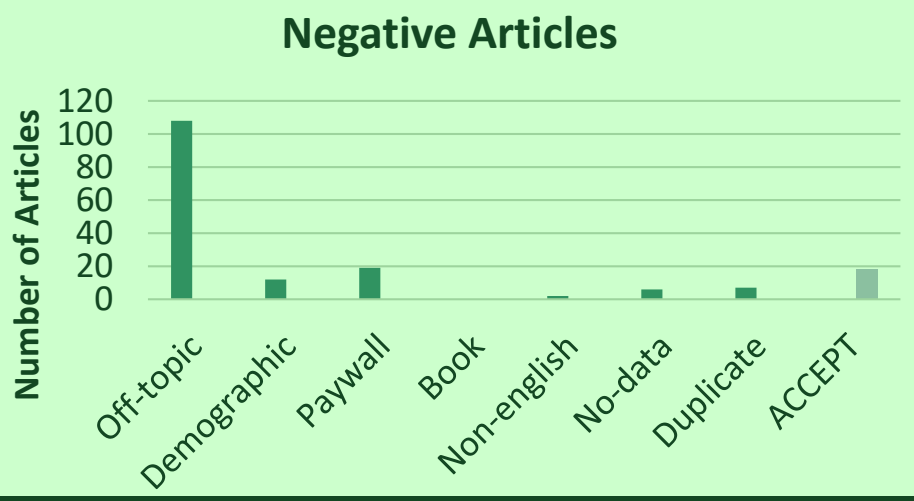
A survey of studies looking at the positive and negative effect of internet in adolescents

Research question

Is there a difference between the sexes in the effects of Problematic Internet Use (PIU)?

Data analysis & Results



Methods

1. Articles were gathered in Google scholar and PubMed
2. The articles were read through, highlighting the tests they used to evaluate internet use its association with mental health
3. Significant results were tallied.

Conclusions

- Gender was found to be significant with females being at higher risk or developing anxiety, depression, and/or suicidal ideation if PIU is already present.
- Age/amount of time spent on the internet also matter for determining the effects and their severity
- The different type of time spent on the internet are significant as the time spent on them varies by gender and so do the effects.

Social Media

- Social media and the internet have become significant parts of everyday life around the world used by many adolescents[3].
- Multiple short-form content platforms have become widely popular among youth such as Tik Tok, Instagram, and Facebook[3].
- The rise of internet use over the last decade has raised concerns over the safety for adolescents' mental health as certain conditions as several mental health conditions and disorders have been linked to or exacerbated by problematic internet use [7].

Tik Tok image credit: 1000 logos. Instagram image credit: Wikipedia commons. Facebook Image credit: Wikipedia.

Effects on Internet use
Positive and negative

Positive Impacts

- Many teenagers find connection and community through different platforms and are often able to create new friendships [24].
- The internet provides adolescents with a space to be creative as well, and to share important moments with friends and family [24].

- Social media platforms provide an opportunity for adolescents to communicate and share ideas with friends, and even new people [24].
- Social media provides a place for teenagers to express and cultivate an identity [24].

Negative impacts

- Internet use is known to be positively associated with mood disorders like depression. Leading some adolescents to experience suicidal ideation [8,13,16,19].
- Certain disorders can predispose adolescents to developed problematic internet use, such as ADHD and depression anxiety.
- Internet addiction in adolescents has been positively associated with depression and anxiety [1,2,6,7,8,9,10,12,13,15,17,18,19].

Question and Hypothesis

Question

Is there a difference between the sexes in the effects of Problematic Internet Use?

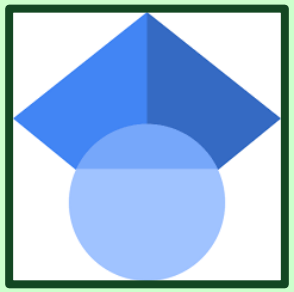
Hypothesis

There will be no difference between the sexes in the effects of Problematic Internet Use (PIU).

Procedure

1

Positive and negative articles were gathered in Google scholar and PubMed the general key words were Highschool, Middle school, Social media, Internet use, the Negative key words were depression, self harm, aggression, ADHD and anxiety, Positive key words were Community and friendship.



2

The articles were read through, highlighting the tests they used to assess the effects, and their results. If the p-value was less than .10, it was considered to be statistically significant.

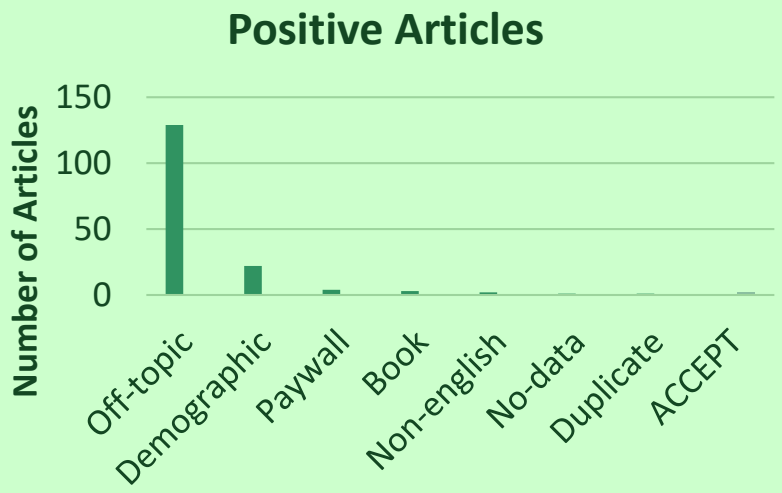
3

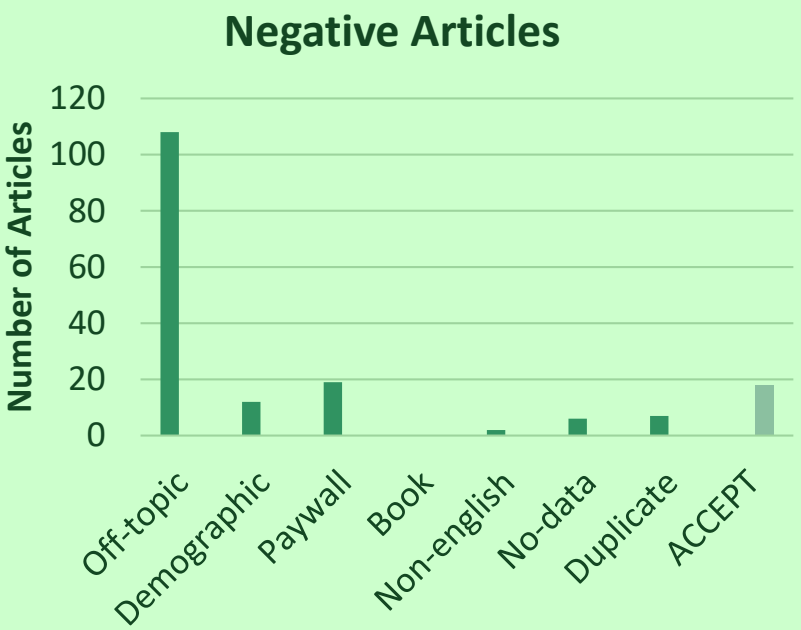
The selected articles were then tallied based on the occurrence of significant associations between problematic internet use (PIU) and negative or positive impacts.

Google scholar image credit: Wikipedia commons. Pubmed image credit:fastpublishjournal

Results and data

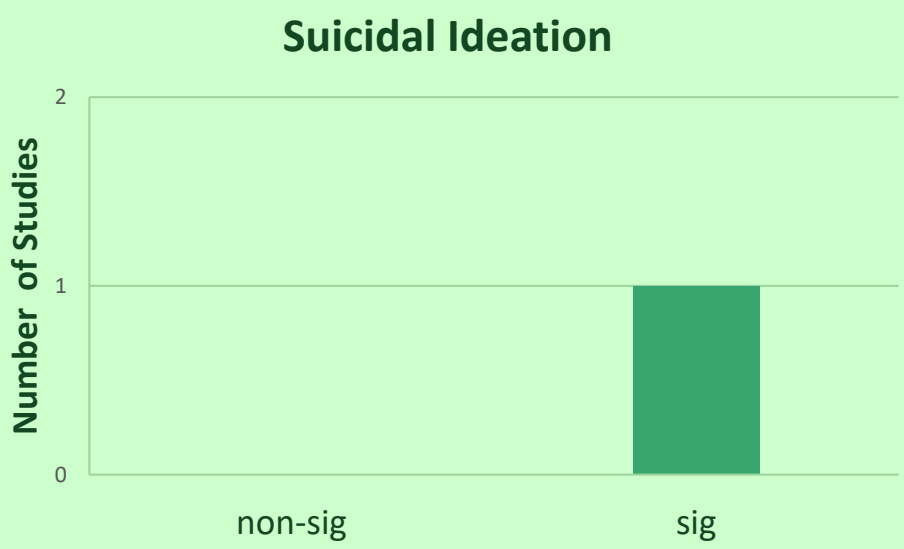
POSITIVE/NEGATIVE SOURCES

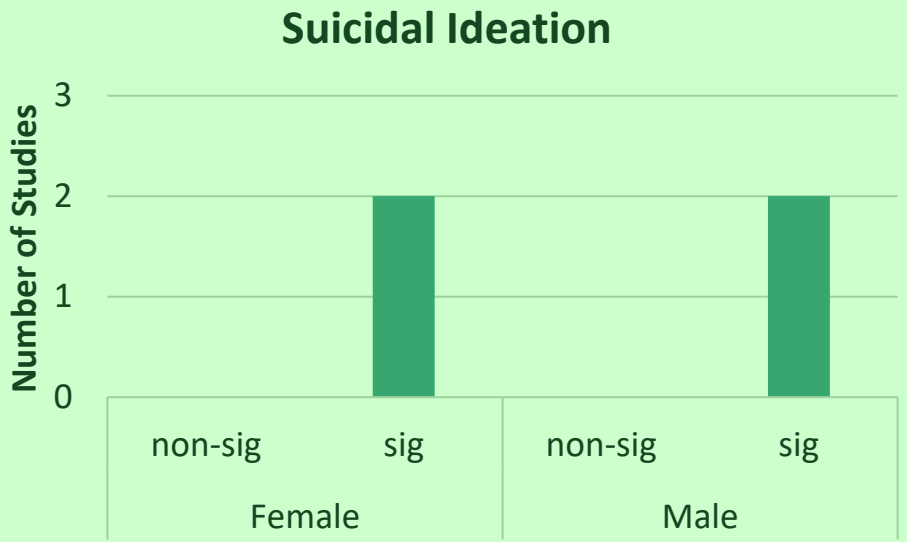




A total 172 negative articles were reviewed of which 18 met the criteria to be used in this study, 164 positive articles were reviewed with only two articles meeting the initial criteria Though the time window for studies was 2000s on studies from 2023 were prioritized due to their newness. An off-topic paper would be that the paper was not related to the relationship between internet use and one or more of the positive or negative effects. Or papers focusing on a mediating effect rather than papers focusing on a direct relationship between internet use and a positive or negative effect. Of the articles found for positive effects they were looking at how adolescents engaged in online fandoms, which was found to be overall a positive experience for the people in those online communities. The second of these articles looked at how adolescents use the internet to form friendships and express their identities, finding that online connections can strengthen friendship but also result in phubbing. However, because of the low number of studies found we could not continue with the positive effects. Of the Eighteen articles found for the negative effects four addressed ADHD, two addressed aggression, fourteen addressed depression and anxiety, and four addressed suicidal ideation. Several of the studies looked at multiple effects. The countries that the studies took place in were 1 in Brazil, 1 in Canada, 1 in the Caribbean, 3 took place in China, 1 in Hungary, 1 in India, 1 in Italy, 3 in Japan, 1 in Korea, 2 in Norway, 2 in the USA, and 1 in Vietnam.

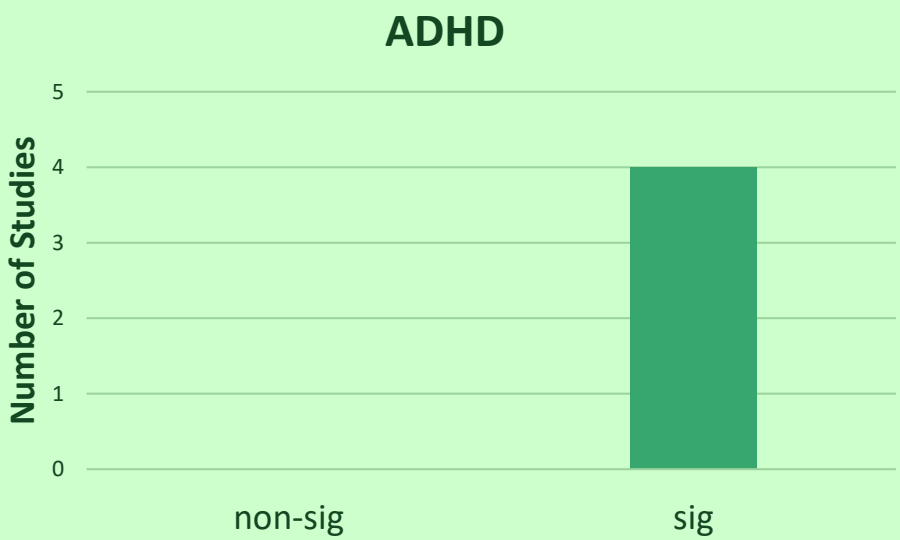
Results and data
SUICIDAL IDEATION

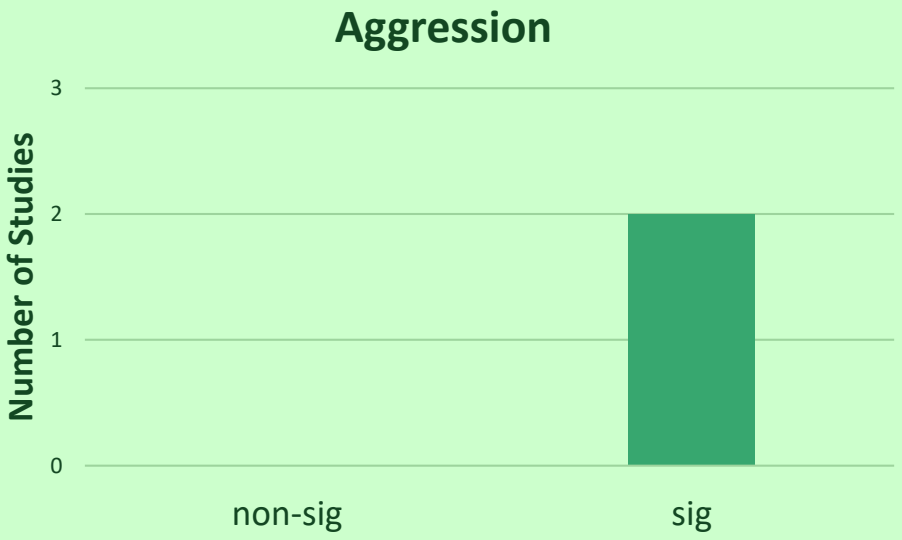




Across two data bases four studies were found relating to problematic internet use (PIU) and suicida ideation (SI). Two of the studies looked at the effect of PIU on males and females separately, and two had no distinction between genders. There was statistical significance between high PIU and suicidal Ideation, for both genders combined and for males and females separately. None of the studies found any non-significance between PIU and SI, with the total number of participants being over 4000 and the combined age range for these studies being 9^{th}-12^{th} grade. The methods of determining SI in participants were questions asking where the participant had ever experienced serious thoughts on killing themselves, the time range varied between ranging from the last 12 months to at any point in their life.

Results and data
ADHD and Aggression



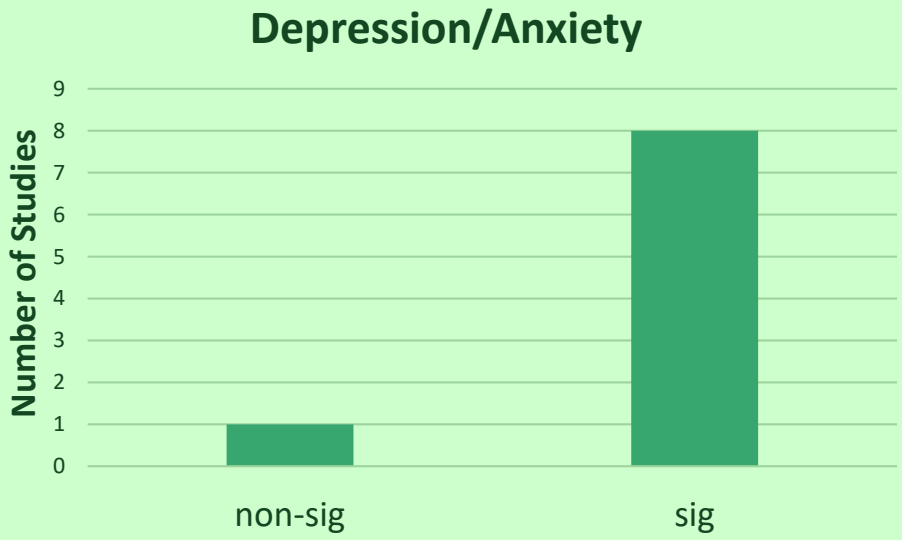


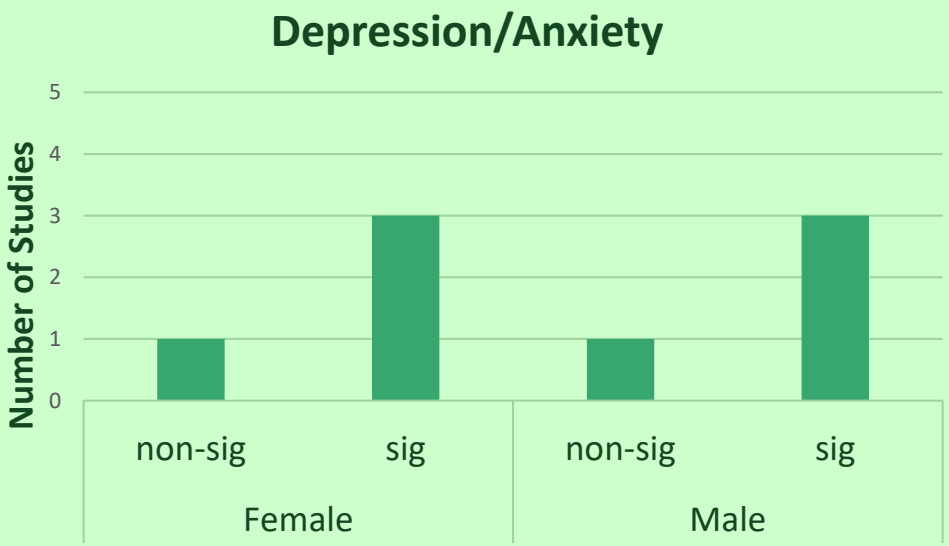
The four studies found comprised of over 8000 participants with the combined age range being 11-19 years old found a statistically significant association between high internet use and ADHD Of the four studies only one study separated by sex however they found significant associations between PIU and ADHD for both sexes and was included in the main graph with the other three studies.

The two studies found on Aggression were made up of 10041 with a combined age group of 12–19-year-old. Aggression had a statistically significant association with PIU. The Buss-Perry Aggression questionnaire was used by both studies to assess aggression. The questionnaire separates aggression into four subcategories: hostility, physical, rage and verbal.1 study found verbal to not be statistically significant however all other aggression types were found to be significant.

Results and data

DEPRESSION/ANXIETY





Problematic internet use was positively associated with depression and anxiety across the thirteen studies. With higher use of social media leading towards an increase in poor mental health symptoms. With several studies reporting that girls tend to use social media more than boys [15,16,20]. Studies that combined girls in boys into one group lead to an indirect indication that PIU in females lead to them experiencing more anxiety and depression than in males. As well as studies that separated girls and boys finding that girls used social media more excessively than boys [15,19,20]. With two of the studies reporting a larger impact on girls than boys, with either smaller significance or no significance at all [29,20]. One study reported that even though the excessive SMU and depression rates were higher in girls, there was much more significant association between anxiety depression and SMU for boys. The increase in PIU was nonlinear either by age (in Longitudinal studies) or by hours per day (in cross sectional studies). A notable jump in the increase of PIU happening between grade 7 and 8 [12]. The hours per day did vary across studies ranging from more than two hours to more than six hours.

Discussion and Conclusion

Is there a difference between the sexes in the effects of Problematic Internet Use?

It was hypothesized that there will be no difference between the sexes in the effects of Problematic Internet Use (PIU). ***Generally, speaking, however, girls are at a greater risk of being negatively impacted by excessive social media use.*** Of the 18 studies, 6 of them screened the negative effects while separating the sexes. Out of the remaining 12 studies 3 found gender to not be significant when screening for depression and anxiety (2) and ADHD (1). Five studies did not mention why they grouped the sexes together [6,11,16,17]. Three of the studies mentioned some differences in the frequency or rates of the negative effects of PIU between the genders but ultimately still grouped them together. The last one did not mention gender as something they were using in their study. Overall, several studies found that girls tend to abuse social media more than boys did even if boys had more time spent on the internet [7,8,15,19]. Girls were also found to be more at risk of developing anxiety, depression, and suicidal ideation because of PIU and IA [10,12,13,14,20]. Several studies did not differentiate the type of Internet use, which is unfortunate because it's important to understand how different types of internet use effect the outcome of PIU, and could be a point for further research.

Further Research

Positive Effects

- More research looking at the quality of online friendships or looking at how online communities/friendships impact quality of life in adolescents.
- Comparing the way Queer youth interact with online communities and how cis het youth interact with online communities.

Negative Effects

- More studies focusing on how PIU ADHD and Aggression are related with differentiation between sex.
- Identifying interventions that can help mediate/decrease the negative consequences of internet addiction.

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