

# Project Report **Exfluenced**

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Preface by the Supervisors	76
Journalistic part	78
Comic	80
Scientific part	82
Self-reflection	94
Process description	96

## Preface by the Supervisors

Prof. Dr. Stephan Jonas and Prof. Dr. Helmut Krcmar

Almost one third of the time people spend on social media is unintended, resulting from a lack of self-control.<sup>1</sup> This time, unwillingly spent in front of a screen, could just as well be spent meeting friends, doing sports, doing homework, or studying for university exams, potentially making a difference in people's lives in the real world.

With the increasing reach of social media platforms such as Facebook, Instagram, and TikTok, we have yet to grasp the full extent of negative implications these platforms can have on people's lives. One of the negative implications is social media addiction. In particular, young people are at risk as children, teenagers, and young adults are exposed to social media as early as in elementary school. While the mechanisms are not fully understood yet, increasing social media usage has been linked to loss of concentration, sleep deprivation and decline in school performance, along with a wide range of mental health issues.

When we were contacted by the TUM: Junge Akademie team Exfluenced, we were immediately convinced that their goal to target social media addiction was important and timely. In the course of the project, the team first developed a better understanding of the issues associated with social media usage by conducting interviews with experts from the field. Then, the team focused on Instagram, highlighting, amongst others, the phenomenon of influencers. With their own social media campaign, the team raised awareness for social media addiction and ways social media content can influence our decisions – an issue that becomes even more crucial in the context of the COVID-19 pandemic and related fake news that are omnipresent on social media platforms. Based

1 Allcott, H.; Gentzkow, M.; Song, L. (2021) Digital Addiction. NBER Working Paper 28936, https://www.nber.org/papers/w28936. on their work, the team developed a social media detox training that aimed at educating participants about the risks of social media usage and the importance of being aware of and in control of their social media usage. The team conducted a scientific evaluation of the detox program by implementing a cross-over study mostly among university students.

The project results show that there is no easy answer for the threat that social media poses for the mental health of its users. A detox program such as the one developed by the Exfluenced team might have positive effects when extended and refined. In particular, it could give users more self-control in their consumption of social media. However, a broader strategy is needed to target social media addiction early on and to help children, teenagers, and young adults to become more selfaware with regard to social media consumption. Besides the users, stakeholders such as parents, schools, universities, and regulatory authorities need to be involved to identify the most vulnerable groups and develop strategies on how to mitigate the risks social media consumption poses for these groups.

We are convinced this project contributes to an increasingly important discussion on social media usage. This discussion needs more attention – not the least at TUM, to ensure the wellbeing of our students.

## My journey of becoming more exfluenced

Like most 22-year-olds, Mia spends a lot of her time on Instagram to browse for inspiration. By chance, she discovers the project Exfluenced, which raises awareness about unhealthy social media usage on their Instagram account and provides a 7-day detox program to increase users' self-competence regarding Instagram.

#### Here is Mia's story:

"Brunch is always a good idea!" Choosing a good Instagram caption is an art. Since I have not been active posting on Instagram lately, I need to deliver with my next post and a witty caption is a great start.

I am sitting in a trendy cafe that an influencer recommended to find out what all the buzz about their famous brunch is about. While my friend is talking about some dress she bought which looks similar to what her favorite celebrity wore, I start looking around. At the table right next to us are two girls who seem like they walked straight out of my Instagram feed. Of course, the waiter puts avocado toast and an Instagram-worthy smoothie bowl on their table. Before they even touch the food, they arrange their plates and take pictures. I am sure all of their followers will see these in their Instagram stories with a filter and a pretty caption about meeting their best friend for brunch as well. My friend excuses herself to go to the bathroom after rambling all about her new celebrity crush. I take out my phone to check out his Instagram. After finding out that he is not my type, I catch myself on my explore page. After Instagram shows me another video where someone tells me a lifehack I already know, I see a post from a page called @exfluenced.<sup>1</sup>

Maybe, I actually should stop scrolling for today... Thinking that a daily reminder cannot hurt, I check out their account and find that they offer a free 7-day detox program on www.exfluenced.com. Fearing becoming one of the girls on the table next to us, I decide: why not give it a try?

#### **DAY 1: INTRODUCTION**

I am welcomed by the words from influencer and author of the book "How Social Media is Ruining Your Life" Katherine Ormerod: "If we continue to use social media the way we have been, we will seriously jeopardize our future health and happiness" (Ormerod, 2018). Wanting to decrease the impact of social media on my life, I am looking forward to the next days.



1 Link: https://www.instagram.com/p/CMZ3za5h8dH/?utm\_source=ig\_web\_copy\_link

#### **DAY 2: TESTIMONIALS FROM OTHER USERS**

I was always judging myself for spending too much time on social media and failing to get myself out of the endless vortex of content on Instagram. The longer I listen to the words of other Instagram users in the interview series, the more I understand: I am not alone with this, others are struggling as well. Sometimes we do not even notice the impact of Instagram. I realize how the three interviewees deal with reducing screen time and being less controlled by the urge to check their Instagram feed.

#### DAY 3: A DAY IN THE LIFE OF AN INFLUENCER

Posting pictures of your holiday and getting paid for it? The job of an Influencer sounds tempting, but as most of us know: there is a gap between what we see online and what in reality it really looks like. Did you know that only 14% of posts by Influencers are correctly marked as ads? That's insane! (Geyser, 2021) As I step into the role of an Instagram influencer in an interactive online game and deepen my knowledge about influencer marketing, I realize that money and followers come at the cost of authenticity.

#### DAY 4: INTERVIEW WITH PROFESSOR HENNINGSEN

I have read articles about the consequences of excessive social media use on mental well-being, but so far, it seemed more like fear-mongering to me. The interview with Peter Henningsen, professor for Psychosomatic Medicine and Psychotherapy at TUM, gave me a new perspective on the complex relationship between the online world and our health.<sup>2</sup> It seems to me that we often tend to oversimplify the mechanisms at play.

"[Fear of missing out] is a normal thing which has existed before but is now amplified by this technical medium."

Reading this, I realize that even before social media, I was mad when I missed a night out with my girls. However, I regularly check out Instagram to know what others are doing. I understand now the importance of keeping in touch with my friends offline. Don't get me wrong – it is nice to be able to text them at any time, but it is totally different to interact with them in person.

#### **DAY 5: DIGITAL WELL-BEING**

I watch the videos explaining fear of missing out, addiction, mental health in connection to social media and productivity. It is fascinating how one small app influences many aspects in our life. The self-reflection questions make me aware of how much Instagram has affected my mental health and productivity. The latter especially always bothered me. Maybe that is why I can't get my seminar paper done...

Hopefully this will change by implementing the helpful tips, especially the one about turning off notifications. Not getting any of these helps a lot with not opening Instagram and finding myself endlessly scrolling afterwards.

I also put a screen-time limit on Instagram. It is easy to bypass, but just that pop-up that I have reached my limit helps me to close the app. Another tip that I really liked was unfollowing all the accounts that do make me feel bad.

#### **DAY 6: INTERVIEW WITH WIENKE STRATHERN**

Today provided an interesting change in scenery for me. Wienke Strathern, a Ph.D student and research associate of Computational Social Sciences and Big Data at TUM, talking about the dynamics of social networks showed me a different side to the implications of my own use.<sup>3</sup> It used to make me wonder why people would go so far as to insult or threaten another person online. Wienke offered me another look at it: such behavior is often driven and even encouraged by social networks to keep its users constantly involved. It always seemed crazy to me that some of my friends believed in conspiracy theories, but now I see that, through social media, they are often just one click away. And once you are in, there is no going back – echo chambers will keep feeding you similar content. But aren't we all living in our own bubble?

#### DAY 7: WHAT DO REALLY I KNOW ABOUT FAKE NEWS?

Spending a lot of time online, I - of course - know about fake news and would say that I am able to detect it. At the end of this journey, I find myself in the shoes of a journalist who gets confronted

with mis- and disinformation. The more I embrace this role in the interactive game, the more I learn about recognizing fake news and the algorithms of social media which facilitate echo chambers. It is scary, that a study even confirmed that fake news spreads significantly faster and further than true news (Vosoughi, Roy, & Aral, 2018). I really should be more aware of my own biases and of the fact that I am not immune to misinformation.

A week later, as I walk past the trendy brunch spot, I see a group of friends laughing about something on their phones. I have to smile, wanting to say to them: I know that I am one of you, but I am now aware of it and able to deal with it.

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Exfluenced



# Effects of a 7-day social media detox program on Instagram usage: a cross-over study

Table of contents:
Abstract
Introduction
Methods Study design Recruitment Study population Intervention Questionnaires Outcomes Statistical analysis
Results Cross-sectional analysis Longitudinal analysis
Discussion Strengths of the Study Limitations of the Study
Conclusion
Supplement
References

#### Abstract

We propose a 7-day interactive social media detox program which aims at educating participants regarding the influences of Instagram (psychological well-being, influencer marketing, political fake news).

We evaluate our detox program with a cross-over study. Participants, aged 18–28 years, were randomized into two groups. In the first two-week study period, Group 1 (n = 17) started with the detox program, while Group 2 (n = 21) did not receive the intervention. The allocation of the two groups switched in the second two-week study period. We employed a Wilcoxon test to evaluate differences of the average daily Instagram usage between the detox and no detox period for both groups, respectively. To test changes in eight further outcomes, all targeting experiences with Instagram usage, we carried out Friedman rank sum tests per group.

We observed no significant difference of the average daily Instagram usage between the detox and no detox period for Group 1 and Group 2 (p-value = 0.2091; p-value = 0.0544). Besides, only the variable "I felt I was in control of how much time I have spent on Instagram during the last 7 days" differed significantly in Group 2 between the baseline and the end of the study (p-value = 0.044) as well as between the start and the end of the second study period (p-value = 0.019).

We discuss the implications of our detox program on Instagram usage time and critical self-reflection on the basis of the accompanying study and formulate suggestions for future research based on limitations of the current study.

#### Introduction

The unprecedented rise of the internet has enabled an age of worldwide connectivity. Social media platforms like Facebook, Twitter, and Instagram have become the de-facto standard for communication – both for personal use as well as for information propagation (Dijck, 2013).

Social media platforms are a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content (Kaplan & Haenlein, 2010).

They have become increasingly important in our lives: Today, the biggest social media platforms share a collective 4.2 billion users worldwide – more than half of earth's entire population (Kemp, 2021). In Germany alone, a reported 79% of the population actively participates in social media – a 13% increase since April 2020 (Kemp, 2021).

Social media networks facilitated the organization of grassroots movements like the Arab Spring (Wolfsfeld, Segev, & Sheafer, 2013), Fridays for Future (Boulianne, Lalancette, & Ilkiw, 2020; Brünker, Deitelhoff, & Mirbabaie, 2019) and Black Lives Matter (Cascante, 2019; Mundt, Ross, & Burnett, 2018). During the recent COVID-19 pandemic, users have relied on social media as a source of information and for a means of staying connected (Tsao et al., 2021). A reported 74% of surveyed users answered that social media helped them stay connected with family and friends during the pandemic (Kemp, 2020).

However, there have been growing concerns about the possible drawbacks of this media revolution. Social media has also enabled the viral spread of misinformation (Gabarron, Oyeyemi, & Wynn, 2021), more explicitly, the phenomenon known as "fake news" (Lazer et al., 2018), which refers to guided and intentional efforts to spread misleading media and information content on social media platforms. This motivated a large body of research investigating the possible influence of fake news on social media during the 2016 US presidential election (Allcott & Gentzkow, 2017).

Several studies have indicated that excessive social media usage is linked to mental health problems such as loneliness, anxiety, and depression (Keles, McCrae, & Grealish, 2020). Moreover, social media use can lead to a lack of sleep (Woods & Scott, 2016) and is associated with a negative body image and disordered eating (Holland & Tiggemann, 2016). Although not formally recognized, social media addiction shares many similarities with diagnoses of recognized addictions, including withdrawal, relapse, and mood modification (Andreassen, 2015). The possibility to continuously engage on social media, connected with the fear of missing out ("FOMO") (Przybylski, Murayama, DeHaan, & Gladwell, 2013), makes it increasingly difficult for users to exhibit self-control when it comes to usage reduction, especially when it conflicts with other goals and obligations, such as academic, career, or social life (Du, Koningsbruggen, & Kerkhof, 2018; Marker, Gnambs, & Appel, 2018; Ward, Duke, Gneezy, & Bos, 2017).

In addition, social media has sparked the rise of so-called influencers, online personas who have gathered a large following on a social media network (Khamis, Ang, & Welling, 2017). This has introduced a novel strategy for the advertising industry, known as "Influencer Marketing," which is based on a more personal and authentic approach to product marketing and is expected to generate \$13.8 billion in market capital in 2021 (Geyser, 2021). Online influencer marketing often blurs the borders between genuine content and advertising, which may increase the susceptibility to these forms of advertising (Lou, Ma, & Feng, 2021). In the past, many influencers have been found to violate existing rules for advertising, which has led to US federal agencies pursuing cases against some influencers (Lou et al., 2021).

Recognizing the possible dangers of excessive and uneducated social media usage, users have become more concerned with their social media usage in recent years. Hence, more than half of millennials and Generation Z individuals think social media does more harm than good. 60% think they would be happier and psychologically healthier if they reduced their interaction with social media. 40% would like to do without social media completely ("The Deloitte Global Millennial Survey 2019," 2019). Another survey finds that out of 4,438 surveyed, roughly 70% have been concerned with reducing their digital consumption (Paisley, 2018). Methods include the deletion of applications, taking short breaks, and switching off notifications.

It has been shown that by limiting social media usage, negative consequences like depression and loneliness can be reduced (Hunt, Marx, Lipson, & Young, 2018). Another study has found that a one-week social media abstinence trial can have a positive effect on perceived mental well-being (Brown & Kuss, 2020). Taking a one-week break from social media has also been shown to lead to an increase in sleep quality (Graham, Mason, Riordan, Winter, & Scarf, 2021). One of the most common practices for social media self-control was found to be modifying a feature on the device,

such as activating airplane mode (Brevers & Turel, 2019). The authors of this study (Brevers & Turel, 2019) propose that promoting self-control can be a mediating factor for social media usage. A recent study revealed that 22% of students voluntarily disconnected from some social networking platforms for a period longer than one week, but returned to those applications shortly after (El-Khoury, Haidar, Kanj, Ali, & Majari, 2021). Here, Instagram was identified as the most difficult network to limit usage of. Another approach to smartphone detoxification involves the use of dedicated applications, that have been recently developed for this purpose. Most of these programs take the approach of monitoring the users' screen time and limiting access once a certain threshold is met (e.g., ("Flipd App," 2021) & ("Anti Social App," 2021)). The app "Binky" gives its users an environment that is designed to mimic social media apps. but without interacting with other people ("Binky App," 2021). This is meant to act as a pacifier for cravings related to social media. While these apps seem to have gained some popularity, the effectiveness of their approaches in reducing social media consumption amongst users remains unclear. We observed a clear study gap in this regard: None of the investigated apps had published analyses or evaluations on the effects of their respective methods.

The overall results of multiple studies hint towards a positive impact of social media usage reduction on mental well-being – however, not all managed to produce conclusive findings (Brown & Kuss, 2020; Graham et al., 2021; Hall, Xing, Ross, & Johnson, 2021; Hunt et al., 2018; Przybylski, Nguyen, Law, & Weinstein, 2021; Wezel, Abrahamse, & Abeele, 2021). For example, a recent study by Przybylski et al. (2021) found that a single day of social media abstinence did not have any significant positive effect on psychological well-being but rather decreased the level of social relatedness. Hunt et al. (2018) found that a three-week social media abstinence trial can lead to a decrease in depression. However, a study by Hall et al. (2021) indicated that a social media abstinence of up to four weeks did not improve daily well-being.

Recognizing that most previous studies (Hunt et al., 2018; Przybylski et al., 2021; Wezel et al., 2021) have solely focused on pure social media abstinence as a mean of incentivizing a healthier relationship with social media, we aimed to develop and analyze a holistic social media detox program which puts emphasis on educational and self-reflective aspects of social media detoxification in order to close this research gap ("Exfluenced," 2021). Our program is divided into three parts that we identified as significant for our target audience a priori: the concept of influencer marketing, the spread of misinformation, and psychosomatic consequences of Instagram usage. It is based on inoculation theory, which has shown promise in reducing susceptibility towards misinformation in the "fake news" intervention game Get Bad News (Roozenbeek, Linden, & Nygren, 2020). As such, we provided a combination of interactive lessons, useful tips, and expert interviews for the aforementioned topics (see the supplement for more details). In the accompanying study, we aim to investigate the impact of the proposed detox program. This type of intervention has not been studied before in the context of social media use.

#### Methods



Figure 1: Cross-over design and overall study outline

The study was carried out as a cross-over design with two groups and three time points, in total lasting 28 days. Weighted randomization to compensate high expected dropout rates was performed at baseline, with one-third of participants assigned to Group 1 and two-thirds assigned to Group 2. The study can be divided into two study periods, A and B. Online questionnaires to assess outcome variables were administered at the beginning of period A, between periods A and B, and after period B. In period A, Group 1 completed the detox program for the first seven days, followed by 7 days without intervention. Group 2 had no intervention in period A. In period B, the intervention assignment was reversed, with Group 2 completing the detox program in the first 7 days, followed by 7 days with no intervention, while Group 1 had no intervention (see Figure 1).

#### Recruitment

For the recruitment of participants, we used several approaches. A few participants could be acquired from the researchers' personal networks. Additionally, advertisements were published on Instagram and emails were sent to all faculties and student representatives of TUM. Other techniques constituted distributing flyers in student accommodations in Munich and publishing an article about the study on the news platform "DeinUpdate" ("DeinUpdate," 2021). To increase the motivation to participate, two forms of incentives were offered. First, a total of four vouchers were shuffled among all participants finishing the study. Second, the first 50 participants, who filled out all three questionnaires, were promised a 20€ reward.

#### Study population

We recruited 181 participants that took part in the survey. After exclusion of participants with missing data in the first questionnaire, data of 137 participants, aged 18–33 years (53 men, 84 women), remained for cross-sectional analysis. In respect of the longitudinal analysis, initially 90 participants were observed, who participated in the third questionnaire. Due to missing participation or missing data in either the second or the third questionnaire, double participation or wrong declaration of the identification code, data of 38 participants, aged 18–28 years (14 men, 24 women), remained for longitudinal analysis. From the 38 participants, 17 participants were included in Group 1 and 21 participants in Group 2.

#### Intervention

The web page ("Exfluenced," 2021), which hosted the detox program, was implemented using the JavaScript ("JavaScript," 2021) framework React ("ReactJS," 2021). In total, the detox lasted for seven days. Each day consisted of a 10–15-minute session using methods such as informative videos, interactive games, or expert interviews. A detailed description of the detox program can be found in the supplement. During the detox, participants were not encouraged to restrict their Instagram usage. The goal was that the usage behavior of participants would change automatically in response to an increased self-competence and expanded knowledge regarding the influences of Instagram in form of influencer marketing, psychological well-being, and political fake news.

#### Questionnaires

The survey consisted of three online questionnaires with two weeks in between each. All guestionnaires were created with the online survey tool LamaPoll ("LamaPoll," 2021). Participants were invited to fill out the questionnaires by receiving emails that included links forwarding them to our survey website LamaPoll. After registering for the detox program on our website, participants received the invitation to the first questionnaire. The invitations for the second and third questionnaires were each sent two weeks after the previous invitation. Only those participants were able to fill out the questionnaires who claimed to be  $\geq$  18 years, assured us of being Instagram users, and agreed to the declaration of consent to the collection and processing of personal data. The questionnaires further consisted of creating an identification code word, which should have been used by the participants for all three questionnaires. Further guestions included the indication of Instagram usage time and eight questions regarding personal experience with Instagram.

#### Outcomes

In total, nine outcome variables were observed, of which one belonged to the continuous and eight to the categorical level. The continuous outcome was defined as the average daily Instagram usage time over the last 7 days. Participants were instructed to look up the exact time in the settings of their Instagram account. For further analysis, we used the mean change in the average daily Instagram usage for both time periods A and B (period A = 1. follow-up – baseline Instagram usage time; period B = 2. follow-up – 1. follow-up Instagram usage time). Outcomes assessed on a categorical level included the following self-administered items: "I felt I was in control of how much time I have spent on Instagram during the last 7 days"; "I feel good when I use Instagram"; "I feel bad about my life because of what I see on Instagram"; "I feel bad about my body because of what I see on Instagram"; "I use Instagram for procrastination (e.g. avoiding studying/working/ chores etc.)"; "I believe that the information on posts/pictures I see on Instagram is true"; "I believe the content on Instagram has an influence on my opinions on political matters"; "I think critically about the content I see on Instagram". Ratings of the items could be given on a 5-point Likert Scale, structured as: yes, very much; yes, kind of; rather not; not at all; I don't want to answer. In respect to coding, the most favorable outcome was always set to 0 (e.g., "I feel good when I use Instagram" - Yes very much) and to

Exfluenced

the least desirable outcome the value 3 was assigned (e.g., "I feel good when I use Instagram" – Not at all). Participants were excluded in the statistical analysis if they chose the option "I don't want to answer" in any of the eight categorical outcomes, due to low participant number in the respective category.

#### Statistical analysis

All statistical analyses were performed using R Studio, Version 4.1.0 (R Core Team, 2021). P-values < 0.05 will be used to determine if the conducted statistical tests show significance. In the cross-sectional analysis, we employed Spearman rank correlation tests to assess the correlations between all nine outcome variables derived from the first questionnaire. Due to the large number of statistical tests performed (n = 36), we adjusted the p-values for multiple testing using Bonferroni correction. In the longitudinal analysis, we applied all statistics tests stratified for Group 1 and Group 2. For evaluating differences between the periods A and B regarding the mean change in the average daily Instagram usage, we performed a Wilcoxon signed rank test with continuity correction since the assumptions for the paired t-test were not fulfilled. To test significant differences of the categorical outcomes between the three time points (baseline, 1. follow-up, 2. follow-up), we carried out the Friedman rank sum tests. As a consequence of the large number of statistical tests performed (n = 16), we again adjusted the p-values for multiple testing using Bonferroni correction. For all observed significant differences in categorical outcome

variables, we conducted post-hoc analysis using Nemenyi multiple comparison test.

#### Results

#### Cross-sectional analysis: correlation between the outcomes

Out of the 36 Spearman rank correlation tests between the outcomes, solely two tests demonstrated a moderate correlation (> 0.3) with significant p-values after Bonferroni correction. Hereby, the outcomes "I feel bad about my body because of what I see on Instagram" and "I feel bad about my life because of what I see on Instagram" showed a significant moderate correlation (rs = 0.42, Bonferroni corrected p-value = 1.39932e-05). Taking into account the coding of the variables, following direction of correlation applies to the variables: Feeling bad about one's body correlates positively with feeling bad about one's life because of what people see on Instagram.

Also, the outcomes "Average daily Instagram usage of the last 7 days" and "I felt I was in control of how much time I have spent on Instagram during the last 7 days" displayed a significant moderate correlation (rs = 0.43, Bonferroni corrected p-value = 5.0256e-06). Regarding this result, the following direction of correlation is given: A higher average daily Instagram usage correlated positively with feeling less in control of how much time one has spent on Instagram during the last 7 days.

Variable	Group 1 (n = 17		Group 2 (n = 21)						
	Baseline	1. Follow-up		2. Follow-up	Baseline	1. Follo	w-up 2. Follow-up		
Average daily Instagram usage of the last 7 days (minutes)*	44.1 ± 46.8	33.1 ± 38.0		44.7 ± 55.1	61.9 ± 36.9	71.6 ± 6	60.8	53.3 ± 50.0	
	1. Follow-up - Baseline (Detox)	2. Follov () 1. Follov		w-up - w-up (No detox)	1. Follow-up - Baseline (No detox)		2. Follow-up - 1. Follow-up (Detox)		
Mean change in the average daily Instagram usage of the last 7 days (minutes)*	- 11.0 ± 32.8	32.8 -		+ 11.6 ± 40.5		+ 9.7 ± 40.5		-18.3 ± 34.3	

\* Continuous variables are presented as mean ± standard deviation

Table 1: Average daily Instagram usage of the last 7 days (minutes) stratified by group

#### Longitudinal analysis: effects of the detox program on the Instagram usage time

Table 1 and Figure 1 display that the mean values of the average daily Instagram usage of the last 7 days of Group 1 and Group 2 demonstrate distinct differences. Group 2 encompasses a higher average daily Instagram usage of the last 7 days at all three time points. Therefore, we decided not to combine both groups in the further analysis, but to perform stratified analysis for Group 1 and Group 2 to avoid bias due to the high differences between the groups for unknown reasons.



Figure 2: Average daily Instagram usage of the last 7 days (minutes) for all three time points stratified by group. Group 1 participated in the detox between baseline and 1. Follow-up. Group 2 completed the detox between 1. Follow-up and 2. Follow-up.

In Group 1, the average daily Instagram usage of the last 7 days decreases on average for 11 minutes from the first questionnaire to the second questionnaire after all Group 1 participants performed the detox program. Between the second and third time point, the average daily Instagram usage of the last 7 days increased on average for 11.6 minutes. During this time period, the participants

did not perform the detox program. In Group 2, the average daily Instagram usage of the last 7 days increased on average for 9.7 minutes from the first questionnaire to the second questionnaire after all Group 2 participants did not perform the detox program. Between the second and third time point, the average daily Instagram usage of the last 7 days of Group 2 decreased on average for 18.3 minutes after performing the detox program during the first 7 days of the time period (see Table 1 and Figure 3).



Figure 3: Mean change in the average daily Instagram usage of the last 7 days for Group 1 and Group 2  $\,$ 

The Wilcoxon test revealed no significant difference between the two time periods (detox vs. no detox) for both Group 1 and Group 2 (V = 49.5, p-value = 0.2091; V = 157, p-value = 0.0544, respectively).

Longitudinal analysis: effects of the detox program on critical self-reflection, awareness concerning the influence of social media and influences on a personal level

Participant numbers of the categorical outcome variables can be assessed in the supplement, Table S1.

Variable	Group 1 (n = 17)		Group 2 (n = 21)	
	Friedman chi-squared	Bonferroni corrected p-value	Friedman chi-squared	Bonferroni corrected p-value
I felt I was in control of how much time I have spent on Instagram during the last 7 days.	4.4	1.787	14.4	0.012
I feel good when I use Instagram.	1.8	6.485	0.8	10.997
I feel bad about my life because of what I see on Instagram.	5.1	1.223	6.5	0.606
I feel bad about my body because of what I see on Instagram.	4.9	1.384	0.9	10.422
I use Instagram for procrastination (e.g., avoiding studying / working / chores etc.).	2.2	5.416	1.3	1.159
I believe that the information on posts / pictures I see on Instagram is true.	3.6	2.645	5.3	1.159
I believe the content on Instagram has an influence on my opinions on political matters.	7.2	0.440	0.8	10.725
I think critically about the content I see on Instagram.	2.8	3.946	0.5	12.181

Bold print indicates significant results.

Table 2: Results of the Friedmann tests stratified by group

Referring to Table 2, the results of the Friedman tests of all categorical outcomes displayed solely one significant difference between the three time points (baseline, 1. follow-up, 2. follow-up) of the variable "I felt I was in control of how much time I have spent on Instagram during the last 7 days" in Group 2 (Friedman chi-squared = 14.4, Bonferroni corrected p-value = 0.012). The post-hoc test revealed that the significant differences appeared between baseline and the 3. follow-up (p-value = 0.044) as well as between the 2. follow-up (before detox) and the 3. follow-up (after detox) (p-value = 0.019). There was no significant difference between the baseline and the 2. follow-up (p-value = 0.949).

#### Discussion

Our study sought to examine the effectiveness of our 7-day detox program in decreasing the Instagram usage time as well as increasing critical self-reflection and awareness concerning the influences and effects of Instagram usage on a personal level.

In the baseline questionnaire two significant correlations were found. Firstly, spending more time on Instagram correlated positively with having less self-perceived control about one's Instagram usage time. Our result is in accordance with previous literature, where participants who scored higher in social media self-control failure used social media more often (Du et al., 2018). Additional studies found a significant negative correlation between self-control and social media addiction (Purba, Istiana, & Wahyuni, 2020) and found that impulsivity (as opposed to self-control) is positively affecting social media usage (Savci, 2016). Secondly, feeling worse about one's body while looking at Instagram correlated positively with feeling worse about one's life while looking at Instagram. This finding is corroborated by previous literature. People who were more satisfied with their appearance and weight reported greater satisfaction with life (Davis, Fowler, Best, & Both, 2020; Frederick, Sandhu, Morse, & Swami, 2016).

The longitudinal analysis revealed that our detox program had a qualitative reducing impact on the average daily Instagram usage time of the past 7 days, i.e., we found a mean change of -11.0 and -18.3 minutes in Groups 1 and 2, respectively. However, the statistical analysis showed that these changes were non-significant. One reason for that might be the high standard deviation in the Instagram reduction time, which could have been caused by the small sample size.

The only ordinal variable that differed significantly between the three points in time was the self-perceived control over one's Instagram usage time in Group 2. Reasons for the missing significant results in the other ordinal variables could be, again, the low number of participants and the possibly high inter-individual differences. Another possible reason could have been the limited intervention time of 7 days. Research indicates that on average 18 to 254 days are necessary to fundamentally change behavior (Lally, Jaarsveld, Potts, & Wardle, 2010).

Furthermore, a possible underestimation of the intervention effect could have occurred due to potential selection bias (e.g., homogeneous education level within participants). The results of the survey on the ordinal variables "I think critically about the content I see on Instagram" and "I believe that the information on posts/pictures I see on Instagram is true" at baseline indicate that participants might have been more critical concerning the content they see on Instagram and more interested in improving their relationship with Instagram compared to the average user to begin with. As a consequence, a major shift in behavior was potentially limited.

Previous research is focused on abstinence for establishing more control over social media usage (Hunt et al., 2018; Przybylski et al., 2021; Wezel et al., 2021), making a relevant positioning of our study difficult. Przybylski et al. (2021) found that one day abstinence from social media did not have any significant positive effect on psychological well-being, whereas another study (Hunt et al., 2018) showed that a three-week social media abstinence trial could lead to a decrease in depression. Thus, an extension of our 7-day detox program might prove to be more effective and yield more conclusive results. In the future, it would also be important to investigate long-term effects on Instagram usage behavior.

It is important to note that it is difficult for researchers to measure the entire screen time associated with one social media account, since devices and services only provide the screen time for a specific device. This means that it is not entirely possible to control whether users access the platforms using other devices. It should also be mentioned that our intervention differs from the previously discussed designs in the way that we did not strictly limit the use of these social media apps. Instead, we based our program on an educational approach, which has not been studied before in the context of social media use. The content addressed multiple topics that we identified as significant for our target audience a priori. It is likely that not all users of our intervention were equally interested in each section of our program, which could explain a weakening in the effects observed, since participants would be more inclined to drop out of the study.

#### Strengths of the Study

Using the cross-over design, participants act as their own control group, which reduces the necessary amount of study participants. Another advantage of our study is that we surveyed both, categorical and continuous, data. The large sample size of the cross-sectional study is another advantage. Besides, the anticipated higher dropout rate in Group 2 was counteracted by using a weighted randomization technique for allocating study participants. In addition, each participant was instructed to look up their own Instagram screen time through their settings providing us with an objective dependent variable. This was done in accordance with results of a recent study which has shown that users tend to overestimate the duration of their own usage (Verbeij, Pouwels, Beyens, & Valkenburg, 2021).

#### Limitations of the Study

Our study design does not allow insights into long-term effects of the detox program. Additional follow-up surveys would have been necessary for that. Also, in our study we observed a relatively high dropout rate which is in line with a general trend observed in online surveys (Eysenbach, 2005). Our study did not provide any insights as to why participants dropped out of the detox program. We had no possibility of checking whether participants really completed each section of the detox program. The subconscious knowledge of participating in our study could have induced a bias in Group 2 such that a change in usage behavior might occur before the first follow-up. We cannot generalize our results to other demographics, i.e., the findings are limited to younger adults within an academic setting.

#### Conclusion

The reduction of the average daily Instagram usage time of the last 7 days and users' increased perceived control of their usage time hint towards a reducing impact of our 7-day detox program. However, the low number of participants did not allow for statistically significant results. Due to the short intervention time and the already critical attitude of the study participants limited the impact on the critical reflection regarding the content on Instagram.

However, the educational approach used in our detox program remains a promising alternative complementary to abstinence trials that are used widely in the literature and should therefore be further studied in future works. Based on the results of this study, it seems crucial that future work uses more participants with more diverse backgrounds who are not already critical about their Instagram usage. The program should last for a longer duration and the active participation of the detox users must be verified. It would be insightful, additionally, to access the long-term impact of the intervention.

#### Supplement

#### Detailed description of the 7-day detox program

*Day 1 – Introduction to the topic of negative impacts of social media* The relevance of the implications of excessive social media consumption is highlighted. This is supposed to provide additional external motivation to the participants.

#### Day 2 – Testimonials of students and expert interview

Fellow students share their experiences of social media consumption and reflect on their online behavior. Such stories are relatable and induce a self-reflection process in the detox program user. Additionally, the first expert interview with Prof. Sarah Diefenbach from Ludwig-Maximilians-University (LMU) addresses the impact of social media on mental well-being and explains how technology is designed to keep users hooked.

Day 3 – Interactive and educational game "How to be an influencer" This lesson introduces the concept of influencer marketing. Through gamification the decision-making social media influencers go through is laid out. The user has to balance monetary incentives with his/her authenticity and the number of followers. These incentives lead to moral dilemmas, e.g., do I promote a product which I do not wholeheartedly support? The key takeaways are summarized and hands-on tips are provided.

#### Day 4 – Expert interview

Prof. Peter Henningsen who is professor of psychosomatic medicine and psychotherapy at the Technical University of Munich (TUM) discusses the possible psychological consequences of social media consumption.

#### Day 5 – Digital Well-being

The topic of digital well-being is explored by discussing the fear of missing out (FOMO), the addictive design of social media, the impact of social media on mental health, and its impact on productivity. Each topic is accompanied by an educational video, multiple self-reflection questions, and practical tips.

#### Day 6 - Expert interview

Wienke Strathern who is a PhD student in the "Computational Social Science and Big Data" group of Prof. Jürgen Pfeffer (TUM) discusses negative dynamics on social media, e.g. fake news, hate speech, and conspiracy theories.

#### Day 7 – Interactive and educational game "How to spread fake news online fast"

This game deals with the phenomenon of fake news. The user has to take over the role of a journalist who learns about fake news items, how they spread online, and how to detect them. This sensitizes users to critically question the validity of online news content on social media. Key takeaways are summarized and the user is provided with practical tips.

Variable	Group 1 (n = 17)			Group 2 (n = 21)		
	Baseline	1. Follow-up	2. Follow-up	Baseline	1. Follow-up	2. Follow-up
I felt I was in control of how much time I have spent on Instagram during the last 7 days.						
Yes, very much.	4	6	5	2	0	5
Yes, kind of.	5	7	7	5	6	9
Rather not.	7	2	3	8	11	7
Not at all.	1	2	2	6	4	0
I feel good when I use Instagram.						
Yes, very much.	2	2	2	0	1	0
Yes, kind of.	9	7	6	11	9	12
Rather not.	4	5	8	8	9	8
Not at all.	2	3	1	2	2	1
I feel bad about my life because of what I see on Instagram.						
Not at all.	3	7	6	3	2	5
Rather not.	8	6	8	7	9	9
Yes, kind of.	5	3	2	10	9	7
Yes, very much.	1	1	1	1	1	0
I feel bad about my body because of what I see on Instagram.						
Not at all.	7	7	8	9	8	7
Rather not.	2	8	5	5	6	7
Yes, kind of.	5	1	3	5	5	5
Yes, very much.	3	1	1	2	2	2
I use Instagram for procrastination (e.g. avoiding studying / working / chores etc.).						
Not at all.	2	2	4	1	1	1
Rather not.	4	7	3	1	1	2
Yes, kind of.	5	4	5	8	6	10
Yes, very much.	6	4	5	11	13	8
I believe that the information on posts / pictures I see on Instagram is true.						
Not at all.	3	4	5	0	0	2
Rather not.	12	10	11	11	12	12
Yes, kind of.	2	3	1	10	9	7
Yes, very much.	0	0	0	0	0	0
I believe the content on Instagram has an influence on my opinions on political matters.						
Yes, very much.	4	2	1	2	1	3
Yes, kind of.	6	7	6	13	14	10
Rather not.	4	4	4	2	3	4
Not at all.	3	4	6	4	3	4
I think critically about the content I see on Instagram.						
Yes, very much.	10	8	7	10	9	10
Yes, kind of.	6	8	9	10	10	9
Rather not.	1	1	1	1	2	2
Not at all.	0	0	0	0	0	0

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### Self-reflection

While discussing the interplay between Technology & Arts, we found the conversation often drifting to the topic of social media as a technological tool used for influence. How is it, that in the age of information, some politicians manage to abuse this tool and expand their outreach through means of fake news, artificial content, and polarizing hate speech? Could their social media behavior be analyzed and assessed? Could the way politicians present themselves even be seen as an "art form"? Those were the questions we asked ourselves in November 2019 in Kochel am See.

Soon after, more and more scholarship holders joined in on the discourse and our group quickly grew larger in size, eventually reaching a total of nine people, the largest in the TUM: Junge Akademie that year. As the number of participants grew, so did our thoughts and ideas, and we additionally started discussing social media influencers, their marketing strategies, spheres of influence and the psychological effect all of this might bear on avid consumers of social media. As a first goal, we sought to reveal the real influences of social media, often not transparent to its users. And thus, team REveAL came to be.



Initially, we had a lot of trouble communicating with our first supervisors. It seemed that our goals and interests weren't aligned, and there was a difficulty reaching a productive level of mutual understanding. A first goal for us to deal with this was to refine our ideas and reformulate our initial goals.

During meetings, workshops and discussions, we started doing just that. Topics concerning mental well-being, fake news, and consumer behavior soon became the center of our attention. And as a result, our goals slightly shifted, and we decided to focus more on the negative psychological aspects of social media, hoping ultimately to empower users and give them a more conscious and reflective social media experience. Our name changed along with our goal, and after having initially been called REveAL, we renamed our team to Exfluenced<sup>™</sup>. This new focus was also more aligned with our new supervisors, Prof. Krcmar and Prof. Jonas, whose main areas of study include digital transformation and health solutions.

To reach our goal, we came up with two concrete ideas: the first was developing a social media detox platform; a web application, where participants could sign up and complete our curated oneweek program, which was centered around informational lectures, expert interviews, and games that would help users become more aware of the ways they are being influenced on social media. The web page would also serve the purpose of gathering data for our study, as participants would fill out surveys at specific timepoints along the program. The second was a complementary social media awareness campaign, aiming to gather a following on Instagram to promote our detox program.

We quickly realized how much of a challenge it is to achieve clear and transparent communication, as well as division of labor in a team consisting of nine students, especially when one takes into account the effects of different study programs having exams and busy periods at different times throughout the semester. To mitigate these effects, we decided to split ourselves into two teams: Team Awareness, who were responsible for the Instagram page and awareness campaign, and Team Webtool, who were responsible for the development and realization of the online Detox Program.

While this decision simplified the structure and organization of our team, the issue of unequal workloads was yet to be tackled. On top of this, the COVID-19 pandemic that struck the world in early 2020 made it impossible for us to meet in person, forcing us to rely on online meetings for communication and creating a further divide and motivational imbalance within the team. Realizing this, our tutors decided to launch an internal self-reflection round within our team, where they held one-on-one conversations with each member, in order to give a chance for each person to express their

concerns with the project as a whole, discuss goals, values, expectations, and so on. It was clear to see that this effort had great positive effects on the team spirit, and, soon after, team meetings were once again more fully attended than before.

The first phases of our project consisted of much more extensive research than we had initially expected, and actually implementing our detox program took a much longer time than anticipated. We surpassed our initial deadline by several months. But, as the pandemic slowly allowed, we started meeting in person again for so-called "sprints" - dedicated meetings where we would work together to get a certain task done. For this purpose, in a show of great team spirit, some of our team's tutors and members offered their apartments as a workspace. After several such sprints, we kicked off our detox program in April 2021. At this point, our Instagram page was at its peak, reaching over 1200 followers, with posts having upwards of over 250 likes. The detox program gathered a total number of 280 participants, most of whom also signed up for the study. At launch, our program consisted of 3 interactive games, 4 self-reflection questionnaires, 5 expert interviews, and 7 videos as well as 3 surveys.





Go to Day 0 Our program is structured in the following 1 way 10 In each of the seven main sections, we will provide you with essential material to -0-0-0 crease your social media self-compet For this purpose, we have prepared educational videos, interactive games and informative interviews. We recommend you to complete one section à every day, so that our detox journey lasts a analy in total

While we were very happy with these achievements, we also would have hoped to reach more participants beyond the channels of the TUM: Junge Akademie and our personal groups. As a final note, we would like to thank some people, without whom none of this would have been possible. Firstly, we would like to thank our tutors, Christos and Jakob, for sharing their knowledge and experience with us, always pushing us forward, and helping us reach our full potential as a team. Furthermore, we would like to thank our supervisors for guiding us with their insights and facilitating the connections to partners and interviewees. We are also grateful to our Berlin-based partner "not less but better" who often shared their expertise and first-hand knowledge on the development of an app-based solution to digital well-being with us. And last, but not least, we would like to thank Peter Finger and the entirety of the TUM: Junge Akademie Office Team, for always being there when we needed them with whatever we needed.

#### exfluenced<sup>o</sup>

#### GOAL

We want to decrease the Instagram screen time of 250 TUM students by 20% over the course of a 30-day detox program while changing their perception of their social media feed.



INTRODUCTION

Social media has fundamentally changed the way we communicate. Only now people are beginning to realize the negative connotations this entails – ranging from aggressive influencer marketing and negative psychological consequences to fake news.

We want to raise your awareness of how Instagram is influencing you subconsciously in an unhealthy fashion. For this purpose, we have created an Instagram channel promoting the issue. Additionally, we are offering a 30-day social media detox program on our webtool. Our guidance will help you to reestablish a healthy relationship with your Instagram, consciously controlled by you.

#### The Telegraph

ТШ

Instagram ranked norst social network for young people's mental health (1--) = 0.00

TIME

How Social Media Is a Toxic Mirror

#### Psychology Toda

Social Media and Mental Health: Time for a Digital Detox?

#### Die Dorigingten Dent

How Russia weaponized social media, got raught and escaped consequences



#checkyourself

#breakupwithyourinstagram #regaincontro

**PSP & TIME SCHEDULE** 



#### POSTER 1:

At the Kick-Off, our team formed with the goal of creating awareness of the influence of social media. Team REveAL started off with an intense brainstorming phase to find a clear project idea and developed the goal to share our researched knowledge about the influential mechanisms of social media through an interactive exhibition with 1000 participants to raise awareness. At the first seminar weekend in January of 2020, not only did we change our name to Exfluenced, but also reworked our project idea. We first identified as the core problem that users are often not in control of their social media usage and, afterwards, agreed the ambitious goal of making students more aware of their Instagram usage and allowing them to #BreakUpWithYourInstagram and to #RegainControl by decreasing their screen time. To achieve this, we developed a detailed time schedule and Project Structure Plan and split into two groups: Webtool and Awareness. The former did intensive research about the relevant topics for a social media detox program. Meanwhile, the latter developed a concept of an Instagram campaign to reach potential participants.

## ТШП



#### RESEARCH QUESTION

How much does the detox program, consisting of the exfluenced Instagram account and the webtool, reduce the Instagram screen time and in what ways does it increase the quality of life of the participants?



#### WHAT WE DID SO FAR

After an intensive research period, we got to work for the simultaneous launch of ourwebsite(exfluenced.com)

and our Instagram account (@exfluenced). Since then, we have focused on creating content for these two channels – in the form of Instagram posts, interactive games and videos.



To account for the programming on the website, we are pushing the launch of our detox program from October 1<sup>st</sup> to January 1<sup>st</sup>. We also shifted our intention of interviewing experts on social media and its effects to contacting just the most essential people.

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#### WHICH GOALS WE REACHED SO FAR

June 1"	>>	Simultaneous launch of our Instagram acco 500 followers, features over 100 posts and	ount, that has accumulated over reaches over 125 Instagram users
July 205		Instagram ad campaigns that reached almo	ne to represent our project
Controphen 100		Instagram ao campaigns that reached almo	Stauto he estations
September 10-	>>	implementation of our first interactive game	How to be an influencer on website
September 20*	>>	"How to spot Fake News online fast"	anking title
October 6th	>>	Redesign of our Instagram account based of	on feedback from our followers
October 9 <sup>th</sup>	>>	Production of 4 educational videos on digit	al well-being
#fri	e <b>r</b>	friendzoneyourinstag O	ISTAGRAM DCTOBER 2020
MEMBERS	Laura 8 Marie P	aliantin, Doniz Bozgin, Lon Brandos, Christopher Ebort, Omar Eld- kiener, David Noachtar, Maryna Shchietbak, Ardina Weiller	we. Letter
TUTORS	Christo	s Gazanis, Jekob Scheffinis	SIN inspired by
SUPERVISORS	Prof. D	Stephan Jonas, Prof. Dr. Helmut Kromar	Tak now beauty
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#### POSTER 2:

On June 1, we officially launched our Instagram account @exfluenced and published a landing page on our website www.exfluenced.com, which the team programmed itself. By October, we managed to accumulate over 500 followers with a successful marketing campaign through online ads, posters and flyers and over 100 Instagram posts including interesting facts, statistics and funny memes. The posters and flyers were distributed all over Munich including the Bayerische Landesbibliothek and student accommodations to reach our target audience. Every week, we managed to post four times and included feedback from our followers to revise the content and design of the account in October.

Simultaneously, we started to develop the content for our 7-day detox program, with its launch planned for the beginning of 2021. We based our concept on inoculation theory. Here, the users are exposed to a weakened version of an influence. This theory is usually employed to describe vaccinations, but recently it has shown promise with psychological influences. We created two interactive online games, which we implemented ourselves. The first game, titled "How to be an Influencer," focuses on influencer marketing, while the second tackles the issue of misinformation online. Furthermore, we started the production of educational videos on digital well-being.

During this period, we also contacted multiple experts on the topics of our detox program to conduct interviews with professionals.



#### WHAT IS OUR RESEARCH ALL ABOUT?

The aim is to evaluate whether our detox programme has a moderating impact on general Social Media usage. Our goal is to analyze if our programme helps the study participants to establish a healthier, more intentional and balanced relationship towards their Social media apps.

#### CURRENT STATUS OF OUR PROJECT

During the last few months, the design for our website was updated entirely and we created the final content for our delox programme. After a one month testing phase, we successfully launched our programme and the corresponding study. In addition, we managed to surpass over 1.000 followers on our Instagram account. Here, you can take a look at the new design of our website:

#### THE NEXT STEPS

In the following months, the focus will lie on recruiting study participants via various channels and evaluating the results of our study. Furthermore, we will conduct additional interviews with experts from various fields

surrounding Social Media. Last but not least, we will invest time into writing the journalistic and scientific parts of the research report. Be sure to participate in our study! After all, we have an offer for you that you can not refuse:



ТШТ

#### OUR MOST IMPORTANT REFERENCES:

For our study, we came up with a unique Crossover design. For this purpose, we consulted our first reference which gives an outline for the deployment of such a design. The other most important sources were helpful for identifying the issues surrounding social networks, especially the rising concerns about disinformation and mental health related problems. Below, you can see the design of our study:



#### POSTER 3:

In the months after the launch of our instagram page, we updated the design of our website and completed the content creation for the program. Part of it was conducting interviews with students and professors, including Prof. Peter Henningsen, director of the Department of Psychosomatic Medicine and Psychotherapy at the Klinikum Rechts der Isar, about the topic of social media usage. The student interviews were added to the program in the form of videos and the interviews with the experts were transcribed to text. Furthermore, we created a video with the best student answers as part of the first day of the program in order to highlight the most important issues of social media usage.

After a redesign and finalization of the website was completed, we carried out a one-month testing phase and then successfully launched the program and the corresponding study.

For the study, we came up with a unique crossover design, allowing us to compare the influence of our detox program on the behavior and mindset of the participants between two independent groups. In order to gain more participants, we decided to award 20€ each to the first 50 participants who completed the program and all 3 questionnaires.



#### SUMMARY

We created a 7-day interactive social media detox program which aims at educating participants regarding the influences of Instagram (psychological well-being, influencer marketing, political fake news) using informative videos, interactive games and expert interviews. We assessed the impact of our detox program on the average daily Instagram usage time of the participants and on eight further variables, all targeting experiences with Instagram usage, with a unique cross-over study (see Figure 1) with two different groups.

#### RESEARCH LIFE CYCLE



#### RESULTS

TUTORS

In both groups, the average daily instagram usage of the last 7 days decreased on average for 11.6 and 18.3 minutes respectively after the detox program, see Figure 2. Unfortunately, due to the low number of participants these results were not statistically significant.

We found that users spending more time on Instagram had less self-perceived control about their usage time. Moreover, users that felt worse about their body while looking at Instagram also felt worse about their life while looking at Instagram.

The variable "I felt I was in control of how much time I have spent on Instagram during the last 7 days" increased significantly between the beginning and the end of the study.

IMPACT

- More than 1200 followers with over 250 posts on our Instagram account
- 280 people signed up for our detox program with 181 of those participating in our study
- 7 educational videos
- 5 expert interviews with researchers
- 3 interactive games
- our program within their app about physical and mental health to continue to exfluence TUM students far into the future

#### PROJECT PARTNERS

#### ACKNOWLEDGEMENT

inspired b

SEPTEMBER 2021 MEMBERS

Laura Ballentin, Deniz Bezgin, Len Brandes, Christopher Ebert, Omar Eldeeb Maris Huerner, David Noachtar, Maryna Shcherbak, Andrea Weiller Christos Gazanis, Jakob Scheffels SUPERVISORS Prof. Dr. Stephan Jonan, Prof. Dr. Haimut Kromer

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#### POSTER 4:

To acquire participants for our study, we launched a new marketing campaign. By July, we gained more than 1200 followers with over 250 posts on our Instagram account. We used this platform to promote the launch of the detox program and study. To increase our reach, we contacted other accounts as well as our partners such as the start-ups "not less but better" and "Friendzone app." In addition to participants whom we recruited through our personal network, we distributed flyers in Munich. In total, over 280 people signed up for our detox program with 181 of those participating in our study. We performed an extensive statistical analysis to evaluate whether our detox program had a moderating impact on general Instagram usage and screen time. We analyzed if our program helped the participants to establish a healthier, more intentional, and balanced relationship with their social media apps.

After brainstorming and creative discussion, we designed the comic for the research report. In it, we accompany our readers through the process of completing our detox program and reaching a state of emotional independence towards social media.

Furthermore, after analyzing the results of our study, we sat down together in one of our first meetings in person after a whole year of not seeing each other and wrote the first versions of the journalistic and scientific parts of our research report. After consulting with our supervisors and a journalist we edited our draft and created the final version of the research report.

Finally, we started to organize a collaboration with TUM4Health to establish our program within their app about physical and mental health to continue to exfluence TUM students far into the future and to help you to #FriendzoneYourInstagram.