Social Media Survey Data Analysis

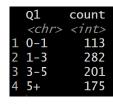## PART I: Introduction

771 individuals' responded to a survey on social media and mental health which was conducted in Bangladesh. Entries from 4th Feb until 10th Mar 2021 were recorded, with respondents being mainly Facebook, Instagram, Snapchat, Twitter, and WhatsApp users in the following split:

Q2	no_respondents
<chr>	*<int>*
1 Facebook	659
2 Instagram	64
3 Snapchat	15
4 Twitter	16
5 WhatsApp	17

Given that the median age of respondents is 25 with IQR of 20-27 and that over 60% of Bangladesh population were aged 15-60 in 2021, the respondents to the survey are not the most accurate representation of the whole Bangladeshi population at the time.

PART II: Comparing social media use with sleep quality

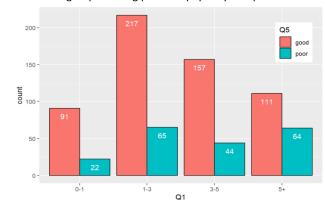| Q1	count
<chr>	*<int>*
1 0-1	113
2 1-3	282
3 3-5	201
4 5+	175

Responses to Q1 (daily hrs spent on social media) and Q5 (sleep quality in the past month) shows majority spend 1-3 hrs on social media, this is the reason for a major spike in the following bar chart demonstrating distribution of each group's sleep quality. Considering proportions, there is a consistent ≈20% from each group claiming poor sleep quality except for those spending 5+ hrs on social media with over 35% suffering from poor sleep. This is a possible indication that regular extreme social media use can disturb a restful night's sleep, likely due to social factors including stress, peer pressure, cyber bullying and other self-confidence issues stemming from the nature of social media platforms as well as probably late night scrolling instead of sleeping reduces time spent actually asleep and negatively affects routine/ sleep schedule leading to poor sleep quality over time.

On the other hand, the graph below interprets the data in a continuous fashion using age as the continuous factor; depicting a falling rate of daily social media use with age, this is accentuated by the imbalanced age groups present in the dataset howe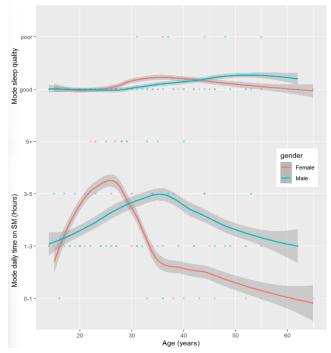ver the general trend is clear. Similarly, while majority claimed good sleep quality in the last 30 days, there is common feature in the data showing older age groups with more "poor sleep quality" responses indicating a possible causation by health and other external factors that come with age rather than from high social media usage. The peak social media usage by both males and females occurs in their 20s and 30s respectively, women showing much more dramatic use of social media leading up to that. At the same time, both males and females also show poor quality sleep later in life, suggesting a correlation between high social media and sleep quality in life, this could be explained by "knock-on effects" and decisions made because on social media and their effect later in life. However, since this dataset does not give the social media usage and sleep quality of the same individuals over time, this hypothesis can't be sufficiently validated.

PART III: Is there evidence that some social media platforms are more engaging or "addictive" than others?

Since the time spent on social media (Q1) was asked in the survey with categorical options, I felt the best way to summarize this was the mode (average) for which I needed to write a function to carry out the calculation. Firstly, using this I found a significant portion of the respondents were mainly Facebook users, immediately indicating Facebook as the top platform with an overwhelming ≈85% stating it as their most common social media platform (Q2).

Q2	no_r	mode_t
<chr>	*<int>*	*<chr>*
1 Facebook	659	1-3
2 Instagram	64	5+
3 WhatsApp	17	1-3
4 Twitter	16	3-5
5 Snapchat	15	1-3

On the other hand, the amount of time spent on it by those who mostly use Facebook, 1-3 hrs, was significantly less than the average daily time spent by Instagram users, 5+ hrs. This suggests instead that Instagram, with next highest number of regular users in the survey to Facebook and highest average daily hours spent by them, is the most "addictive". Alternatively, looking from the perspective of time spent on social media, Facebook was the most common social media across each of the groups. This emphasises that Facebook seems to be the most engaging social media platform for the Bangladeshi population in 2021. Finally, taking into account the different social media behaviours and effects seen before-hand between men and women, I grouped the relevant results by gender, strongly reinforcing the same conclusion for Facebook:

Q1	no_r	mode_sm
<chr>	*<int>*	*<chr>*
1 0-1	113	Facebook
2 1-3	282	Facebook
3 3-5	201	Facebook
4 5+	175	Facebook

gender	no_r	mode_t	mode_sm
<chr>	*<int>*	*<chr>*	*<chr>*
1 Female	414	1-3	Facebook
2 Male	357	1-3	Facebook