONS**

This descriptive and analytical study confirms, in a sample of Moroccan adolescents and young adults, the existence of significant associations between problematic scrolling, fear of missing out, self-control, sleep quality, and life satisfaction. The identified at-risk profile - young adolescents (ages 15-17), high FoMO, low self-control, and multi-platform use spread throughout the day - aligns with the neurodevelopmental mechanisms already described in behavioral addiction models, particularly the mismatch between reward system maturation and prefrontal control. Although compulsive scrolling does not currently constitute a recognized diagnostic entity, these findings support targeted awareness efforts for younger adolescents and the integration of at-risk use screening into routine clinical assessment, particularly when sleep complaints or life dissatisfaction are reported. Longitudinal studies

are needed to clarify the direction of the observed associations and to document the possible evolution of this phenomenon toward future nosographic recognition.

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