trends in higher education

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An Exploratory Study of First-Year Students' Mental Health Support and Problematic Use of Social Media

Maria Limniou [1,*], Munira Raja [2], Mia Donovan [1] and Caroline Hands [1]

[1] Department of Psychology, University of Liverpool, Liverpool L69 7ZA, UK; miadonovan18@icloud.com (M.D.); cahands@liverpool.ac.uk (C.H.)
[2] Department of Electrical Engineering and Electronics, University of Liverpool, Liverpool L69 3GJ, UK; mraja@liverpool.ac.uk
* Correspondence: maria.limniou@liverpool.ac.uk

Abstract: First-year university students face mental health challenges like adjusting to independence, forming new friendships and coping with academic pressures. Research highlights mixed findings on social media use; some students use social media to connect with family and/or friends while experiencing mental health issues (i.e., loneliness, depression and anxiety), and others turn to social media for support. This study explores the associations between problematic social media use, mental health and perceived support from university, friends and family while considering EDI (Equality, Diversity and Inclusion) factors such as age, gender and disability. EDI promotes fairness and equal opportunities for learning and support ensuring all students receive equitable access to resources regardless of their individual differences. A total of 158 first-year student participants from the Psychology, Electrical Engineering and Electronics and Computer Science departments completed an online questionnaire. Regression analysis revealed that females used social media more frequently than males and problematic social media use was linked to higher levels of anxiety and depression, but not loneliness. University and friend support was associated with depression only, while family support showed no significant relationship with anxiety, depression and loneliness. Addressing these issues is critical to promoting student well-being and academic success.

Keywords: problematic social media use; anxiety; depression; loneliness; EDI characteristics; university support

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Academic Editor: Carlos Hervás-Gómez

Received: 14 September 2024
Revised: 3 February 2025
Accepted: 12 February 2025
Published: 17 February 2025

Citation: Limniou, M.; Raja, M.; Donovan, M.; Hands, C. An Exploratory Study of First-Year Students' Mental Health Support and Problematic Use of Social Media. *Trends High. Educ.* **2025**, *4*, 9. https://doi.org/10.3390/higheredu4010009

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1. Introduction

The transition from college to university entails substantial changes in the first-year students' lives, including the necessity to relocate and adopt a higher degree of independence, embarking on a new academic journey characterised by elevated expectations [1–3]. These changes may increase the risk of developing mental health disorders [4], which are associated with university failure and dropout [5,6]. Depression, anxiety and loneliness are the most prevalent and widespread mental issues among university students [7,8]. Research also indicates that individual characteristics influence the onset of mental health symptoms, with females having a higher likelihood of being diagnosed with mental health conditions such as depression and generalised anxiety disorder [9]. Physiological differences between genders contribute to females' higher likelihood of experiencing internalising disorders such as anxiety and depression [10], potentially linked to their heightened emotional reactivity during puberty [11,12].

Previous research also indicates higher rates of anxiety and other mental health issues among university students with disabilities [13]. This may be due to disabled students having additional academic challenges [14], which contribute to anxiety and academic worries, particularly in the face of stigmas and misconceptions about their academic abilities [15]. Specific learning difficulties (i.e., dyslexia) can considerably affect student mental health [16]. These challenges might be unrecognised before entering university, particularly for mature students who have taken a break between compulsory education and university [17,18]. This interruption in studying may lead to increased mental health issues amongst mature students, which are most prevalent in their first year of university [19], affecting their academic performance and retention [5,6]. Mental health issues are highlighted as a concern for mature students because of their challenge of balancing various responsibilities, such as work, childcare and family obligations, compounded by financial pressures [20]. These commitments often lead to social isolation because they are unable to engage socially, resulting in emotional difficulties among mature students [21]. Recognising these groups' increased need for mental health support underscores the importance of high-quality, effective and accessible services provided by the university.

Universities are responding to the increasing prevalence of mental health issues by offering support services, with an emphasis on early intervention and prevention [22]. However, as attrition rates sharply rise, universities face an unprecedented surge in demand for learning accommodations and mental health support for students. This demand is outpacing enrolment growth and placing a burden on university resources [1,14]. Faculty members may also serve as crucial points of contact for students, potentially impacting retention [23,24] and mental health [25], as they are frequently the initial points of contact for students. Students' mental health [25] and academic achievement [24] are highly influenced by faculty–student relationships. However, due to lengthy waiting lists for university counselling services, students may not receive the mental health services they require, leading some to seek additional support through social media [26].

Social media platforms, such as Facebook, WhatsApp, Instagram and TikTok, are popular among young adults and several researchers have studied the association of social media use with mental health [27–29]. Research on this topic suggests that males typically use social media to find people who share interests, while females use it more frequently than males to maintain contact with close friends [30]. This underscores the importance of students adapting to challenges by fostering friendships for support, a process facilitated by social media [31]. There is evidence that mature students may encounter technological obstacles, potentially hindering their ability to form online social connections and receive support [32], and students with disability issues rely on digital media to find information and engage with society [33]. However, only a few researchers have examined how first-year students perceived university support and how their perception may be linked to social media use, particularly when viewed through the lens of problematic social media [34].

The literature extensively discusses the definition and threshold of problematic social media use. Griffiths (2005) [35] described it as a pattern of repeated addictive behaviours characterised by the symptoms of salience, mood modification, tolerance, withdrawal, conflict and relapse. More recent studies have expanded on this concept, defining problematic use as the difficulties in regulating and controlling social media use. This includes obsessive thinking about going online, an inability to resist the urge to use social media constantly and a preference for online communications over face-to-face interactions [36]. The European Network for Problematic Usage of the Internet (European research group) has provided a similar definition linking the problematic use of social media to a loss of control regarding time, frequency and duration of use [37]. Overall, problematic social media use is considered a behavioural addiction for which several models, including biopsy-

chosocial models, suggest how biological, psychological and social factors contribute to the development and symptoms of addictive behaviour [38]. However, various frameworks have explored the relationship between the problematic use of social media in association with users' mental health. For example, the cognitive–behavioural framework describes how psychological issues (i.e., loneliness, anxiety and depression) may lead individuals to develop maladaptive thoughts (i.e., obsessions) and/or behaviours (i.e., withdrawal), resulting in problematic social media use, which causes adverse effects in academic and work performance [39]. Another well-known framework, the social skill model introduced by Caplan (2005) [40], discusses how individuals with psychological issues who lack social and/or presentation skills are more likely to engage in online interactions being vulnerable to be engaged with problematic social media use. Thus, problematic social media use involves obsession, loss of control and excessive time spent on social media to the extent that it negatively impacts daily life [41]. It is also considered to have a bidirectional relationship with mental health [42,43]. Researchers have primarily explored the harmful effects of extensive use and problematic use of social media linked to increased levels of anxiety and depression, along and other mental health conditions [44–46]. However, the bidirectional relationships between problematic social media use and mental health remain underexplored and the broader consequences and crises associated with these issues have often been overlooked [47]. For example, first-year students may face challenges if social media replaces real-world connections, potentially exacerbating mental health problems [26]. Conversely, social media can offer benefits, such as maintaining friendships, social support, well-being and reducing stress [48]. Students' mental health is generally adversely affected by social media only when its usage becomes problematic [49], highlighting the need to identify and support vulnerable individuals (i.e., disabled students), to mitigate the negative impacts.

Overall, research has discussed the links between greater social media usage anxiety, depression and loneliness [50–52]. However, there has been limited focus on the first-year university student population, particularly concerning their EDI characteristics (i.e., disability, age, mature students). The primarily cross-sectional and correlational nature of studies in this field makes it, challenging to determine the directionality of these associations, or whether they are bidirectional with mediating factors, further complicating the relationships. Additional research is necessary to fully understand the complex relationship between social media usage and mental health, including both positive and negative associations between variables. For example, social support can act as a predisposing factor for problematic use of social media, with perceived support from family and friends resulting in different outcomes [28]. Strong family support has been also found to protect against problematic social media use [53]; however, students lacking family support may turn to social media for connection, and, potentially, to problematic use [54]. Conversely, research on students suggests a positive correlation between the quality of friendships with in-class and intercultural peers and social media usage [55,56]. Although frequent use of social media has been linked to first-year university students [27], no studies to date have considered the role of problematic social media use, with EDI characteristics (i.e., age, disability, gender), support systems (e.g., from university, family and friends) and mental health issues (i.e., loneliness, anxiety and depression). Addressing these gaps is essential for a comprehensive understanding of the broader implications of social media use in the first-year university student population. Therefore, this exploratory study examines the following research questions:

Research Question 1 (RQ1): There will be a positive association between the frequency of social media use with the problematic use of social media.

Research Question 2 (RQ2): Equality, Diversity and Inclusion (EDI) characteristics—such as gender, age and disability—will be positively associated with both the frequency of social media use (RQ2a) and problematic social media use (RQ2b).

Research Question 3 (RQ3): Mental health issues will negatively interact with problematic social media use (RQ3a), and problematic social media use will be positively associated with depression, anxiety and loneliness (RQ3b).

Research Question 4 (RQ4): There will be a positive association between university, family and friend support with anxiety, depression and loneliness.

2. Materials and Methods

2.1. Participants and Experimental Procedure

A total of 191 first-year students from three departments (Psychology, Electrical Engineering, and Electronics and Computer Science) participated in an online questionnaire from November 2023 to February 2024. However, only 158 students fully completed the online questionnaire, and their responses were included in the analysis. Table 1 presents a detailed breakdown of the responses by department. These three departments were identified for the distinct EDI characteristics of their student populations. These departments offered a cohesive sample in line with wider UK university populations while allowing cross-department consideration of differing characteristics such as participant gender. Consistent with the UK university trends, psychology students predominately comprise British females (approx. 90% in the current department) [57]. In contrast, engineering students are predominately international males (approx. 80%). These include a significant proportion of Asian students, aligning with broader patterns observed in UK universities [58]. This diversity in demographics across the departments provides a valuable lens for examining the relationship between social media use, mental health and EDI-related factors.

Table 1. Participant details per department per gender.

Department	Total 1st-Year Students (% Rate Responses)	Males (%)	Females (%)
Psychology	111 (43% of cohort)	10 (9%)	101 (91%)
Electrical and Engineering Electronics	19 (12.0% of cohort)	14 (74%)	5 (26%)
Computer Sciences	28 (10% of cohort)	21 (75%)	7 (25%)
Total	158 (22.3% of cohort)	45 (28.5%)	113 (71.5%)

Participants were recruited through online advertisements disseminated via emails and announcements. Additionally, psychology students were recruited through the department's internal recruitment system, which allowed them to earn course credit for their participation in the study. Recruitment commenced following ethical approval from the University Research Ethics Committee. All participants were initially provided with an information sheet, consent form, assurances of anonymity and the right to withdraw from the study. The participant information sheet and consent form provided relevant information and support details in case of distress arising from the study to all participants. This ensured that all students, including those who might be vulnerable but might not know if they belong to this population, have access to the relevant support information. The questionnaire covered topics such as demographics, perceived support, and social media use, and included validated mental health scales. Upon completing the questionnaire, participants received a debrief form containing contact details and mental health resources.

The inclusion criteria for this study required participants to be first-year students from the Psychology, Electrical Engineering, Electronics and Computer Science departments,

aged 18 or older, active social media users and without clinical diagnoses of mental health disorders such as anxiety or depression. Exclusion criteria included individuals who were non-users of social media, second-year, third-year and postgraduate students, diagnosed with mental health disorders and individuals currently receiving professional support for problematic use of social media. As this study utilised an online questionnaire, students with diagnosed mental health disorders or at high risk of distress might not have immediate access to support if needed. Also, one of the objectives of this study was to explore the bidirectional relationships between mental health and problematic use. Including students already diagnosed with social media addiction would lead to inaccurate findings due to their pre-existing unstable mental health status. Thus, these population groups were not the focus of this study. The overall mean age of all the students who participated in this study was 19.5 years old (SD = ±3.15, Min age = 18, Max age = 45). Table 2 illustrates the mean age per department.

Table 2. Participants' mean ages per department.

Department	Age M (±SD)
Psychology	19.1 (±3.10)
Electrical and Engineering Electronics	19.1 (±1.19)
Computer Sciences	21.1 (±3.79)

The age range of participants reflects a mix of young students who joined the University directly after completing their college studies, as well as mature students. A total of 23.4% of the participants were identified as mature students with/without caring responsibilities. Among these students, 16 students were between 21 and 45 years old (10.1% of this study's sample), and only 7 of them were mature students with caring responsibilities. To account for variability, the data have been disaggregated by age group. The cutting age of 21 years old is considered the typical beginning age based on The Universities and Colleges Admissions Service (UCAS) for UK university entry applications [59].

In addition to gender and age, the study collected data on other EDI characteristics including disability status (7% of the participants were students with a disability plan across the different departments). This figure is slightly lower than the UK university average [60], which was anticipated due to the ethical exclusion criteria outlined in the participant information sheet and consent form. The students with a disability plan who participated in this study did not have any mental disorders (i.e., stress, anxiety), but instead had other types of disabilities. The most common types reported were specific learning difficulties, such as dyslexia, and other neurodiverse conditions. Thus, for this study, disability does not include mental conditions.

Although most participants were home students, a significant percentage (23.4%) were international students, who had come from other countries to study in the UK. Figure 1 below illustrates the distribution of home and international students, with the majority coming from the engineering departments.

Finally, most of the students across all departments live alone or with housemates in a university hall of residence (65.2%). This was expected, as these are first-year students who typically prefer university accommodation due to being new to the city and not yet having friends with whom to share a house (15.5%). The remaining students either lived with their guardians (9.5%) or independently (10.8%).

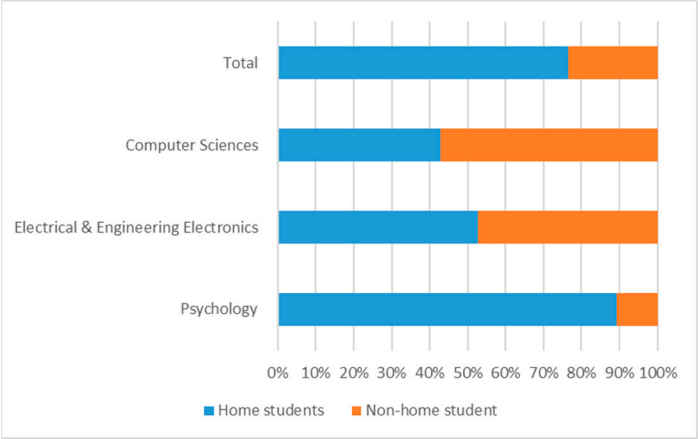


Figure 1. The percentage of non-home students per department and in total.

2.2. Questionnaire

The online questionnaire consisting of 62 items (approx. 10 min long) was developed through Qualtrics (www.qualtrics.com) and uploaded to the Zenodo repository [61]. The initial section included 7 items addressing EDI characteristics (university department, gender, age, mature status, disability status, home status (international/or home) and accommodation status). The subsequent part of the questionnaire included 4 items concerning the student's intention to withdraw from their studies and the support they received from family, friends and university. Following this part, 3 items pertained to social media usage (i.e., most frequently used social media platform, daily usage frequency and purpose of use). The subsequent sections featured several validated scales designed to assess university support, problematic social media use, loneliness, depression and anxiety.

2.2.1. University Support and Acceptance Scale [62]

An 8-item scale was employed to assess participants' perceptions of acceptance and support from their university, specifically evaluating the availability of supportive resources and opportunities for personal development. Participants rated their level of agreement with each statement using a 4-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree). Higher scores reflected a greater sense of university support and acceptance. In this study, the scale demonstrated good internal reliability with Cronbach's alpha $\alpha = 0.799$.

2.2.2. Bergen Social Media Addiction Scale [63]

A 6-item scale was used to measure participants' problematic social media use. Participants responded to questions regarding their social media behaviours on a 5-point Likert scale, ranging from 1 (very rarely) to 5 (always). This scale has been utilised to measure the behavioural problematic use of social media, as it has been adapted, validated and used in international samples. It captures a range of variations in the problematic use of social media and incorporates the six core indicators of addiction (i.e., salience, tolerance, mood modification, withdrawal, relapse, conflict), as discussed by Griffiths (2005) [35,64]. Higher scores indicate a greater risk of behavioural problematic social media use. In this study, the scale exhibited good internal reliability with Cronbach's alpha $\alpha = 0.776$.

2.2.3. UCLA Loneliness Scale Version 3 [65]

A 20-item scale was used to assess participants' subjective feelings of loneliness and social isolation. Participants rated how often they experienced the feelings described in each item on a 4-point Likert scale, ranging from 1 (never) to 4 (often). Higher scores

reflected greater feelings of loneliness. In this study, the scale demonstrated excellent internal reliability with Cronbach's alpha $\alpha = 0.904$.

2.2.4. Depression and Anxiety Scale from DASS-21 [66]

The current study employed the 14-item depression and anxiety self-report subscales to assess negative emotional states from the DASS-21 validated measure. Participants responded on a 4-point Likert scale, ranging from 0 (never) to 3 (almost always), indicating how much the statement applied to them. Higher scores reflect greater levels of anxiety and depression. In this study, the scale demonstrated good internal reliability with Cronbach's alpha $\alpha = 0.882$ for depression and Cronbach's alpha $\alpha = 0.807$ for anxiety.

3. Results

Data collected on Qualtrics were analysed using four linear, five multiple and two two-step hierarchical regressions and independent t-test analysis. IBM SPSS Statistics version 28.0.1.1 was used for data analysis.

As presented in the pie chart, most students spent most of their time (75%) on social media platforms such as TikTok and Snapchat and then Instagram and YouTube (Figure 2).

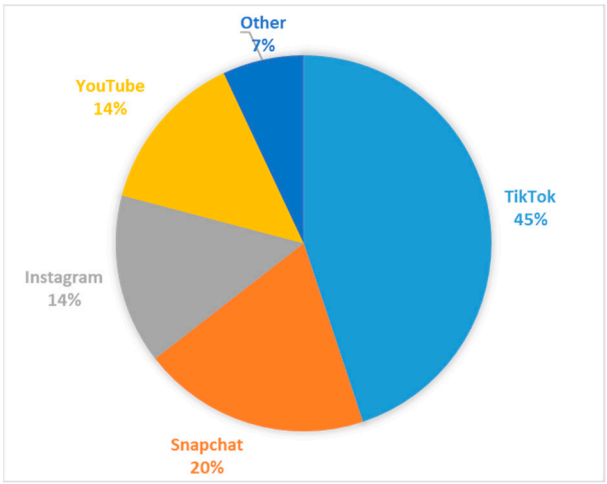


Figure 2. The social media platforms that are frequently used.

Approximately half of the participants spent less than 3 h per day on social media, while the other half engaged in more extensive usage (Figure 3).



Figure 3. Students' responses to the question regarding the time they spent on social media daily.

Finally, regarding the primary purpose of using social media, the majority of the first-year students indicated communicating with their friends and their family members, followed by entertaining themselves (Figure 4).

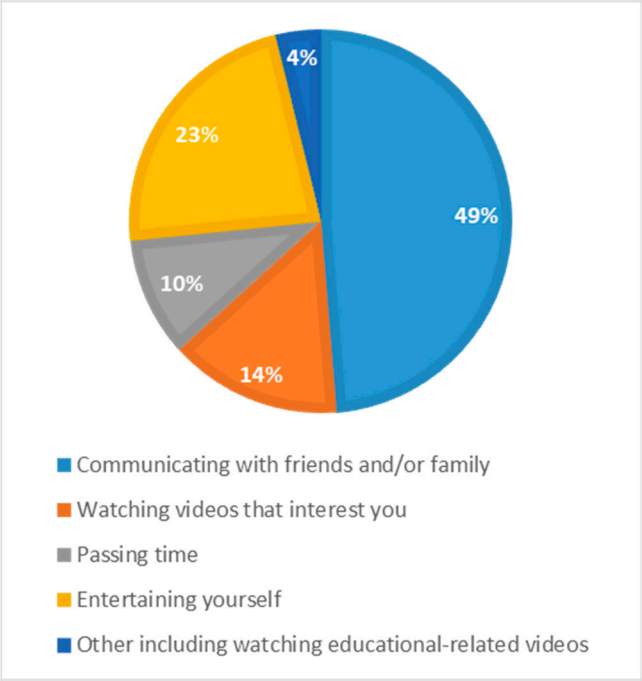


Figure 4. Reasons for using social media.

Various regression analyses were conducted to explore potential associations between social media use, problematic social media use, EDI characteristics, mental health and support from family, friends and university service. Since the department was not found to be a predictor in any regressions, these were excluded as potential predictors in the analysis. Additionally, although accommodation status is part of the EDI characteristics, no associations were found between accommodation status and problematic social media use, mental health or support from family, friends and university. Therefore, accommodation status was not included in any of the subsequent analyses.

RQ1: There is an association between the frequency of social media and problematic use.

A linear regression analysis examined the association between the frequency of social media use and problematic use. The regression model predicted approximately 7.2% of the variance in problematic use (adjusted R2 = 0.066, F (1,156) = 12.165, $p < 0.001$), with the frequency of use being a positive predictor ($\beta = 0.871$, $p < 0.001$).

RQ2a: An analysis of gender, age, mature, international students and disability on the frequency of social media use was conducted.

A correlational design was used to assess the relationship between the frequency of social media use and EDI characteristics (i.e., gender, age, disability, maturity and residential status). Specifically, a two-step hierarchical regression was conducted to examine these associations. At Step 1, age and gender predicted approximately 7.1% of the variance in frequency of social media use (adjusted R2 = 0.059, F (2,155) = 5.884, $p = 0.003$) and it was a significant model. A significant positive association was found between gender and frequency of social media use ($\beta = 0.684$, $p = 0.005$), with females using social media more than males. However, there was no significant association between age and frequency of social media use ($\beta = -0.052$, $p = 0.132$). In Step 2, the additional inclusion of EDI characteristics increased the variance accounted for by the model. The overall regression model predicted 11.2% of the variance in frequent social media use (adjusted R2 = 0.083;

F (5, 152) = 6.821, $p = 0.003$). The hierarchical regression indicated that age ($\beta = -0.004$, $p = 0.925$), gender ($\beta = 0.473$, $p = 0.064$), disability ($\beta = 0.424$, $p = 0.322$) and international students ($\beta = -0.053$, $p = 0.861$) did not significantly associate with the frequency of social media use, but this has been associated and mature students ($\beta = 0.238$, $p = 0.039$).

RQ2b: An analysis of gender, age, mature, international students and disability on the problematic social media use was conducted.

A correlational design was used to assess the relationship between problematic social media use and EDI characteristics (i.e., gender, age, disability). Specifically, a two-step hierarchical regression was conducted to assess these associations. At Step 1, age and gender predicted approximately 5.7% of the variance in problematic social media use (adjusted R2 = 0.045, F (2,155) = 5.884, $p = 0.011$) and the model was significant. A significant positive association was found between gender and problematic social media use ($\beta = 2.293$, $p = 0.004$), with females (16.3 ± 4.18) exhibiting more problematic behaviour than males (13.9 ± 4.94). However, no significant association was found between age and problematic social media use ($\beta = -0.056$, $p = 0.623$). In Step 2, the additional inclusion of EDI characteristics increased the significant variance accounted for by the model. The overall regression model predicted 7.9% of the variance in problematic social media use (adjusted R2 = 0.049; F (5, 152) = 2.606, $p = 0.027$), but none of the predictors was significantly associated with problematic use of social media (age ($\beta = -0.093$, $p = 0.471$), gender ($\beta = 2.319$, $p = 0.06$), disability ($\beta = 1.593$, $p = 0.259$), mature students ($\beta = -0.520$, $p = 0.160$) and international students ($\beta = -1.530$, $p = 0.130$)).

RQ3: There are associations between anxiety, depression, loneliness and problematic use of social media.

Three linear regression analyses were conducted to explore whether problematic use of social media is predicting anxiety, loneliness and depression. Additionally, a multiple regression analysis was performed to examine whether mental issues (i.e., anxiety, loneliness and depression) are predictors of problematic social media use.

A linear regression analysis was conducted to investigate the relationship between problematic use of social media and anxiety. The regression model was significant and predicted approximately 4% of the variance (adjusted R2 = 0.04, F (1,156) = 7.06, $p = 0.009$). A significant positive association was found between problematic social media use and anxiety ($\beta = 0.208$, $p = 0.009$).

A linear regression analysis was also conducted to investigate the relationship between problematic social media use and depression. The regression model was significant and predicted approximately 5% of the variance (adjusted R2 = 0.05, F (1,156) = 8.94, $p = 0.003$). A significant positive association was found between problematic social media use and depression ($\beta = 0.233$, $p = 0.003$).

A linear regression analysis was conducted to explore the relationship between problematic social media use and loneliness. The regression model was not significant (adjusted R2 = -0.01, F (1,152) = 0.18, $p = 0.67$) and no significant association was found between problematic social media use and loneliness ($\beta = 0.035$, $p = 0.67$).

A multiple regression analysis was conducted to predict whether loneliness, depression and anxiety influence problematic social media use. This regression model predicted 5.5% of the variance in problematic social media use (adjusted R2 = 0.036; F (3,150) = 2.897, $p = 0.037$) with none of the mental health issues to be a significant predictor (loneliness: ($\beta = -0.040$, $p = 0.300$), depression: ($\beta = 0.108$, $p = 0.058$) and anxiety: ($\beta = 0.033$, $p = 0.574$)).

RQ4: There are associations between the different types of support with depression, anxiety, loneliness and problematic social media use.

A multiple regression analysis was conducted to investigate the relationship between university, friend and family support and depression. The regression model was significant

and predicted approximately 18% of the variance (adjusted R2 = 0.164, F (3,154) = 11.250, $p < 0.001$). The main significant positive predictors of this model are university support (β = 1.710, $p = 0.017$) and friend support (β = 1.577, $p = 0.040$), while family support was not associated with depression (β = 1.396, $p = 0.090$).

A multiple regression analysis was conducted to investigate the relationship between university, family and friend support and anxiety. The regression model was significant and predicted approximately 9.3% of the variance (adjusted R2 = 0.075, F (3,154) = 5.259, $p = 0.02$). None of the types of supports were significant predictors for anxiety (university support (β = 0.821, $p = 0.219$), family (β = 1.092, $p = 0.155$) and friends (β = 1.054, $p = 0.140$)).

A multiple regression analysis was conducted to investigate the relationship between university, family and friend support and loneliness. The regression model was significant and predicted approximately 10% of the variance (adjusted R2 = 0.082, F (3,150) = 5.577, $p = 0.001$). However, there was no significant predictor between the various types of support and loneliness (university support (β = 0.669, $p = 0.449$), family (β = 1.805, $p = 0.078$) and friends (β = 1.449, $p = 0.124$)).

4. Discussion

This exploratory study aimed to examine the association between problematic social media use and mental health issues (anxiety, depression and loneliness) among first-year university students. Building on the theories of problematic use and the existing studies in this area, this exploratory investigation examined the potential bidirectional relationships between mental health (i.e., loneliness, anxiety and depression) and problematic social media use addressing a gap in research focused on first-year students. Additionally, this study considered whether students' diverse backgrounds, including EDI characteristics, might influence the extent of social media use. The previous literature has not sufficiently explored how such factors might contribute to social media behaviour in university students. Moreover, this study explored the relationship between university, family and friend support and mental health outcomes. Despite the high engagement of first-year students with social media, which often leads to increased online time, they might not necessarily exhibit behaviours indicative of problematic social media use, such as mood modification, salience, tolerance, withdrawal symptoms, conflict and relapse [67]. This could be due to the support they receive from family, friends and the university regarding their mental health. To ensure the integrity of the data, a screening question was included to ask participants whether they were getting any professional support for the problematic use of social media. Ryding & Kaye (2018) [68] emphasised the importance of understanding the reason behind for using social media use (i.e., work, education, leisure) to overcome the issue of 'the typical flawed metrics' (p. 229) when examining the problematic use. The sample of first-year students in this study primarily used social media to communicate with friends and family members, followed by using it for entertainment purposes.

The first research question of this study found a positive association between problematic social media use and the frequency of social media use in this sample. This finding can be interpreted in light of considering the reasons for using social media, as previously discussed. It appears that the first-year student sample might not primarily use social media for entertainment (22.8%), as it is commonly noted in the literature [69], but rather to seek support through communication with friends and family (48.7%). This is a key finding for understanding the role social media plays in providing types of support to students who might be living at a distance from friends and family.

This study also explored whether the frequency of use and the problematic use shared similar predictors in terms of EDI (i.e., age, gender, disability). The findings indicated that gender was the only significant predictor for the frequency of social media use and

problematic use, with females using social media more frequently than males. This aligns with previous research that shows that females tend to spend more time on social media and smartphones compared to males [29], and similar findings have been noted for problematic use of social media [70]. However, mature students were found to use social media more frequently than other students without exhibiting any problematic use. Mature students often face several challenges, including anxiety and lack of confidence, due to the years away from formal education, feelings of isolation and a sense of separateness from younger peers [71]. These challenges may drive mature students to seek support through social media communication without displaying signs of problematic use. The recent literature has proposed various interventions for mature students, such as the online chat and chatbots use [72], and the creation of inclusive online communities [73]. However, further research is required to explore what specific challenges mature students face that lead them to be less active online compared to their younger peers and how universities can better support them. Additionally, this study found no significant association between disability and the frequency of social media use and problematic use, which may be attributed to low participation rates of disabled students (7%). In this study, only students with learning disabilities participated, leading to insufficient data for a broad representation of the disabled student community. However, the findings provide evidence for a potential association between problematic social media use and students with cognitive difficulties in general. Further research with a larger sample of disabled students could explore how social media use varies across different disabilities (i.e., dyslexia, autism) in terms of learning and mental health support. Finally, apart from the mature students, no age-related differences were found regarding the frequency and problematic social media use, suggesting that universities (i.e., teachers and professional services) could develop strategies to promote mental health support across all age demographics. Therefore, potential interventions that could be applied to all first-year students, such as anxiety management workshops, could be introduced by universities [74]. These workshops could help students regulate their anxiety [75]. Understanding the various EDI nuances related to social media use is important when studying first-year university students, who experience significant life transitions such as relocation, and the formation of new social connections.

A positive association between problematic social media use and both anxiety and depression was found in this study, suggesting that first-year students who exhibit problematic social media behaviour are more likely to experience higher levels of depression. This aligns with previous research on anxiety and depression [46,51,76]. A potential explanation for this among first-year students is that they may feel anxious about their studies and depressed due to the new and demanding learning environment [52]. However, social support has been shown to reduce the levels of mental health issues [77]. In this context, students seek support through social media communication with their friends, which could lead to more extensive and problematic social media use. According to the cognitive behavioural model, maladaptive cognitions can be developed in response to a lack of social support which amplifies problematic use, creating a vicious circle [39]. Given these findings, universities may need to consider strategies to enhance social support, connectedness and a sense of belongingness among first-year students [34], reducing their reliance on social media for support. A potential intervention is a peer mentoring scheme that could support first-year students' transitions into university life, familiarising them with the university academic environment and demands, and enhancing their sense of belonging [78]. Furthermore, universities could develop screening tools to identify students at risk of problematic social media use and provide support to address mental health issues like depression and anxiety. In a recent study, Chen (2025) [79] discussed how an immersive artificial intelligence game could support universities in assessing students' mental health engagingly

and entertainingly. As noted by Naslund et al. (2020) [80], social media can also present opportunities to improve users' mental health, by fostering social interactions and peer support, while increasing belongingness and increased perceived emotional support [81]. First-year university students, for instance, might use social media to form new connections and receive support from family and friends to potentially enhance their well-being [82]. However, it is crucial to recognise when social media use becomes problematic, to mitigate its negative effects on mental health [81]. Students themselves may not be always aware of their usage becoming problematic, and thus universities could provide information to students during their transition to university, signposting resources and supporting individuals who become concerned about their levels of usage.

Although a strong bidirectional relationship between problematic use, depression and anxiety was found in this study, the findings did not support the bidirectional relationship between problematic social media use and loneliness. These findings align with the previous studies that suggest loneliness is a predictor of the problematic use of social media [83], but not vice versa. There is evidence in the literature for a unidirectional association between problematic social media use with loneliness for the general population [84,85] and there might be various explanations to interpret this unidirectional relationship for the university student population. For example, loneliness could be an outcome of the problematic use of social media, but not a predictor because it is caused by various reasons in the university population (i.e., mental illness, psychological distress and academic and social adjustment to the new environment) [86]. Students experiencing loneliness might use social media to communicate with others, which does mean that they exhibit problematic behaviour. Validated scales such as the Bergen Social Media Addiction Scale [63,87], which assesses specific traits related to problematic use, may provide a more accurate measure, rather than the overall frequency of social media use. These traits include behaviours, such as feeling restless or troubled when unable to use social networking sites. Also, a recent literature review [88] on problematic use and loneliness reported that the findings are not always consistent across the studies for various reasons, depending on one's motives and other mental health issues that lead people to withdraw from face-to-face interactions. These factors could also help explain the results of the current study. The first-year students in this study mostly communicated with friends and family members to gain some support, but this did not mean that they preferred online interactions instead of face-to-face interpersonal relationships, leading them to problematic online behaviour. A future study may consider a longitudinal design to assess this relationship and its association with other mental health issues [88]. For example, females are at greater risk for anxiety and depression [9], which are strongly related to loneliness. They may tend to use social media more frequently than males [30], which may suggest a stronger relationship in gender demographic characteristics. Therefore, an implication of this finding is for future research to investigate the link between gender, problematic social media use and mental health, to subsequently tailor interventions to specific demographics.

Positive associations between support from university and friends with depression, but not with loneliness and anxiety, have been also found. This indicates that although students receive support from their university and their friends when they experience symptoms of depression, it is not enough. Factors such as lengthy waiting lists in university counselling services and demand surpassing enrolment growth may contribute to students perceiving support as inadequate [1,14], leading them to seek support from their friends. However, they might not disclose their depression to their friends, receiving less support [89] from friends and experts. Consequently, students might use social media for support during their studies or university transition [26]. A perceived lack of university support and reliance on social media could explain the high social media usage among

first-year university students [26]. However, it is unclear from this study whether students perceive a lack of university support without investigating further support available [90]. Future research could explore students' awareness of university services, which would help further understand the relationship between support and social media use. Student–faculty relationships and a stronger sense of belonging have been linked to higher levels of well-being [23,91], highlighting the importance of university support during the transition to higher education and proposing a potential intervention to enhance the sense of belonging. Additionally, although university support could be protective against mental illness in general, research underscores the role of family and friend support in promoting students' mental well-being. There is evidence from this study that these factors are crucial to consider as confounders in students' experiences. Both family and friends may be influential, acting as buffers for mental health such as loneliness and anxiety [82,92]. Family support aids students in navigating challenges, alleviating mental strain, and thus fostering their overall mental well-being [93]. Therefore, interventions should not only focus on enhancing university counselling services but also emphasise peer group and family support to comprehensively assist students.

While the current study enhances our understanding of the relationship between individual differences in social media use, mental health, first-year university experience and various types of support, several limitations can be considered. Firstly, the high proportion of female participants may create a bias, as females are more likely to participate in questionnaire-based studies than males [94]. Additionally, the exclusive focus on one university may limit the generalisability of the findings, as different locations vary in affluence, affecting access to services such as mobile phones and social media usage. Therefore, exploring responses from a less affluent university or one with differing support services could provide valuable insights. Another limitation is the cross-sectional nature of the study, which examines associations between variables through correlation analysis, precluding the determination of causation [95]. Correlational research does, however, allow researchers to pinpoint associations warranting further experimental investigation, to uncover causation pathways. It also enables psychologists and professionals to identify potential paths and implement interventions to mitigate impacts. A final constraint is the self-report nature of the questionnaire. Although questionnaires are easy to complete and time-efficient, they can be susceptible to self-report bias [96]. Participants may hesitate to report mental health symptoms due to stigma, affecting the validity of results. However, to reduce this, the current research used anonymity to assure participants their responses would remain anonymous. The length of the 62-item questionnaire may also be a concern, as students may have experienced fatigue, as evidenced by the level of incomplete responses.

Future research could address the highlighted issues by utilising a more diverse student sample (i.e., students from other departments, considering intersectional EDI characteristics) to explore potential differences in the first-year university experience, social media use and mental health across various universities and faculties. Additionally, studies could investigate the relationship between females, problematic social media use and mental health, given females' higher social media usage rates [30], and increased likelihood of depression and anxiety diagnoses [10]. Furthermore, researchers could explore gender-specific motivations behind social media usage among first-year students, providing valuable insights into their university experiences, in response to support and mental health challenges.

5. Conclusions

Overall, the implications of this exploratory study suggest that its findings will provide valuable insights for university support services, particularly regarding the EDI charac-

teristics of demographics most at risk of problematic social media use, such as mature students. The study also emphasises the importance of enhancing support services, as lower perceived support is associated with mental health concerns among first-year students. By utilising the study's results, universities can implement targeted interventions for mature and disabled students to better address the needs of students facing difficulties related to social media use and mental health. It has been highlighted in the literature that mature students are more likely to drop out of university education [97], so university support services should consider alternatives to using social media to meet their needs. Additionally, this study found that problematic social media use was associated with higher levels of anxiety and depression, indicating the need for better support systems to reduce reliance on social media. Finally, further research is required to explore university support interventions tailored to the students' characteristics in each academic department. University policymakers and professional service staff should consider first-year students' EDI characteristics when developing and implementing relevant support interventions.

Author Contributions: Conceptualisation, M.L. and M.R.; Methodology, M.L., M.R., M.D. and C.H.; Formal Analysis, M.L. and M.D.; Investigation, M.L., M.R., M.D. and C.H.; Resources, M.L., M.R. and M.D.; Data Curation, M.L., M.R. and M.D.; Writing—Original Draft Preparation, M.L. and M.D.; Writing—Review and Editing, M.L., M.R., M.D. and C.H.; Supervision, M.L. and M.R.; Project Administration, M.L. and M.R.; Funding Acquisition, M.L. and M.R. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Faculty of Science and Engineering, University of Liverpool, through the Learning and Teaching Enhancement Project (Funding number: 75096518).

Institutional Review Board Statement: All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of the University of Liverpool (date 16.11.2023/no.12991).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The original data presented in the study are openly available in Zenodo at https://doi.org/10.5281/zenodo.13759037.

Conflicts of Interest: The authors declare no conflicts of interest.

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