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Journal of Social Media Research (JSOMER) is a multidisciplinary, blind peer-reviewed, open-access, free-of-charge, international scientific academic journal published twice a year (June, December) focusing on the social, cultural, educational, psychological, economic, technological, and sociological dimensions of social media. JSOMER is an interdisciplinary journal with a broad scope that includes social sciences, humanities, arts, health, medicine, psychiatry, psychology, computational social sciences, artificial intelligence, and natural sciences, focusing on, or related to social media. We are pleased to publish current and innovative research articles, reviews, and argumentative essays focusing on social media. Articles published in JSOMER are expected to raise issues related to social media in various fields, open discussions about these issues, and propose different methods to address these issues or solve related problems. It is also hoped that the papers published in JSOMER will provide a basis for current debates on various areas of social media and guide innovative research and practice. JSOMER welcomes a variety of theoretical paradigms and methodologies and considers this as a scientific enrichment. JSOMER aims to contribute to scientific accumulation by including original and qualified studies written by academic standards, copyrights, and ethical rules and to be among the first reference sources for those doing research in the field of social media.

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RESEARCH ARTICLE OPEN ACCESS

Weight stigma exposure inventory (WeSEI): Validity and reliability study of the Chinese version in Hong Kong

Ji-Kang Chen[1*], Oscar Rhodes[2], Chia-Wei Fan[3], Kerry S. O'Brien[4], Ali Gökalp[5], Nail Degirmenci[6] and, Chung-Ying Lin[7,8,9*]

[1] Department of Social Work, Chinese University of Hong Kong, Shatin, New Territories, Hong Kong
[2] Departament d'Educació Física i Esportiva, Universitat de València, València, Spain
[3] Department of Occupational Therapy, AdventHealth University, Orlando, Florida, USA
[4] School of Social Sciences, Faculty of Arts, Monash University, Melbourne VIC 3800, Australia
[5] Department of Educational Sciences, Gaziantep University, Gaziantep, Türkiye
[6] Gazi University, Institute of Educational Sciences, Ankara, Türkiye
[7] Institute of Allied Health Sciences, College of Medicine, National Cheng Kung University, Tainan 701401, Taiwan;
[8] Biostatistics Consulting Center, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan 701401, Taiwan;
[9] School of Nursing, College of Nursing, Kaohsiung Medical University, Kaohsiung 807378, Taiwan

***Correspondence Authors:**
Ji-Kang Chen, Department of Social Work, Chinese University of Hong Kong, Shatin, New Territories, Hong Kong. jkchen@swk.cuhk.edu.hk;
Chung-Ying Lin, Institute of Allied Health Sciences, College of Medicine, National Cheng Kung University, Tainan 701401, Taiwan; Biostatistics Consulting Center, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan 701401, Taiwan; School of Nursing, College of Nursing, Kaohsiung Medical University, Kaohsiung 807378, Taiwan. cylin36933@gmail.com

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Highlights:

- WeSEI is a valid and reliable tool for measuring weight stigma exposure in Hong Kong.
- WeSEI's original seven-factor structure was confirmed, indicating its cross-cultural robustness.
- The scale demonstrates high internal consistency and acceptable convergent and discriminant validity.
- WeSEI scores were positively correlated with psychological distress and physical activity avoidance.

Abstract

This study examined the validity and reliability of the Weight Stigma Exposure Inventory (WeSEI), Chinese version, among the Hong Kong population. The WeSEI was developed by Ruckwongpatr et al. (2025) and then translated by the present authors to Chinese for the Hong Kong population. The study recruited 949 Hong Kong adults ($Mean_{age}$ = 23.07; 68.6% female) to complete the 35-item WeSEI, a self-report instrument with seven factors (television sources, traditional media sources, social media sources, parental sources, extraneous sources, significant other sources, and friends sources). The seven factors assess how participants observed (or were exposed to) weight stigma from different sources. The psychometric properties of the scale analyzed in the present study included factor structure using confirmatory factor analysis (CFA), internal consistency using McDonald's ω and Cronbach's α, discriminant validity using heterotrait-monotrait (HTMT) ratio, and convergent validity using average variance extracted (AVE) values. Pearson correlations with related measures, such as the Depression Anxiety Stress Scale (DASS-21), Tendency to Avoid Physical Activity and Sport (TAPAS), Weight Self-Stigma Questionnaire (WSSQ), and Perceived Weight Stigmatization Scale (PWSS), were used to assess WeSEI's concurrent validity. The findings indicate that the WeSEI has a confirmed seven-factor structure, possesses high internal consistency, and exhibits acceptable convergent and discriminant validity. The WeSEI total score and its subscale scores showed statistically positive correlations with the other measures used. The WeSEI Chinese version can be used as a valid and reliable self-report psychometric tool for assessing Hong Kong participants' exposure to weight stigma in future research.

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1. Introduction

Weight Stigma (WS) is a common form of prejudice and discrimination against individuals who are overweight or obese (i.e., those having a higher weight). This stigma manifests in various ways in the media, healthcare services, and interpersonal relationships, particularly among parents and peers (de Macêdo et al., 2022; Lessard & Puhl, 2021; Panza et al., 2023; Pearl et al., 2015). Weight Stigma Exposure (WSE), the exposure of individuals to negative attitudes and behaviors to overweight/obesity, is how an individual observes the weight stigma scenarios/situations. These scenarios have significant and detrimental effects on public health. Research demonstrates the devastating effects of WSE on both physical and mental health outcomes. At the physiological level, exposure to weight stigma has been shown to lead to significant increases in blood pressure and heart rate, especially in obese women with high blood pressure (Panza et al., 2023). Psychologically, Perceived Weight Stigma (PWS) and Weight Self-Stigma (WSS) are strongly associated with psychological distress such as depression, anxiety, and stress (Ahorsu et al., 2024; Alimoradi et al., 2020; Chan et al., 2019; Cheng et al., 2018; Huang et al., 2024; Lin et al., 2020a; Lin et al., 2020b).

Even in pre-adolescence, WS is linked to internalizing symptoms and mental health problems (Zancu & Diaconu-Gherasim, 2024). At the behavioral level, WSE can lead to disordered eating patterns such as binge eating, eating addiction, and problematic eating behaviors in general (Ahorsu et al., 2020; Cheng et al., 2018; Fung et al., 2024; Huang et al., 2024; Lin et al., 2020a). Furthermore, WS may reduce individuals' enjoyment of physical activity and increase their tendency to avoid physical activity. This may contribute to increased sedentary lifestyles (Bevan et al., 2021; Ruckwongpatr et al., 2021; Saffari et al., 2024; Soraci et al., 2024). Paradoxically, in some individuals who have experienced stigma in the past, exposure to stigmatizing media may result in a short-term increase in exercise intention and behavior; however, this effect is associated with a "pursuit of thinness" that carries a risk of long-term adverse health outcomes (Pearl et al., 2015). WS can also negatively impact body self-esteem and lead to body dissatisfaction (Lessard & Puhl, 2021; Soraci et al., 2024; Zancu & Diaconu-Gherasim, 2024). Rather than actual weight, how an individual perceives their weight may play a more important role in the experience of peer bullying (Lin et al., 2018).

The adverse effects of WS often manifest through mediating mechanisms such as WSS and psychological distress (Huang et al., 2024; Saffari et al., 2024; Zancu & Diaconu-Gherasim, 2024). Furthermore, technology addictions such as smartphone addiction and problematic internet use may also exacerbate physical inactivity by influencing the relationship between weight self-stigma and physical activity (Liu et al., 2022; Saffari et al., 2022). Increased media exposure of WS and its effects on adolescents' body dissatisfaction have also been examined during the COVID-19 pandemic (de Macêdo et al., 2022; Fung et al., 2021; Lessard & Puhl, 2021).

Research demonstrates the profoundly devastating effects of exposure to WS on individuals' physical and mental health. Given these wide-ranging impacts, it becomes essential to engage key stakeholders across multiple sectors. Healthcare providers, researchers, public health policymakers, and educators must understand and address the issue of WS (Alimoradi et al., 2020; Panza et al., 2023). Early interventions to prevent WS, especially during pre-adolescence (Zancu & Diaconu-Gherasim, 2024), and strategies targeting stigma and internalized bias (Saffari et al., 2024) play a vital role in promoting physical activity and improving overall health. Reducing weight stigma and increasing awareness can support individuals in engaging in healthy behaviors and preventing associated negative health outcomes.

Scales assessing perceived and self-stigmatized weight stigma (Perceived Weight Stigma Scale [PWSS], Weight Self-Stigma Questionnaire [WSSQ], Weight Bias Internalization Scale [WBIS], Modified Weight Bias Internalization Scale [WBIS-M]) have been found valid and reliable in different populations (Chinese adolescents, Iranian adolescents, Asian children, university students; Ahorsu et al., 2024; Lin et al., 2020b; Pakpour et al., 2019; Rozzell-Voss et al., 2024). In the literature, the WSSQ (Lillis et al., 2010) and PWSS (Cheng et al., 2018) are widely used to assess WS. However, scales assessing WSE or observed WS are relatively insufficient in the literature when compared to WSS or PWS. When assessing WSE, the exposure could be from interpersonal (e.g., family members) and non-interpersonal sources (e.g., social media posts; Ruckwongpatr et al., 2021). To the best of the present authors' knowledge, only one measures assess WSE using both sources: the Weight Stigma Exposure Inventory (WeSEI; Ruckwongpatr et al., 2021).

The WeSEI has also been adapted for use in different cultures, including two additional regions that use Chinese as the official language (i.e., Taiwan and mainland China; Ruckwongpatr et al., 2021). Apart from Chinese versions for Taiwanese and Chinese, the WeSEI has been validated in a Malay version (Gan et al., 2025) and a Turkish version (Çarkıt et al., 2025); both Malay and Turkish versions of WeSEI were found to have a seven-factor structure concurring with the original WeSEI version. The seven-factor structure was then found to be invariant across gender and weight status groups (Gan et al., 2025). Moreover, internal consistency of the

WeSEI was satisfactory in both Malay and Turkish versions (Çarkıt et al., 2025; Gan et al., 2025). Therefore, WeSEI can be considered as a culturally robust measure. To quantify WSE among the Hong Kong population, the present study aimed to validate the Chinese version of WeSEI developed by Ruckwongpatr et al. (2021) in the Hong Kong population.

2. Method

2.1. Participants

The study was conducted on 949 Hong Kong adults (women = 68.6%; male = 31.4%). The participants were reached by convenience sampling method, which is one of the non-probability sampling methods. The mean age of the participants was 23.07 years old with S.D. = 5.27 (range = 18-67 years). The majority of the participants is single (95%). The mean height of the participants is 165 cm with S.D. = 8.05 cm (range = 142 - 190 cm). Their mean weight is 57.79 kg with S.D. = 11.59 kg (range = 35 - 160 kg).

2.2. Weight Stigma Exposure Inventory (WeSEI)

The WeSEI has been translated into Chinese for Taiwanese and Chinese populations (Ruckwongpatr et al., 2025). Therefore, the present study used the Chinese WeSEI to pilot test on several Hong Kong people to evaluate whether its content can be understandable in this population. In general, all WeSEI item contents can be interpreted by the pilot participants without difficulties. Therefore, the WeSEI Chinese version is finalized for formal psychometric testing among Hong Kong people. WeSEI is a seven-factor instrument (television sources, traditional media sources, social media sources, parental sources, extraneous sources, significant other sources, and friends sources) comprising a total of 35 self-reported psychometric items, with five items in each factor. The validity and reliability of the original WeSEI have been tested on Taiwanese young adults, Chinese adolescents, and Chinese young adults with good reliability (Ruckwongpatr et al., 2025). The original five-point Likert scale (1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Almost always) was retained to align with the original WeSEI. The construct validity, criterion validity, and reliability of the scale were analyzed on a group of 949 Hong Kong adult participants in the present study.

2.3. Other Measures

Different measures were used to examine the concurrent validity of WeSEI. The structural information of the scales and the internal consistency coefficients calculated in this study are presented below.

2.3.1. Depression Anxiety Stress Scale-21 (DASS -21)

The DASS-21 (Henry & Crawford, 2005) is the short form of the DASS (Lovibond & Lovibond, 1995). It was developed with three subscales to measure depression (seven items; sample item = I felt that life was meaningless), anxiety (seven items; sample item = I felt scared without any good reason) and stress (seven items; sample item = I felt that I was rather touchy). Items are rated on a four-point scale from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time). McDonald's ω and Cronbach's α internal consistency coefficients calculated for the DASS-21 subscales were between .822 and .899 and .808 and .893.

2.3.2. Tendency to Avoid Physical Activity and Sport (TAPAS)

The TAPAS (Bevan et al., 2022; Fan et al., 2023) assesses participants' physical activity and sport contexts, consists of a total of 10 items. Items are rated on a five-point scale from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating a greater tendency to avoid physical activity or sport (Sample item = I avoid physical activity because I might get teased about my weight). Calculated McDonald's ω and Cronbach's α internal consistency coefficients were .936 and .933, respectively.

2.3.3. Weight Self-Stigma Questionnaire (WSSQ)

The WSSQ was used to assess participants' perceptions of weight-related self-stigma (Lillis et al., 2010). It has 12 items and is self-rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores on the WSSQ indicate greater weight-based self-stigma (Sample item = I became overweight because I am a weak person). Calculated McDonald's ω and Cronbach's α internal consistency coefficients were 0.928 and 0.926, respectively.

2.3.4. Perceived Weight Stigmatization Scale (PWSS)

Participants' perceived weight stigma was assessed with PWSS (Cheng et al., 2018). The PWSS contains 10 items, and all items are rated on a dichotomous scale of 1 (yes) and 0 (no), with higher PWSS scores reflecting

higher perceived weight stigma (Sample item = People pretend to be afraid of you). Calculated McDonald's ω and Cronbach's α internal consistency coefficients were 0.664 and 0.660, respectively.

2.4. Statistical Analysis

Jeffreys's Amazing Statistics Program (JASP version 0.18.3) was used in all analyses. A CFA was conducted to verify whether the original factor structure of the WeSEI was validated. The following fit indices calculated from CFA were used to describe whether the factor structure of the original scale was confirmed: comparative fit index (CFI) > .90, incremental fit index (IFI) > .90, root mean square error of approximation (RMSEA) < .08, and standardized root mean square residual (SRMR) < .08) (Byrne, 2016; Kline, 2023). The entire WeSEI and its sub-dimensions were analyzed for internal consistency using both McDonald's ω and Cronbach's α. An internal consistency coefficient value (i.e., ω or α) > 0.80 indicates a high degree of scale reliability (George & Mallery, 2019). Then, the heterotrait-monotrait (HTMT) ratio method was used to examine the discriminant validity of the WeSEI. According to Kline (2023), discriminant validity is supported when the HTMT ratio is < 0.85. Additionally, average variation extracted (AVE) values were calculated to assess the convergent validity of WeSEI's sub-dimensions. AVE values > .05 are sufficient for convergent validity (Shrestha, 2021).

The entire WeSEI and its sub-dimensions were examined for their concurrent validity with relevant measures (i.e., DASS-21, TAPAS, WSSQ, and PWSS). Pearson's product-moment correlations were used for concurrent validity, provided that all measure scores met the assumption of normality (Wilcox, 2017). In the present study, skewness and kurtosis coefficients were between -2.0 and + 2.0 indicating normal distribution (Hair et al., 2010) for all the measures. Therefore, Pearson's correlations are appropriate to assess concurrent validity in the present study.

3. Results

Table 1 presents the CFA results for the WeSEI. The seven-factor structure of the WeSEI was confirmed by the acceptable fit obtained from the CFA, using data from 949 participants. AVE values of the factors were calculated to assess convergent validity, and an HTMT analysis was conducted to evaluate discriminant validity. Convergent validity was supported because the AVE value calculated for each factor was > .50, and discriminant validity was supported because the HTMT ratio of factor loadings was < .85.

Table 1. Scale Properties of the Weight Stigma Exposure Inventory (WeSEI)

	WeSEI	Social media sources	Traditional media sources	Television sources	Parent sources	Friend sources	Significant others sources	Stranger source
McDonald's ω	.947	.882	.936	.934	.899	.884	.904	.929
Cronbach's α	.960	.891	.939	.932	.899	.895	.913	.938
CFA								
CFI	.901	--	--	--	--	--	--	--
IFI	.901	--	--	--	--	--	--	--
RMSEA	.078	--	--	--	--	--	--	--
SRMR	.056	--	--	--	--	--	--	--
HTMT method								
Social media sources	--	--						
Traditional media sources	--	.598	--					
Television sources	--	.632	.632	--				
Parent sources	--	.433	.452	.465	--			
Friend sources	--	.568	.522	.510	.656	--		
Significant others sources	--	.409	.492	.454	.646	.704	--	
Stranger source	--	.597	.519	.565	.420	.592	.422	--
AVE	--	.621	.754	.738	.661	.633	.695	.752

Note. CFA = confirmatory factor analysis; CFI = comparative fit index; IFI = incremental fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; HTMT = heterotrait-monotrait ratio; AVE = average variance extracted.

Additionally, the internal consistency of the entire WeSEI and all its sub-dimensions was calculated and presented in Table 1. It was found that the entire WeSEI and its sub-dimensions were reliable. In addition,

McDonald's ω and Cronbach's α values were also calculated for the internal consistency and presented in Table 1. It was observed that the whole WeSEI and its sub-dimensions were reliable.

Table 2 presents the correlations between the entire WeSEI, its sub-dimensions, the DASS-21's subscales (i.e., depression, anxiety, and stress), TAPAS, WSSQ, and PWSS. The entire WeSEI and its sub-dimensions (i.e., social media sources, traditional media sources, television sources, parent sources, friend sources, significant others sources, and stranger sources), as well as the DASS-21's subscales, TAPAS, WSSQ, and PWSS, exhibit a statistically positive correlation.

4. Discussion

This study aimed to investigate the reliability and validity of the Chinese version of the WeSEI in a Hong Kong sample. The findings clearly indicate that the WeSEI Chinese version, similar to other WeSEI language versions (Çarkıt et al., 2025; Gan et al., 2025; Ruckwongpatr et al., 2025), is a valid and reliable self-reported psychometric instrument for assessing WSE. The present findings extend the use of WeSEI from Taiwan, mainland China, Malaysia, and Türkiye to the Hong Kong population.

Table 2. Concurrent Validity of the Weight Stigma Exposure Inventory (WeSEI)

Measures	Pearson correlation with an external criterion measure						Descriptive statistics		
	Depression	Anxiety	Stress	TAPAS	WSSQ	PWSS	Mean (SD)	Skewness	Kurtosis
WeSEI total scale	.23	.24	.28	.27	.29	.32	2.27 (.70)	.16	-.37
Social media sources	.20	.18	.23	.22	.21	.24	2.65 (.94)	-.05	-.58
Traditional media sources	.14	.15	.17	.20	.21	.22	2.16 (.94)	.50	-.50
Television sources	.15	.17	.22	.18	.14	.18	2.72 (.96)	-.21	-.64
Parent sources	.21	.19	.23	.24	.30	.29	1.98 (.90)	.71	-.05
Friend sources	.19	.22	.22	.21	.25	.27	2.13 (.89)	.49	-.36
Significant others sources	.20	.23	.21	.20	.25	.27	1.82 (.86)	.86	.09
Stranger source	.16	.14	.20	.21	.17	.22	2.42 (1.03)	.15	-.95
Depression	--						.68 (.64)	1.11	.83
Anxiety	.72	--					.59 (.53)	.98	.51
Stress	.77	.77	--				.91 (.66)	.51	-.53
TAPAS	.29	.29	.31	--			2.55 (.92)	.37	-.57
WSSQ	.34	.30	.30	.63	--		2.25 (.82)	.32	-.57
PWSS	.32	.31	.32	.31	.37	--	.08 (.13)	1.69	1.86

Note. N = 949; all p <. 01; Depression, Anxiety, and Stress were measured using the Depression, Anxiety, Stress Scale-21; TAPAS = Tendency to Avoid Physical Activity and Sport; WSSQ = Weight Self-Stigma Questionnaire; PWSS = Perceived Weight Stigmatization Scale; SD = standard deviation.

The CFA results confirmed the original seven-factor structure of the WeSEI. This indicates that the scale retains the intended structure in the Hong Kong context. The confirmation of the seven-factor structure of the Chinese version for Hong Kong people is consistent with findings from previous adaptations of the WeSEI to Malay (Gan et al., 2025) and Turkish (Çarkıt et al., 2025) cultures. This consistency reinforces that the WeSEI is a robust measurement tool in different cultural contexts.

WeSEI and its sub-dimensions were found to have high internal consistency. Both McDonald's ω and Cronbach's α values meet the high reliability threshold (above .80) for the overall scale and all subscales. This suggests that the scale items consistently measure the same construct and that the WeSEI provides reliable measures in the Hong Kong population. In addition, it was determined that WeSEI has acceptable convergent and discriminant validity. The AVE values calculated for the factors are above .50, which supports convergent validity, and the HTMT ratios are below .85, which supports discriminant validity. These findings reveal that WeSEI can distinguish the construct it aims to measure from other constructs and is consistent within its own factors.

Moreover, the WeSEI and its subscales demonstrated statistically significant positive correlations with relevant external measures (i.e., DASS-21, TAPAS, WSSQ, and PWSS), thereby establishing the concurrent validity of the scale. These correlations are in line with existing literature showing that exposure to WS is associated with individuals' psychological distress (i.e., depression, anxiety, stress), tendency to avoid physical activity, and levels of WSS (Ahorsu et al., 2024; Alimoradi et al., 2020; Bevan et al., 2021; Chan et al., 2019; Cheng et al., 2018; Fung et al., 2024; Huang et al., 2024; Lin et al., 2020a; Ruckwongpatr et al., 2021; Saffari et al., 2024;

Soraci et al., 2024). WS has physiological effects such as increased blood pressure and heart rate (e.g., Panza et al., 2023), as well as eating disorders (e.g., Ahorsu et al., 2020; Fung et al., 2024; Huang et al., 2024; Lin et al., 2020a), physical activity avoidance (e.g., Bevan et al., 2021; Ruckwongpatr et al., 2021; Saffari et al., 2024; Soraci et al., 2024) and body dissatisfaction (e.g., Lessard & Puhl, 2021; Soraci et al., 2024; Zancu & Diaconu-Gherasim, 2024). The fact that the WeSEI is associated with these adverse outcomes suggests that the scale can reflect the wide range of effects of weight stigmatization.

This study is significant in that it provides a culturally appropriate and robust tool for assessing WSE in the Hong Kong population. Unlike other existing WS scales, the WeSEI comprehensively assesses interpersonal and non-interpersonal sources of exposure, such as social media and family members, taking into account contemporary influences as well as traditional media sources (Ruckwongpatr et al., 2025). This broad scope is important for understanding the multifaceted nature of weight stigmatization in today's society. Weight stigmatization is a pervasive form of prejudice and discrimination that has devastating effects on public health. This issue must be understood and addressed by healthcare providers, researchers, public health policy makers, and educators (Alimoradi et al., 2020; Panza et al., 2023). The validation of the Chinese version of the WeSEI as a valid and reliable instrument among Hong Kong population will provide a solid foundation for future research. In particular, the WeSEI could be used in the development of early interventions to prevent WSE in pre-adolescence (Zancu & Diaconu-Gherasim, 2024) and strategies targeting internalized bias (Saffari et al., 2024). The fact that WeSEI provides a general framework that allows comparative analysis of the results of different studies will contribute to the advancement of weight stigma research internationally.

5.1. Limitations and Future Research

This study employed a cross-sectional design, which may limit the ability to make direct inferences about cause-and-effect relationships. Future research could include longitudinal studies to better understand the long-term effects and mediating mechanisms of exposure to WS. Furthermore, validity and reliability studies of the WeSEI in other cultural contexts would further reinforce the scale's generalizability. Testing the WeSEI in clinical populations and across different age groups may also enhance the scale's applicability. Finally, using the WeSEI to evaluate the effectiveness of weight stigma intervention programmes will provide valuable information for practitioners. Such an evaluation is critical, given that weight stigma has devastating effects on public health and needs to be understood and addressed by healthcare providers, researchers, public health policymakers, and educators.

5. Conclusion

As a result, the Chinese version of WeSEI has acceptable psychometric properties (i.e., internal consistency, concurrent validity, convergent validity, and discriminant validity) among Hong Kong population. The Chinese version of the WeSEI is a valid and reliable self-report psychometric tool for assessing Hong Kong participants' exposure to weight stigma in future research. The Chinese version of WeSEI, similar to WeSE in other language versions, offers a general framework for comparative analysis of results from various studies. The validation of this valid and reliable instrument will provide a solid foundation for future research and support the development of early interventions (especially in pre-adolescence) and strategies targeting internalized bias.

Statement of Researchers

Researchers' contribution rate statement:

J-KC: Conceptualization, data curation, investigation, project administration, resources, supervision, writing – review & editing. **OR:** Conceptualization, methodology, writing, review, and editing. **C-WF:** Conceptualization, Methodology, Writing – review & editing. **KMO:** Conceptualization, methodology, writing – review & editing. **AG:** Formal analysis, methodology, software, validation, visualization, writing – original draft. **ND:** Formal analysis, Methodology, Software, Validation, Visualization, Writing – original draft. **C-YL:** Conceptualization, investigation, methodology, project administration, resources, supervision, writing – original draft, writing – review & editing.

Conflict statement:

Chung-Ying Lin is the editor-in-chief of the Journal of Social Media Research. However, he has no role in the review process of this paper; this paper went through rigorous peer review and revision. All other authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data Availability Statement:

The data supporting this study's findings are available from the corresponding author upon reasonable request.

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Ethical Considerations:

All procedures performed in studies involving human participants were by the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Ethical approval was granted by the Chinese University of Hong Kong Ethics Committee (Ethics Number: SBRE-23-0685).

The Authors' Biographies

Ji-Kang Chen, PhD, is currently a Professor at the Department of Social Work at the Chinese University of Hong Kong. His primary research interests include cross-national comparative research on violence and bullying in school and cyberspace, adolescents' mental health, and children's well-being. Specifically, his research aims to contribute to the theoretical and practical knowledge of school violence, cyberbully, mental health, and children's well-being in Chinese societies and other countries to help design effective intervention strategies and policies to alleviate school violence and promote adolescent mental health and well-being.

Oscar Rhodes is a 4th-year PhD student within the Department of Physical Education and Sport at the University of Valencia, Spain. He holds an MU in Research Methodologies in Sport and Exercise Sciences from the University of Valencia, an MBA in Sport Management from the Universidad Catolica San Antonio de Murcia (UCAM) in Spain, and a BSc in Fitness and Personal Training from Solent University in the UK. His research examines the influence of educational experiences on the development of health behaviours among students, with a particular focus on physical activity and the effects of living environments. He has presented at international and student conferences, with ongoing projects that involve collaborations with distinguished academics in Taiwan, Hong Kong, Spain, Qatar, the USA, and Australia. He has previously worked as a research assistant within the Health and Physical Education Department at The Education University of Hong Kong and performed a competitively funded research attachment at The Hong Kong Polytechnic University.

Chia-Wei Fan, Ph.D., OTR/L, is an Associate Professor in the Department of Occupational Therapy at AdventHealth University. Her research centers on technology-supported health behavior change, community-based interventions, innovations in curriculum development, psychometric validation, and the scholarship of teaching and learning (SoTL). Dr. Fan serves on the American Occupational Therapy Association's (AOTA) Productive Aging Special Interest Section committee and mentors early-career educators through AOTA's New Educator Mentoring Program and SoTL Program. As a Fulbright Specialist (2025–2028), Dr. Fan is committed to fostering sustainable international partnerships. She has contributed to the advancement of occupational therapy through widely disseminated peer-reviewed publications and invited presentations focused on evidence-based education, research translation, and socially responsive practice.

Kerry M. O'Brien received training in psychology and public health, completing an honours degree in psychology/neuroscience, and PhD in applied cognitive psychology. Kerry M. O'Brien has since broadened research interests into a range of mental and physical health related topics, and social harms broadly, including the potential antecedents and mediators. Kerry M. O'Brien is particularly interested in developing and testing new research methodologies and measures, including psychometric testing of new measures, and application research designs and program evaluations in complex real-world settings. Since arriving at Monash, Kerry M. O'Brien has been lead chief investigator of co-lead chief investigator on over $4.5 million in competitive research grants. This includes two ARC grants, two NHMRC grants, and 12 competitive research grants totalling.

Ali Gökalp, PhD, Assistant Professor of Educational Sciences at Gaziantep University, Türkiye. His research interests are teacher education, values, and teaching skills.

Nail Değirmenci is a doctoral student at the Institute of Educational Sciences at Gazi University. His research focuses on augmented reality, virtual reality, artificial intelligence, and educational technologies in the field of education. Additionally, he conducts research on the development and adaptation of scales.

Chung-Ying Lin, PhD, Full Professor in the Institute of Allied Health Sciences, Department of Occupational Therapy, Department of Public Health, and Biostatistics Consulting Center, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan. His research interests include behavioral addiction, mental health, quality of life, health behaviors, stigma, and psychometric testing. He has published more than 500 academic publications with an H-index over 60 and FWCI over 3 in Scopus. Based on his expertise, he has developed and validated different instruments to assess people's health and behaviors. He also has served as an ad-hoc reviewer over 250 journals, including top-tier ones such as Psychological Medicine, Plos Medicine, Australian and New Zealand Journal of Psychiatry, Journal of Affective Disorders, Journal of Behavioral Addictions, Journal of Clinical Epidemiology, Value in Health, and Lancet's EClinicalMedicine.

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What is the impact of viewing social media style images in different contexts on body satisfaction and body size estimation?

Ruth Knight[1,2*] **and Catherine Preston**[2]

[1] Department of Psychology, York St John University, United Kingdom
[2] Department of Psychology, University of York, United Kingdom
* **Correspondence:** Dr Ruth Knight, Department of Psychology, York St John University, Lord Mayors Walk, York, YO31 7EX, r.knight1@yorksj.ac.uk

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Highlights:

- Body-related may have a different effect when viewed on social media apps than elsewhere..
- Those who saw images in the app experienced changes in body satisfaction and size estimation.
- Changes to body image were related to overall social media use and underlying disordered eating.

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Abstract

Previous research indicates that viewing images of bodies on social media can have an adverse effect on how individuals feel about their own bodies. Prior research has presented stimuli in various contexts, with some studies employing a lab-based approach and others attempting to replicate the social media context. However, there has been little research that considers how seeing these images in different contexts might have different effects. Methodological issues, such as these, have been highlighted as limiting the conclusions we can draw about the impact of social media on various well-being measures, including disordered eating and body satisfaction. In this study, we recruited 230 female participants via a university participation platform and exposed them to social media-style images of bodies, either in the lab or on a social media profile that they viewed on their own device. We then measured body satisfaction and body size judgments before and after this exposure. Results indicate that seeing images in a social media context, specifically in the Instagram app, seems to have a different impact than seeing the same images in a lab setting, such that in a lab setting there were no changes to body satisfaction or size estimation, but when using the smartphone app participants experienced changes in these measures. We also note that the effect of seeing these images is related to individual social media use and underlying disordered eating thoughts and behaviours. Future research should consider in more depth the characteristics of social media platforms that might exacerbate negative effects of seeing content in these contexts.

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1. Introduction

Social media is among the most popular ways to spend time online, with roughly 70% of internet users in the UK engaging with social media platforms (ONS, 2020). Instagram is especially popular, reporting one billion users in 2018—a number that has likely increased since then (Instagram, 2018). As a photo-based sharing platform, Instagram is particularly relevant when examining the influence of social media on our perceptions of our bodies. Recent reviews have noted that certain types of content, such as fitspiration images, can have particularly harmful effects on body satisfaction and related disordered eating behaviors (Vandenbosch et al., 2022; Powell & Pring, 2024; Ladwig et al., 2024). However, earlier research in this area has been limited by a lack of ecological validity, especially regarding how stimuli are presented within the platform, a common issue in social media research (Orben, 2020). Eating disorders are serious and potentially life-threatening mental health conditions, including anorexia nervosa, bulimia nervosa, binge eating disorder, and others, characterized by a range of symptoms such as disrupted eating patterns (restriction or bingeing), preoccupation with weight or shape, engagement in compensatory behaviors (excessive exercise, purging), and more (APA, 2013). Research shows that 'sub-clinical' disordered eating is highly prevalent across various communities (Carey et al., 2019). Although disordered eating may not meet the criteria for a formal diagnosis, it can significantly impact an individual's well-being and quality of life. We use the term disordered eating to encompass these experiences, acknowledging that it is not possible to determine whether a participant meets the criteria for an eating disorder diagnosis.

Fitspiration aims to motivate followers to adopt a healthier lifestyle through good eating habits and exercise (Tiggemann & Zaccardo, 2015). It can be found by searching hashtags like #fitspiration or #fitspo, or it can appear unintentionally in a user's feed. Content analysis of what is labeled as "fitspiration" reveals that there is a predominantly one type of body displayed – one that is thin and toned (Tiggemann & Zaccardo, 2015; Nuss et al., 2024; Pryde et al., 2024). The idea that other users on Instagram are peers may lead to appearance and health-related social comparisons, which, along with easy access, could make fitspiration content especially influential on a user's body satisfaction. This content implicitly suggests that only one type of body can be healthy and attractive. Following 'health and fitness' accounts that post fitspiration on Instagram is linked to higher internalization of the thin ideal, a stronger drive for thinness, and disordered eating behaviors (Cohen et al., 2017; Xu, 2024). Much of fitspiration content consists of selfies—photos individuals take of themselves (Diefenbach & Christoforakus, 2017). Some research suggests that selfie activities, rather than general social media use, are more closely linked to body image and eating concerns (Cohen, Newton-John, & Slater, 2017). Regularly viewing selfies has also been linked to lower life satisfaction and self-esteem (Wang, Yang, & Haigh, 2017). Despite selfies being common on social media, little research has examined how viewing these images might affect body satisfaction. Selfies are unique because of the visual angle from which they are taken. The angle from which a body is viewed influences aesthetic judgments. For example, large bodies are rated as significantly less attractive from an allocentric (observer) perspective compared to an egocentric perspective (viewed as if from the eyes in the head), and bodies from an allocentric perspective are judged as weighing more than from an egocentric view, especially for larger bodies (Carey et al., 2019). Selfies are often perceived as slimmer than images of bodies taken from other angles, and differences in perceived attractiveness between perspectives relate to eating disorder vulnerability. Those who are more vulnerable tend to rate selfies as more attractive, which could put them at higher risk of negative effects on body satisfaction, particularly from selfies (Knight & Preston, 2023). Since taking and viewing selfies has been shown to negatively impact body image and self-esteem (Veldhuis, Alleva, de Vaate, Keijer, & Konijn, 2020), and selfies tend to portray bodies in a slimmer light than those seen from other angles, selfies may be especially influential on the body satisfaction of viewers.

Although a body of research highlights how fitspiration can affect our thoughts and feelings about our bodies, there has been no research to date examining whether this kind of content also influences our perception of body size. Body size estimation differs in women with eating disorders compared to women without them, as they are often found to perceive their bodies as larger than they actually are (Keizer et al., 2013; Stice, 2002; Stice & Shaw, 2002). Perception of body size is linked both behaviorally and neurologically to how we feel about our bodies (Preston & Ehrsson, 2014, 2016, 2018). Therefore, it is essential to investigate whether social media negatively impacts body size perception in the same way it affects body satisfaction, a topic that has not yet been thoroughly examined in research.

Many body size estimation tasks that aim to tap into perceptual experiences of the body may actually be more related to attitudes toward the body (Cornelissen, Johns & Tovée, 2013). The door aperture task might avoid this (Keizer et al., 2013; Guardia et al., 2010). In this more implicit task, participants view door apertures

projected on a screen in front of them and must decide whether they can pass through the door without turning their shoulders (Guardia et al., 2010). Participants with anorexia turn their bodies for apertures 40% wider than their own shoulders (both in terms of judgments and actual actions), whereas healthy participants only start turning their bodies for doors that are 25% wider than their own shoulders (Guardia et al., 2010; Keizer et al., 2013). This suggests that body size perception, as well as body satisfaction, differs for people with an eating disorder. Based on this, it appears that individuals who are more vulnerable to an eating disorder and, therefore, more susceptible to negative body attitudes from social media, may also exhibit related changes in body size perception.

There are many potential barriers to accurately understanding how social media influences our thoughts and feelings about our bodies; social media platforms are constantly changing, and each person's feed is unique to them. Furthermore, how we use social media, such as messaging versus viewing images, likely affects its impact on us (Engeln et al., 2020). It is challenging to study these experiences in a way that accurately reflects real life, as controlling certain variables in experiments alters the actual social media experience. For this reason, previous research in this area has been criticized for lacking sufficient control or ecological validity to be meaningful (Orben, 2020). For example, a prior study by Fardouly et al. (2015) asked participants to browse their own Facebook accounts. However, this browsing was done via desktop in a laboratory setting, which may not accurately replicate the typical experience of using a smartphone. Different platforms also tend to deliver different types of content, which can influence results. Instagram, being an image-based platform, is also associated with more exposure to body-related content than Facebook (Engeln et al., 2020). The authors of the above paper suggest that future research should focus on maintaining naturalistic viewing and ecological validity. However, in doing so, they did not control or monitor the specific elements of Facebook or the types of posts participants viewed during their 10-minute browsing session (e.g., pictures of friends, status updates).

To build on previous findings, we specifically control which images participants are exposed to in a lab setting (Experiment 1) and maintain a more naturalistic social media viewing experience by allowing participants to use their own devices (Experiment 2). By regulating the type of posts viewed, we aim to examine whether participants experience changes in body satisfaction and related shifts in body size perception after viewing fitspiration images from different visual viewpoints (allocentric, egocentric, and selfies). Including both lab-based and real-world settings helps us understand the importance of considering context when viewing social media images. We also evaluate vulnerability to disordered eating thoughts and experiences to determine if those with such experiences are at higher risk when exposed to this type of content.

When trying to understand the potential impact of various factors, including social media use, on eating vulnerability, it is crucial to ensure that the correct construct is being measured. Many of the measures used in both clinical and community samples have been questioned for their psychometric properties. This is particularly important because the broadened criteria for eating disorders introduced in DSM-5 (American Psychiatric Association, 2013) suggest that assessments should not be based solely on symptoms related to anorexia and bulimia nervosa (Carey et al., 2019). Therefore, we used a recently validated factor structure (Carey et al., 2019) of the “Eating Disorder Examination Questionnaire” to assess Eating Disorder vulnerability. Based on the findings related to traditional and social media mentioned above, it is hypothesized that body satisfaction will decrease in both a lab-based and more ecologically valid setting after viewing fitspiration-style images. Furthermore, because selfies are perceived as slimmer than images from other perspectives, it is anticipated that reductions in body satisfaction will be greater in participants who view selfie (and selfie-stick) images compared to those who view allocentric and egocentric images. It is also hypothesized that viewing fit-spiration-style images will influence body size perception such that, after viewing the images, participants will judge the smallest door aperture they can fit through to be larger compared to before viewing, and that this effect will be more pronounced after viewing selfies. Finally, it is hypothesized that participants who spend more time on social media in general will have lower baseline body satisfaction, experience greater decreases in body satisfaction after viewing the images, and have more disordered eating thoughts and behaviors.

2. Method

Participants

Based on the small effect sizes found in previous meta-analyses, a power analysis was conducted using R (pwr package) for general linear model analysis with three groups. This indicated that a minimum of 96 participants was needed to be sufficiently powered (power = .08, alpha = .05, f = .1). Ninety-six female participants aged 18 to 26 took part in the experiment; further demographic information can be found in Table

1. Participants were recruited through an online system allowing students on undergraduate Psychology courses to gain course credit for taking part in experiments.

Table 1. A table showing demographic information for both experiments.

	N	Gender	Race	Age	EDE-Q SWC	EDE-Q PEC	EDE-Q Restriction
Experiment 1	96	Female (100%)	87 White 3 Asian 6 Mixed Race	20.14 (1.48)	2.49 (1.60)	0.64 (0.97)	1.86 (1.70)
Experiment 2	134	Female (100%)	121 White 1 Hispanic 2 Black 6 Asian 4 Mixed Race	19.30 (2.42)	2.67 (1.67)	1.02 (1.14)	1.86 (1.55)

Participants provided informed consent through an information and consent form delivered via the Qualtrics platform. Full details of confidentiality, the right to withdraw data, and how to do so were included in both this and the debrief sheet, which was received via Qualtrics (experiment two) or in person (experiment one). In the information sheet, participants were provided with information about the purpose of the study, indicating that the way social media influences one's experiences of the body was being explored, but not with precise details about the specific factors being examined. Ethical approval was obtained from the departmental ethics committee for this project.

Equipment

An iMac computer and projector were used to project door apertures onto a large blue screen, positioned approximately 200cm away from the projector. Participants stood approximately 150cm away from the screen. Participants used a wireless keyboard to respond to the question of whether they felt they could walk through the door without turning their shoulders. Questionnaires (demographic information and Eating Disorder Examination Questionnaire 6.0) were presented via Qualtrics on the iMac computer. Images of female bodies, taken from either an allocentric, egocentric, or selfie perspective, were randomly displayed on the computer on a programme coded with Python in Psychopy (Peirce et al., 2019).

Stimuli

Images of female bodies from the shoulders down were captured from three different perspectives (egocentric, allocentric, and selfie) against a white background. The women in the photos wore gym-appropriate clothing, such as leggings and a tight-fitting vest or T-shirt. The same eight models appeared in each perspective—one model took the allocentric photo, while the egocentric and selfie photos were taken by the models themselves. Six of these models were included in the experiment due to variations in body size; since fitspiration images mainly feature slim bodies and two of the photo sets were outliers based on BMI, their images were excluded. Research shows that exposure to images of different body sizes impacts disordered eating thoughts and behaviors differently than exposure to a narrower range of body sizes (Cohen et al., 2021). Because our focus was specifically on fitspiration-style content, we only used the six image groups that fit these criteria. The stimuli were a subset from a previous study (Knight & Preston, 2023).

Measures

Eating Disorder Examination Questionnaire 6.0 (EDE-Q)

The EDE-Q is a 28-item self-report questionnaire that assesses eating disorder symptoms (Fairburn & Beglin, 1994; 2008). It assesses disordered eating behaviors and attitudes over the last 28 days and has traditionally used four subscales (Restraint, Eating Concern, Shape Concern, and Weight Concern) as well as a global score, which is calculated from the mean of the four subscale scores. However, previous studies found a three-factor model using 14 items showed the best fit, with factors consisting of Shape and Weight Concern (SWC), Preoccupation and Eating Concern (PEC), and Restriction (Carey et al., 2019). We used this three-factor structure. Participants rate items on a 7-point Likert scale, with higher scores indicating higher eating disorder psychopathology. Six items relate to the frequency of eating disorder attitudes and behaviours in the past 28 days, which do not contribute to the subscale or global scores but provide information on some core eating

disorder behaviours such as laxative use and self-induced vomiting. These were omitted from this study. Research has established acceptable levels of internal consistency for global and subscale scores in men and women, alongside the reliability of this version of the scale (Carey et al., 2019; Knight et al., 2023; Knight & Preston, 2023).

Design

We employed a between-subjects design, with participants allocated to one of four conditions to ensure an even distribution of EDE-Q scores, based on the visual angle of the images (i.e., egocentric, allocentric, selfie, and selfie-stick). See allocation details below.

Procedure

Between 72 and 24 hours before coming to the lab for the experiment, participants received a personalized link to a questionnaire on Qualtrics that included demographic information and the EDE-Q. The results were used to assign each participant to one of three conditions (allocentric, egocentric, and selfie) to ensure a balanced distribution of EDE-Q scores across groups. In the lab, participants first completed a state body satisfaction measure using a visual analogue scale (VAS) anchored by 'Very Dissatisfied' and 'Very Satisfied'. They then performed the door aperture task, where they viewed 51 door openings ranging from 30 cm to 80 cm in width, increasing in 1 cm steps, projected in front of them (Guardia et al., 2010). Using a keyboard, they responded whether they could walk through the door at a normal pace without turning their shoulders. The experiment was programmed in PsychoPy. Afterwards, participants viewed six body images from a perspective assigned to their condition (egocentric, allocentric, or selfie) and completed a 1-back task to maintain focus, pressing the spacebar if they saw the same image twice in a row—this occurred at least twice per participant. The images were randomized within each condition, each shown for 2 seconds, and repeated six times. Then, participants completed post-manipulation measures of body satisfaction (VAS) and body size judgments (the door aperture task). At the end, the experimenter measured each participant's shoulder width with a tape measure, along with their height. Participants also recorded their own weight using a set of scales.

Data Analysis

Body satisfaction scores before and after viewing images were calculated using the VAS, and critical apertures for both conditions were determined by finding the aperture corresponding to a 50% positive 'yes' response (Guardia et al., 2010). This was done for each trial for each participant. EDE-Q scores were computed by averaging the relevant items for each participant. All data were normally distributed. A MANOVA was employed to identify potential differences in EDE-Q scores between conditions. To directly test the hypotheses that body satisfaction decreases after viewing fitspiration images and that selfies have the biggest impact, we conducted a 2x3 mixed ANOVA on body satisfaction scores with the within-subject factor of time (pre and post) and the between-subject factor of condition (egocentric, allocentric, and selfie-stick). Similarly, to test whether viewing fitspiration images influences body size perception and if selfies exert the largest effect, we performed a 2x3 mixed ANOVA on critical aperture in the door aperture task with the within-subject factor of time (pre and post) and the between-subject factor of condition (egocentric, allocentric, and selfie-stick). Based on previous research indicating that shape and weight concerns may underlie differences in judgments across social media content from different perspectives (Knight & Preston, 2023), we also explored these models with levels of shape and weight concern controlled for (mixed ANCOVA). Reliability values for the EDE-Q were both more than acceptable: $\omega = 0.954$, $\alpha = 0.948$. All statistical analyses were conducted in Jamovi (The Jamovi Project, 2025).

3. Results-Experiment One

To directly test the hypothesis that viewing social media style images will influence body size estimations, and that selfies will have the largest effect, a mixed 2x3 ANOVA was run in order to establish whether there was an effect of exposure to stimuli or stimuli type (selfie, allocentric, or egocentric) on critical aperture. There was no significant effect of exposure to stimuli on critical aperture ($F_{(1, 91)} = 1.32$, $p = .254$, $\eta 2 = 0.002$). When controlling for SWC, there was also no significant effect of exposure to stimuli on critical aperture ($F_{(1, 91)} = 13.07$, $p = .425$, $\eta 2 = 0.000$). There was also no significant effect of stimulus type on critical aperture ($F_{(2, 91)} = 0.07$, $p = .936$, $\eta 2 = 0.001$).

To directly test the hypothesis that viewing social media-style images affects body satisfaction, and that selfies have the greatest effect, a second mixed 2x3 ANOVA was conducted to determine whether exposure to

stimuli or stimulus type has an impact on body satisfaction. There was no significant effect of viewing the stimuli on body satisfaction ($F_{(1, 90)} = 0.25$, $p = .618$, $\eta 2 = 0.000$). There was also no effect of exposure to the stimuli on body satisfaction when controlling for SWC ($F_{(1, 90)} = 0.80$, $p = .373$, $\eta 2 = 0.000$). There was no significant effect of stimuli type on body satisfaction ($F(2, 90) = 1.51$, $p = .227$, $\eta 2 = 0.032$).

Discussion – Experiment One

There was no significant effect of viewing social media style images on measures of body size estimation or body satisfaction. The angle that the images had been taken from also did not elicit a significant effect on body size estimation or satisfaction. No differences in body size estimation or satisfaction were found when individual levels of shape and weight concern were controlled for. None of the hypothesized effects were found in experiment one.

Previous research indicates that differences in aesthetic judgements of social media style images from various perspectives may be driven by differences in shape and weight concern (Knight & Preston., 2023). Based on this, we controlled for shape and weight concern when exploring the effects of exposure to stimuli on body satisfaction and size estimation. Even when shape and weight concern was controlled for, there were no differences in body satisfaction and size estimation following viewing these images. This may indicate that transient exposure to social media style stimuli is not sufficient to elicit changes in body satisfaction and body size estimation. It may be that only more consistent, long-term viewing of this kind of content affects how we feel about our bodies.

Some previous studies have found significant increases in body dissatisfaction after viewing social media images in a laboratory setting (Tiggemann & Zaccardo., 2015) however we did not replicate this finding in experiment one. Results in the aforementioned study were found to be mediated by state appearance comparison; it may be that our sample in experiment one did not have high levels of appearance comparison, something that we did not measure. Furthermore, in the 2015 study images were presented on an iPad and no attention task was used, unlike in our experiment in which images were presented on a desktop and participants were asked to engage in an attention task. These manipulations may have influenced results with the previous task (Tiggemann & Zaccardo., 2015) potentially reflecting a more naturalistic social media-type viewing context.

However, much of the previous literature exploring the effect of viewing social media style content on body satisfaction has exposed participants to this stimuli within lab conditions, with the images being presented on a computer in various ways (e.g., Robinson et al., 2017; Tiggemann & Zaccardo., 2015). However, social media platforms themselves have unique features that cannot be captured by presenting participants with these images outside of the platform's overall context. This may include, for example, comments and likes that are visible by other users, or other contextual cues such as one's own profile. It may be that the context that images are seen in also influences how participants feel about their body. In order to examine this more closely, in experiment two we will present fitspiration style images on the Instagram application itself. To achieve this, participants will complete the experiment on their own smartphones. Although body satisfaction can be measured in the same way in experiment two, using a VAS scale, participants will not be able to complete the door aperture task in their home environment. Therefore, to assess changes in body size estimation, the Photographic Figure Rating Scale (PFRS) will be used (Swami, Salem, Furnham & Tovee, 2008).

Methods - Experiment Two

Participants

Based on the small effect sizes found in previous meta-analyses, a power analysis was conducted using R (pwr package) for general linear model analysis with four groups. This indicated that a minimum of 112 participants were needed to be sufficiently powered (power = .08, alpha = .05, f = .1). One hundred and thirty-four female participants aged 18 to 35 took part in the experiment, further demographic information can be found in Table 1. All participants were recruited through an online system allowing students on undergraduate Psychology courses to gain course credit for taking part in experiments.

Equipment

Participants accessed the questionnaire via a Qualtrics link on their smartphones and used the Instagram app to view the images.

Stimuli

The same stimuli were used for this experiment as in the first experiment, as described above, however in this experiment we also included an extra set of selfie images, taken with a selfie-stick. These were included in order to more accurately capture the kind of fitspiration content commonly seen in the Instagram app at the time as well as being taken at a similar distance from the body as the allocentric condition. The extra condition was not included in the first experiment due to time constraints for an in-person experiment.

Measures

The EDE-Q was used in experiment two, as described above.

The Photographic Figure Ratings Scale was used as a measure of body size estimation. This body image assessment scale was developed to improve on typically used line-drawn scales by overcoming issues of realism and poor ecological validity (Swami et al., 2008). Research indicates that the instrument demonstrates acceptable levels of reliability and validity (Swami et al., 2008; Swami et al., 2012). Participants are presented with a series of ten standardized photos of women's bodies, which range from the BMI category 'emaciated' to the BMI category 'obese'. They are asked to select the image that they feel best matches their own body.

Weekly social media use was also collected by asking participants to report their average weekday social media use in hours and their average weekend day social media use in hours. There are some issues with self-report measures of social media use, so we attempted to account for differences between weekends and weekdays to obtain a weekly measure (Verbeij et al., 2021).

Procedure

Participants followed the link to the questionnaire via social media or an online participant recruitment platform. They were presented with the study information and consent sheet before completing the initial measures of body satisfaction. This consisted of a visual analogue scale (VAS) asking them how satisfied they were with their body at that moment: 'How satisfied are you with your body right now?'. The VAS was anchored by 'Very Dissatisfied' and 'Very Satisfied', as in Experiment One. Body perception was measured using the Photographic Figure Ratings Scale, replacing the door aperture task, which could not be completed outside the lab environment. Then participants were directed to one of four Instagram profiles (depending on which condition they had been allocated to), which contained the stimulus photos from one condition (selfie, selfie-stick, allocentric, and egocentric). They were instructed to browse and engage with these profiles for five minutes. We instructed participants to view only the linked profile, to control the type of content being observed; however, it is not possible to confirm whether they followed these instructions. Whether participants clicked on the link and the time spent away from the Qualtrics survey was recorded. Those who did not click on the link or spent less than the mandated five minutes on the platform (measured by the time taken to progress to the next question, which was recorded via Qualtrics) were excluded. The body satisfaction and size perception tasks were then repeated. Finally, participants completed the EDE-Q and recorded their height and weight. At the end of the questionnaire, participants were presented with a debrief sheet that provided details of the study's purpose and signposts to sources of further support and information.

Data Analysis

Body satisfaction scores for before and after viewing images were calculated from the VAS and body size estimation scores from the Photographic Figure Ratings Scale. EDE-Q scores were calculated for each participant by taking the mean of the relevant items for each subscale. All data were normally distributed. A MANOVA was used to identify potential differences in EDE-Q scores between conditions. To directly test the hypotheses that body satisfaction will decrease following viewing fitspiration images and that selfies will have the biggest effect, we conducted 2x4 mixed ANOVA for body satisfaction scores with the within factor of time (pre and post) and between factor of condition (egocentric, allocentric, selfie, and selfie-stick). In order to directly test the hypotheses that viewing fitspiration images will impact body size perception and that selfies will have the biggest effect, we conducted a 2x4 ANOVA for body figure rating scale with the within factor of time (pre and post) and between factor of condition (egocentric, allocentric, selfie, selfie-stick.) Reliability statistics for the EDE-Q were both more than acceptable: $\omega = 0.951$, $\alpha = 0.947$. All statistical analysis was carried out in Jamovi (The Jamovi Project, 2025).

To test the hypotheses that those who spend more time on social media will have lower body satisfaction, a greater negative affect of viewing the images, and higher eating disorder thoughts and behaviours, we combined data from experiments one and two to increase power. Pearson's correlation coefficient was used to examine relationships between reported weekly social media and baseline body satisfaction (body satisfaction

measure before viewing the stimuli), change in body satisfaction (the difference between pre- and post-body satisfaction scores), and EDE-Q scores. The change in body satisfaction scores was calculated by subtracting the pre-exposure body satisfaction scores from the post-exposure scores, such that negative scores represented decreases in body satisfaction and positive scores represented increases in body satisfaction.

In Experiment 1, participants were allocated to a condition based on their EDE-Q scores, ensuring an equal spread of scores across conditions. Given the non-significant results in Experiment 1, as well as the ethical and logistical considerations of group allocation for an online study, we did not follow this procedure in Experiment 2.

Results – Experiment Two

To directly test the hypothesis that viewing social media images affects body size perception, with selfies having the greatest impact, a mixed 2x4 ANOVA was conducted to determine whether stimulus exposure or stimulus type (selfie, selfie-stick, allocentric, or egocentric) influences FGRS. A significant difference in FGRS was observed from pre-exposure (M = 4.43, SD = 1.64) to post-exposure (M = 4.63, SD = 1.69) to stimuli ($F_{(1, 128)}$ = 4.66, p = .033, η2 = 0.001), as shown in Figure 1. Controlling for SWC, however, there was no significant effect of stimulus exposure on FGRS ($F_{(1,128)}$ = 2.69, p = 103, η2 = 0.000). Additionally, stimulus type did not significantly affect FGRS ($F_{(3, 128)}$ = 0.09, p = .967, η2 = 0.001).

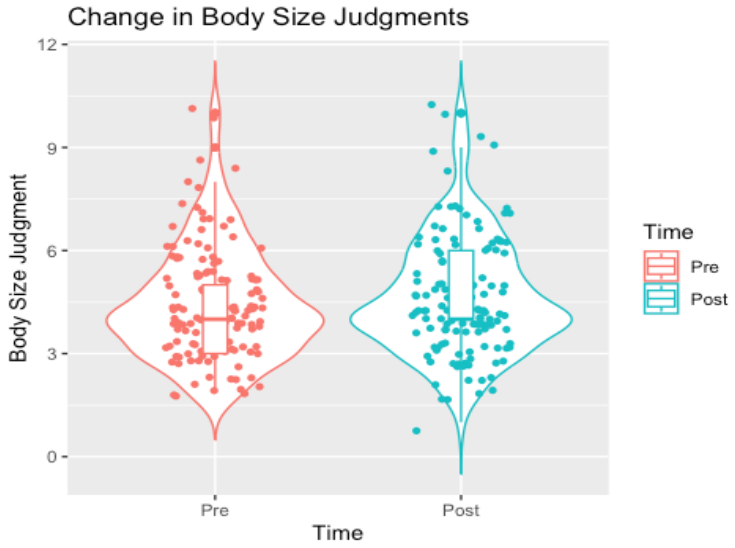

Figure 1. Showing the significant change in body size judgement from pre to post exposure to stimuli.

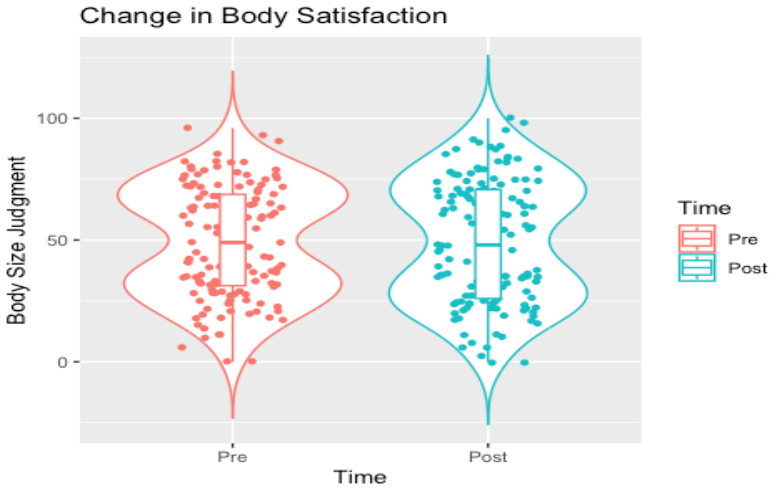

Figure 2. Showing the significant change in body satisfaction from pre-to-post exposure to stimuli.

To directly test the hypothesis that viewing social media images influences body satisfaction, and that selfies have the greatest effect, a mixed 2x4 ANOVA was conducted to determine whether exposure to stimuli or the type of stimuli (selfie, selfie-stick, allocentric, or egocentric) affects body satisfaction. There was a significant difference in body satisfaction from pre-exposure to stimuli (M = 49.35, SD = 22.93) to post-exposure (M = 49.32, SD = 25.49) ($F_{(1, 129)}$ = 9.14, p = .003, η2 = 0.002), as shown in Figure 2. There was also a significant effect of exposure to stimuli on body satisfaction when controlling for SWC ($F_{(1, 129)}$ = 13.11, p < .001, η2 = 0.002). There was no significant effect of condition on body satisfaction ($F_{(3, 129)}$ = 0.32, p = .808, η2 = 0.002).

Social Media Use (Collapsed Over Experiments One and Two)

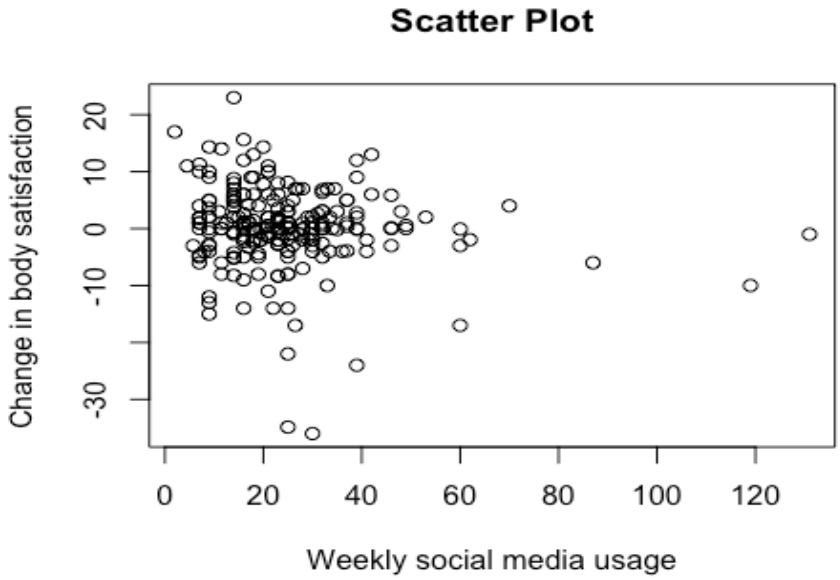

Figure 3. Showing the significant weak correlation between weekly social media use and change in body satisfaction.

As was hypothesized, Pearson's correlations revealed a significant weak negative correlation between weekly social media use and baseline (pre) body satisfaction scores, such that higher weekly social media use was related to lower body satisfaction scores (r = -0.14, p = .038). There was also a significant weak negative correlation, as hypothesized, between weekly social media use and change in body satisfaction, such that higher social media use was linked to greater decreases in body satisfaction after viewing the images (r = -0.14, p = .041), as shown in Figure 3. Finally, weekly social media use was significantly positively correlated with EDE-Q scores, such that as weekly social media use increased, so did EDE-Q scores. This was the case for Restriction (r = 0.16, p = .018), Shape and Weight Concern (r = 0.21, p = .001), and Preoccupation and Eating Concern (r = 0.16, p = .013) subscales. All these relationships represent small effects.

Experiment Two Discussion

As hypothesized, there was a significant increase in FGRS, a measure of body size perception, after viewing the stimuli, as evidenced by the rise in this score following image exposure. However, when controlling for shape and weight concerns, this difference was no longer significant. Body satisfaction scores also decreased significantly after viewing the stimuli, even when accounting for concerns about shape and weight. There was no significant effect of stimulus type on either measure.

Controlling for SWC did not affect the observed decrease in body satisfaction after exposure to the stimuli; however, controlling for this factor did remove the change in PFRS. This may relate to the different aspects of body satisfaction and size estimation experiences we are examining. The PFRS was used to measure body size perception, and SWC may influence how a person judges their body size. In fact, previous research shows that people with anorexia nervosa are poor at assessing their body size (Keizer, 2013) and tend to have more unstable body size estimates (Espeset et al., 2012). These findings could help explain why this occurs; perhaps concerns about shape and weight affect the accuracy of body size estimation, with more negative feelings about our body dimensions linked to greater perceptual instability. More research is needed to clarify this. The fact

that controlling for SWC did not prevent the decrease in body satisfaction suggests that SWC alone does not cause social media-related changes in body satisfaction. Body satisfaction is a complex, multifaceted phenomenon, and many other factors likely influence this in the context of social media. These factors may include the tendency to make social or appearance-based comparisons, other disordered eating thoughts and behaviors (e.g., preoccupation and eating concerns), or factors related to overall social media use or even temporary mood states. These areas were outside the scope of the current study, and further research is necessary to explore them more fully.

Interestingly, these results suggest that viewing images within the app may have a slightly different effect compared to viewing the same images in a laboratory setting. The context in which an image is viewed may include social cues that influence body satisfaction and perception. Alternatively, priming effects from previous experiences in environments like Instagram could play a role. In the future, researchers might want to explore more specifically what features of the app context—such as likes and comments—contribute to this effect.

4. General Discussion

This study investigated the impact of viewing social media content (via Instagram and in the lab) on participants' body satisfaction and body size estimation, as well as the relationship between time spent on social media and these perceptions. We found no significant impact of viewing fitspiration content in the lab regarding body satisfaction and size estimation. However, when participants viewed the same images on their own smartphones using the Instagram app, their body satisfaction decreased significantly, and their body size estimates increased significantly. Nonetheless, the difference in size estimates was no longer significant after controlling for shape and weight concerns. Contrary to expectations, the angle from which a photo was taken did not influence body satisfaction or size estimation in either experiment. Combining results from both experiments, we observed that participants who spent more time on social media each week reported lower initial body satisfaction and experienced larger decreases after viewing the stimuli. Additionally, those who spent more time on social media scored higher on measures of disordered eating thoughts and behaviors.

In both experiments one and two, there was no significant effect of the visual perspective from which images were taken on any outcome measures. This was somewhat surprising, given previous research suggesting that the visual angle from which images are taken influences aesthetic judgments of bodies and may involve different levels of self-referential processing, thereby more readily implicating the self (Knight & Preston, 2023). It is possible that this finding might be explained by the objectification inherent in social media-style images, which could reduce the extent to which viewing these images involves the self, making all types of bodies equally impactful on body satisfaction. However, it is also possible that, because the observed effects were not large and may disproportionately affect individuals who spend more time on social media and are already vulnerable to eating disorders (as suggested by our correlation results), we may not have had sufficient power to detect such effects. Future studies might consider specifically recruiting participants with low body satisfaction or those who are intensive social media users.

In experiment one, the lab-based study, there was no significant change in body satisfaction after viewing fitspiration images, and the perspective from which the bodies were viewed did not affect body satisfaction scores. However, there was an effect of viewing the same images on the Instagram app in experiment two. This suggests that short exposure to fitspiration content does not cause significant changes in body satisfaction in laboratory conditions but does in more ecologically valid settings, such as on the Instagram app on participants' own smartphones. Social comparison theory, which indicates that we compare ourselves to others as a form of self-exploration, suggests that media and social media may be especially ripe for comparisons, since we perceive other users as peers (McComb et al., 2023). Making upward social comparisons might be inspiring in the short term but harmful to well-being over the long term (Meier & Johnson, 2022). It may be that the context in which we view images, rather than the images themselves, plays a key role in any social comparisons we make. The environment of the Instagram app may be particularly conducive to upward social comparisons, potentially leading to decreases in body satisfaction. Our previous study, which found differences in slimness judgments based on the viewing angle of these same images in a laboratory setting, measured this in a laboratory environment (Knight & Preston, 2023). It would be valuable to determine whether viewing the same images in a more ecologically valid environment would produce similar differences in appearance judgments. This could help clarify whether the social media context influences the appraisal of appearance or appearance comparisons. Suppose it is appearance comparisons, not appraisal, that are affected by context, as suggested by social comparison theory. In that case, this might also explain the null results regarding stimuli type in this

study—that is, our tendency to make upward comparisons rather than overall judgments of attractiveness or slimness that affect body satisfaction when viewing idealized bodies. However, since we did not directly measure social comparison here, this explanation remains speculative.

Viewing these images in the Instagram app led to a change in body size estimations, with participants judging their bodies as slightly larger after exposure to the stimuli. This was not observed when the same images were viewed in the lab. Research indicates that individuals with disordered eating and low body satisfaction may also exhibit changes in their body size perception. Furthermore, a neural link exists between body satisfaction and body perception in healthy controls (Keizer et al., 2011; Keizer et al., 2013; Preston & Ehrsson, 2016). These findings suggest that brief exposure to fitspiration-style content, especially on Instagram, does alter an individual's body size estimates. However, this effect disappeared when controlling for concerns about shape and weight. This underscores the complexity of the relationship between body satisfaction, size estimation, social media exposure, and disordered eating thoughts and behaviors. It may be that individuals already vulnerable to negative thoughts and feelings about their bodies are more likely to experience changes in body size estimation after viewing appearance-related content on social media, as previous meta-analyses have suggested (Ferguson, 2013). Additionally, this measure appears more influenced by attitudes toward the body rather than body perception itself, unlike the door aperture task in experiment one, which was a more implicit measure of perceived body size. Nevertheless, the slight differences observed between body satisfaction and body size estimations suggest they assess somewhat different constructs.

Decreases in body satisfaction after viewing stimuli on Instagram could not be attributed to underlying disordered eating thoughts and behaviors. This indicates that brief exposure to appearance-related social media content on Instagram alone can reduce people's satisfaction with their bodies, regardless of their baseline concerns. Since these effects are specific to the app and do not occur when viewing the same images in isolation, other elements of social media content, such as comments, likes, and captions, might influence body satisfaction more than the images themselves. In the second experiment, participants were told they could interact with the photos as they would with other social media content, such as liking or commenting. Some participants did engage in this interaction, but due to anonymity, it's unclear which ones. There may be something about the social context of a social media platform that could intensify the negative effects of viewing these types of images. Very little research has directly compared the effects of viewing the same images in a lab setting versus on social media, which future studies should address. Research shows that making attractiveness judgments in a lab is similar to doing so in real life (Tovee et al., 2017); however, the same may not apply to the effects of interacting with social media content on the platforms themselves. It's worth noting that in this experiment, we focused specifically on the role of viewing the body; stimuli did not display the models' heads. Previous research indicates that the face and body contribute independently to attractiveness (Peters, Rhodes & Simmons, 2007), but how social comparisons are made using the face and body has not been explored in this research. Nevertheless, selfies are often taken to showcase the model's face, and common filters and enhancements on social media—such as those used with apps like Facetune and Perfect365—contour the face, enlarge lashes and lips, and add volume to hair. Including the face in selfies could amplify the negative impact these stimuli have on viewers, with the effect of viewing the body alone being minimal. Future studies should directly compare the effects of viewing selfies of just the body, just the face, and those that feature both. Although selfies are often judged as slimmer than other images, this does not appear to significantly increase the risk of body dissatisfaction for viewers (at least not to an extent detectable in these experiments). Still, these results suggest that even viewing the body on platforms like Instagram might have harmful effects. Additionally, the way stimuli are presented could influence how viewers are affected, which may help explain previous inconsistent findings.

We also only recruited female participants for this study. Some research indicates that gender may influence how social media affects thoughts and feelings about the body (Mahon & Heavey, 2021). Men might experience more concerns related to muscularity after appearance-related social media use, rather than traditional disordered eating thoughts and behaviors (Lonergan et al., 2021). Since research suggests that social media effects are probably affected by gender, our focus was on female participants viewing bodies presented as female. However, future research should examine effects on men and explore whether they are similar to those observed in women. We also did not recruit more participants than what the power analysis recommended. This may have limited our findings due to individual differences in social media use and disordered eating thoughts and behaviors. Nevertheless, over-recruiting could have made interpretations less solid and increased the risk of overinterpreting very small effects, so a cautious approach seemed wise. Future studies might consider how to interpret power analysis in relation to variables like social media use and disordered eating measures or target specific demographics to identify who might be especially vulnerable to social media content.

Research on how social media influences various mental health experiences faces similar challenges, especially regarding how to assess these behaviors in a way that is both ecologically valid and experimentally controlled (Orben, 2020). We used the Photographic Figure Rating Scale to see if body size estimation changed (measured via the door aperture task in the lab-based study). However, there is limited psychometric evidence supporting the reliability of this scale, so results should be interpreted with caution (Swami et al., 2012). It is important for researchers to work toward developing reliable experimental measures that can effectively capture these complex phenomena in a way that is accessible for social media research and prioritizes ecological validity. As highlighted throughout this article, accurately capturing the experience of social media use and its impact on disordered eating thoughts and behaviors is difficult due to the complexity of these phenomena. A key goal for future research should be the collaborative development of these paradigms to facilitate accurate and rigorous investigation in this area. Participants who reported spending more time on social media on average each week also reported lower baseline body satisfaction. Although this is only a weak correlation, it supports previous findings suggesting that social media might influence body satisfaction, albeit to a small extent (Fiorovanti et al., 2022). Additionally, a weak relationship was found between social media use and changes in body satisfaction after viewing fitspiration images, with more time spent on social media associated with a greater decrease in body satisfaction following the images. Recent research generally finds no direct effects of social media use on body satisfaction; however, indirect effects are observed, such as social comparisons mediating the relationship over time. Higher social media use predicts more social comparisons, which in turn lead to lower body satisfaction (Jarman, McLean, Slater, Marques & Paxton, 2021). The correlations we identified support the idea that these factors may be connected in the long term. Given the complexity of body satisfaction, it is reasonable to assume that any contributing factors would likely play small but significant roles (Cash, 2004). Increased time on social media was also weakly associated with greater shape and weight concerns, preoccupation, eating concerns, and restriction-related thoughts and behaviors. This aligns with previous studies showing that overall social media use can relate to disordered eating concerns, possibly through appearance comparisons (Griffiths et al., 2018; So & Kwon, 2023). Alternatively, it may be that individuals experiencing higher levels of disordered eating thoughts and behaviors spend more time on social media. Future research will need to explore the direction of this relationship. Replicating complex behaviors, such as using social media, in experimental conditions is incredibly challenging. Even when asking participants to browse the images on their own devices, the act of doing so was undoubtedly not the same as naturalistic social media use. As a result, it is challenging to determine whether these findings can be applied more broadly to actual social media use. For example, the effect of the closeness of a relationship an individual has with the person whose images they are viewing, or whether there is an impact from surrounding information such as captions, likes, and comments, is not captured here. Furthermore, social media is constantly evolving, and much of the body-related content currently consumed is in the form of reels rather than still images. In addition, the participants were predominantly young white women, so the study did not capture a representative range of experiences, given the impact that social identity may have on body satisfaction and size estimation.

This research suggests that viewing images in social media contexts has a unique impact on body satisfaction, whereas viewing the same images in isolation does not produce the same effects. Seeing these kinds of images on social media platforms may also influence perceptions of body size, but this is more likely due to underlying disordered eating thoughts and behaviors related to shape and weight concerns. Individuals more vulnerable to body image issues are likely to experience a greater effect on their overall body satisfaction from viewing appearance-related content on social media. Future research could investigate the specific characteristics of the social media environment that enhance its impact on body satisfaction.

Statement of Researchers

Researchers' contribution rate statement:

First author: conceptualization, data curation, formal analysis, investigation, methodology, writing – original draft.

Second author: supervision, conceptualization, validation, writing – review and editing.

Conflict statement:

The authors declare that they have no conflict of interest.

Data Availability Statement:

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Author Biographies
First Author,

Ruth completed a PhD in Psychology at the University of York followed by a postdoctoral position with Converge at York St John University. She joined York St John University as a Lecturer in 2022 and was promoted to Senior Lecturer in 2024. Ruth's research focuses on mental health experiences in marginalized communities, with a particular interest in the experiences of disordered eating. She uses co-produced, mixed methods approaches.

Catherine completed a Ph.D in Psychology at the University of Nottingham followed by postdoctoral positions in Nottingham and Karolinska Institutet, Stockholm. During her postdoc she was awarded two fellowships: the Wenner Gren foreign researcher fellowship and Marie Curie Intra European Fellowship. Catherine started a Lecturership at the University of York in 2015, being promoted to Associate Professor in 2022. Catherine's research focuses on body representations, including body perception, interoception, neural mechanisms and emotional experience of the body. In 2024 Catherine was elected as co-chair of the Body Representation Network (BRNet)

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Motives for social media use in adults: associations with platform-specific use, psychological distress, and problematic engagement

Martin Wolgast[1]*, Hampus Adler[1], and Sima Nurali Wolgast[1]

1 Lund University, Department of Psychology, Sweden
* **Correspondence:** Dr. Martin Wolgast, Lund University; Department of Psychology; Box 213; 22100 Lund, Sweden. martin.wolgast@psy.lu.se

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Highlights:

- Habitual use and emotional regulation motives emerged as the strongest predictors of problematic social media use and psychological distress, while loneliness was tied to seeking new online connections.
- Platform-specific patterns showed that TikTok and Instagram engagement was driven by entertainment and algorithmic recommendations, whereas Facebook use was linked to self-presentation and information sharing.

Abstract

Social media has become an integral part of daily life, particularly among young adults, yet the psychological motives driving social media engagement remain underexplored. This study examines the motivations underlying social media use and their associations with key psychological and behavioral outcomes, including problematic social media use, mental health, and loneliness. Using a survey design, 1.015 participants aged 16 and older who enrolled in courses at Swedish universities were assessed through validated measures of social media motives, problematic use, distress, and perceived loneliness. Factor analysis identified four additional motivational dimensions beyond traditional frameworks: algorithmic recommendations, habitual use and boredom, feedback-driven engagement, and seeking new social connections. Results indicated that habitual use and mood management were the strongest predictors of problematic social media use. At the same time, socialization and entertainment motives were more prevalent but less associated with adverse outcomes. Psychological distress was most strongly linked to social media use for emotional regulation, whereas loneliness was associated with attempts to form new social connections online. Platform-specific analyses revealed that TikTok and Instagram were more strongly associated with entertainment and algorithm-driven engagement, while Facebook was more linked to self-presentation and information sharing. These findings highlight the evolving role of social media platforms in shaping user engagement and underscore the potential risks of compulsive usage driven by algorithms and passive consumption. Understanding these motivations is essential for developing targeted interventions to promote healthier digital habits and mitigate the adverse psychological effects of excessive social media use.

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1. Introduction

The emergence of social media platforms has redefined the landscape of human interaction, communication, and information sharing, creating both opportunities and challenges. Platforms such as Instagram, TikTok, Snapchat, and Facebook provide users with tools to connect, share, and curate their experiences in real time, fostering a digitally mediated social environment. These platforms have become central to the lives of young adults, who use them not only to stay connected but also to navigate complex social landscapes, seek entertainment, and build their identities (Ellison et al., 2007; Nesi & Prinstein, 2015).

Usage statistics highlight the widespread use of social media among young adults: over 90% of individuals aged 18–30 interact with social media platforms daily, with an average usage time of more than two hours per day (Datareportal, 2023). This demographic's engagement with social media is shaped not only by their social and developmental needs but also by the features of these platforms, including algorithms, interactive design, and feedback loops that incentivize extended use (Hilty et al., 2023). These design elements often blur the line between voluntary and compulsive use, raising important questions about the psychological and behavioral implications of social media engagement (Bucher, 2018).

Social media's influence extends beyond individual behavior to broader societal norms, creating a digital culture where constant connectivity and virtual interactions are normalized. For young adults, this digital culture intersects with key life transitions, such as entering higher education or the workforce, further amplifying the role of social media in shaping identity, relationships, and aspirations. The centrality of these platforms underscores the importance of understanding why individuals use social media and how these motivations influence their well-being.

Motivations for social media use are also shaped by cultural context. For example, research suggests that in individualistic cultures, users often emphasize self-presentation and feedback-seeking, whereas in collectivistic cultures, social media is more commonly used to maintain group belonging and relational harmony (Jackson & Wang, 2013; Nadkarni & Hofmann, 2012). Such differences suggest that findings from one cultural setting may not be fully generalizable to others, underscoring the importance of interpreting results within their specific cultural context.

1.1. Motives for social media use

Motivations for social media use constitute a critical area of inquiry for understanding the reasons behind individuals' engagement with these platforms. Grounded in the theoretical framework of the uses and gratifications theory (UGT; Katz, Blumer, & Gurevitch, 1973), which emphasizes that individuals actively seek media to satisfy distinct psychological, social, and emotional needs, research has consistently highlighted a core set of motivations. These motivations align with the multifaceted affordances of platforms such as Instagram, TikTok, and Facebook, which allow users to maintain relationships, access entertainment, seek information, and curate their identities in ways that were not possible with earlier media forms.

Socialization remains a fundamental motivation for using social media, reflecting the human need for connection and a sense of belonging. Platforms enable users to maintain interpersonal relationships, cultivate new connections, and engage with communities that transcend geographic and cultural boundaries. Young adults, who often experience significant life transitions such as entering higher education or starting careers, find social media particularly useful for fostering and maintaining both strong and weak social ties. Ellison et al. (2007) highlighted the role of social media in sustaining these connections, noting that it serves as a bridge between offline and online interactions.

Entertainment and escapism are also prominent motives that have garnered substantial academic attention. Social media platforms offer an endless stream of entertaining content, ranging from humorous videos to immersive challenges and personalized feeds, which satisfy users' desire for leisure and enjoyment. Escapism, defined as the use of social media to avoid stressors or negative emotions, plays a particularly important role during periods of heightened anxiety or uncertainty. Seidman (2013) observed that escapism motives are closely tied to emotional regulation, as individuals turn to platforms to distract themselves or alleviate feelings of distress. Cuadrado et al. (2022) reinforced this perspective, finding that escapism was a key driver of social media use during lockdowns, when many individuals sought solace in digital environments to cope with isolation and uncertainty. These findings underline the dual role of social media as both a source of entertainment and a mechanism for emotional relief. Thus, the reliance on social media for emotional regulation suggests that young adults may turn to these platforms not just for entertainment and socialization but also as a coping mechanism to manage stress and anxiety (Nesin et al., 2025). This aligns with recent research on

social-emotional learning, which highlights the role of digital engagement in self-regulation and identity formation (Parent, 2023).

In addition to providing entertainment, connection, and coping, social media has become a primary source of information for many users. The ability to access real-time updates, news, and educational content has transformed how individuals consume information, with algorithmic curation playing a significant role in this process (Morris et al., 2023). Sundar and Limperos (2012) argued that algorithmic personalization enhances the efficiency and appeal of information-seeking on social media, tailoring content to individual preferences and ensuring its relevance. Cuadrado et al. (2022) further demonstrated that during the pandemic, the need for reliable information was a significant motivator for social media use, highlighting the platform's utility as a tool for staying informed in dynamic and uncertain environments. Hence, social media is increasingly being used as a source of information. However, this also raises concerns about the spread of misinformation. Recent studies highlight how social media platforms have become a key tool for science communication, yet they also facilitate the dissemination of misleading content (Steen & Weinberg, 2024).

Self-presentation and feedback-seeking behaviors are additional dimensions that underscore the unique affordances of social media platforms. The ability to craft and share curated representations of one's life provides users with opportunities for identity expression and social validation (Cataldo et al., 2021). Feedback mechanisms, such as likes, comments, and shares, reinforce these behaviors by offering immediate rewards and social recognition. Toma and Hancock (2013) emphasized the psychological impact of these mechanisms, noting that they create cycles of validation that encourage continued engagement. Vogel et al. (2014) extended this discussion, highlighting that individuals who frequently engage in self-presentation are particularly susceptible to social comparison, which can either bolster or diminish self-esteem depending on the nature of the feedback received.

The study by Cuadrado et al. (2022) made significant strides in formalizing these motivations through the development of the Social Networks Motives Scale (SN-MotiveS). This validated measure captures a range of motivations, including socialization, escapism, prosocial behavior, and self-presentation, providing a robust tool for assessing why individuals engage with social media. Moreover, the study revealed that escapism and self-presentation motives significantly mediated the relationship between frequency of use and problematic behaviors, indicating that specific motivations may predispose users to maladaptive patterns of engagement. These findings underscore the importance of examining motives in relation to broader behavioral and psychological outcomes, particularly in the context of social media addiction.

However, while Cuadrado et al. (2022) offered a comprehensive framework for understanding traditional motives for social media use, their approach did not fully capture emerging drivers that are increasingly relevant in contemporary digital environments. For example, algorithmic recommendations, which are central to the functionality of platforms like TikTok and Instagram, were not explicitly addressed. These algorithms shape user behavior by curating personalized content feeds, encouraging prolonged engagement, and fostering a sense of novelty that keeps users returning to the platform (Bucher, 2018). The psychological impact of these algorithm-driven interactions, particularly their role in promoting compulsive use, remains an important area of further study. The increasing role of artificial intelligence in personalizing user experiences has been a major driver of prolonged social media engagement. Recent research suggests that algorithmic curation is not only shaping user preferences but also reinforcing habitual engagement through automated recommendations (Parsonage, 2024).

Similarly, feedback-driven motives are insufficiently represented in the SN-MotiveS. While self-presentation is included, the specific behaviors associated with monitoring likes, comments, and other reactions are not fully captured. These feedback-driven motives are particularly salient for users seeking validation, as they create a dependency on external recognition that can exacerbate feelings of inadequacy or anxiety when expectations are not met (Nesi & Prinstein, 2015). Emotional triggers, such as boredom and feelings of emptiness, also warrant greater attention. Kardefelt-Winther (2014) argued that these emotional states often drive compulsive social media use, as individuals turn to platforms to fill voids in their offline lives. Such motives are distinct from escapism, as they reflect an intrinsic desire to combat feelings of purposelessness rather than an active attempt to avoid stress.

Additionally, habitual and time-passing behaviors, which reflect the integration of social media into daily routines, remain underexplored. Masur et al. (2014) noted that many users engage with social media as a default activity during idle moments, such as waiting in line or commuting. This habitual use may contribute to compulsive patterns over time, as individuals become accustomed to turning to social media without deliberate intent or purpose.

Building on the foundation established by Cuadrado et al. (2022), this study aims to integrate these missing dimensions into a broader framework for understanding social media motivations. By categorizing algorithmic, feedback-driven, and emotional triggers as distinct motivational factors, this study aims to provide a more nuanced understanding of why adults engage with social media. Furthermore, it explores how these motivations relate to key outcomes such as mental health, loneliness, and problematic use. This expanded framework acknowledges the evolving nature of social media platforms and their increasingly personalized and interactive features, offering valuable insights into contemporary digital behavior and its implications for well-being.

1.2. Social media use, mental health, loneliness, and quality of life

The psychological impact of social media use is a multifaceted phenomenon that encompasses both positive and negative outcomes, making it essential to understand the motivations underlying social media engagement. By examining these motives, researchers can gain insight into how social media influences mental health, loneliness, and quality of life, highlighting its dual role in supporting well-being while also potentially exacerbating distress and dissatisfaction.

The relationship between social media use and mental health is particularly complex, functioning as both a facilitator of emotional support and a potential driver of psychological distress. On the positive side, social media platforms provide users with opportunities for emotional expression and connection, especially for individuals experiencing isolation or mental health challenges. Naslund et al. (2016) noted that platforms allow users to share their struggles, seek advice, and build supportive networks, which can help alleviate feelings of loneliness and foster a sense of belonging. These benefits are particularly salient for marginalized groups who may find it challenging to access similar support offline. However, this positive potential is counterbalanced by the risks associated with maladaptive or excessive use. Studies have consistently linked problematic social media behaviors to adverse mental health outcomes, including heightened levels of depression, anxiety, and stress (Keles, McCrae, & Grealish, 2020; Wolgast et al., 2023; Hunt et al., 2018). In addition, social cognition plays a crucial role in how individuals interpret and respond to digital interactions, with recent studies highlighting that frequent social media use may impact users' ability to process emotional and social cues (Morellini, Ceroni, Rossi, & Zerboni, 2022). This suggests that the cognitive load of digital interactions could have long-term effects on users' emotional well-being. Moreover, social media's influence extends beyond personal relationships, with work-related and academic pressures also contributing to digital stress. For example, research has shown that the increased use of digital communication platforms in remote work settings has raised concerns about employee well-being and mental health (Van Dick et al., 2024).

Loneliness, another critical dimension of social media's impact, is similarly shaped by the motives underlying its use. While social media has the capacity to reduce loneliness by fostering virtual connections and providing users with a sense of community, it can also contribute to feelings of isolation when online interactions fail to meet emotional needs or replace meaningful offline relationships. Twenge et al. (2019) highlighted the paradoxical nature of social media's role in loneliness, observing that while platforms facilitate frequent interactions, these engagements may lack the depth and intimacy required to alleviate loneliness effectively. Motives such as socialization and prosocial behavior are generally associated with reductions in loneliness, as they promote positive interactions and foster a sense of belonging. However, escapism and feedback-driven motives may exacerbate loneliness by encouraging users to engage in shallow comparisons or idealized portrayals of their lives, which can heighten feelings of inadequacy and disconnection (Braghieri et al., 2022; Yang et al., 2018). This dual dynamic underscores the importance of examining not just the frequency of social media use but also the underlying reasons driving engagement.

Quality of life, encompassing emotional, physical, and social dimensions, is another domain significantly influenced by social media use. Positive interactions facilitated by social media can enhance well-being by enabling self-expression, promoting inclusion, and providing avenues for social support. Masur et al. (2014) observed that social media users who engage in meaningful exchanges often report higher levels of life satisfaction, as these interactions contribute to a sense of purpose and connection. However, the potential for positive outcomes is often undermined by problematic use patterns characterized by compulsivity and time displacement. When social media use begins to interfere with offline activities, relationships, and responsibilities, it can lead to declines in life satisfaction and overall quality of life. For example, individuals who rely on social media for escapism or mood regulation may neglect real-world opportunities for growth and fulfillment, ultimately compromising their well-being. The integration of social media into everyday routines further complicates its impact, as habitual use can blur the line between healthy engagement and overdependence.

By examining the motivations behind social media use, researchers can gain a clearer understanding of how different engagement patterns affect mental health, loneliness, and quality of life. These relationships are dynamic and influenced by the interaction of user motives, platform design, and broader social factors. Recognizing the dual effects of social media is crucial for developing interventions that maximize its benefits for well-being while mitigating its risks.

1.3 Problematic social media use

Problematic social media use (PSMU) refers to excessive, compulsive engagement with social media that disrupts daily functioning and resembles behavioral addiction. It is characterized by a loss of control, prioritization of social media over essential activities, and persistent use despite adverse outcomes. This aligns with Griffiths' (2005) "components" model of addiction, which identifies six defining features: salience, mood modification, tolerance, withdrawal, conflict, and relapse.

Salience reflects the dominance of social media in users' thoughts and behaviors, often displacing academic, professional, or relational responsibilities. *Mood modification* involves using platforms to manage emotions, offering temporary relief from boredom or distress, but promoting dependency. *Tolerance* develops as users need more engagement to achieve the same psychological effects, paralleling patterns in substance use. *Withdrawal* is marked by irritability, anxiety, or low mood when access is restricted. *Conflict* arises when social media use impairs personal, academic, or occupational functioning, accompanied by internal struggles like guilt or frustration. *Relapse* refers to returning to problematic patterns after attempts to reduce use, often triggered by stress or emotional discomfort.

Motivations such as escapism and feedback-seeking are central to PSMU. Escapism enables users to avoid real-life stressors, while feedback-seeking fosters preoccupation with likes and comments, reinforcing engagement and vulnerability to negative self-appraisal. Technological features, including algorithmic feeds, infinite scroll, autoplay, and notifications, exacerbate PSMU by reducing self-regulation and exploiting cognitive biases such as the fear of missing out (FOMO).

In sum, PSMU is shaped by psychological, motivational, and platform-related factors. Griffiths' addiction model provides a valuable framework for understanding its mechanisms and informing interventions to mitigate its harmful effects.

1.4 Purpose and research questions

The primary purpose of this study is to explore the motivations underlying social media use among young adults and examine how these motives relate to key psychological and behavioral outcomes. While prior research has extensively documented traditional motives such as socialization, escapism, and self-presentation (Cuadrado et al., 2022), contemporary social media platforms introduce new affordances that may shape user engagement in novel ways. This study extends existing frameworks by incorporating additional motivational dimensions, including algorithmic influences, feedback-driven behaviors, and emotional triggers. Given the increasing personalization of social media experiences through algorithmic content curation and the role of instant feedback in reinforcing platform use, investigating these factors is essential to understanding the evolving digital landscape.

In addition to identifying prevalent motives for social media use, this study aims to explore how these motives relate to mental health, loneliness, quality of life, and problematic social media use (PSMU). While prior studies suggest that certain motives, such as escapism and feedback-seeking, may be associated with compulsive engagement and poorer well-being outcomes (Keles et al., 2020; Ryan et al., 2014), it remains unclear whether the same patterns hold for emerging motivational drivers, including algorithmic recommendations and boredom-driven use. Furthermore, this study aims to investigate whether the motivations for social media use, as well as their associations with psychological and behavioral variables, differ across various social media platforms. Given the diverse affordances and engagement styles of platforms such as Instagram, TikTok, and Facebook, it is plausible that users engage with these platforms for different reasons, which in turn may influence their well-being in distinct ways.

To address these gaps, the study is guided by the following exploratory research questions:

1. What are the most common motivations for social media use among young adults, and how do these motivations align with existing theoretical frameworks?
2. How do motivations for social media use relate to mental health, loneliness, and problematic social media use?
3. To what extent do social media motivations differ across platforms?

By addressing these questions, this study aims to provide a more nuanced understanding of the motivational landscape of social media use and its implications for well-being. Findings may inform future research on digital media engagement, contribute to theoretical models of social media behavior, and offer insights for policymakers, mental health professionals, and platform designers seeking to promote healthier digital interactions.

2. Method

2.1. Research Design

The present study employed a cross-sectional, correlational survey design to investigate the associations between self-reported motives for social media use and measures of problematic social networking site (SNS) use, psychological distress, and loneliness among young adults. This design was chosen for its suitability in capturing patterns of association between psychological constructs and behavioral tendencies within a defined population at a single point in time.

2.2. Participants, Procedure, and Ethical Considerations

Participants in the study were aged 16 years or older and were recruited via email invitations sent to students enrolled at Malmö University and Dalarna University. The email outreach reached a total of 5180 individuals.

Potential participants were informed about the purpose of the study, that participation was voluntary, and that they could withdraw at any point before submitting their survey responses. They were also informed that the survey was completely anonymous and that their responses could not be linked to them as individuals. They were also allowed to contact the principal investigator at the Department of Psychology via e-mail if they had any questions or concerns about the survey.

A total of 1107 responses were received when the survey closed. After excluding incomplete or invalid responses, 1015 responses remained, representing a response rate of 19.6%. Demographic information was collected on participants' age, gender, primary occupation, and highest level of completed education. If no value was provided for gender, the response was categorized as Other/Prefer not to say. The mean age of participants was 36 years, with a standard deviation of 12.6 years. The youngest participant was 17 years old, and the oldest was 78 years old. Descriptive statistics for gender, primary occupation, and highest completed education are presented in Table 1.

Table 1. Descriptive statistics for demographic variables.

Variable	Category	f	%
Gender	Woman	729	71.8
	Man	269	26.5
	Nonbinary	9	0.9
	Other/do not want to say	8	0.8
Occupation	Employed	479	47.2
	Student	463	45.6
	Retired	24	2.4
	Unemployed	19	1.9
	Parental leave	12	1.2
	Sick leave	8	0.8
	Other	9	0.9
Highest completed education	Secondary school	267	26.3
	Vocational college or equivalent	44	4.3
	University education, ≤ three years	266	26.2
	University education, > three years	436	43

2.3. Measures

2.3.1. Total Use of Social Media Platforms

Participants were asked to estimate the approximate number of hours they spend daily using various social media platforms. The list of platforms presented to participants was derived from the Internet Foundation's survey on the most used social media platforms among the Swedish population (Internet

Foundation, 2023). The study included the 12 most frequently used platforms. However, it excluded Flashback, as it is a discussion forum and does not meet all the criteria for social media as defined by Obar and Wildman (2015).

2.3.2 Motives for Social Media Use

To assess the motivational factors driving participants' social media use, the Social Networks Motives Scale (SN-MotiveS) developed by Cuadrado et al. (2022) was utilized. SN-MotiveS is designed to measure the key motives underlying social media use. The scale consists of 18 items rated on a five-point Likert scale, ranging from 1 ("Very rarely") to 5 ("Very often"). Since an official Swedish translation of the scale is not yet available, I translated the scale into Swedish for use in this study. The SN-MotiveS includes four primary motivational factors, two of which have subfactors (Cuadrado et al., 2022). The four primary factors are Escapism (with the subfactors Mood management and Entertainment), Prosocial behavior (with the subfactors Information sharing and helping), Socialization, and Self-presentation. The scales have demonstrated good internal consistency (Cronbach's α .83 – .92) and correlate as expected with other measures related to the constructs it aims to assess (Cuadrado et al., 2022).

2.3.3 Problematic Social Media Use

To measure participants' levels of problematic SNS use, the Social Networking Addiction Scale (SNAS) developed by Shahnawaz and Usama (2020) was used. The SNAS consists of 21 items rated on a seven-point Likert scale, where 1 represents "Not at all" and 7 represents "Completely." These items are grouped into six categories that correspond to the six components of Griffiths' (2005) model of addiction: salience, mood modification, tolerance, withdrawal, conflict, and relapse. The scale yields a total score ranging from 21 to 147 points, with scores above 84 indicating problematic social media use (Shahnawaz & Usama, 2020). Factor analysis of the SNAS has confirmed the presence of six distinct factors, corresponding to the six addiction components outlined in Griffiths' model. The SNAS has demonstrated good test-retest reliability and positive correlations with related constructs, such as problematic Facebook use and problematic internet use. Its outcomes also correlate positively with total internet use and perceived loneliness and negatively with perceived life satisfaction (Shahnawaz & Usama, 2020).

2.3.4 Psychological Distress

Participants' general levels of psychological distress were assessed using the Kessler-6 (K6). The K6 was developed as a brief screening tool for non-specific psychological distress (Kessler et al., 2002). The scale comprises six items designed to capture general psychological discomfort over the past 30 days without targeting specific psychiatric diagnoses. Prochaska et al. (2012) examined the validity and utility of the K6 for identifying moderate psychological distress by comparing participants' scores on the K6 with other indicators of psychological well-being. They proposed a new, lower threshold (≥5) for moderate psychological distress in addition to the established threshold for severe distress (≥13). The K6 has demonstrated strong internal consistency (α = 0.89; Kessler et al., 2002). It was selected for this study due to its brevity, non-diagnostic focus, and capacity to capture general psychological distress.

2.3.5 Perceived Loneliness

Perceived loneliness was measured using the UCLA Three-Item Loneliness Scale (UCLA-3). The UCLA-3 is a shortened version of the Revised UCLA Loneliness Scale (R-UCLA), developed to facilitate simpler administration, such as during telephone interviews (Hughes et al., 2004). The scale consists of three items rated on a three-point Likert scale, where one represents "Hardly ever," 2 represents "Sometimes," and three represents "Often." Hughes et al. (2004) demonstrated that the UCLA-3 has acceptable internal consistency (α = 0.72) and that its outcomes correlate with depressive symptoms and higher levels of perceived stress. These findings suggest that the scale effectively measures loneliness in relation to psychological distress. The short version was selected for this study to minimize survey length while maintaining strong psychometric properties comparable to the full version of the scale.

2.4. Data Analysis

Data were analyzed using IBM SPSS Statistics. Preliminary data screening involved examining patterns of missingness, identifying outliers, and verifying normality assumptions for key variables. Incomplete or invalid responses were excluded from the final dataset, resulting in a total sample of 1.015 participants.

To examine the dimensionality of the newly developed motivational items not captured by the SN-MotiveS, an exploratory factor analysis (EFA) was conducted. The suitability of the data for factor analysis was first assessed using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. Principal axis factoring was employed for extraction, and factors were rotated using Promax oblique rotation, given the anticipated intercorrelations among constructs. The number of factors retained was determined through parallel analysis, and item retention followed the guidelines of Tabachnick and Fidell (2007), removing items with low loadings or substantial cross-loadings.

Descriptive statistics and a repeated measures ANOVA were then used to compare the frequency of different motivational drivers for social media use. Pairwise comparisons with Bonferroni correction were applied to identify statistically significant differences between motive categories.

To investigate platform-specific motivational patterns, bivariate Pearson correlations were computed between participants' average weekly use of each social media platform and their scores on the ten motivational subscales (including both SN-MotiveS and the new factors derived from EFA).

Finally, to assess how motivations predicted psychological and behavioral outcomes, hierarchical linear regression analyses were conducted separately for three outcome variables: problematic social media use (SNAS), psychological distress (K6), and loneliness (UCLA-3). Demographic covariates (age and gender) were entered in the first block of each model, followed by the ten motivational subscales in the second block. Standardized beta coefficients (β), t-values, and significance levels were reported for all predictors. Changes in explained variance (ΔR^2) between models were used to evaluate the contribution of motivational factors.

3. Results

3.1. Factor structure of the added motives

Exploratory factor analysis (EFA) was used to determine the dimensionality of the items formulated to measure other motives than the one captured by the SN-MotiveS. Prior to running the analyses, the data were examined using the Kaiser-Meyer-Olkin test (KMO) and Bartlett's test of Sphericity. The KMO value was 0.85, indicating that the patterns of correlations were sufficiently compact to produce reliable factors. In addition, Bartlett's test of Sphericity was significant ($\chi 2$ = 4112.95, df = 91, p <.001), suggesting that the correlation matrix significantly differs from an identity matrix, and hence that the items share enough variance to justify factor analysis.

Factors were extracted using principal axis factoring and – given that the factors were expected to be correlated – rotated using an oblique rotation procedure (Promax). The number of factors to extract was determined using parallel analysis (Horn, 1965), which indicated that the eigenvalues of the first four factors exceeded the corresponding eigenvalues in a random score matrix of the same rank. The four extracted factors accounted for 57.8% of the variance.

To determine which items to exclude/include, we followed the criteria suggested by Tabachnick and Fidell (2007) and removed items with 1) a lower factor loading than .45 on any of the factors and 2) a difference between factor loadings of less than .20 between the primary and secondary factors that the item loaded upon. This resulted in the exclusion of 4 items, leaving 12 remaining (see Table 2).

The factors were named in accordance with the type of motive for SNS use they were related to and the internal consistency (Cronbach's α) of each factor was calculated. This resulted in the following factors: Factor 1: Reactions from others (α = .90); Factor 2: Habitual use and boredom (α = .84); Factor 3: New social connections (α = .82); Factor 4: Algorithmic recommendations (α = .78).

3.2. What motives for social media use are most reported?

Next, we aimed to determine whether there was a difference in the extent to which various motives for social media use were reported, and if so, which motives were mentioned more frequently. First, a repeated measures ANOVA was conducted with the average item scores across the 10 motives as a within-subject factor. The omnibus test showed a significant effect ($F_{(9, 8388)}$ = 464.9; p < .001; partial $\eta 2$ = .33), indicating that the scores varied across the motives. In the next step, the differences between the estimated marginal means for

the different levels of the within-subjects factor were examined to identify which motives were reported more or less often. These comparisons were Bonferroni corrected to account for multiple testing. Table 3 displays descriptive statistics and Bonferroni-corrected pairwise comparisons for the various motives for SNS use.

Table 2. Items measuring motives for social media use and factor loadings.

Item	Factor 1	Factor 2	Factor 3	Factor 4
1. See how others have reacted to or commented on your posts	.92			
2. See how many views your posts have received.	.81			
3. You received notifications about your posts.	.56			
4. It is a habit that you engage in almost automatically		.84		
5. You feel like you have nothing else to do		.66		
6. You feel bored when not using social media		.60		
7. Find new friends			.83	
8. Find people who share the same interests			.62	
9. Seek contact with other people			.61	
10. You are recommended posts that you might be interested in				.84
11. You get notifications about content that interests you				.63
12. You come across posts about things that interests you				.59

Table 3. Descriptive statistics and Bonferroni corrected pairwise comparisons of the different motives for SNS use.

Motive	*M* (*SD*)	Significantly higher than (p <.05)	Significantly lower than (p <. 05)	Not significantly different from (p >.05)
1: Socialization	2.97 (1.17)	2-10	-	-
2: Entertainment	2.56 (.92)	3;4;5;6;8;9	1;7	10
3: Mood management	2.06 (1.18)	4;5;6;8;9	1;2;7;10	-
4: Self-presentation	1.46 (.70)	-	1-10	-
5: Information sharing	1.88 (.88)	4;6;8;9	1;2;3;7;10	-
6: Helping	1.55 (.67)	4	1;2;3;5;7;9;10	8
7: Habit and boredom	2.75 (1.07)	2;3;4;5;6;8;9;10	1	-
8: New connections	1.62 (.76)	4	1;2;3;5;7;10	6;9
9: Reactions from others	1.67 (.86)	4;6	1;2;3;5;7;10	8
10: Algorithmic recom.	2.52 (.92)	3;4;5;6;8;9	1;7	2

As can be seen in Table 3, the most frequently reported were Socialization (maintaining contact with those close to you), Habitual use and boredom (using social media out of habit and since it feels boring when not using), Entertainment (having fun and hanging out), and Algorithmic Recommendations (social media use triggered by recommendations and notifications). On the other hand, the motives least frequently reported were Self-Presentation (posting information and pictures of yourself), Helping (using social media to help others and sign petitions), New Social Connections (using social media to contact others), and Reactions from others (checking how other users have responded to one's postings).

3.3 How are the different motives for social media use associated with the use of different social media platforms?

As previously described, the present study also aimed to investigate the relationship between different motives and the use of various social media platforms. To do this, bivariate correlations were calculated between the motives and reported weekly usage of different social media platforms. The results are shown in Table 4.

As shown, the analyses indicated that the motives Socialization, Helping, and New Social Connections had the strongest connection with using Instagram and Snapchat, while Entertainment was most strongly linked to Snapchat and TikTok. The motives Mood Management, Habitual Use, Boredom, and Algorithmic Recommendations, on the other hand, showed the strongest links with using Instagram and TikTok. Additionally, the motives Self-Presentation, Information Sharing, and Reactions from Others were most strongly associated with using Facebook and Instagram.

Table 4. Bivariate correlations between scores on the motives for SNS use scales and average weekly use of different social media platforms.

	Youtube	Facebook	Instagram	Snapchat	TikTok	X
Socialization	-.08*	.08*	.23**	.24**	.14**	-.02
Entertainment	.17**	-.08*	.21**	.24**	.33**	.15**
Mood management	.19**	-.09**	.24**	.15**	.32**	.05
Self-presentation	-.02	.11**	.22**	.12**	.02	-.03
Information sharing	-.03	.14**	.14**	.09**	.06*	.02
Helping	.03	.08*	.09**	.10**	.08*	.04
Habit and boredom	.08*	-.01	.28**	.25**	.35**	.08*
New connections	.06	.04	.13**	.11**	.10**	.06
Reactions from others	-.07*	.14**	.19**	.03	-.03	-.03
Algorithmic recom.	.09**	.06	.13**	.04	.11**	.08*

* $p < .05$; ** $p < .001$

3.4 Associations between motives for social media use and problematic social media use, distress, and loneliness.

To investigate the associations between motives for social media use and psychological functioning, a series of hierarchical multiple regression analyses was conducted. For each outcome variable - problematic social media use (SNAS), psychological distress (Kessler-6), and loneliness (UCLA-3) - demographic covariates were entered in Block 1, including gender and age, followed by the ten motivational variables in Block 2. Gender was included due to the imbalance in the sample (71.8% women), allowing for examination of whether gender differences influenced the psychological outcomes. Age was included as a continuous covariate, given the broad age range of participants (17–78 years). The standardized regression coefficients (β), *t*-values, and significance levels are reported below for both models. Results for the full models are summarized in Table 5.

Table 5. Hierarchical linear regression analyses of Gender and motives for social media use as predictors of problematic social media use (SNAS), Distress (Kessler-6), and Loneliness (UCLA-3).

	SNAS			Kessler-6			UCLA-3		
	β	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*
Model 1									
Gender	**-0.07**	-2.46	.014	**-0.11**	-3.42	<.001	-0.01	-0.27	.789
Age	**-0.45**	-15.05	<.001	**-0.32**	-9.98	<.001	**-0.19**	-5.56	<.001
Model 2									
Gender	0.01	0.31	.755	-0.04	-1.42	.155	0.02	0.59	.554
Age	**-0.11**	-3.80	<.001	**-0.07**	-2.23	.026	-0.02	-0.41	.680
Socialization	-0.003	-0.10	.924	-0.05	-1.47	.142	**-0.08**	-2.07	.039
Entertainment	0.06	1.87	.062	-0.03	-0.66	.508	0.07	1.51	.132
Mood management	**0.28**	9.84	<.001	**0.56**	16.67	<.001	**0.32**	7.95	<.001
Self-presentation	0.06	1.96	.050	**-0.10**	-2.68	.008	-0.06	-1.35	.179
Information sharing	0.03	1.16	.245	-0.03	-0.81	.420	**-0.08**	-2.12	.035
Helping	**-0.06**	-2.18	.030	0.03	0.79	.430	0.02	0.60	.546
Habit and boredom	**0.41**	12.86	<.001	0.06	1.45	.148	0.02	0.43	.669
New connections	**0.09**	3.45	<.001	**0.11**	3.37	<.001	**0.14**	3.49	<.001
Reactions from others	0.04	1.21	.227	0.08	2.32	.021	**0.09**	2.00	.046
Algorithmic recom.	0.03	0.99	.325	-0.04	-1.45	.149	-0.05	-1.45	.146

Note: Statistically significant predictors are written in bold figures.

The hierarchical regression analyses revealed distinct patterns of association between motivational factors and the three outcome variables: problematic social media use, psychological distress, and loneliness. In each case, the inclusion of motivational variables in Model 2 led to a substantial and statistically significant increase in explained variance compared to the gender-only models.

For problematic social media use, Model 1 indicated that both gender and age were significant predictors, with men and older participants reporting lower levels of problematic use. However, these effects were attenuated when motivational factors were entered in Model 2, which significantly increased the explained variance ($\Delta R^2 = .363$, $p < .001$). In the full model, the strongest associations were observed for *Habitual use and boredom*, followed by *Mood management*, with smaller effects for *Self-presentation* and *New social connections*.

Age remained a significant negative predictor, suggesting that problematic use decreases slightly with increasing age, even after accounting for motivational differences.

In the initial model for psychological distress, both gender and age were significant predictors, with women and younger participants reporting higher distress levels. After including motivational variables in Model 2, the overall model fit improved substantially (ΔR^2 = .289, p < .001). The motive most strongly associated with distress was *Mood management*, followed by seeking *New social connections*. Interestingly, *Self-presentation* was negatively associated with distress, suggesting a potential distinction between expressive and compensatory forms of SNS use. Other motives did not contribute significantly to distress in the final model. Age remained a small but significant negative predictor, indicating that younger age was associated with higher distress independent of motivational patterns.

For loneliness, age but not gender was a significant predictor in the initial model, with younger participants reporting more loneliness. In Model 2, the inclusion of motivational variables significantly improved the model (ΔR^2 = .135, p < .001). Loneliness was positively associated with *Mood management*, *Reactions from others*, and *New social connections*, and negatively associated with socialization and information sharing. Age was no longer significant in the full model, suggesting that motivational patterns may account for the age-related variance in loneliness.

4. Discussion

This study aimed to explore the motivations underlying social media use among young adults and examine their associations with key psychological and behavioral outcomes, including problematic social media use (PSMU), mental health, loneliness, and quality of life. By integrating both established motives, such as socialization and escapism, and emerging ones, like algorithmic recommendations, habitual use, and feedback-seeking, this study contributes to a more nuanced understanding of how these motivations relate to well-being.

5.1. Motives for social media use across different platforms

The most frequently reported motives were socialization, habitual use, boredom, entertainment, and algorithmic recommendations. These findings support prior research on the central role of social media in maintaining connections and providing entertainment and distraction (Cuadrado et al., 2022; Ellison et al., 2007). The emergence of algorithmic recommendations as a distinct motive highlights how passive, personalized content delivery now drives engagement (Bucher, 2018; Parsonage, 2024).

Motives such as self-presentation, helping others, seeking new connections, and checking reactions were less common. This contrasts with earlier studies emphasizing self-presentation (Toma & Hancock, 2013; Vogel et al., 2014), suggesting a shift toward more passive, consumption-based use. Notably, platform-specific analyses revealed that Instagram and Snapchat were associated with socialization and new connections, whereas TikTok and Snapchat were more closely tied to entertainment and mood regulation. Facebook was linked to self-presentation, information sharing, and feedback-seeking—consistent with its design as a space for identity curation and social feedback (Cuadrado et al., 2022; Nesi & Prinstein, 2015).

5.2 Associations with Well Being

Motivations were significantly associated with key psychological outcomes, and several patterns illustrate how specific motives may foster problematic social media use (PSMU). Habitual use and mood management emerged as the strongest predictors of PSMU, consistent with research on behavioral addiction that emphasizes repetitive, automatic engagement as a maladaptive form of emotion regulation (Andreassen et al., 2012; Kardefelt-Winther, 2014). For example, users may check platforms compulsively during idle moments or “doomscroll” late at night to escape stress, reinforcing dependency through repetitive relief-seeking cycles (Elhai et al., 2017). Over time, this habitual coping strategy can escalate into compulsive patterns that displace healthier coping mechanisms.

Mood management also predicted psychological distress and loneliness, supporting the compensatory internet use framework, where social media is used to alleviate negative affect but often fails to improve well-being (Kardefelt-Winther, 2014; Nesin et al., 2025). For instance, turning to TikTok or Instagram during episodes of anxiety may provide a temporary distraction, but excessive reliance can contribute to rumination, disrupted sleep, and heightened emotional vulnerability (Keles et al., 2020).

Interestingly, self-presentation was negatively associated with distress. Expressive behaviors, such as posting curated photos or sharing personal reflections, may enhance agency and foster validation from peers, improving mood in the short term (Toma & Hancock, 2013). However, other studies suggest that the same

behaviors can fuel problematic comparison and feedback dependency in different contexts (Ryan et al., 2014; Vogel et al., 2014). This indicates that platform affordances and individual differences likely moderate whether self-presentation is protective or maladaptive.

The motive "new social connections" showed positive associations with PSMU, distress, and loneliness. Users seeking new connections online may compensate for unmet offline social needs, but online interactions do not always provide the intimacy or stability required to alleviate loneliness (Valkenburg & Peter, 2011; Yang et al., 2018). This discrepancy can foster compulsive attempts to expand digital networks without achieving meaningful emotional support, thereby reinforcing problematic use.

By contrast, prosocial motives—such as helping others or sharing useful information—were negatively or only weakly associated with distress and problematic engagement. This suggests that motivations oriented toward contributing to others may represent more adaptive digital habits.

Finally, while socialization motives were expected to reduce loneliness, this effect was not observed, possibly reflecting the superficiality of many online interactions or their inability to substitute for deeper offline connections (Twenge et al., 2019). Notably, gender initially predicted PSMU and distress, but these effects disappeared once motivational patterns were taken into account, indicating that psychological motives, rather than demographic variables alone, account for problematic outcomes.

Taken together, these findings underscore that motivations provide a more effective explanatory model for digital behavior than simply measuring time spent online. Still, the cross-sectional design precludes causal conclusions. Future longitudinal studies could clarify whether specific motives directly increase vulnerability to distress or whether individuals experiencing distress are more likely to adopt these motives as coping strategies.

5.3 Theoretical and Practical Implications

The findings align with established frameworks while pointing toward the need for updated theoretical models. Uses and Gratifications Theory (UGT; Katz et al., 1973) explains traditional motives, such as entertainment and socialization; however, emerging motives, like algorithmic engagement and habitual use, necessitate expansion. These reflect a shift toward less volitional, more reactive behaviors, better captured by dual-process models of media use (LaRose et al., 2009).

Mood management aligns with the Compensatory Internet Use Theory (CIUT), which views digital engagement as a coping mechanism for unmet offline needs (Elhai et al., 2017; Kardefelt-Winther, 2014). Similarly, Self-Determination Theory (SDT) suggests that users turn to social media to satisfy basic needs, such as relatedness or competence, in the absence of offline fulfillment (Błachnio et al., 2016; Przybylski et al., 2009; Ryan & Deci, 2000; Sha et al., 2019). The consistent associations between mood-related and habitual use and problematic outcomes support calls to integrate motivational theory with insights into persuasive platform design (Alter, 2017; Montag et al., 2019). Features like algorithmic feeds, infinite scroll, and notification systems foster automatic behaviors that blur the line between intentional and compulsive use.

From a practical standpoint, interventions should focus on reducing problematic use by targeting underlying motives—particularly emotion regulation and boredom. Digital literacy efforts that promote emotional self-regulation and awareness of persuasive design could help users develop healthier engagement habits.

In addition, prosocial motives like helping and information sharing, which were not linked to distress, may represent protective engagement strategies. Platforms could encourage these behaviors by designing features that foster meaningful interaction, civic participation, and community support. Finally, a motivation-based approach to social media literacy is essential. Rather than focusing solely on time online, attention should shift to the reasons behind engagement. This can help distinguish adaptive from maladaptive use and inform user-specific and platform-specific interventions. Recent research supports this view. Fassi et al. (2024) found a small but consistent link between social media use and internalizing symptoms, moderated by content and engagement style. Similarly, Karim et al. (2020) highlighted associations between problematic use and anxiety or depression, often driven by disrupted sleep or compulsive checking. Voggenreiter et al. (2023) showed that online feedback quality impacts emotional well-being, with low feedback increasing stress and disconnection.

Taken together, these findings suggest that platform architecture, engagement motives, and emotional context all shape how social media affects mental health. This study contributes by showing how motivational factors help differentiate problematic from benign use—offering practical and theoretical insights into digital well-being.

5.4 Limitations and directions for future research

Despite its contributions, this study has important limitations that should be acknowledged. First, the cross-sectional design precludes any conclusions about causality. While the findings indicate associations between motivations and well-being outcomes, it remains unclear whether certain motives lead to problematic use and distress or whether individuals with higher distress levels are more likely to engage with social media for those reasons. Longitudinal research is needed to clarify the directionality of these relationships.

Second, the study relied on self-reported measures, which may be subject to recall bias or social desirability effects. Future studies could benefit from incorporating objective behavioral data, such as screen time tracking or platform-specific usage logs, to validate self-reported engagement patterns. Additionally, while the study examined differences in motives across platforms, it did not consider potential demographic moderators, such as age, gender, or personality traits, which could influence how individuals engage with social media. Further research should explore how these variables interact with motivations and psychological outcomes.

Third, the generalizability of the findings is limited by both the sampling method and the cultural context. The study employed a convenience sample of Swedish university students, which may not be representative of the broader population. Additionally, cultural norms shape social media use: previous research indicates that users in individualistic cultures are more likely to engage in self-presentation and seek feedback, while users in collectivistic cultures tend to focus on relational motives and group belonging (Jackson & Wang, 2013; Nadkarni & Hofmann, 2012). As a result, the demographic makeup of the sample and its cultural environment may have affected the prevalence of certain motives and their links to psychological outcomes. Future cross-cultural and population-based research is necessary to determine if these patterns apply to other groups and settings. Lastly, although the study identified new motives such as algorithmic engagement and feedback-seeking behaviors, future studies should work to refine and validate these concepts. The impact of algorithmic recommendations on compulsive engagement is significant to explore, given the growing role of personalized content in shaping social media use.

5. Conclusion & Practical Implications

This study provides a comprehensive examination of why young adults engage with social media and how these underlying motivations relate to psychological well-being and problematic usage. While social media platforms continue to serve essential functions, such as fostering social connections, providing entertainment, and facilitating self-expression, our findings underscore that not all motives are equally benign. Motives related to habitual use, mood management, and algorithmically driven engagement emerged as the most robust predictors of problematic social media use and psychological distress. These findings suggest that digital behaviors increasingly reflect not only conscious choices but also automated responses and design-driven reinforcement mechanisms.

By incorporating both established and emerging motivational dimensions, this study extends previous research and highlights the evolving psychological landscape of social media use. The results show that motivations are not uniform across platforms: for example, entertainment and feedback-driven motives are more prevalent on TikTok and Instagram, whereas Facebook use is more closely associated with self-presentation and information sharing. These platform-specific patterns emphasize the importance of treating social media not as a monolithic activity but as a set of diverse, context-dependent engagements shaped by user intent and platform architecture.

From a practical perspective, these insights carry important implications for mental health professionals, educators, policymakers, and platform designers. First, interventions targeting problematic social media use may benefit from focusing on the psychological functions that drive engagement, particularly the use of platforms for mood regulation or as a means of coping with boredom. Programs that teach alternative coping strategies, such as emotional self-regulation or mindfulness-based techniques, may be especially beneficial for users at risk of compulsive behavior.

Second, the identification of algorithmic engagement as a distinct motivational category calls attention to the persuasive and often opaque role of recommendation systems. Policy measures could include mandatory transparency reports on algorithmic curation, the implementation of user-control tools (e.g., chronological feed options, time-limit settings), and restrictions on design features like infinite scroll or autoplay that are known to encourage compulsive use. Such measures would enable users to manage their engagement more effectively while holding platforms accountable for their manipulative design practices.

Third, the finding that helping and information-sharing motives were associated with lower psychological distress points toward more adaptive forms of engagement. Educational programs at the school and university

levels could integrate digital well-being curricula that emphasize prosocial uses of social media, such as community building, civic participation, and collaborative learning, rather than passive consumption. Parent- and teacher-focused guidance initiatives could further reinforce healthy norms of digital use.

Finally, these findings support a motivation-based approach to social media literacy. Rather than emphasizing time spent online as the primary indicator of risk, future research and practice should focus on the reasons individuals engage with platforms. Digital literacy campaigns could encourage critical reflection on why users engage online, alongside practical strategies for balancing entertainment-driven and algorithm-driven use with healthier forms of digital interaction. Understanding and addressing these motivations, particularly those rooted in emotional needs or habitual use, can inform more nuanced and effective strategies for supporting well-being in an increasingly digital world.

In summary, this study provides a more detailed map of the motivational landscape of social media use among young adults, highlighting key psychological mechanisms that may underlie both beneficial and maladaptive patterns of engagement. Future research should continue to refine motivational typologies and explore how interventions can be tailored not only to individual needs but also to platform-specific and cultural dynamics.

Statement of Researchers

Researchers' contribution rate statement:

All authors contributed to the study using the Contributor Roles Taxonomy (CRediT) as follows:

Martin Wolgast: Conceptualization; Methodology; Data Analysis; Writing – Original Draft; Writing – Review & Editing.

Hampus Adler: Conceptualization; Methodology; Writing – Review & Editing.

Sima Nurali Wolgast: Conceptualization; Writing – Original Draft; Writing – Review & Editing.

All authors have read and approved the final manuscript. They agree to be accountable for all aspects of the work and ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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The authors declare that they have no conflict of interest.

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The data supporting this study's findings are available on request from the corresponding author. However, the data are not publicly available due to privacy or ethical restrictions.

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This research was approved by the Ethics Committee at the Department of Psychology, Lund University, 20/1 2024.

Author Biographies

Martin Wolgast is a Docent and Senior Lecturer in Psychology at Lund University, Sweden. His research focuses on the psychological and behavioral effects of digital media use, particularly social media engagement and its implications for mental health, attention, and emotional well-being. With a background in clinical psychology and cognitive behavioral science, Dr. Wolgast has published widely on topics such as anxiety, behavioral addiction, and digital technology use in everyday life. He is actively involved in interdisciplinary projects addressing digital well-being, user behavior, and algorithmic influence on cognition. His current research explores the intersection between psychological motives, compulsive use patterns, and emotional regulation strategies in digital environments.

Hampus Adler is a licensed clinical psychologist and holds a Master of Science in Psychology from Lund University. His research interests focus on digital behavior, social media engagement, and the psychological mechanisms underlying problematic use of online platforms.

Sima Nurali Wolgast is an Associate Professor of Psychology at Lund University. Her research lies at the intersection of social and clinical psychology, with a particular focus on mental health, identity formation, and social determinants of psychological well-being. Dr. Wolgast's work often addresses how social environments—both offline and online—contribute to psychological distress, emotional regulation, and social connectedness. She has extensive experience in psychometric evaluation, survey methodology, and applied psychological research. Her recent projects explore digital socialization, algorithmic exposure, and psychosocial outcomes among youth and marginalized populations.

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New love, old stereotypes: ageism in social media discourses on the golden bachelor†

Alixe Ménard[1], Alison L. Chasteen[2], Mateja van Gameren[3], Nefissa Bedri[1], Michelle Yang[1], Christopher Belanger[4], and Sarah Fraser[1]*

[1] Interdisciplinary School of Health Sciences, Faculty of Health Sciences, University of Ottawa, Ottawa, Ontario, Canada
[2] Department of Psychology, University of Toronto, Toronto, Ontario, Canada
[3] Lisgar Collegiate, Ottawa, Ontario, Canada.
[4] Telfer School of Management, University of Ottawa, Ottawa, Ontario, Canada
* **Correspondence:** Dr. Sarah Fraser, Interdisciplinary School of Health Sciences, Faculty of Health Science, University of Ottawa 200 Lees Avenue Office 223, Ottawa, ON K1S 5L5, Canada, E-mail: sarah.fraser@uottawa.ca
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Highlights:

- Social media perpetuates explicit, implicit, and benevolent ageism around older adult representation.
- "The Golden Bachelor" challenged and reinforced stereotypes about aging and romance.
- Sexuality in older adults was both celebrated and stigmatized by social media users.
- Ageist and sexist tropes intersected in online reactions to older reality TV contestants.

Abstract
Age-based discrimination or ageism is often propagated through media platforms. Focusing on the 2023 reality television show "The Golden Bachelor", which features older adult contestants seeking romance, this study explored ageism spread via social media posts related to the program. Using social astronomy software and qualitative content analysis of user posts, four forms of ageism (1) personal, (2) explicit, (3) implicit, and (4) benevolent, were explored in a sample of 4000 posts shared between November 2023 and June 2024 in Reddit's English-language corpus. The analysis of Reddit posts related to "The Golden Bachelor" revealed four key themes: (1) Dimensions of Ageism—discussions highlighted overt and subtle forms of ageism, including personal, explicit, and benevolent biases; (2) Aesthetic and Gendered Expectations in Aging—Reddit users critiqued societal pressures for older women to maintain youthful appearances; (3) Sexuality and Romance in Older Adults—while some users expressed skepticism about older adults' romantic pursuits, others celebrated the cast members' desires for love and intimacy; (4) The Convergence of Ageism and Sexism—comments reflected a gendered lens, where older women faced harsher scrutiny compared to their male counterparts. While "The Golden Bachelor" may help some understand the capabilities of older adults and counter the misperception of them as asexual, existing ageist stereotypes emerge and are shared on social media platforms. These findings underscore the pervasive nature of ageism in social media and highlight the importance of addressing age-related biases in media representation.

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1. Introduction

Age-based discrimination is one of the few prejudices that is still socially accepted (Sánchez-Román et al., 2022). Ageism, which manifests through a variety of stereotypical beliefs and perceptions, perpetuates prejudice and discriminatory actions against individuals or groups due to their age, consequently fostering the societal exclusion of older adults (Fraser et al., 2020).

Stereotypes related to age can lead to presumptions regarding an individual's physical and cognitive abilities, interpersonal aptitude, sexuality, and various other attributes solely based on their age (Iversen et al., 2009). Mainstream media, including newspapers, television, and radio, have perpetuated ageist stereotypes over time by frequently depicting older adults as societal burdens (Soto-Perez-de-Celis 2020). This phenomenon has likewise been noted on social media platforms (i.e., web-based services for sharing user-generated content) in recent decades (Soto-Perez-de-Celis, 2020). Ageism can adversely impact the psychological health of older adults, potentially precipitating mental health challenges like depression and anxiety (Kang & Kim, 2022). This form of prejudice can also perpetuate loneliness, lead to psychological distress (Courtin & Knapp, 2017), reduce quality of life and health-seeking behaviors (Chang et al., 2020). It is therefore essential that ageism be recognized as a public health concern and that its perpetuation be investigated and disrupted.

Ageism has been recognized to take multiple, sometimes intersecting, forms: (1) personal (i.e., prejudices, biases, attitudes, and practices that discriminate against individuals or groups on the basis of their older age; for example, assuming an older person is forgetful or less capable in a workplace setting), (2) explicit (i.e., practices that are knowingly discriminatory on the basis of older age; for instance, refusing to hire an older candidate because of the belief that they are 'too old' to adapt to new technologies), (3) implicit (i.e., practices that are unconsciously discriminatory; assuming older adults are bad at technology or automatically blaming age for a person's forgetfulness), or (4) benevolent (i.e., positive stereotypes or attitudes that, while well-intentioned, contribute to the marginalization or infantilization of older individuals; for example, overly praising an older adult for completing a simple task, implying that such achievements are exceptional due to their age) (Marques et al. 2020). These forms of ageism can overlap and compound, with ageist behaviors often manifesting as both benevolent and implicit simultaneously, for example, thereby amplifying their impact (Marques et al., 2020). Recognizing these intersecting forms is critical for understanding how ageism operates in everyday life and for developing more effective strategies to challenge and dismantle it. One particularly persistent and harmful expression of ageism involves how older adults are perceived in relation to sexuality.

Ageist stereotypes often depict older adults as asexual or lacking in sexual desire (Srinivasan et al., 2019). While it is true that the prevalence of sexual dysfunction tends to increase with age, research on sexual satisfaction indicates that only a minority of older adults experience significant distress related to their sexual health (Srinivasan et al., 2019). Nevertheless, popular culture frequently conflates aging with sexual dysfunction, reinforcing these negative stereotypes (Syme & Cohn, 2015). Sexuality is a multifaceted construct that encompasses not only sexual activity and behavior but also attitudes, motivations, and the nature of partnerships (Ricoy-Cano et al., 2020). Studies show that many older adults can, and choose to remain sexually active well into later life (Srinivasan et al., 2019), and the importance of intimate relationships persists as people age (Harris, 2024). Loneliness and isolation can drive both older and younger adults to seek romantic connections, yet popular media often portrays older adults as devoid of romantic feelings, perpetuating stigma surrounding their sexuality and romantic lives (Harris, 2024).

While prior research has examined ageist stereotypes in media (Bacsu et al., 2022; Cheng et al., 2018; Fraser et al., 2020; Soto-Perez-de-Celis, 2020), little is known about how reality TV challenges or reinforces these stereotypes, and even less about how audiences respond to portrayals of older adults in this genre. On September 28, 2023, "The Golden Bachelor" premiered as a spin-off of the well-known dating reality series "The Bachelor", which traditionally features a single bachelor in their twenties or thirties choosing a partner from a pool of contestants in their twenties and thirties. This new iteration targets older adults seeking companionship (Porter, 2023). As a fresh approach to a franchise that has aired over 169 seasons in more than 23 countries since its debut in 2002 (Lenhard et al., 2023), "The Golden Bachelor" introduced 22 women aged 60 to 75 and one bachelor aged 72, marking a significant milestone by featuring older adults on reality television (Kayser et al., 2024).

This study utilizes Reddit as a primary data source to investigate potential ageist attitudes and discourses of its users towards "The Golden Bachelor". Using qualitative content analysis, we aimed to answer the question: How does the portrayal of "The Golden Bachelor" in popular media and social platforms influence ageist

stereotypes and assumptions about older adults' sexuality? By posing this question, our objective is to understand how popular representations of aging intersect with public discourse to either reinforce or challenge ageist views, particularly those related to romance and sexuality in later life.

Theoretical Framework

Social Identity Theory is a social psychological framework that examines how individuals' self-perception, along with social beliefs, influences group dynamics and interactions between different social groups (Hogg, 2016). Social Identity Theory explores the relationships between large social groups by focusing on psychological processes related to social identity (i.e., an individual's perception of belonging to a group and the emotions tied to that affiliation) (Harwood, 2020). It offers a framework for understanding intergroup interactions and communication, emphasizing how people assign significance to their group memberships and strive to perceive their own groups favorably (Harwood, 2020). This tendency can contribute to biases and conflicts between groups (Harwood, 2020). Social Identity Theory has been widely applied in studies on ageism, demonstrating how younger adults may perceive older adults as an out-group, reinforcing negative stereotypes and exclusionary behaviors (Chonody & Teater, 2016; Gans et al., 2023). Similarly, research has shown that media representations can shape intergroup attitudes by either reinforcing or challenging social hierarchies and stereotypes (Arendt, 2023; Harwood, 2020). Given that The Golden Bachelor presents older adults in romantic and social contexts typically reserved for younger individuals, Social Identity Theory provides a useful framework for analyzing audience reactions. This framework provided a structure for organizing the data and drawing explanatory conclusions related to our research question. Social Identity Theory is particularly useful for interpreting complex, unstructured data such as social media posts, as it helps illuminate patterns of in-group favoritism (e.g., younger users) and out-group bias or discrimination (e.g., older adults).

2. Method

Data screening and extraction

Reddit is a widely used social media and micro-blogging platform with over 57 million daily users, offering a rich environment for exploring public discourse (Chi & Chen, 2023; Pollack et al., 2022). Reddit is a social media platform organized into user-created communities, known as "subreddits," which focus on specific topics or interests. Users create posts, typically in the form of questions, personal stories, images, videos, or links, that serve as prompts for discussion (Goddard & Gillespie, 2025). Other users respond in the comment section, resulting in threaded conversations that often reflect diverse opinions and lived experiences. Posts and discussions can be located using subreddit titles or relevant keywords (e.g., "Golden Bachelor"), allowing researchers to analyze discourse around specific topics through search-based content retrieval (Goddard & Gillespie, 2025). This platform is most popular in the United States, which accounts for the largest share of users, followed by Australia and India. The majority of users are male (69%), with over 90% being below the age of 50 (Sattelberg, 2021).

For this study, data screening involved assessing the relevance of each post to the research question: how ageism and related themes are discussed in relation to "The Golden Bachelor." Posts were included if they contained explicit or implicit content related to ageism, counter-ageism, or secondary themes such as romance, sexuality, and appearance in the context of older adulthood. Posts were excluded if they (1) lacked meaningful textual content (e.g., just a meme or image without commentary), (2) only shared media links or promotional material without further discussion, or (3) did not reference "The Golden Bachelor" either directly or via keyword-based search terms (e.g., "golden bachelor"). After applying these criteria, 1,435 posts were retained for full analysis.

Data analysis

Qualitative content analysis encompasses a range of methods for systematically examining texts and media (Seddighi et al., 2021). This approach aims to condense large amounts of text into a concise, organized summary of the main results (Erlingsson & Brysiewicz, 2017). As a result, raw data (i.e., Reddit posts) are analyzed to identify categories or themes, allowing for further abstraction. Themes were identified based on the frequency and significance of discourse, with particular attention to how ageist and counter-ageist narratives intersected with personal identities in romance and appearances. Developed themes sought to provide insight

into generational perspectives on ageism and social relationships. While the initial codebook guided the analysis, emergent themes beyond predefined categories were identified, including the convergence of ageism and sexism, reflecting the dynamic discourse on age and appearance in the posts. Qualitative content analysis encompasses a range of methods for systematically examining texts and media (Seddighi et al., 2021). This approach aims to condense large amounts of text into a concise, organized summary of the main results (Erlingsson & Brysiewicz, 2017). As a result, raw data (i.e., Reddit posts) are analyzed to identify categories or themes, allowing for further abstraction. Themes were identified based on the frequency and significance of discourse, with particular attention to how ageist and counter-ageist narratives intersected with personal identities in romance and appearances. Developed themes sought to provide insight into generational perspectives on ageism and social relationships. While the initial codebook guided the analysis (see Appendix 1), emergent themes beyond predefined categories were identified, including the convergence of ageism and sexism, reflecting the dynamic discourse on age and appearance in the posts. The initial codebook was developed through a combination of theory-driven and inductive processes. It included 17 primary codes (e.g., personal or internalized ageism, benevolent ageism, counter-ageism, gendered ageism, appearance-focused comments), allowing for classification of posts based on types of age-related attitudes and perceptions of aging as shared by Reddit users. To illustrate this process, one representative quote, “There’s a new version out called The Golden Bachelor which has people in their 60s and 70s. There’s a woman twice my age named Edith with a full head of luscious gray hair.”, was first coded as “Appearances-women (9A)” and “Counter ageism/age inclusion (7).” These were grouped into the broader category of “Disparities in age expectations between men and women.” This, in turn, contributed to the overarching theme: “Aesthetic and Gendered Expectations in Aging.” This process was repeated across the dataset, with both deductive codes informed by the initial codebook and inductive codes emerging from the data.

Study design

This study employed an exploratory design (Rendle et al., 2019), guided by Social Identity Theory (Hogg et al., 1995), due to the novelty of the research area, with limited prior studies addressing this topic through social media (Bacsu et al., 2022; Cheng et al., 2018). Social Identity Theory examines how an individual’s sense of self is shaped by their membership in social groups and how this membership influences their attitudes and behaviors toward in-group members (those within the group) and out-group members (those outside the group) (Hogg et al., 1995). In the context of this study, we conceptualize in-group members as individuals under the age of 65 (younger adults) and out-group members as those over 65 (older adults). The theory highlights the tendency for in-group favoritism (i.e., where individuals positively evaluate and support members of their own group) and out-group discrimination, which often manifests as negative biases or behaviors toward those in rival or external groups (Hogg et al., 1995). This dynamic can contribute to ageist rhetoric, with younger adults favoring their own group while marginalizing older adults. Social Identity Theory has been widely applied to explore social dynamics such as prejudice and group conflict (Hogg et al., 1995), making it particularly relevant for examining ageist perspectives in media. When applied to Reddit discourse, Social Identity Theory provides a useful framework for analyzing how age-based group identities shape interactions. Online platforms often serve as spaces where age-related stereotypes and biases are either reinforced or challenged (Meier et al., 2020). This theory helps uncover how in-group favoritism among younger users may perpetuate the marginalization of older adults, while also exploring how older adults push back against ageist narratives, redefining their group identity in digital spaces or even through media such as reality TV. By applying this framework, we sought to gain a deeper understanding of the complex dynamics of age-based group membership and its role in perpetuating or challenging ageism, both online and in broader cultural contexts. Using qualitative content analysis, we elucidated patterns in the public discourse concerning aging and “The Golden Bachelor”, as observed on Reddit (Seddighi et al., 2021). We utilized Social Identity Theory to inform our codebook by developing codes that reflect how group identities (in-group and out-group) influence discourse, particularly in the context of ageism. Specifically, we focused on categories that capture the dynamics of age-based group membership, such as Ageism/Discrimination, Romance, Relationships & Sexuality, and Appearances. The Appearances category was further refined into sub-categories reflecting different types of group-based evaluations: Positive, Negative, and Neutral, allowing us to explore how these identity-based perceptions influence ageist discourse.

Search strategy

Data were scraped using Social Astronomy, an automated text analysis software designed for graphic visualization by co-author CB (Social Astronomy, n.d.). This tool employs a method similar to opinion mining, utilizing text mining techniques to aggregate co-occurring words in Reddit discussions (Baumgartner et al., 2020). To investigate public discourse surrounding "The Golden Bachelor", we employed Boolean logic using the keyword "golden bachelor*" to search through Reddit posts shared online. Social Astronomy automatically identified 4,000 posts as the total dataset for analysis. This dataset spanned from November 2023 to June 2024, covering key events, including the Fall 2023 telecast and the January 2024 wedding. While we initially aimed to focus on these events, the extended timeline was necessary to capture the ongoing prevalence of relevant online discourse. Figure 1 presents the Reddit posts over time from November 2023 to June 2024, with the greatest number of posts occurring in December 2023, following the end of the series and leading up to the televised wedding special between "The Golden Bachelor", Gerry, and his winner, Theresa, whom he eventually married. We gathered data from the complete English-language content of Reddit within this timeframe. Since Reddit posts typically lack metadata regarding users' locations unless voluntarily disclosed, we opted not to categorize posts based on users' nations or regions. However, the majority of Reddit's user base is from the United States (222 million), Australia (18 million), and India (14 million) (Sattelberg, 2021), and ageist social media content has been found to be especially high in the United States (Soto-Perez-de-Celis 2020). Further, to protect user anonymity, we only included Reddit posts that were publicly available and did not contain any self-identifying information. Although Reddit users often post anonymously, we recognize the potential for re-identification through verbatim quotes. Therefore, we reviewed each quotation by entering it into a web search engine. When quotes were found to be searchable or potentially identifying, we shortened or slightly paraphrased them without changing their original meaning. This step ensured that user privacy was preserved while maintaining the integrity of the data.

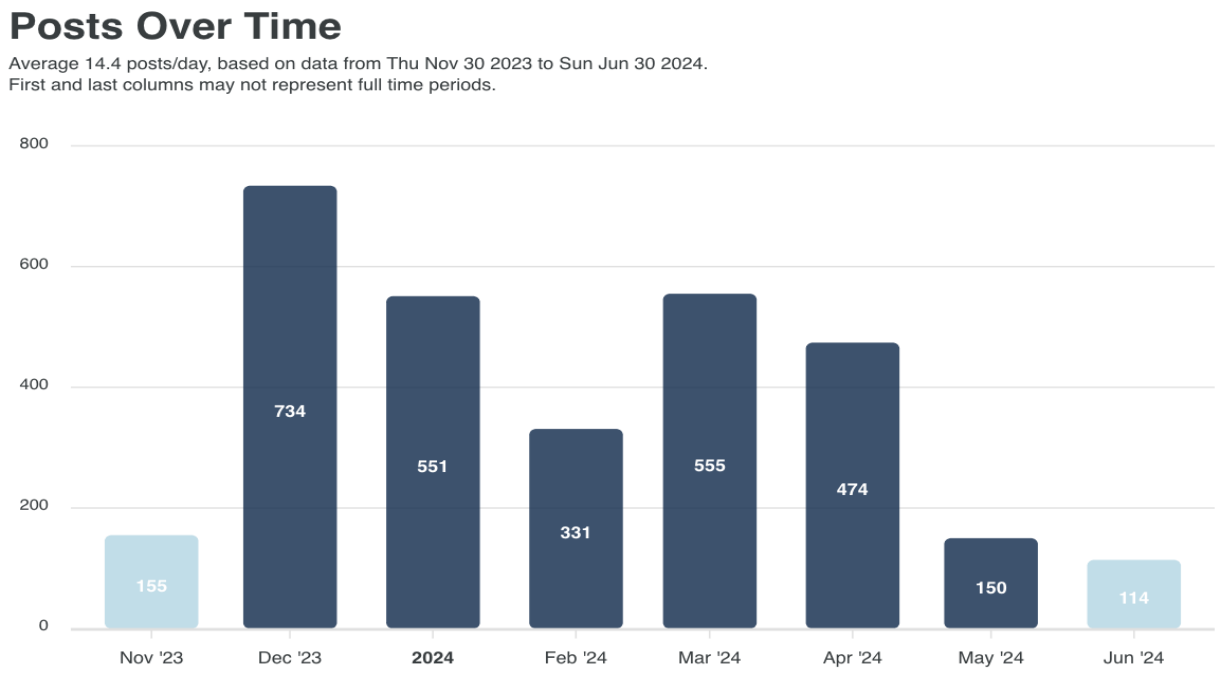

Figure 1. Reddit posts over time matching the keyword search "golden bachelor*".

Data organization

To ensure consistency and clarity in our coding process, we conducted three rounds of interrater reliability testing, each involving 50 randomly selected posts. In the first round (May 21–June 4), the initial coding process

by six team members [AM, ALC, MVG, NB, MY & SF] resulted in fair agreement (67%), revealing areas where code definitions required refinement. Following updates to the coding guide and additional coder training, the second round (June 20–July 5) yielded fair agreement (63%), indicating ongoing challenges in distinguishing closely related codes. By the third round (July 10–July 24), further refinements and discussions led to moderate agreement (70%), demonstrating improved consistency among coders. Given that forms of ageism are not always mutually exclusive, coders were invited to assign two codes to each of the 50 posts during each round of coding. This approach explains the variation in our interrater reliability, as each post could be attributed multiple codes, leading to potential discrepancies in coding interpretations. While some overlap between codes remained due to the complexity of the data, our process ensured that coders could reliably distinguish key themes, capturing both their distinctions and intersections. These collaborative sessions refined the codebook, reducing it from 30 to 17 codes. For the remaining 3,850 posts, coding responsibilities were divided among team members: AM coded 950 unique posts, ALC, NB, MY and SF each coded 700, while MVG coded 100 posts. As first author, AM then reviewed all other team members' coding. Posts with ambiguous content were flagged in red, and team consensus was reached in a group review to ensure clarity and reliability in the data analysis. Figure 2 presents a visual summary of the data organization process.

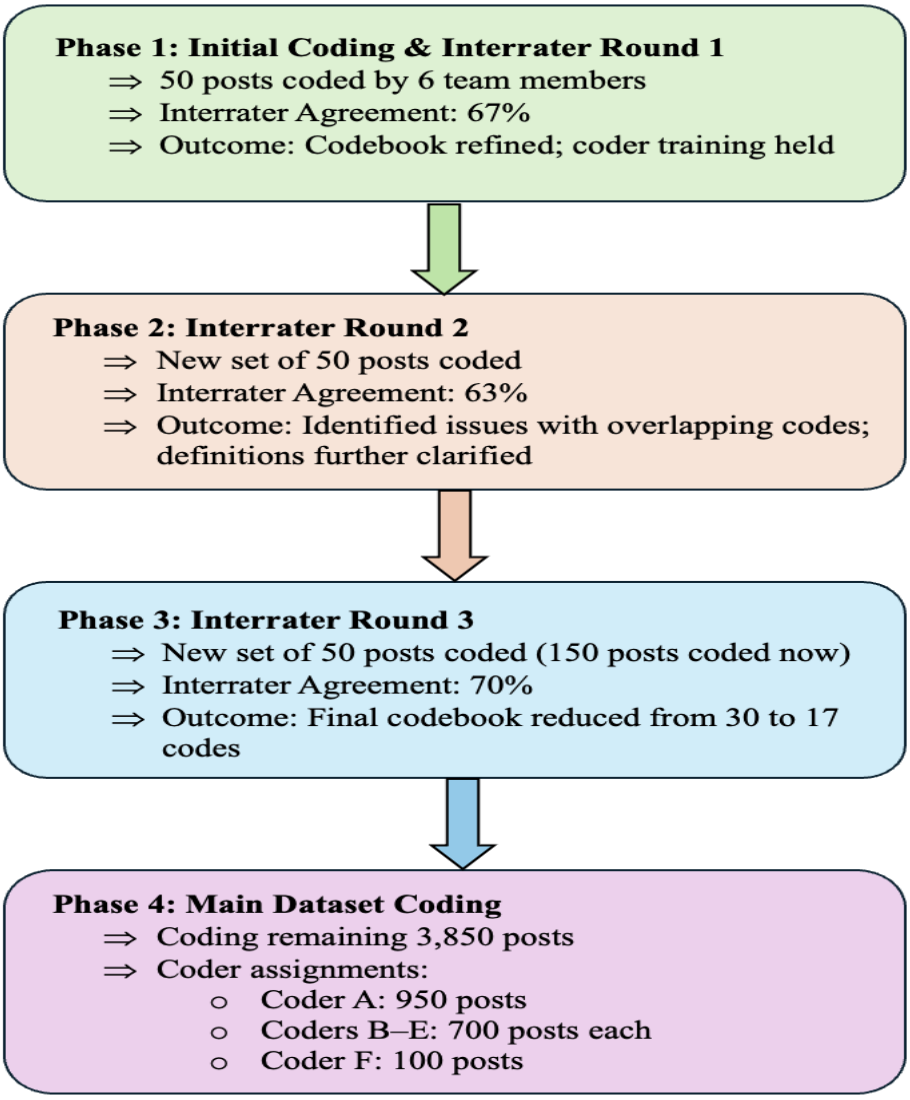

Figure 2. Overview of data organization and coding process.

3. Results

The coded Reddit posts related to "The Golden Bachelor" broadly emerged into four themes: (1) dimensions of ageism, (2) aesthetic and gendered expectations in aging, (3) sexuality and romance in older adults, and (4) the convergence of ageism and sexism.

Theme 1: Dimensions of ageism

This theme explored the various ways ageism appeared in Reddit discourse surrounding "The Golden Bachelor", capturing both overt and subtle forms of bias expressed in discussions about the show's contestants. Multiple forms of ageism surfaced, including personal, explicit, implicit, benevolent, and gendered ageism, reflecting a spectrum of attitudes ranging from hostility to well-intentioned but limiting stereotypes about older adults. *Personal ageism* was exemplified through biases that devalued the experiences and preferences of older adults, perpetuating attitudes that can lead to their marginalization and isolation. Reddit users categorized older adults on "The Golden Bachelor" as an out-group, with some expressing limited views on aging that imply that watching television is the only meaningful or valuable activity for older adults. By equating a lack of engagement in diverse hobbies, such as playing games or attending cultural events, with a diminished quality of life, these users implied that older adults are somehow less capable of enjoying or participating in fulfilling activities. One Reddit user said,

> "I mean, the only hobby my parents had was watching television. They didn't ever play any games, video or board or card games. Didn't read books anymore. Didn't watch movies in the theater or attend plays. Didn't do anything outdoors beyond a daily walk around the neighborhood. Television is literally all boomers have. If the thrill of old age is watching The Golden Bachelor, kill me now."

Explicit ageism was evident in derogatory comments that openly mocked older adults' physical appearance and capabilities. Examples included derogatory language aimed at older bodies and sexuality through statements such as, "[w]hat The Golden Bachelor saves on tampons it spends on Depends", as well as stereotypes portraying older adults as mentally or emotionally incompetent. These overtly negative remarks reinforced ageist stereotypes regarding physical and cognitive decline as exemplified in this quote: "Riding the success of The Golden Bachelor, they should have a dating show with two old folks that have dementia. They can call it: 50 First Dates".

Implicit ageism reflects subtle biases that, while not overtly negative, reveal underlying ageist assumptions. For instance, users expressed surprise that older adults might be interested in reality television or assumed their lives primarily revolved around retirement and grandchildren. Additionally, the commentary suggesting that older individuals are less willing to make significant lifestyle changes compared to younger people underscores a belief that aging equates to stagnation:

> "[T]hese contestants, for the most part, are settled in their lives. Young people are more prone to make big lifestyle changes, but most older people don't want to leave their lifelong friends & family to move to another part of the country to be with a person they have only known for a short time."

This notion perpetuates the idealization of youth, wherein youth, as depicted in shows like *The Bachelor*, is associated with vitality and potential, while older adults are viewed as less capable of adapting to change.

Benevolent ageism emerged as Reddit users described older contestants as innocent and wholesome, contrasting them with younger reality show participants which they described as full of drama. This portrayal implied that older individuals were inherently more genuine, nurturing, and emotionally stable, framing their romantic pursuits as heartwarming rather than complex. Phrases that are normally well-intentioned but ageist in their description of the show and/or its contestants like "genuinely wholesome" and "sweet grandpa" created an idealized image of aging that overlooked the diversity of experiences and emotions within older populations seeking romance or companionship. By emphasizing these simplistic narratives and this overtly positive but constraining language, the discourse inadvertently suggested that older adults were fundamentally different from their younger counterparts, promoting a patronizing view that ignored their individuality. The focus on "wholesomeness" also trivialized the nuanced realities of dating and relationships for older adults, reducing their experiences to a simplistic narrative of romance, vulnerability, and nostalgia, thereby reinforcing societal stereotypes about aging rather than challenging them. One Reddit user described their perspective:

> "Golden bachelor is one of, if not the most, genuine reality shows I've ever seen, and I need more seniors to find love! They are just trying to find their person and it's the most wholesome thing I've ever seen."

Overall, these examples revealed the wide-ranging nature of ageism in the discourse, illustrating that even in a lighthearted context like reality television, ageist attitudes, whether explicit or implicit, were deeply embedded in social media users' perceptions of older adults.

Theme 2: Aesthetic and gendered expectations in aging

This theme reflects the perceptions of Reddit users regarding societal standards that influence views on aging, particularly for women. Many users noted that media and culture have perpetuated the idea that older women should maintain a youthful appearance, often emphasizing hair color, makeup, and cosmetic procedures. Discussions surrounding shows like "The Golden Bachelor" highlighted that the featured women, aged in their 60s and 70s, frequently presented themselves with colored hair and cosmetic enhancements to align with these expectations. One Reddit user shared their view:

> "I don't love seeing all the critiques about these women specifically when The Bachelor (and any dating reality show really) has always been casting conventionally thin/attractive people. It feels like these women are getting more criticism for their looks when contestants in their 20s/30s get just as much - if not more - work done. Also, how these women choose to present themselves is a reflection of our society. Women are constantly being bombarded with "anti-aging" products, even teenagers I've seen putting together full skincare routines to prevent wrinkles."

Reddit users pointed out that there is a societal pressure for women to look significantly younger than their actual age, which aligns with cultural ideals that prioritize youth over natural aging. This has led to an aesthetic standard in which women may feel compelled to conceal their gray hair and pursue treatments to minimize visible signs of aging. While some users acknowledged that certain women embraced their gray hair and natural look, many expressed concerns about the societal pressure to conform to these gendered ideals, reinforcing the belief that women's value and romantic/sexual appeal remains closely tied to their appearance, even in later stages of life.

Theme 3: Sexuality and romance in older adults

The Bachelor franchise has long been known for creating opportunities for physical intimacy between contestants and the lead (i.e., "Bachelor" or "Bachelorette"). For instance, certain challenges within the show are designed to encourage physical closeness, such as kissing or embracing during romantic or playful scenarios. Additionally, one of the show's hallmark features is the "fantasy suites" date, a pivotal moment later in the season where the Bachelor is given the chance to spend the night privately with each remaining contestant, fostering deeper connections and intimacy. This theme revealed a complex interplay of societal perceptions related to romance, sexuality and sexual performance in older adults. Many commenters expressed a somewhat skeptical or humorous stance towards older adults engaging in romantic and sexual relationships, with remarks that highlighted the taboo surrounding such topics with statements such as "The Golden Bachelor missed an opportunity to be sponsored by Viagra". Many users joked about the potential use of Viagra on the show, reflecting a common stereotype that associates aging with diminished sexual capability. Others, however, acknowledged the reality of older adults seeking love and intimacy, emphasizing the normalization of these desires through the show and shared hopeful remarks such as, "I hope that Golden Bachelor is still a thing when I get older because I want someone to love my husband as much as I do when I'm gone". A few comments suggested that "The Golden Bachelor" provided a refreshing portrayal of older adults navigating romance, countering the notion that their sexual lives should be dismissed or ridiculed. Users appreciated the depth of relationships portrayed, particularly Gerry's respectful reminiscence of his late wife, which resonated with those seeking meaningful connections later in life. The discussions collectively underscored the ongoing societal challenge of reconciling aging with the right to love, desire, and sexual expression, suggesting that "The Golden Bachelor" may serve as a platform to challenge ageist assumptions and inspire confidence among older adults in their romantic pursuits. One Reddit user stated:

> "He's 71 and his wife passed 6 years ago, really beautiful relationship it seems like, and she always said she'd want him to find love again and his kids support him in this and encouraged him to be on the show. Just a really warm, loving take on the whole idea of finding love after losing a partner".

This comment captures the emotional depth and societal value of the show, illustrating how narratives of later-life romance can challenge prevailing ageist attitudes and affirm that love, loss, and intimacy remain meaningful at any age.

Theme 4: The convergence of ageism and sexism

The convergence of ageism and sexism became evident in the Reddit discussions surrounding "The Golden Bachelor" as many users critiqued the show's portrayal of aging women and highlighted the influence of societal expectations on how women were represented. Comments often reflected a belief that older women, particularly those in the cast, were unfairly judged based on their appearances and perceived behaviors. Phrases like "gold digger" and "whiny crybaby" illustrated a tendency to diminish these women's agency, framing them as desperate or overly emotional. Simultaneously, the discussions revealed underlying ageist assumptions about older men, who were often described in more forgiving terms, such as 'adventure-seeking' or 'sweet grandfather', reflecting a more lenient view toward aging men compared to aging women. This disparity underscored a gendered lens through which viewers evaluated the participants, exposing the double standards that women faced compared to their male counterparts. As users expressed their discomfort with the show's dynamics, it became clear that both ageism and sexism were deeply intertwined in the narratives surrounding "The Golden Bachelor", ultimately reflecting broader societal attitudes towards aging and gender. One Reddit user stated:

> "I just don't see them finding a bunch of golden bachelors for a Golden Bachelorette. Women in their 60s and 70s are on social media, are still vivacious, love having female companionship, and there are more women in that age bracket who are single due to divorce or being widowed. Men in their 60s and 70s want younger women in the 40s, 50s, or lower 60s. Many get married quite soon after being widowed or divorced. I just don't see then sitting around the mansion laughing, sharing stories, posting on social media, and forming bonds like the women did on "The Golden Bachelor".

This disparity highlighted a gendered lens through which viewers evaluated the participants, revealing how ageism and sexism intersect to shape perceptions. Older women were scrutinized for not fitting into traditional ideals of beauty and femininity, while older men were more readily accepted regardless of appearance. Discussions around the show often focused on the women's efforts to appear youthful, with criticisms aimed at the use of cosmetic enhancements like Botox or dyed hair. As one commenter observed, "[s]eeing women in their 60s-70s still trying so hard not to age shows that the pressure to conform to youthfulness doesn't disappear."

The discussions pointed to broader societal attitudes that marginalize older women, depicting them as less valuable if they don't conform to youthful beauty standards to appear younger.

> "I watched maybe the first 20 minutes or so of "The Golden Bachelor" last night and at first I was like, how are they going to manufacture drama if all these women are mature and have lived a whole life and won't be slighted as easily? Then I watched the carousel of women in their 60-70s come out with fake boobs, dyed hair, and Botox faces and throw themselves at this man and realized, "oh no, these women who are obsessed with not aging will be just as bad."

This intersection of ageism and sexism not only affected how the female contestants were perceived but also reflected wider cultural biases that devalue women as they age. Overall, the show served as a lens through which these biases were exposed, underscoring the persistent double standards that shape the experiences of aging women in comparison to their male counterparts.

4. Discussion

Our analysis of Reddit posts about "The Golden Bachelor" identified four key themes reflecting complex societal attitudes toward aging, revealing both overt and subtle forms of ageism and sexism. Using Social Identity Theory as a lens, these discussions illustrate how group-based categorization and comparison shape attitudes toward older adults (Hogg et al. 1995). The discourse highlighted personal biases against older contestants, with comments ranging from explicit mockery of their physical abilities to implicit assumptions about older adults' interests, evident in the surprise expressed by some users at their enthusiasm for reality television. These reactions suggest a pervasive stereotype that older adults are out of touch with contemporary entertainment, reinforcing ageist assumptions about their place in popular culture. This aligns with Social Identity Theory's concept of in-group/out-group dynamics, where younger viewers and contestants represent the in-group, and older contestants are relegated to the out-group, subjected to stereotypes and biases (Hogg et al., 1995). Existing research suggests that media often portrays aging individuals as less relevant to modern cultural trends, which contributes to a broader societal narrative that views aging as a period of decline and

irrelevance (Wangler & Jansky, 2023). Studies have shown that this portrayal not only affects societal attitudes but also influences how older adults perceive themselves, often leading to internalized ageism, reduced engagement with social and cultural activities, lower self-compassion, and reduced life satisfaction (Bratt & Fagerström, 2023; Wangler & Jansky, 2023). The process of social comparison, as described in Social Identity Theory, may further perpetuate these negative self-perceptions, as older adults are measured against youth-centric cultural ideals (Hogg et al., 1995). By normalizing these ageist stereotypes, popular media reinforces the idea that aging individuals are less capable of understanding or participating in "youth-oriented" spaces, such as reality television, thereby limiting public perceptions of their interests, capabilities, and roles within society (Lee et al., 2007). Thus, shows like The Golden Bachelor play a role in challenging exclusionary narratives by positioning older adults within youth-dominated cultural spaces, offering an opportunity to reframe societal perceptions of aging, albeit with the risk of introducing new complexities, such as benevolent ageism, in the process.

Benevolent ageism also emerged in our study, with some users reducing contestants' stories to simplistic or pitying views, often seeing them as endearing but "past their prime". This framing denies older adults' individuality and agency, subtly reinforcing the notion that aging equates to a loss of personal complexity and social relevance (Vale et al., 2020). While benevolent ageism may stem from good intent, it can lead to grave consequences such as undermining older adults' confidence in their memory (i.e., metamemory confidence), which in turn decreases their sense of control or competence in managing their environment and life (i.e., environmental mastery) (Sublett & Bisconti, 2023). In other words, being patronized can lead older adults to doubt their memory skills, and this self-doubt may result in feeling less capable or in control overall (Sublett & Bisconti, 2023). Similarly, by portraying older adults as asexual or aromantic, we risk diminishing their confidence in forming meaningful relationships, reinforcing limiting stereotypes that ultimately constrain how they see themselves and how society values them.

Maintaining youthful appearances also surfaced in online discussions about the contestants' hair, makeup, and cosmetic choices, underscoring the persistent expectation that women's value and romantic/sexual appeal remain tied to their physical appearance even in later life (Kilpela et al., 2015). This reveals how ageist and sexist standards intersect, placing a disproportionate burden on older women to defy natural aging in ways not expected of their male counterparts. Notably, the 'double standard of aging' was coined by Susan Sontag in 1972 in reference to the phenomenon where aging is perceived and judged differently for men and women, often resulting in harsher or more negative judgments of older women compared to older men (Sontag, 1997). This double standard reflects cultural attitudes that value youthfulness more strongly in women than in men, resulting in greater societal pressure on women to maintain a youthful appearance as they age (Sontag, 1997). Sontag's work has highlighted the intersection of ageism and sexism, revealing how cultural expectations link women's worth to youth and physical appearance, while allowing men to age without similar social penalties (Sontag, 1997). The double standard of aging is most evident in expectations around sexual desirability, which consistently disadvantage women. Women face stricter requirements related to appearance and age to be considered "eligible" in romantic or sexual contexts (Åberg et al., 2020). This societal pressure is reflected in the show through the visible use of Botox and the absence of grey hair among female contestants, which became a frequent focus of online commentary. These expectations not only reinforce the idea that women must resist aging to remain romantically viable but also reveal deeper cultural values that continue to diminish women's worth as they grow older.

Users' discussions reflected a tension between stereotypical assumptions about older adults' romantic and sexual lives and a growing appreciation for the normalization of love and intimacy in later life. While skepticism about older contestants' sexuality was evident and possibly rooted in negative social attitudes towards sexuality in older adults (Boyacıoğlu et al., 2023), many users also expressed admiration for the show's portrayal of meaningful relationships, challenging reductive views on older adults' emotional and romantic capacity. This may suggest a gradual shift in cultural narratives about the sexuality and romance between older adults, from lingering biases about their capacity, to a recognition of their sexual satisfaction, functioning, and interest (von Humboldt et al., 2021).

The discussions around "The Golden Bachelor" serve as a lens through which to view the challenges and evolving attitudes surrounding aging, revealing a nuanced landscape where respect, mockery, admiration, and prejudice coexist. Despite various forms of ageism described above, many Reddit users responded positively to the show's ability to normalize aging by highlighting desirability among older adults, friendships in later life,

widowhood, and the significance of grandchildren. The show even sparked calls for similar programs featuring gay older adults and middle-aged cohorts. Media narratives reflect cultural assumptions and aspirations about aging and later-life lifestyles (Ylänne, 2015). Positive portrayals of older adults in the media have the potential to challenge and reshape societal biases (Ylänne, 2015). Figure 1, presented above, demonstrates the active online engagement and conversation surrounding the show, highlighting its cultural relevance and the impact it has had in sparking discussions about aging.

Strengths & Limitations

This study's strengths include its innovative approach to exploring the public discourse surrounding aging through the lens of "The Golden Bachelor" using qualitative content analysis. By employing Social Identity Theory, the study was able to contextualize ageist and counter-ageist narratives within broader generational perspectives, offering valuable insights into how individuals engage with age-related stereotypes and social relationships in media representations. The rigorous coding process, involving multiple coders and iterative refinement of the codebook, enhances the reliability of the findings. Additionally, the comprehensive data collection strategy, covering 4,000 posts from November 2023 to June 2024, ensures a broad representation of the discourse. However, the study has some limitations. First, the absence of metadata on Reddit users' locations and other demographic factors limits the ability to generalize the findings to specific geographic or cultural contexts, despite Reddit's user base being predominantly from the United States. Additionally, while the study focuses on ageism and counter-ageism, other potential themes or nuanced discussions within the posts may have been overlooked due to the predefined coding categories. Lastly, as the study is based on publicly available posts, it is important to consider that the data may not fully represent the diversity of opinions within the broader population, as online discourse is often skewed by the types of users who engage on platforms like Reddit.

5. Conclusion & Practical Implications

"The Golden Bachelor" offers a compelling case study of how media can shape and reflect societal attitudes towards aging, revealing a complex mix of admiration, prejudice, and evolving perspectives. The positive responses from Reddit users, alongside critical discussions, suggest that while ageist and sexist biases persist, there is also a growing willingness to see older adults as capable, multi-dimensional individuals with meaningful emotional, romantic, and sexual lives. This evolving discourse highlights the potential of popular media to challenge stereotypes, especially when it normalizes older adults' participation in activities traditionally seen as "youth-oriented," such as reality television. The Golden Bachelor serves as both a reflection of and a catalyst for shifting narratives about aging. As media increasingly portrays older adults in more nuanced and positive ways, it has the potential to challenge ingrained cultural biases, promoting a more inclusive and respectful view of aging across all stages of life. By showcasing older adults participating in a reality dating show, The Golden Bachelor opened the door to reimagining their inclusion in a broader range of invigorating popular cultural spaces, from romance and adventure to cooking shows or mystery programs. Research should examine whether positive portrayals, such as those in The Golden Bachelor, have lasting effects on public perceptions of aging and age-related stereotypes over time in an effort to reduce ageism and sexism in the broader population.

Statement of Researchers
Researchers' contribution rate statement:
Alixe Ménard: Conceptualization, data curation, methodology, project administration, investigation, writing- original draft preparation. **Alison L. Chasteen:** Conceptualization, formal analysis, writing- review and editing, investigation, validation. **Mateja van Gameren:** Formal analysis, writing- review and editing, investigation. **Nefissa Bedri:** Formal analysis, writing- review and editing, investigation. **Michelle Yang:** Formal analysis, writing- review and editing, investigation. **Christopher Belanger:** Software, writing- review and editing. **Sarah Fraser:** Conceptualization, supervision, methodology, project administration, writing- review and editing, investigation, validation.
Conflict statement:
The authors declare that they have no conflict of interest.
Data Availability Statement:
The underlying data for this research cannot be shared due to the ethical and copyright restrictions surrounding social media data. Any queries about the methodology or materials should be directed to the corresponding author. The Social Astronomy application is proprietary. For more information, please contact Belanger Analytics Inc.

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Ethical Considerations:
No ethics approvals were required by the university.
Author Biographies
Alixe Menard is a PhD candidate in Population Health at the University of Ottawa, specializing in aging, dementia, and inclusive healthcare.
Alison L. Chasteen is a professor of psychology at the University of Toronto, with expertise in ageism and intergroup relations.
Mateja van Gameren is an undergraduate student at Duquesne University with interests in psychology and social equity.
Nefissa Bedri recently completed a Health Sciences degree with a minor in Psychology at the University of Ottawa.
Michelle Yang is a PhD candidate in Population Health at the University of Ottawa, with a focus on aging- and disability-inclusive disaster risk communication.
Christopher Belanger is a data scientist and adjunct professor at the Telfer School of Management, University of Ottawa.
Sarah Fraser is an associate professor at the University of Ottawa whose research explores cognitive aging, motor control, neuroimaging, and ageism.

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Appendix 1. Codebook.

Exclude			**Examples**
CODE		**DEFINITION**	**EX.**
0	Irrelevant	Unclear/irrelevant (e.g., does not answer the research question; not enough context, etc.)	
Include			
Discrimination			
1	Personal or internalized ageism	Self-directed ageism: Older adults may internalize negative stereotypes about aging, leading to diminished self-esteem, self-efficacy, and a sense of worthlessness.	I can't believe he's trying to find love at his age. Isn't he too old for this kind of show? **I feel like I'm past my prime** for things like this too.
2	Intentional (explicit) or imperialist ageism	Practices that are carried out with the knowledge that they are discriminatory on the basis of older age / Imposing values and priorities from one age group onto another age group. "Act your age" (prescriptive ageism) **NOTE**: If the comment is intentionally ageist towards younger adults, please use the code "2(Y)".	Why is there even a show like The Golden Bachelor? **Who wants to watch a bunch of old people trying to date?**
3	Unintentional (implicit) ageism	Practices that are carried out without the knowledge that they are discriminatory on the basis of older age. **NOTE**: If the comment is unintentionally ageist towards younger adults, please use the code "3(Y)".	It's nice that they have activities suited for older people. **They probably can't handle anything too intense. It's great to see older people getting out there and being active for their age.**
4	Benevolent ageism	Involves seemingly positive stereotypes or attitudes towards older adults that, despite being well-intentioned, still contribute to the marginalization or infantilization of older individuals (e.g., "cute". "wholesome", "sweet grandpa").	It's so heartwarming to see older people still believing in love**. Isn't it just adorable?**

5	Gendered ageism	Disparities in age expectations between men and women.	The Golden Bachelor is great, but I bet they'd never do The Golden Bachelorette. **No one wants to watch an <u>older</u> woman date.**
6	Sexism	Sexist comments directed towards the women OR men on the show: ex. superiority of men over women (i.e., complementary gender differentiation); negative stereotyping (i.e., hostile sexism); paternalism or the purity of women (i.e., benevolent sexism); etc. For more information visit: Sexism Inventory. **NOTE**: If the comment is sexist towards men, please use the code "6(M)".	Maybe **the women** selected by the men on the show **are supposed to be inferior or submissive looking**. They should also know how to make a good sandwich! The men need to be protectors. This Gerry guy won't stop crying!!
7	Counter ageism/age inclusion	Comments made that counter ageist rhetoric, encouraging or normalizing aging / heterogeneity of aging (e.g., widowhood, wrinkles, etc)	It's nice to see older people getting a chance to date on TV. Usually, that's something for the younger crowd. **Why should dating be limited by age? Everyone deserves the chance to find love, regardless of how old they are.**
Romance, relationships & sexuality			
8A	Sexuality-positive	Positive reactions to sexuality in later life; nice to see sex being normalized among older adults, etc.	I think it's beautiful that we get to see Gerry and Theresa have a romantic night in the fantasy suite. **It's nice to see love, romance and sexuality among an older population on tv.** Let's normalize it!
8B	Sexuality-negative	Comments pertaining to erectile dysfunction (ED), viagara, diapers as a means to devalue the participants' sexuality, sexuality as being "gross" in older adults, etc.	**I'm surprised the show isn't sponsored by Viagara**! The night in the fantasy suite may be short lived… Is the show **sponsored by Depends? I**t certainly should be!
Comments about the participants' appearances			
9A	Appearances-women	General comments about the appearances of the women on the show or of female viewers (e.g., Botox, hair, wrinkles, etc.). **NOTE**: Can be positive or negative. However, consider how the post fits under "ageism" or "sexuality" first.	The ladies on The Golden Bachelor are fabulous! Beautiful women! Makes me excited to age.
9B	Appearances-men	General comments about appearances of the men on the show (Gerry or the host, etc.) or of male viewers. **NOTE**: Can be positive or negative. However, consider how the post fits under "ageism" or "sexuality" first.	It's nice to see Gerry in all his glory with hearing aids! Showing that the body changes with age - including our hearing. He's very handsome!
Positive comments			
10A	Positive-women	Positive reactions to the women on the show.	I came for the love but stayed for the women! I can't wait to see them on reboots and maybe other shows!

10B	Positive-men	Positive reactions to the men on the show.	I love Gerry. He seems so genuine.
10C	Positive-show	Positive reactions to the show or ads about the show	I hope that in 2024 we get another The Golden Bachelor or The Golden Bachelorette! I doubt Joey's season can bring this infectious chaotic energy.
Negative comments			
11A	Negative-Gerry	Negative reactions to the Golden Bachelor, Gerry.	I am not a fan of Gerry. I knew he was too good to be true!
11B	Negative-show	Negative reactions to the show or ads about the show.	The Golden Bachelor ads are so annoying! Not interested in the show at all! Clearly BN is desperate at this point.

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REVIEW ARTICLE OPEN ACCESS

My socials told me I have ADHD: A cross-sectional study of information about ADHD symptomatology on social media

Brooke Hulsizer[1]*, and Fabrizia Passaro[1]

1 Independent Researcher, United Kingdom
* **Correspondence Author:** Brooke Hulsizer, Inverness, UK, bahulsizer@gmail.com, Tel: +44 7821161299

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Highlights:

- Posts about ADHD on Instagram and TikTok have become increasingly popular in recent years.
- 82.5% of posts about ADHD on Instagram and TikTok did not fully align with DSM-5 or ICD-11 ADHD criteria and were thus categorised as misleading.
- The majority (84.5%) of posts about ADHD on Instagram and TikTok were made by individuals selling ADHD-related products.
- While 78% of content creators had no known qualifications, mental health professionals were no more likely to post accurate information.

Abstract

Social media posts about attention deficit/hyperactivity disorder (ADHD) have become increasingly popular and have accrued billions of views, which has raised questions about the spread of ADHD misinformation. This coincides with an increasing number of long ADHD waiting lists globally, as posts shared by influencers with varying credentials appear to be prompting people worldwide to reflect on whether they might have ADHD. It has been found that approximately half of TikTok posts about ADHD contain misinformation. However, more exploration is needed to assess the amount of misinformation on social media regarding ADHD presentation and symptomatology. This study builds upon previous research by comparing posts about ADHD symptomatology on Instagram and TikTok, examining the relationship between misinformation and the qualifications of the account, and investigating potential financial benefits for accounts that post about ADHD. This cross-sectional study analysed 200 posts about ADHD symptomatology and assessed for misleading information by comparing the posts to the DSM-5 and ICD-11 criteria for ADHD. Of the 200 posts that met inclusion criteria, 17.5% (n = 35) were categorised as accurate and 82.5% (n = 165) were categorised as misleading. This aligns with research that has found misinformation about ADHD online, but shows a higher occurrence of misinformation about ADHD symptomatology specifically. Clinicians and the online public should be aware of the possibility of exposure to misleading information about ADHD symptoms on social media, which could lead to misunderstanding and inaccurate beliefs about diagnosis.

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1. Introduction

As of 2023, around 61% of UK internet users aged 16 to 24 reported using the internet to search for health-related information, reflecting a significant increase from 43% in 2015 (Statista, 2023). The prevalence of misinformation on social media raises concerns about the accuracy of health information to which the general public is exposed, alongside a potential increase in susceptibility to misinformation (Bizzotto et al., 2023; Khullar, 2022; Wang et al., 2019; Muhammed & Mathew, 2023). The World Health Organization advises that health literacy is the ability to access, understand, and use information in ways that promote well-being (Aydin et al., 2015). Low levels of health literacy can lead to misunderstandings of medical information and diagnoses, especially as the internet becomes an increasingly common source of low-quality and misleading health content (Aydın et al., 2015).

Attention Deficit Hyperactivity Disorder (ADHD) is defined as "a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development" (American Psychiatric Association, 2022). According to NHS England (2024), ADHD was the second most-viewed health condition on the NHS website in 2023 at 4.3 million views, beaten only by COVID-19. The search term "attention deficit hyperactivity disorder" on Google has also trended upwards between January 2018 and present day (See Figure 1) (Google Trends, 2025). At the same time, NHS health boards across the UK have been reporting an increase in inquiries related to ADHD (Morris, 2024; NHS England, 2024) and the CDC reported that an estimated 11.4% of U.S. children are diagnosed with ADHD (Center for Disease Control, 2024). Studies show that an increase in ADHD diagnoses is a trend that appears to be happening globally (Bonati et al., 2019; Abdelnour et al., 2022).

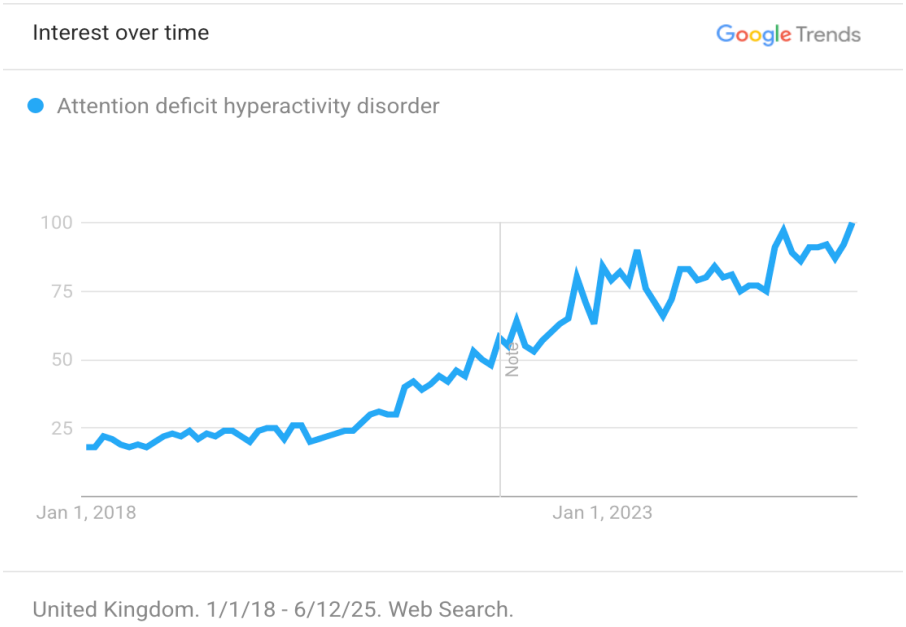

Figure 1. Search data on attention deficit and hyperactivity disorder. Source: Google Trends data, 2025

Alongside this increase in ADHD inquiries, the number of social media posts about ADHD has spiked significantly in the past several years as videos about ADHD are accruing billions of views (Harper & Sandhu, 2023). Due to the nature of social media, misinformation is more likely to be shared on social media platforms than on other online mediums, primarily because of the ease of access to posting information (Ceylan et al., 2022; Muhammed & Mathew, 2023). Algorithms on Instagram, TikTok, and Facebook may contribute to the spread of sensationalised or inaccurate information (Fernández et al., 2021). This can lead to inaccurate self-diagnosis (Corzine & Roy, 2024) and a misunderstanding of health and mental health conditions (Muhammed & Mathew, 2023). One cross-sectional study reviewed 100 TikTok videos tagged with #ADHD and found that 52% of videos were deemed misleading, 27% were personal experience stories, and 21% were useful (Yeung et al., 2022). Yeung et al. (2022) also found that misleading content was significantly more popular than accurate information, as videos created by non-healthcare professionals were more prone to misinformation than those produced by healthcare professionals. Thapa et al. (2018) found similar results on YouTube, where a significant number of misleading videos about ADHD by non-professionals appear to be gaining increasing popularity.

The link between social media and mental health is becoming ever more apparent. The Royal College of Psychiatrists has called for more research on the understanding of technology on mental health, including

ADHD (Royal College of Psychiatrists, 2020). While studies evaluating misinformation about ADHD on TikTok have been conducted, there appears to be a lack of research regarding ADHD content on Instagram. Previous studies have focused on general misinformation about ADHD as opposed to focusing on misinformation about ADHD symptomatology. Further exploration is needed to compare various platforms and accounts with differing credentials, and previous studies have not yet investigated how many content creators may profit financially from promoting products alongside posts about ADHD.

The overall aim of the present study is to expand previous research by examining 200 highly viewed social media posts on Instagram (n = 100) and TikTok (n = 100) about ADHD signs/symptoms/traits to determine what percentage contain misleading information. In this study, misleading information is defined as signs, symptoms, or traits shared that do not align with the criteria of the DSM-5 or ICD-11. The objectives were the following:

- To determine the quantity of misleading vs non-misleading content on TikTok and Instagram.
- To determine the credentials of individuals sharing ADHD-related content on TikTok and Instagram.
- To determine what percentage of creators are promoting ADHD-related products and thus may experience financial gain from posting about ADHD.
- To determine whether there is a difference in engagement (likes and followers) between misleading and non-misleading content. This will be explored using an independent t-test or non-parametric equivalent.
- To determine whether creators with varied categories of credentials differ in rates of engagement (likes and followers). This will be explored using a One-Way ANOVA or non-parametric equivalent.
- To determine whether Instagram and TikTok differ in the quantity of misleading information, product promotion, and credentials of creators. This will be explored with a Chi-Square Analysis.
- To assess whether content creators with certain credentials are more likely to disseminate misleading information. This will be explored with a Chi-Square analysis.

Hypotheses: Considering the results obtained by previous research, the present study expects to find the following:

- The percentage of misleading information on social media is higher than non-misleading information.
- The percentage of people with no known qualifications sharing ADHD-related information on TikTok and Instagram is higher than the percentage of creators with mental health qualifications.
- The percentage of creators that advertise ADHD-related products is higher than the percentage of creators who are not advertising anything.
- Misleading content has higher engagement than non-misleading content.
- There is a significant difference in user engagement (likes, views, and followers) between the various types of credentials among content creators.
- There is a difference between Instagram and TikTok in the quantity of misleading information, financial gain, and credentials of creators.
- People with no credentials share more misleading information than people with mental health qualifications.

2. Method

This observational study used a cross-sectional, between-subjects design. An opportunistic sampling approach gathered 200 highly viewed posts on Instagram and TikTok. Data collection began in May 2024 and concluded in July 2024 upon reaching a total of 100 posts from each social media platform. Inclusion criteria for engagement were met if the post (a) had at least 30,000 likes or views or (b) was by an account with at least 30,000 followers. Inclusion criteria for relevance were met if the post discussed signs, symptoms, or traits of ADHD. Posts with fewer than 30,000 likes, views, or followers were excluded to ensure we only assessed popular and highly visible content, while those unrelated to the signs, symptoms, or traits of ADHD were excluded to ensure that only content relevant to ADHD diagnosis was included. A social listening tool called Brand24 was used to collect top-performing TikTok posts, all of which met the inclusion threshold for engagement. Due to Instagram's privacy restrictions, posts were manually searched using a new account to avoid algorithmic bias. Posts from both platforms were included if they met the thresholds for relevance and engagement defined above. A total of 543 posts on Instagram and TikTok were assessed sequentially until 100 qualifying posts meeting inclusion criteria were reached on each platform for a total sample size of n = 200. The final sample included posts published between September 2020 and July 2024; 76.5% were video content (reels), and 23.5% were written photo posts. This study utilised publicly available, anonymised data, and did not involve any interaction with human participants. Therefore, ethical review was not required.

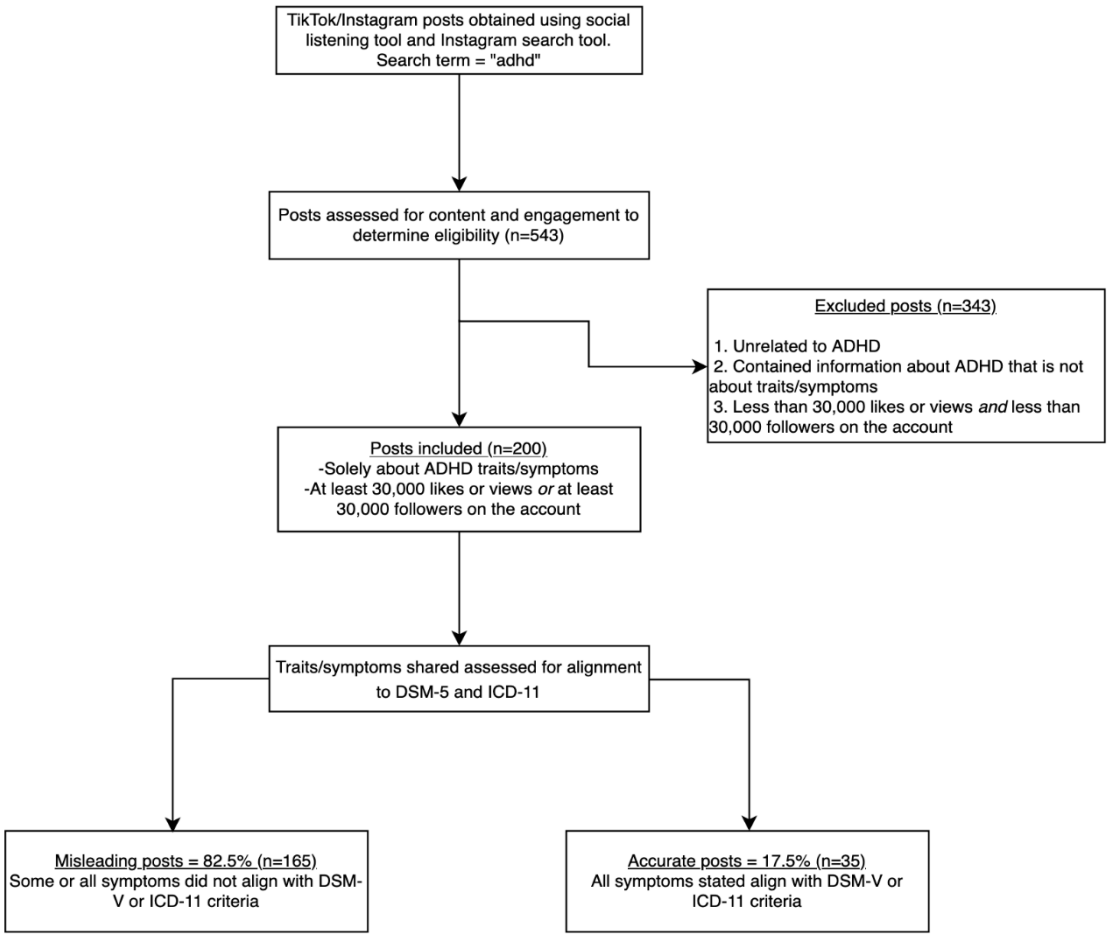

Figure 2. Flow chart of method for post inclusion

Procedure: Each post was assessed for the following descriptive and quantitative data that was gathered in an Excel spreadsheet before being transferred to SPSS for statistical analysis:

- Credentials of the account
- Date posted
- ADHD signs/symptoms/traits listed
- Whether or not the signs/symptoms/traits listed aligned with the DSM-5 or ICD-11
- Number of likes on the content
- Number of views if it was a reel (missing value for photo posts)
- Number of followers of the account
- Whether or not the account advertised an ADHD-related product (financial gain)
- Whether or not a study or source was cited

The credentials were gathered by visiting the profile page of the post. If the credentials or lack thereof were not clearly stated in the bio, then a Google search was conducted to determine if the individual's or page's credentials were listed on a website or professional register. The credentials were then categorized into one of four groups: mental health professionals, other professionals, coaches, or individuals with no known credentials.

Posts that included an ADHD-related product or service for sale within the content were labelled as exhibiting financial gain. Examples of marketed products include support groups, coaching courses, 1:1 coaching, curriculum materials, books, workbooks, fidget toys/sensory products, mobile applications, tickets to educational talks, and inclusive sex toys. Given that many social media accounts promote products via link-in-bio features, each account was also examined for such a link. If present, the link was opened to assess whether any ADHD-related products or services were being promoted. Accounts that listed any such offerings were categorized as exhibiting financial gain. However, some accounts may promote products through temporary

content such as stories or previous posts, which would not always be visible at the time of analysis. This represents a limitation that may result in the underreporting of financial gain.

The symptoms/traits listed in each post were then gathered and analysed for misleading information. Each symptom or trait mentioned in the post was individually examined and compared against the diagnostic criteria for ADHD outlined in both the DSM-5 and ICD-11. The ICD-11 aligns much more fully with the DSM-5 than the ICD-10, albeit with some subtle differences still present (Gomez et al., 2023). One of the main differences is that the DSM-5 contains nine inattention and nine hyperactivity/impulsivity diagnostic criteria while the ICD-11 contains 11 diagnostic criteria for each respective category (Gomez et al., 2023). Because the DSM-5 is used more widely in North America while practitioners in other parts of the world tend to use the ICD-11, it was decided to compare each post to the core criteria in both diagnostic manuals and only require that the post align with one of them to be categorised as accurate. This approach ensured avoidance of labelling any posts as misleading that might align with one manual but not the other. If the listed symptoms fully aligned with either of the diagnostic manuals, then the post was categorised as accurate. In posts where some or all of the symptoms did not align with either manual, the post was categorised as misleading. One researcher analysed each post, and if there was any doubt about categorisation then a second researcher's opinion was obtained and a decision made through discussion.

In cases where a stated symptom was a specific example of a general DSM/ICD symptom, the information was categorised as accurate. For example, one lived experience video stated that a trait of ADHD can include 'feeling the need to get my life together.' This was portrayed through a theatrical demonstration of disorganisation, which is a diagnostic criterion for ADHD in both the DSM-5 and ICD-11 (American Psychiatric Association, 2022; World Health Organization, 2019). Thus, this video was categorised as accurate. Examples of traits shared in these posts that were categorised as inaccurate included 'Being unable to sit up straight [slouching],' 'rage,' and 'getting more dopamine from thinking about a task than from actually doing it.' These were all assessed to be misleading information because they were not portrayed in a way that could be attributed to the criteria listed in the DSM-5 or ICD-11. Although each post was analysed for whether a source was cited, posts that cited a source could still be categorised as misleading if any of the signs/symptoms/traits shared did not align with the DSM-5 or ICD-11.

3. Results

As shown in Figure 3, 156 (78%) content creators were influencers with no known credentials; 10 (5%) were mental health professionals (including psychologists, psychiatrists, and mental health nurses); 15 (7.5%) were other professionals (including lawyers, researchers, and doctors); 19 (9.5%) were coaches, for which there is typically no registration regulation.

Overall, 17.5% of posts analysed contained signs/symptoms/traits that fully aligned with the DSM-5 or ICD-11 while 82.5% of posts analysed contained symptoms that did not fully align with either and were thus categorised as misleading. On Instagram, 83 posts (83%) contained misleading information while 82 posts (82%) on TikTok contained misleading information (see Figure 4). This left 17 Instagram posts (17%) and 18 TikTok posts (18%) that were categorised as accurate. Three posts (1.5%) cited a study or a source while 197 posts (98.5%) did not cite a study or source. A complete list of all misleading signs, symptoms, and traits of ADHD that were analysed in this study can be found in the appendix section.

An analysis of these posts was completed to determine the percentage of accounts exhibiting financial gain through the promotion of ADHD-related products or services. It was found that 169 of posts (84.5%) were published by accounts exhibiting evidence of financial gain compared to 31 accounts (15.5%) that exhibited no evidence of sales or financial gain.

At the time of data collection, all posts (n = 197) on both platforms had accumulated 29,012,235 likes. The missing value (n = 3) is due to 3 Instagram posts with a hidden number of likes. The reels (n = 153) had accumulated 346,938,940 views. The accounts overall had a total of 120,524,512 followers.

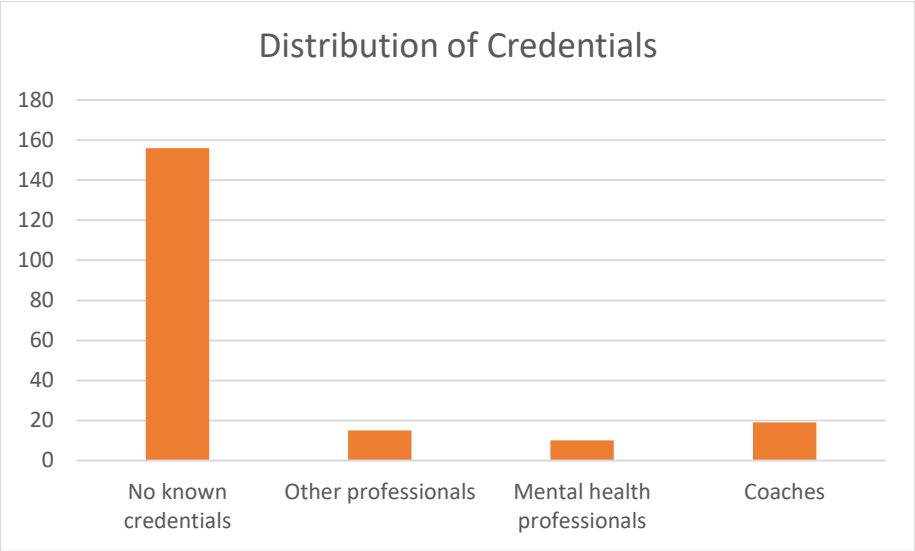

Figure 3. Distribution of content creators by credentials

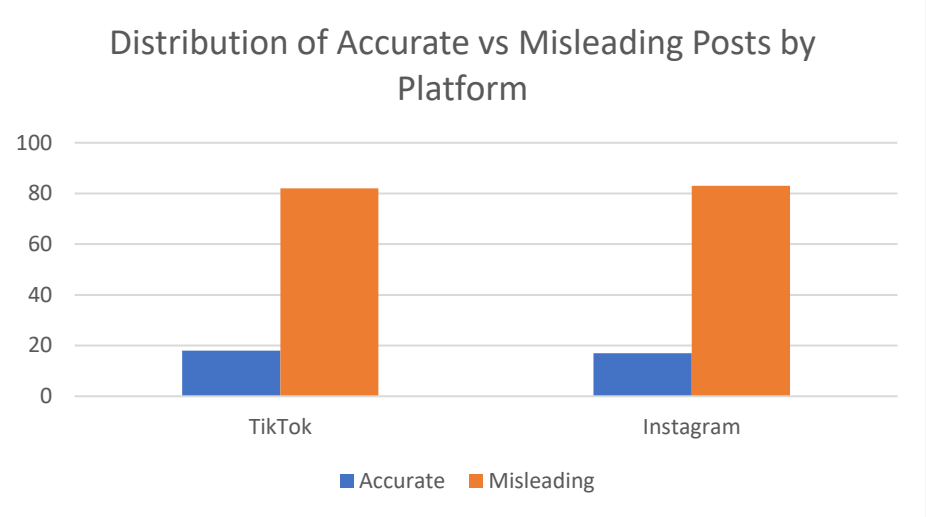

Figure 4. Distribution of accurate vs. misleading posts on Instagram and TikTok

Misleading/Non-misleading Posts and Likes

A Mann-Whitney U test was run to determine if there were differences in numbers of likes between misleading and non-misleading posts. This non-parametric test was chosen as the assumptions of outliers, normal distribution and normality were not met for the independent t-test. Distribution of likes for misleading and non-misleading content were similar, as assessed by visual inspection. There was no statistically significant difference between the number of likes for misleading (*Mdn* = 32752) and non-misleading (*Mdn* = 20200) content, $U = 2691.500$, $p = .639$.

Misleading/Non-misleading Posts and Views

A Mann-Whitney U test was run to determine if there were differences in the numbers of views between misleading and non-misleading content. This non-parametric test was chosen as the assumptions of outliers, normal distribution, and normality were not met for the independent t-test. Distributions of likes for misleading and non-misleading content were similar, as assessed by visual inspection. There was no statistically significant difference between misleading (*Mdn* = 786000) and non-misleading (*Mdn* = 519500) content, $U = 1751.500$, $p = .667$.

Credentials and Engagement

A Kruskal-Wallis H test was conducted to determine if there were differences in the number of likes between groups that differed in their credentials. The following groups were compared: “no qualification" (*n* = 153), “mental health professionals" (*n* = 11), “other professionals" (*n* = 15) and "coaches" (*n* = 19). Distributions of likes were similar for all groups, as assessed by visual inspection of a boxplot. Median of likes increased from coaches (*Mdn* = 11,413), mental health professionals (*Mdn* = 23,066), other professional (*Mdn* = 29,240) and no qualifications (35,542), but the differences were not significant, $H(3) = 3.753$, $p = .289$.

A Kruskal-Wallis H test was conducted to determine if there were differences in the number of views on reels between groups that differed in their credentials. The following groups were compared: “no qualification" (*n* = 121), “mental health professionals" (*n* = 10), “other professionals" (*n* = 12) and "coaches" (*n* = 10). Distributions of views were similar for all groups, as assessed by visual inspection of a boxplot. Median of likes increased from other professionals (*Mdn* = 290,000), mental health professionals (*Mdn* = 362,450), coaches (*Mdn* = 569,450) and no qualifications (748800), but the differences were not significant, $H(3) = 3.244$, $p = .356$.

A Kruskal-Wallis H test was conducted to determine if there were differences in the number of followers between groups that differed in their credentials: the “no qualification" (*n* = 155), “mental health professionals" (*n* = 11), “other professionals" (*n* = 15) and "coaches" (*n* = 19). Distributions of views were similar for all groups, as assessed by visual inspection of a boxplot. Median of followers were significantly different across groups, $H(3) = 12.811$, $p = .005$. Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted *p*-values are presented. This post hoc analysis revealed statistically significant differences in followers between coaches (*Mdn* = 99,000) and the no qualification group (*Mdn* = 343,400) (p = 0.002), but not between coaches and mental health professionals (*Mdn* = 185,000*)* (p = 0.491*),* coaches and other professionals (*Mdn* = 221,000*)* (p = 0.184*),* other professionals and mental health professionals (*Mdn* = 185,000*)* (p = 1.000), mental health professionals and no qualifications (p = 1.000), and other professionals and no-qualifications (p = 1.000).

Credentials and Misleading Information

A chi-square test for association was conducted between credentials and misleading information. Three cells (37.5%) had expected count less than five, thus the assumptions for the chi-square test were not met. The credentials categories were therefore collapsed from 4 to 2 (mental health professionals and others). When running the test with these categories, only 1 cell (25%) had an expected count less than five. As such, assumptions were met. There was no statistically significant association between credentials (mental health professionals, others) and sharing misleading information, $\chi^2(1) = 0.004$, $p = 1.00$.

Credentials and Platform

A chi-square test for association was conducted between credentials and platform. All expected cell frequencies were greater than five. There was a statistically significant association between platform and credentials, $\chi^2(1) = 9.00$, $p = .029$. In particular, Instagram had a higher frequency of mental health professionals (8%), other professionals (9%) and coaches (14%), compared to TikTok, which overall had a smaller percentage of mental health professionals (3%), other professionals (6%) and coaches (5%). On the other hand, TikTok held a higher percentage of posts by accounts with no qualifications (86%) compared to Instagram (69%).

Platform and Misleading Information

A chi-square test for association was conducted between platform and misleading information. All expected cell frequencies were greater than five. There was no statistically significant association between platform and misleading information, $\chi^2(1) = 0.35$, $p = .852$.

Platform and Source Citation

A chi-square test for association was conducted between platform and source citation. All expected cell frequencies were greater than five. There was no statistically significant association between platform and study citation, $\chi^2(1) = 3.046$, $p = .081$.

Platform and Financial Gain

A chi-square test for association was conducted between the platform and financial gain. All expected cell frequencies were greater than five. There was no statistically significant association between platform and financial gain, $\chi^2(1) = .954$, $p = .329$.

4. Discussion

The primary aim of this study is to assess the prevalence of misleading information in posts about ADHD signs, symptoms, and traits on Instagram and TikTok. The results reveal that a significant majority of posts examined contained misleading information. While the finding that 82.5% of analysed posts were misleading supports the research hypothesis, this rate is considerably higher than those observed in prior studies (Yeung et al., 2022; Wang et al., 2019). This discrepancy may be attributed to the focus on symptomatology and the rigorous comparison of ADHD posts against the DSM and ICD manuals in this study. Despite the subtle differences between the DSM and ICD diagnostic criteria (Gomez et al., 2023), there were no instances in which any of the analysed posts aligned with one diagnostic manual but not the other. Another likely reason for the difference in findings is that this study focuses on 'misleading information' rather than 'misinformation' only. Misleading posts can contain some elements of truth, but are often presented in ways that can lead to misunderstanding or confusion. In many posts, there were signs/symptoms/traits of ADHD that could theoretically be linked to a DSM or ICD symptom, but were not thus presented in the content. An example of this is 'financial difficulties', which appeared in 3% (n = 6) of posts. Someone with ADHD may struggle to hold down a job due to issues with attention, focus, and productivity. As a result, they may become unemployed and thus experience financial difficulties. However, many content creators do not explain the link between the broader signs/symptoms/traits shared and the DSM/ICD criteria. Thus, sharing 'financial difficulties' as a general sign of ADHD without linking it to a diagnostic symptom of ADHD is misleading and implies that anyone struggling with financial difficulties might have ADHD.

There were many misleading signs, symptoms, and traits shared in these posts that occurred multiple times. Figure 5 shows the distribution of the frequency of the top 20 signs/symptoms/traits shared that were categorised as 'misleading.'

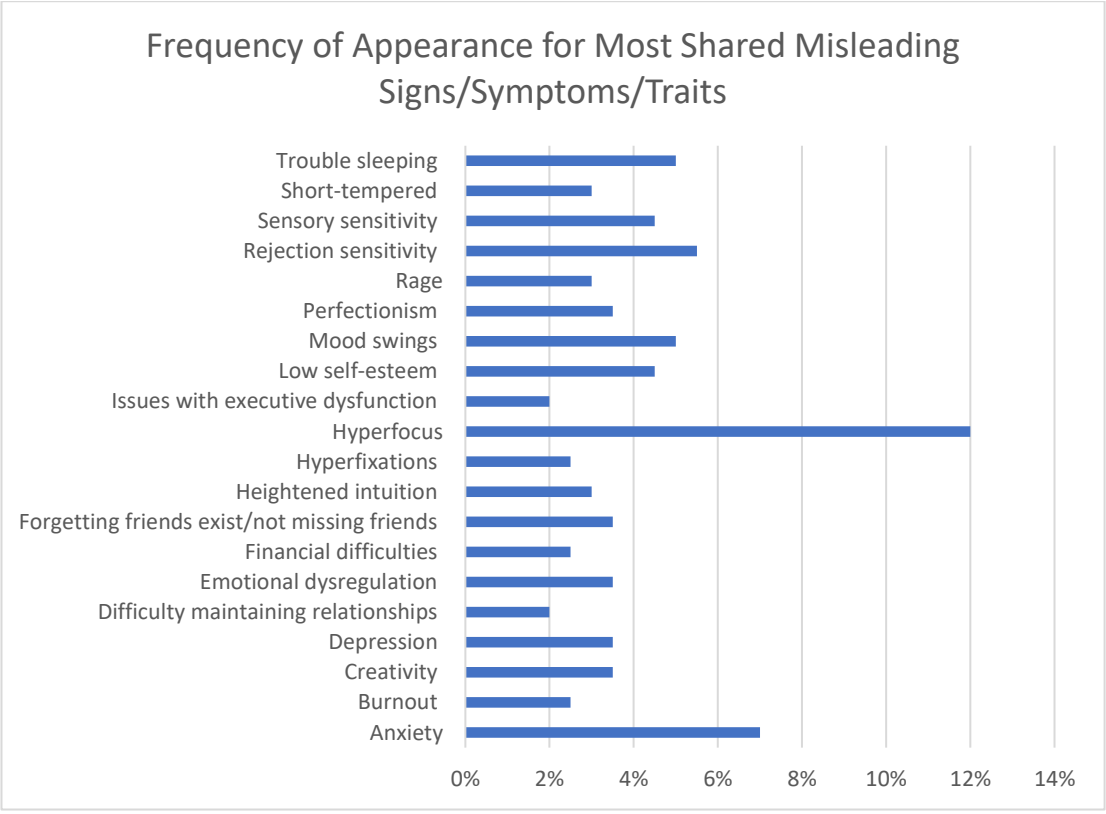

Figure 5. Frequency (%) of the most commonly shared misleading signs/traits/symptoms of ADHD in all social media posts (n = 200)

Although some symptoms highlighted on social media are supported by a limited evidence base, they are not included in the core diagnostic criteria of the DSM-5 or ICD-11 due to a lack of sufficient research. One such example is the cognitive-behavioural construct 'rejection sensitivity,' which is a phenomenon that is considered by some to be widespread but under-studied in the context of ADHD symptoms (Müller et al., 2024). As shown in Figure 5, rejection sensitivity occurred in 5.5%% of posts (n = 11) in this study. Downey & Feldman (1996) describe rejection sensitivity as the phenomenon of individuals anxiously expecting, readily perceiving, and overreacting to rejection. They went on to study the correlation between rejection sensitivity and traumatic childhood experiences, finding that rejection sensitivity might be linked to early relational trauma (Downey et al. 1997). Other research has studied the link between ADHD and rejection sensitivity, suggesting that people who meet criteria for ADHD have higher rates of rejection sensitivity (Hussain, 2024). Dodson (2016) is credited by several ADHD charities as coining the phrase 'Rejection Sensitive Dysphoria' (RSD) in a paper published by CHADD (Children and Adults with Attention-Deficit/Hyperactivity Disorder), in which he states that RSD is rejection sensitivity that is unbearable and can look like instantaneously triggered major depression (Purcell, 2024). This article stated that about a third of adolescents and adults list RSD as the most impairing aspect of their ADHD (Dodson, 2016), although no evidence was cited. He also states that RSD is genetic and neurological and cannot be treated with therapy (Dodson, 2016), which contradicts earlier ideas about rejection sensitivity that suggest it could be linked to relational trauma and previous rejection (Downey et al. 1997). While there are conflicting ideas about rejection sensitivity/Rejection Sensitive Dysphoria and the role they may play in ADHD presentations, both terms were shared as confident indicators of ADHD in posts analysed in this study. A similar phenomenon occurs with the term 'hyperfocus', which is also poorly defined in the literature (Ashinoff & Abu-Akel, 2021) and is not included in diagnostic manuals at this time. It seems that content creators are suggesting certain traits may indicate potential ADHD despite insufficient research to confirm whether these symptoms truly implicate the condition.

This theme also illustrates the issue of differential diagnosis when it comes to online posts about ADHD symptomatology. Many symptoms and traits shared online could be the result of external factors or other mental health conditions which would need to be ruled out during a diagnostic evaluation. Some researchers believe that ADHD and PTSD can present similarly and are concerned that ADHD is being misdiagnosed in individuals with PTSD/traumatic exposure (Brown et al., 2017; Szymanski et al., 2011). The need for differential diagnosis and excluding trauma and other factors is generally not discussed in online posts, which we hypothesise is generating further fallacies and misconceptions about the diagnosis.

This study assessed whether misleading content led to higher rates of engagement than non-misleading content. The Mann-Whitney U test revealed that while rates of likes and views on misleading posts were higher, there was no statistical significance. This did not align with our hypothesis that there would be a significant difference and differs from other findings that misinformation typically receives much higher rates of engagement (Wang et al., 2019). This indicates that viewers may not be more inclined to engage with misleading information about ADHD symptoms than accurate information. This trend could stem from the sheer prevalence of social media posts that contain misleading information available today.

We hypothesised that accounts with no qualifications would be more common than accounts with mental health or other qualifications. This was found to be true as 78% of the posts were created by accounts with no known qualifications. It is notable that 9.5% of posts were shared by coaches who may or may not have formal registration and training. This study also explored whether mental health professionals were less likely to post misleading information. A chi-square test for association found that mental health professionals are not less likely to post misinformation, which was not consistent with the hypothesis. However, it is important to highlight that only 5% (n = 10) of the content creators were mental health professionals, so the sample size for that category of content creators was small. While the low rates of posts by healthcare providers overall align with other findings, the high rate of misinformation among mental health professionals' posts differs from a previous study's finding that only 27% of healthcare providers posted misinformation on TikTok (Yeung et al., 2022).

This study also examined whether rates of misleading information differed between Instagram and TikTok. The chi-square test showed that there was no statistically significant difference between rates of misleading information on the two platforms, and the rates of misleading posts closely resembled each other: 82% on Instagram and 83% on TikTok. While this did not align with our hypothesis that there would be a difference, it is noteworthy as this appears to be the first study to directly compare ADHD misinformation rates across platforms, and the rate of misleading information between Instagram and TikTok was almost identical.

When the prevalence of the various credentials was compared to the platform, it was found with statistical significance that Instagram had a higher frequency of mental health professionals, other professionals, and coaches than TikTok. This study found that 86% of TikTok posts were by content creators with no known credentials while 69% of Instagram posts were by content creators with no known credentials. This aligns with our hypothesis and with previous studies that have found the majority of posts on TikTok are posted by non-professionals (Yeung, et al., 2022). While this suggests that there are more professionals posting on Instagram than on TikTok, it appears that this does not result in a difference in the amount of misleading information between the two platforms.

The chi-square test also revealed no statistically significant difference between the two platforms in terms of the prevalence of accounts promoting products. This did not align with the hypothesis that a difference would be observed. However, the hypothesis was met that accounts promoting products or services would be more frequent than accounts with no evidence of financial gain. Considering that 84.5% of content creators were promoting ADHD-related products or services alongside their posts, it seems that posting about ADHD could lead to financial profit. While there may be a genuine desire to offer support, these accounts appear to profit from individuals believing they need help to manage symptoms of ADHD, regardless of whether they have the condition. As ADHD is trending on Instagram and TikTok, posting about it can also help influencers attract more views and followers, potentially increasing their earning potential.

This study also investigated the relationship between engagement rates (likes, views, and followers) and the credentials of content creators categorised into four groups: mental health professionals, coaches, other professionals, and those with no known credentials. The Kruskal-Wallis H test revealed that influencers lacking any credentials received more likes and views compared to the other groups; however, the differences in likes and views among the four categories were not statistically significant. A Kruskal-Wallis H test found that accounts with no known credentials had the most followers overall, while coaches had the least. There was a statistically significant difference between the coaches and non-credentialed groups, but not between any of the others. Overall, these findings partially aligned with our hypothesis that there would be a statistically significant difference in engagement between each of the credential groups. These results do replicate other findings that content uploaded by non-healthcare providers is more popular than content by healthcare providers (Yeung et al., 2022).

Most of these social media posts originated from the United States, Canada, Australia, New Zealand, and the UK. Overall, we assume that most content creators have access to healthcare, diagnostic services, and pharmaceutical care based on the information they shared. Some posts included a disclaimer advising viewers to consult their GP if they suspect they might have ADHD. However, it is likely that some viewers lack access to healthcare providers or ADHD assessment services due to limited resources. For instance, in the UK, certain areas do not offer NHS ADHD assessment services, and others have waiting lists of two to six years or more (ADHD UK, 2023). Private assessments are available but typically cost an average of £1267 for adults in the UK (Steele, 2024). In other countries like the USA, the absence of a national healthcare system results in reduced access to publicly funded ADHD care. While influencers may aim to raise awareness to help, their lack of clinical training and the limited global access to mental healthcare raises ethical concerns. If viewers encounter content suggesting they might have ADHD but lack access to proper resources due to geographic or financial barriers, it could cause undue stress. Additionally, ADHD awareness videos might encourage people to join waitlists for assessments, increasing pressure on existing services. If misleading posts prompt individuals to self-refer for assessment who do not qualify for a diagnosis, it could create unnecessary obstacles to accessing appropriate care. More research is needed to understand the relationship between misleading social media content about ADHD and inappropriate diagnosis-seeking.

Emerging research suggests that increased exposure to technology and social media heightens ADHD symptoms, interferes with emotional and social intelligence, can lead to addictive behaviours, increases social isolation, and interferes with brain development and sleep (Small et al., 2020). One study found a positive relationship between ADHD symptoms and internet addiction, suggesting that spending large quantities of time on social media could disrupt attention and focus skills (Panagiotidi & Overton, 2018). This means that excessive time spent on the platforms where ADHD content is shared could be leading to or exacerbating ADHD symptoms, even if one does not have ADHD.

The Barnum Effect, also known as the Forer Effect, is the phenomenon whereby individuals believe that a vague or broad personality description applies more specifically to themselves than to others (Vohs, 2024). Studies have suggested that people tend to accept the accuracy of vague or general personality interpretations even when they are not tailored to the individual (Forer, 1949; Snyder et al., 1977). Viewers might be positioned

to feel they are described in broad but relatable descriptions of ADHD, regardless of accuracy. Some of the influencers in the analysed posts stated that they are trying to make content relatable to viewers, and this may lead them to inadvertently create content that is relatable to even those who do not qualify for an ADHD diagnosis. More evidence is needed to explore the Barnum/Forer Effect and online posts about mental health and ADHD.

The Prevalence Inflation Hypothesis is a term coined to describe the theory that increased mental health awareness efforts have led to over-interpretation of everyday psychological experiences, which has contributed to the rise of mental health problems (Foulkes & Andrews, 2023). Foulkes & Andrews (2023) posit that while mental health awareness efforts have led to some positive benefits for society, misunderstandings and overinterpretation are likely to be a simultaneous disadvantage. In addition, the BBC Loneliness Experiment found that young people appear to be the loneliest demographic, followed by middle-aged individuals and then older adults (Barreto et al., 2021). High rates of loneliness in young and middle-aged groups may encourage them to turn to social media for a sense of community. Viewers might feel seen and understood when seeing influencers describe the ADHD experience, which often involves consistent struggles and feeling a deficit of belonging. More research is needed to explore if there is a link between loneliness and seeking a diagnosis of ADHD. Differentiation between helpful and unhelpful online material is influenced by health literacy, and further research is needed to explore the links between social media health information and health literacy online.

Limitations

Because of Meta's privacy policies, Instagram does not allow social listening tools to access its data, so we had to use the search tool directly within Instagram to find posts related to ADHD. Since Instagram only grants access to its content through a logged-in account, we created a fake user with a name and date of birth. Although the account never liked or interacted with any content, Instagram still generated an algorithm based on the account's age, gender, and location. Meta did not respond to information requests, making it impossible to avoid this disruption in data collection. Due to the nature of social media, photo posts often receive more views than likes, as people may view without engaging. These views are not recorded, so it is hard to determine exactly how many people saw a post. Additionally, while we aimed to be as consistent and objective as possible when comparing the posts to the diagnostic manuals, the process remained subjective because we had to make judgments to determine whether the listed traits accurately fit the criteria in the DSM and ICD.

5. Conclusion

This study examined the accuracy of content related to ADHD on Instagram and TikTok, with a focus on symptomatology, content creator credentials, and potential financial motivations. The findings revealed that 82.5% of the 200 posts analysed were categorized as misleading, with 17.5% accurately aligning with the diagnostic criteria outlined in either the DSM-5 or ICD-11. While 78% of content creators have no known qualifications, there was no significant difference in the accuracy of posts between credentialed influencers and influencers without credentials. The vast majority of posts (84.5%) were created by accounts exhibiting financial gain, indicating a strong commercial influence. Individuals with no formal qualifications created a substantial majority of the posts (78%). Statistical analysis showed no significant difference in engagement (likes, views or shares) between accurate and misleading content. As such, it appears that misleading information are not likely to generate more traction, compared to accurate posts.

The study also found no significant relationship between platform type and the prevalence of misinformation, or between credentials and the likelihood of posting misleading content, indicating a similar amount of accurate and misleading information across platforms and credentials. However, TikTok had a higher percentage of creators without qualifications, whereas Instagram featured a slightly more diverse mix of professionals.

These results highlight that Instagram and TikTok are saturated with misleading ADHD content, often delivered by influencers who are selling ADHD-related products and services. This suggests that these influencers might profit from producing content that leads people to believe they might have ADHD. Even though misleading information did not appear to generate more traction, the prevalence of misleading information could lead to misunderstanding of ADHD symptoms, self-misdiagnosis, or scepticism about professional diagnoses. More research should be conducted to determine the impact of misleading posts on the individuals who see them.

Statement of Researchers

Researchers' contribution rate statement:

Brooke Hulsizer: Authorship, conceptualization, data curation, methodology, product administration, resources, software, writing – original draft, writing – review and editing. **Fabrizia Passaro:** Authorship, data curation, methodology, product administration, resources, software, writing – original draft, writing – review and editing.

Conflict statement:

No conflicts of interest.

Data Availability Statement:

The data supporting this study's findings are available from the corresponding author upon reasonable request.

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We verify and confirm that everyone who contributed to this manuscript is listed as an author.

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Ethical Considerations:

No subject research was completed in this study, which therefore negates the need for informed consent or board approval.

Authors Biographies

Brooke Hulsizer is a registered social worker (SSSC) and mental health therapist (NCPS) in Inverness, Scotland. She obtained a bachelor's degree in Addictions Counselling from Indiana Wesleyan University and a Master's of Social Work from Arizona State University. She is also EMDR-trained and a Certified Sexual Addictions Therapist (CSAT). Brooke specializes in working with adults and adolescents struggling with addictions, mood issues, and relationship problems. Her main research interest is the impact of technology and social media on mental health, sexuality, and society.

Fabrizia Passaro is an Assistant Psychologist working in the NHS and in an Expert Witness private practice in London, UK. She holds a Bachelor's degree in Criminology and Psychology from City St. George's, University of London and a Master's in Clinical Forensic Psychology from King's College London. Her research interests include social media, neurodivergence, and forensic psychology.

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6. Appendix

Signs, traits, and symptoms of ADHD categorised as 'misleading'

'All or nothing' mentality
Ability to hear two songs at once
Addiction
Aggression
Alexithymia
Always tired
Anxiety
Anthropomorphism
Appearing socially confident but internally being anxious
Argumentative
Attentive
Auditory processing disorder
Auditory stimulation (making random noises)
Being a fun person
Being lazy/unmotivated
Being quiet
Being unkind when over-stimulated
Being very organized
Benefit from social connection
Big energy fluctuations
Binge eating
Blacking out transition times
Blurring vision on command
Body dysmorphia
Breaking things all the time
Burnout
Buying loved ones thoughtful gifts
Calm
Calm in a crisis but overwhelmed when a small thing goes wrong
Can't do math
Catastrophizing
Cleaning when overwhelmed
Constantly seeking stimulation
Conversation dissecting
Creativity
Craving stimulation but easily overstimulated
Decision paralysis
Deep cleaning home to professional standard
Defiance
Fear of letting others down
Fear of over committing
Fear of under committing
Feeling defensive/combative due to fear of rejection
Feeling exhausted from doing nothing
Feeling more intensely than others
Feeling responsible for how others feel
Feeling that every choice is 'big and important'
Feeling wired
Feeling apathetic when understimulated
Financial difficulties
Finding new things overwhelming
Focusing on stimulating thoughts that include rejection, stress, anxiety, worry, depressive thoughts, self-doubt, guilt, shame
Food hyperfixation
Forgetting friends exist/not missing friends
Forgetting to breathe
Frontal lobes don't develop until age 35
Frequent car accidents
Frequent emotional meltdowns
Gets anxious in drive-thrus
Getting irritated at noises
Getting more dopamine from thinking about doing something than actually doing it
Goes the extra mile
Great in a crisis
Guilt
Hate structure but can't function without it
Hating being told what to do
Hating windshield wiper settings
Heightened intuition
High bursts of energy or lethargic low mood
High-functioning
Highly driven
Hoarding random objects
Hobby hopping
Hyperfixation on crushes
Hyperfixation on other people
Over-analyzing everything
Over-committing
Overcompensating
Overexaggerative/disingenuous
Overthinking
Overwhelmed by food decisions
Overwhelm deciding what to eat
Panic
Pattern recognition
People-pleasing
Perceived as "nosy"
Perfectionism
Performing endless research
Planning schedule in advance
Pre-planning tasks
Preferring songs without lyrics
Pushy
Rage
Really liking one's friends
Reckless driving
Reciprocating stories with stories to show understanding
Rejection sensitivity
Replaying arguments in mind
Resilience
Restricting food
'Roasting' friends
Ruminating on every interaction
Sarcasm
Scratching oneself to mask ADHD
Seeking loud or fast music
Self-critical
Self-doubt
Self-sabotaging relationships
Sense of pride in abilities
Sensory sensitivity
Shame
Shy
Short-tempered
Singing
Sitting down and having no motivation to get back up due to a lack of dopamine
Sitting down for longer than planned
Sitting down on phone and not getting up for hours

Deliberately annoying people
Depression
Digestive issues/bad gut health
Difficulty controlling/managing emotions
Difficulty expressing emotions
Difficulty living in the moment
Difficulty maintaining friendships/relationships
Difficulty verbalizing feelings
Disappearing for months at a time
Dislikes small talk
Dislikes texting and phone calls
Disliking large spoons
Disliking short texts
Dissociation
Doing things 'full out'
Doomscrolling
Dreading showering
Dreading washing hair
Echolalia
Eating disorder
Eating nothing or way too much
Easily frustrated
Earned good grades in school but forget what was learned
Emotional dysregulation
Emotional Intensity
Emotional over-reaction
Emotional sensitivity
Emotional sensitivity and reactivity
Entrepreneurial
Fear of failure
Hyperfixations
Hyperfocus
Hypermobility
Ignoring hunger
Imposter syndrome
Inability to make dots disappear in optical illusion video
Inability to relax
Indecisiveness
Intense fear of letting others down
Isolation
Executive dysfunction
Irritability
Jumping to worst case scenario
Knowing what others feel even when they don't say it
Lack of motivation to get up after sitting down
Listening to same song and eating the same food over and over
Low energy
Low motivation
Low self-esteem
Low tolerance for frustration
Loving to fix things
Meltdowns when food order is messed up
Mirroring people's personalities
Mood swings
Multitasks well
Needy
No sense of accomplishment after completing a task
Not having the choice to do things due to lack of executive function
Not making eye contact when speaking to people
Not understanding object permanence
Noticing things that others don't
Often exhausted/overwhelmed
Over-achieving
Skin conditions like dermatitis, cystic acne, psoriasis, dandruff
Skin-picking
Sleepy during the day while hyperactive at night
Sleeping too late
Sleeping with T-rex arms
Social anxiety
Speaking incoherently
Speaking to animals
State of paralyzing anxiety
Stealing other peoples' food
Staying awake all night
Staying up late
Struggling to let things go
Struggling to like things casually
Struggling to verbalize feelings and opinions
Strong problem-solving
Strong sense of justice
Take everything personally
Takes risks
Testing people
Trauma
Trouble making friends
Trouble sleeping
Unable to sit up straight
Unresponsive
Wanting new experiences
Wearing sunglasses even when it's dark
Withdrawn
Workaholism
Yawning without being tired

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Information and communication technologies: the expansion of individual freedom and the gradual conquest of the universal

Nikolaos P. Sfakianos[1]*

1 1Department of Psychology, Panteion University of Social and Political Sciences, Athens, Greece
* **Correspondence:** Panteion University of Social and Political Sciences, 136 Syngrou Avenue. 17671 Athens, Greece. n.sfakianos@panteion.gr

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Highlights:

- Integration of cosmosystemic gnosiology with technology's impact on freedoms in historical and modern contexts.
- Explores ICT's role in enhancing agency but risking social freedom in professional settings.
- ICT may shift voting to participatory decision-making, fostering collective thinking and societal evolution.
- Stresses embedding individual freedoms within collective structures for meaningful technological participation.
- Highlights that tech-driven participation does not guarantee legal rights or true individual freedoms.

Abstract

The field of Information and Communication Technologies (ICT) has experienced exponential growth over the past decade. As a tool that has become integral to people's daily lives, ICT is used extensively on both individual and societal levels, influencing the way people interact with one another. This treatise employs the theory of cosmosystemic gnosiology to investigate and explain the influence of ICT on the expansion of individual freedom, the necessary integration of individuality into the collective, and the possibility of society's transition to universal freedom, contingent on the realization of the cosmosystemic time to which the present era relates. From this perspective, the practical challenges that societies of the early anthropocentric era face are elucidated, including the dismantling of privatization, fostering collective consciousness, and navigating the citizen-authority dynamic. This paper concludes by delineating the critical pathways through which these obstacles can be surmounted and by speculating on the prospective dimensions of advancement contingent upon the responsiveness of societies to the aforementioned issues. Pointing toward a future direction where the harmonization of technological progress and human values can become not only a theoretical study, but also essential for sustainable societal evolution.

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1. Introduction

Before embarking upon the analysis of this particular issue, it is first necessary to define the conceptual framework within which we will conduct our investigation. Information and communication technologies (ICT) are of paramount importance in society, largely due to the exponential growth and advancement that these technologies have undergone over the past decade. Particularly through faster data exchange, ICT are profound and far-reaching across multiple sectors of society. From enhancing the volume and accessibility of information to transforming communication processes, educational methodologies, healthcare delivery, economic operations, and research capabilities, ICT continues to reshape the foundational structures of modern life (Duma & Monad, 2013). In accordance with the definitions provided in the Eurostat glossary, Information and Communication Technology (2023), the term "Information and Communication Technology" encompasses all technical means that facilitate communication and information processing, including software, services, and equipment. Such devices include computers, mobile phones, smart televisions, and other equipment that enable users to access the Internet. Consequently, internet access serves as a crucial indicator for gauging the extent of ICT utilization and integration within society. Greece has made noteworthy advancements in its population's internet access from 2012, when only 55% had access, to 2023, when 85% have access. Although this percentage appears to be relatively high, it is among the lowest observed in the EU-27, which has an average of 91.4%. The Nordic countries have the highest internet access rates, with Norway at 99.6%, Luxembourg at 99.3%, and the Netherlands at 99.1% (ICT Access and Usage by Households, 2023).

No boundaries constrain the application of these technologies. The aforementioned technologies can be utilized in many contexts, including personal, economic, and political spheres. In the realm of personal life, they can be employed for entertainment, information, and communication purposes. In the economic sphere, they facilitate transactions, aid in employment searches, and serve as a medium for advertising. In the political sphere, they can be leveraged for consultation and the dissemination of information to citizens. It is acknowledged from the outset that, despite the plethora of possibilities afforded by ICT, the user's freedom is constrained to the domain of their individual life. However, it provides the requisite foundation for the acquisition of political freedom.

As Contogeorgis (2022) notes, cosmosystemic gnosiology is a framework that enables the definition of an evidential system of knowledge, thereby facilitating the interpretation of the present time and the prediction of the evolutionary perspective of social humans in the future. This is achieved through the reading of the past in a universal cosmosystimic time. This epistemology derives its scientific legitimacy from the cosmosystemic reconstruction of the Greek anthropocentric phenomenon, as well as from its despotic counterpart and the anthropocentric clarifications of modern times. Consequently, the dramatic transformation that technology has undergone over the past 100 years, driven by exponential advancements in the field of ICT (Arthur, 2011), did not occur in a vacuum. The impact of this theoretical framework on ICT is predicated on its capacity to situate technology within a historical and social timeframe, thereby underscoring the notion that each historical period develops the specific technologies it requires to fulfill its functional needs. This perspective enables a more nuanced comprehension of the technological landscape, emphasizing the need to shift the focus from the utilization of ICT to its governance. This is not done arrogantly, but because in human history only the Greek world has demonstrated a complete anthropocentric paradigm (Amarantos, 2022). In conclusion, the central objective of this study is to shed light on the research hypothesis that the development of Information and Communication Technologies (ICT) brings about significant transformations in the global communication system, while simultaneously creating the conditions for a transition from individual freedom to economic and political freedom—concepts that will be further clarified in the following sections.

Purpose and aims

Having established the fundamental structure within which the present study is situated, the central issue that the study seeks to address is presented. The combination of new technologies with the theory of cosmosystemic gnosiology enables the interpretation of the changes they bring about at the individual level of social beings, the mapping of the evolutionary historical time in which the present era is situated, and finally, the proposal for integrating individuality into the collective. and over time, the transition from individual freedom to universal, as will be presented in the following sections. Considering the practical implementation of the above argument, such an outcome is feasible through the institutionalization of social collectivity. In other words, beyond acting within their individual sphere, individuals may also participate as collective subjects in decision-making processes, for example, through the use of Information and Communication Technologies,

without the necessity of their physical presence in a parliamentary setting. In conclusion, this study aims to advance the knowledge and understanding offered by cosmosystemic epistemology while establishing connections between this theory and the research subjects of social psychology and ICT. In addition to addressing the aforementioned questions, it seeks to provide answers to these broader issues.

Freedom in the Present Time

The concept of freedom in modernity can only be adequately understood in the context of Kant's philosophical approach. The philosopher engages with the concept of freedom in its cosmological sense. In Kant's view, transcendental freedom represents the pinnacle of human liberty. It is a form of freedom that is inextricably linked to the concept of absolute agency, signifying the capacity of the human will to exist independently from the natural order. In particular, it pertains to the human mind's ability to initiate and shape its state of being. In this manner, freedom is merely an idea that cannot be empirically verified. Conversely, it can only be grasped on the foundation of moral-practical reasons (Kant, 2002; Kant, 2015). In summary, Kant (1967) posits that the status of the state as a regime of law is contingent upon the liberty of each member of the community as a human being, equality with all others as subjects, and the independence of each member of the community as a citizen.

In comparison to other concepts, Engels dedicates less space in his writings to discussing the concept of freedom. He appears to equate freedom with knowledge, contending that freedom is contingent upon a foundation of natural necessity and that it can only be attained within the context of an organized society. He ultimately asserts that the limitations of class oppression constrain humanity's autonomy in its relationship with the natural world. Individuals are only able to act freely when they engage in this struggle (Engels, 2017; Marx & Engels, 2014). Similarly, J.S. Mill employs a comparable line of reasoning, associating individual freedom with democracy (Macintyre, 2006).

In accordance with Pettit's (1999) theory of freedom, a more comprehensive understanding of freedom in modernity can be attained. The latter states that the freedom of the actor has three dimensions: the freedom of action performed by an actor, the freedom of the self, which is linked to the ability of the actor to identify with what he does, instead of seeing it from a distance as an observer, and the freedom of the person that the individual possesses when, thanks to his social status, the act is truly his own and is not done under the pressure of others. Pettit acknowledges that autonomy is a fundamental aspect of freedom. However, his perspective is constrained to the individual level, which, as will be discussed in the following sections, represents a mere framework within which one can actualize their freedom.

The concept of cosmosystemic gnosiology allows us to consider the value of freedom from a distant view and to place it within the context of the cosmosystemic time. The concept of a time that can be approached in the context of the cosmosystem, considering the constitution of social humans and the evolutionary biology of society. After examining the ideas of thinkers such as Kant, Mill, and Pettit on the concept of freedom, we move on to the understanding of freedom in cosmosystemic gnosiology. Direct comparisons can be made to highlight the similarities and differences between Kant, Mill, and Pettit's concept of freedom and that of cosmosystemic gnosiology. For example, by establishing a connection between Pettit's understanding of freedom and cosmosystemic time, individual and collective freedom can be examined. This enables a more comprehensive and in-depth examination of freedom in the present. Consequently, beginning with Aristotle, who addresses the concept of freedom and equality in great detail, although from an older historical perspective, is nevertheless more contemporary in a cosmosystemic context. This is because he lived and described an era of universal freedom (political, economic, and individual) in contrast to the modern era, which can be defined as a transmissive state (Contogeorgis, 2013). Aristotle would define the “Be ruled by none” (Μη άρχεσθαι υπό μηδενός) as a fundamental principle of democracy. According to Contogeorgis (2013), there are two ways of approaching democracy: a positive one that defines it as autonomy and a negative one that defines it as "Bε ruled by none". Contogeorgi's approach to freedom appears to be more comprehensive than the preceding conceptions, as he asserts that in its fullest form, freedom encompasses both one's biological needs and one's social needs. This entails the disengagement from the constraints imposed by nature and the liberation from the dependencies created by power in the domains of labor and politics. Furthermore, freedom is typically distinguished into three categories: individual, social, and political (Blackstone, 1973; Talbot, 1909). However, it is important to recognize that these divisions are not mutually exclusive and that freedom is a unified concept.

Individual freedom encompasses the private life of man and represents the initial form of freedom to be asserted, as it is a fundamental prerequisite for attaining universal freedom. This form of freedom can be observed in societies of the early anthropocentric era, which were characterised by a pre-representative political

system. Examples of such societies can be found in societies that emerged from feudalism (Contogeorgis, 2006). Social freedom is concerned with how individuals interact with institutions and other individuals, and the conventions that emerge from these interactions within the context of social subsystems. These subsystems may include professional and economic interactions, such as those experienced by freelancers, individuals, or job seekers. This concept is predicated on the notion of attaining individual freedom, which is evident in societies that espouse anthropocentric values. In such societies, the demand for freedom in the social domain has emerged, as exemplified by the classical Athenian era and the Byzantine period. Political freedom, in conclusion, refers to the status of the individual within the broader context of the state and society. It represents the ultimate phase in the pursuit of universal freedom, which is contingent upon the existence of individual and social freedom. Anthropocentric systems, such as those of classical Greek democracy, provide an example of this phenomenon. In such systems, the citizen is an integral part of the political system and participates in decision-making as a demos (δήμος) (Contogeorgis, 2021).

In light of the preceding arguments, it can be concluded that freedom is neither an inherent attribute of the will nor a supernatural endowment bestowed upon humanity by God or nature. Conversely, it is a quality that is gradually acquired over the course of human social evolution and is identical with autonomy. As a result of his social existence and the laws of evolution, humankind gradually develops within the context of social practice those qualities that make it universally free.

I.C.T, Progress & Freedom

The field of information and communication technology is arguably one of the most developed sectors in the global technology and economy. These new technologies are having a significant change on society, having already penetrated the domains of work and communication, thereby indicating their potential to become the future of work. Accordingly, one perspective maintains that novel technologies will enhance production and democratize access. In contrast, the opposing viewpoint asserts that they will gain absolute control, resulting in significant job losses and insecurity (Mayer-Schönberger & Cukier, 2013). In conducting a historical analysis of ICT, Coleman (2009) argues that each new technological advancement has the potential to enhance individual autonomy, access to information, and engagement in the public sphere. From the telegraph to radio, cable television, the Internet, and finally mobile phones, he posits that societies have progressed from a stage of representation and voting on issues to a new stage of direct action and decision-making. Moreover, Morris (1999) posits that the Internet will inevitably erode the sovereignty of rulers over the people. However, this argument overlooks the distribution of information and the potential for other entities to control the Internet and ICT.

The Internet, as the epitome of ICT, has facilitated the establishment of digital discussion forums, online communities, open-access libraries, and other digital platforms. However, it has also been employed by governments to reinforce the extant system through the incorporation of citizen participation in party decisions and digital votes for representatives, given that the assumption that individuals will accrue social capital merely as a consequence of their interactions in the media is being called into question. Information and communication technology has the potential to facilitate a two-way dialogue between citizens and their government (Trechsel & Mendez, 2005). It is therefore evident that ICT has the potential to facilitate progress and freedom, yet simultaneously reinforce and perpetuate existing social and economic orders.

Information and communication technology has direct application in the industrial sector, thus affecting the economy, developing production and supply chains, and enabling work beyond the territorial boundaries of a state through the digitization of information (Howcroft & Richardson, 2012). Examples include India, Vietnam, and other developing countries that offer inexpensive labor and attract software and service companies (Thompson & Smith, 2010; Warhurst et al., 2006). Nevertheless, these initiatives are not solely driven by financial considerations; they are frequently also shaped by the influence of global markets.

The evolution of information and communication technology has extended beyond the realm of traditional mobile phones and personal computers. The advent of the Internet of Things (IoT) has led to the proliferation of smart devices, including wearables, smart glasses, televisions, home appliances, and even automobiles, all of which are equipped with internet connectivity. These devices are capable of interacting with one another, thereby facilitating interconnectivity. The potential offered by smart devices has not been overlooked in the market, as evidenced by the proliferation of paid applications pertaining to health and image (Holtgrewe, 2014). Furthermore, businesses are increasingly driven towards automation and interconnectivity, creating Industry 4.0, which is based on technological advances in ICT and artificial intelligence, thereby enhancing efficiency and production quality (Zhong et al., 2017). The promised economic growth associated with market liberalization

reveals a fundamental contradiction. Increased productivity no longer equates to job creation as it did in the past. With the integration of advanced technologies into the production process, manual labor is being increasingly replaced by automation, while cognitive labor is also being significantly displaced by artificial intelligence. As a result, although economic output expands, employment opportunities decline (Autor & Salomons, 2018).

A report by the McKinsey Global Institute (2017) projects that automation could significantly disrupt global labor markets by 2030, potentially displacing between 400 and 800 million jobs. This large-scale study, which analyzed 800 occupations across 46 countries, estimates that up to one-fifth of the global workforce may be impacted by robotic automation. The findings highlight the accelerating pace at which automation technologies are being integrated into various sectors, posing considerable challenges for employment stability, particularly in routine and predictable occupations. In this context, we are confronted not merely with rising unemployment, but with a more profound phenomenon: the systemic exclusion of labor. Consequently, the much-lauded investments associated with economic freedom and deregulated markets may no longer lead to job creation, as labor itself becomes progressively unnecessary for the production of goods and services.

In recognition of the potential challenges that the aforementioned work practice may pose to societal cohesion and interpersonal relationships, the concept of Industry 5.0 and Society 5.0 was introduced in Japan's 5th Science and Technology Basic Plan. In an article published in 2018, Fukuyama posits that societies evolve through a series of stages. The characteristics of Society 1.0 include groups of people who are hunter-gatherers and who live in a harmonious coexistence with nature. The formation of groups based on farming and the increase in organization and nation-building that occurred during the formation of Society 2.0 represent a significant shift in societal structure. Society 3.0 is a society that promotes industrialization through the Industrial Revolution, whereas Society 4.0 is an information society that achieves increased added value by connecting intangible assets through information networks. In this evolutionary trajectory, Society 5.0 is an information-centric society, wherein anthropocentrism will be a defining feature of economic and social development, enabled by the fusion of the digital and physical realms. In 2021, the European Commission presented a proposal for the reorganization of European industry, with a focus on societal considerations. This proposal also advocated for the promotion of Industry 5.0, which was presented as a means of articulating the prospective flourishing of European industry and, by extension, society (Breque et al., 2021). Figure 1 illustrates this proposition.

Figure 1. Society 5.0 Source: *Keizai Koho Center*

Huang et al. (2022), posit that industry is an integral component of society, actively contributing to its development in a mutually reinforcing relationship. In light of these considerations, the challenges associated with Society 5.0 include population aging, the depletion of available energy resources, environmental pollution, and complex international situations. Conversely, the opportunities presented by Industry 5.0 include the convergence of digital and physical space, the creation of future employment opportunities, and the

development of new roles for workers, human-robot collaboration, smart green entrepreneurship, and the formation of a hybrid cyber-human system.

In accordance with Sen's (1999) conceptualization, development is defined as the expansion of individuals' capabilities to live a life they value. The development of capabilities is not contingent on individual income; rather, it is concerned with the freedom to access services such as education, welfare, and social security. These factors, in conjunction with access to information, ultimately enhance people's social options. Additionally, Sen posits that real income is an insufficient analytical measure for comparisons and the capture of well-being. He defines freedom as the primary determinant of individual initiative and social effectiveness, recognizing five dimensions of freedom: political freedom, economic facilities, social opportunity, equity, and transparency guarantees, as well as protective security. Furthermore, he argues that decisions on wealth distribution and development strategies should be democratic, not determined by succession to power through electoral processes, but rather by continuous citizen involvement in setting economic priorities.

The contemporary nation-state global system is distinguished by the proliferation of the economic sector and its global expansion facilitated by information and communication technologies. Concurrently, while individuals who have attained personal autonomy may possess the capacity to "manage their own affairs," they are devoid of economic and political authority. Consequently, economic growth does not inevitably facilitate the advancement of political or economic liberty. In many instances, it rather gives rise to their subjugation. As previously outlined, the influence of technological advancement on the economy gradually results in the restructuring of the social fabric and the rejection of labor. This does not entail an increase in unemployment; rather, it signifies the emancipation of citizens from the production process (Contogeorgis, 2013). By drawing on information from the Greek world and employing the method of comparative analogy, we can discern that the underlying cause of this phenomenon can be attributed to the emergence of a state-centric system in the Western world. During this transitional period, the advancement of ICT will be of great importance, not only for their capacity to enhance access to information, civic participation, and individual autonomy, but also for the increasingly sophisticated mechanisms of surveillance and control they enable. From a Foucauldian perspective, these developments reflect a shift in the modalities of power, from overt coercion to more subtle, decentralized forms of disciplinary and biopolitical control embedded within technological systems. ICT thus functions as a site of both empowerment and subjugation, where freedom is not simply expanded but also redefined within new regimes of visibility and data-driven governance. This dual character necessitates a critical re-evaluation of freedom, understood not as the absence of constraint but as a condition produced and regulated through technologies. In this context, freedom becomes deeply entangled with the political logic of governmentality, as individuals are simultaneously enabled and constrained by the very infrastructures that claim to serve their autonomy (Foucault, 2008).

The transition to a democratic regime, and thus to full freedom for the entire state, requires the accumulation of vastly increased communicative energy, which is now possible through the ongoing technological revolution in ICT. This conclusion is an inevitable consequence of the Industrial Revolution's role as a catalyst for the transformation of feudal societies, alongside the emergence of civil society. Similarly, the advancement of ICT offers a multitude of avenues for reimagining the interconnections between individuals, politics, and the economy. The intermediary role of authoritative bodies, such as political parties and pressure groups, may become less necessary and increasingly symbolic (Contogeorgis, 1996, 2015).

2. Discussion

The concept of freedom remains complex, having engaged numerous scholars throughout history. In conjunction with the significant advancements in information and communication technologies, the notion of freedom emerges in a novel context. This study examines the multifaceted aspects of freedom, as delineated by Contogeorgis (2015; 2013), who identifies three distinct levels. Firstly, the individual level, which permits personal agency and the articulation of actions within one's private sphere; secondly, the social level, which necessitates the individual and enables participation and collaborative decision-making in communal activities, such as employment; and thirdly, political freedom, which encompasses both individual and social freedoms, thereby allowing citizens to engage in political decision-making. Additionally, the trajectory of freedom in contemporary society has been explored, with reference to the Greek cosmosystem, leading to the conclusion that the present era is characterized only by individual freedom. However, within the professional domain, the act of signing a contract often entails a forfeiture of social freedom, whereas at the political level, citizens frequently lack substantive decision-making authority (Contogeorgis, 2013). Ultimately, this analysis posits that

freedom is not an inherent trait, but rather a concept situated within the social fabric and the dynamics of its evolution.

The relationship between ICT and progress, and by extension of freedom, was examined. This dual capacity of ICT, as both an enabler and inhibitor of freedom, suggests that technological progress must not be assessed solely through the lens of efficiency or modernization. Instead, it must be situated within a broader socio-political framework that accounts for the evolving dynamics of power and the conditions under which freedoms are exercised or restricted. The notion of freedom, therefore, cannot be confined to the individual level, where the use of smart devices may appear to enhance autonomy. It must also account for the structural conditions, both technological and institutional, that shape the possibilities for social interaction and political engagement. As Sen (1999) emphasizes, development and freedom are mutually reinforcing only when individuals are not merely passive users of technology but active participants in shaping its direction and purpose. Thus, a comprehensive evaluation of ICT and its impact on freedom must grapple with this tension. While digital technologies hold transformative potential, their deployment within neoliberal economic systems and state apparatuses often prioritizes control, commodification, and efficiency over democratic inclusion and ethical accountability. Recognizing this tension is essential in redefining freedom in the digital age—not as a static or universal attribute, but as a historically contingent, socially embedded, and politically contested condition.

According to the international literature, progress most commonly pertains to economic development, the modernization of production, the integration of new technologies with industrial production and labor, and the emergence of new forms of work and society, such as Society 5.0 and Industry 5.0 (Breque et al., 2021; Fukuyama, 2018; Huang et al., 2022). In this context, freedom is conceptualized as the individual's participation and facilitation in utilizing smart devices to enhance daily life and work. According to Sen (1999), individual freedom encompasses the ability to choose a life that one values, as well as the opportunity to engage in a more collectivist approach to decision-making.

This divergence between the Greek cosmosystemic realization of freedom and the contemporary structures of Western liberal democracies invites a comparative analysis with modern theoretical frameworks. Liberal theory, particularly as articulated by Rawls (1971) and Berlin (1969), prioritizes individual autonomy and negative liberty as the core of political freedom. Within this framework, the liberal state guarantees civil rights and liberties, yet often leaves the realms of economic and social power relatively untouched. The result is a form of individual freedom that is formal rather than substantive, as it neglects the structural inequalities and asymmetries of power embedded in the economic and political systems. From this perspective, the individual is nominally free to participate in the market and electoral politics, but lacks any real agency over the institutional forces that shape their lived reality. In contrast, the cosmosystemic approach, as advanced in this study, views freedom not only as an individual capacity but as a collective condition that must be institutionally grounded in social and political participation. This perspective challenges the adequacy of liberal democratic models by arguing that they have not yet fully integrated social and political freedoms, as envisioned in the Greek paradigm. The continued alienation of the citizen from both economic ownership and political sovereignty reveals the limitations of current democratic practices, which, despite technological advancements, remain fundamentally representative and elite-driven. Furthermore, theories of deliberative democracy, such as those proposed by Habermas (1996), offer an attempt to reconcile this gap by emphasizing the importance of communicative action and inclusive public discourse. However, even these frameworks often operate within the constraints of capitalist modernity, where institutional reform is favored over systemic transformation.

Therefore, when viewed through the lens of cosmosystemic gnosiology, contemporary theories of freedom appear partial and constrained by their historical and epistemological contexts. Liberal theorists such as Berlin (1969) distinguish between negative and positive liberty, emphasizing freedom from interference as the cornerstone of modern liberal democracies. Similarly, Rawls (1971) conceives of justice as fairness, grounding individual liberty in the structure of constitutional democracy but largely abstracting from economic inequalities that limit real agency. These frameworks foreground the individual as the primary unit of analysis but fail to institutionalize mechanisms for collective autonomy and shared governance. The widespread adoption of digital technologies may give the illusion of participation and empowerment, yet it often masks deeper exclusions from decision-making processes at the social and political levels.

This study approaches freedom as autonomy, understood as the individual's capacity for self-determination. In this sense, freedom stands in direct opposition to dependency, whether imposed or voluntarily accepted, which is synonymous with power or domination, and it is fundamentally distinct from the concept of rights. Freedom can be analytically differentiated into three dimensions of individual, social, and political.

Individual freedom pertains to the personal choices and actions of the human being as a social agent. Social freedom relates to the agreements and contracts that an individual enters into with subsystems, such as those within the labor domain. Political freedom encompasses the individual's relationship with the collective whole, particularly in terms of participation in public decision-making. The cumulative realization of individual, social, and political freedoms is encapsulated in the concept of universal freedom.

To sum up, the use of ICT at the individual level, can significantly contribute to the expansion of individual freedom and the gradual transition to political and social freedom. Nevertheless, the engagement with the political system via the Internet remains, at present, an external phenomenon. The principle of individual freedom is predicated on the notion of equality, particularly in matters that serve to legitimize it. These include the objectification of law and, by extension, equality before the law or the demand for equality in property ownership. When individual freedom is the primary consideration, the principle of equality can also be extended to the social and political spheres. The advent of social and political freedom does not negate the foundational tenets of equality that underpin individual liberty. Conversely, it broadens the scope of equality to encompass provisions that substantiate the individual as socially and politically free (Contogeorgis, 2015). In an era of transition from civil society to political society, the key issue is not to oppose evolution but to move alongside it and understand it. The imperative for the technological generation is to determine how it will maintain pace with this evolution and integrate the forthcoming changes.

Conclusion

The aforementioned reasoning extends beyond mere utopian formulation and remains relevant in contemporary society. To attain social and, subsequently, political freedom, it is imperative for society to evolve from a mere aggregation of individuals into a cohesive institution. This evolution necessitates the integration of individual interests into collective interests, whereby the societal framework will transition from relying solely on voting as a mechanism for electing representatives to employing it as a means for collectively making executive decisions. Such a transformation will inevitably guide societies toward progressive evolution, fostering a mindset centered on common interest and collectivity. However, prior to this advancement, it is essential to reassess and clarify fundamental concepts to facilitate a deeper understanding among individuals regarding the principles that inform their daily choices. To sum up, this paper has provided a brief examination of the concept of freedom and its significance in the context of progress.

Recommendations for future research

Future research should concentrate on elucidating the concepts of democracy, equality, and rights. Information and Communication Technologies present opportunities for enhancing individual freedom and integrating individual interests into the collective framework; however, this integration does not equate to legality, as technology primarily serves as a conduit for individuals to engage directly with communities, form groups, and participate in decision-making processes. In brief, transformative practices and engagement evoke reflection while simultaneously presenting opportunities for societal members to contemplate their values. They facilitate innovative thinking and the appropriation of technology with the overarching aim of achieving universal freedom and concurrently fostering the development of society as a collective institution.

Statement of Researchers
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Nikolaos P. Sfakianos: Conceptualization, methodology, software, investigation, validation, writing- original draft preparation, writing - review & editing, data curation.
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In accordance with the ethical standards governing research involving human subjects, approval was not required for this study because it did not involve any participants.
Author Biography
Nikolaos P. Sfakianos, pursued his undergraduate studies in Sociology at Panteion University, where he later completed postgraduate studies in both Sociology and Social Psychology. Since 2021, he has been a doctoral candidate in the Department of Psychology at Panteion University, focusing on the subject of social comparison on social media platforms.

He has been actively involved in various research projects as a social researcher since 2019 and has maintained a consistent presence at international academic conferences since 2015, with over ten oral presentations to his credit. His research interests span a wide range of topics within the fields of research methodology, social psychology, media psychology, and social theory. His academic work demonstrates a strong interdisciplinary orientation, aiming to bridge theoretical and empirical approaches to the study of social behavior in contemporary digital contexts. Also he continues to contribute to the academic community through both collaborative research and independent scholarly inquiry.

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BOOK REVIEW OPEN ACCESS

Book Review: From legacy media to going viral: generational media use and citizen engagement

Robert H. Wicks, Shauna A. Morimoto, and Jan LeBlanc Wicks

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Book Reviewer: Bharat Dhiman[1c]

[1] Department of Journalism, Lady Shri Ram College for Women, University of Delhi, New Delhi, India
[c]**Correspondence Author:** Department of Journalism, Lady Shri Ram College for Women, University of Delhi, New Delhi, India, Email: bharatlsr@lsr.du.ac.in

Review

The Book arrives as a timely and comprehensive exploration of the evolving media ecosystem. The book provides an interdisciplinary bridge between traditional mass communication paradigms and emergent digital behaviors. The first chapter draws heavily on Lasswell's and McLuhan's frameworks, arguing that while the one-to-many broadcast model remains relevant, it has been fractured by the many-to-many dynamics of social media. The authors skillfully map out how concepts like gatekeeping, agenda-setting, and framing are being renegotiated in the digital age (p. 8).

The second chapter presents a compelling genealogy of technological innovations from the printing press to radio, television, cable news, and the internet, demonstrating that each communication revolution both displaces and incorporates its predecessor. This diachronic view challenges the "digital exceptionalism" often found in new media discourses. The case study of CNN's coverage of the Gulf War (p. 41) is juxtaposed with the

live-streamed Black Lives Matter protests in 2020, drawing parallels between spectacle and immediacy across eras.

Chapters Four and Five argue that virality is fundamentally about affect, emotion, and networked amplification. Drawing on Jenkins' concept of "spreadability" and Papacharissi's work on "affective publics", the authors position the viral as a site where identity, ideology, and interface collide. This is best illustrated in their analysis of the "Ice Bucket Challenge" and Greta Thunberg's climate activism, both of which went viral but in dramatically different ways. The former relied on gamification and spectacle, while the latter harnessed moral urgency and intergenerational solidarity. By presenting these examples side by side, authors reveal how platform affordances, algorithmic visibility, and user engagement co-construct the viral arc (p. 88). The book is impressive in its breadth. Utilizing both qualitative and quantitative methods, the authors incorporate ethnographic interviews with content creators, social media analytics, and textual analysis of news reports (p. 103). Each case study is meticulously crafted, with a keen eye for political economy, media aesthetics, and cultural context.

Chapter Six, which blends data from Facebook's oversight board with critical discourse analysis of viral conspiracy videos. The authors caution against overemphasizing technological determinism, instead arguing that "virality without verification" poses a significant risk to democratic discourse. This concern is echoed throughout the book, positioning it within the urgent field of media literacy and civic responsibility. The authors cite the harassment campaigns of Gamergate and the weaponization of memes by far-right groups as evidence that participatory power can also reinforce toxicity and polarization. The book discusses how women of color activists are disproportionately targeted online and how algorithms may reinforce structural inequalities (p. 151). By citing the work of Safiya Umoja Noble and Ruha Benjamin, the authors amplify marginalized perspectives within the media studies canon (p. 155).

Chapter Eight explores the regulatory gaps that have allowed platforms to operate with minimal oversight. They critique Section 230 of the U.S. Communications Decency Act and highlight ongoing efforts by the EU and India to impose content moderation frameworks. The authors call for a "new media ethics" that holds both platforms and users accountable. They advocate for algorithmic transparency, data justice, and equitable representation in content moderation teams. These recommendations are not utopian but grounded in policy proposals and empirical realities, making them valuable to both practitioners and scholars. Each chapter ends with reflective questions, key terms, and discussion prompts that encourage classroom engagement.

Conclusion

The book also addresses global trends, but the empirical focus remains primarily Western, with limited engagement with media ecosystems in the Global South. Given the rise of platforms like WhatsApp in Brazil or WeChat in China, a more geographically diverse set of case studies would have enriched the analysis. The book touches upon AI and deep learning, but it could go further in interrogating how generative AI tools like ChatGPT or Sora are reshaping content creation and journalistic practices. As AI becomes more embedded in media production, future editions could expand this discussion to include epistemological and ontological implications. The authors' critique platform capitalism; they stop short of envisioning alternatives beyond regulatory reform. More engagement with cooperative platforms, public service algorithms, or decentralized networks could have offered a more radical reimagination of the digital public sphere. The book stands as a vital and timely intervention in media scholarship. It combines theoretical sophistication, empirical depth, and pedagogical clarity to examine the ongoing transformation of media landscapes. Its insistence on connecting the dots between legacy and digital, power and participation, structure and agency, makes it an indispensable reading for anyone interested in the future of communication.

Statement of Researchers

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Author Biography	
Bharat Dhiman	Dr. Bharat teaches Journalism at the prestigious Lady Shri Ram College for Women, University of Delhi, New Delhi, India. His areas of interest are Visual Communication, Film Studies, Celebrity Journalism, and Digital Media Production.

3. References

Wicks, R. H., Morimoto, S. A., & Wicks, J. L. (2024). *From legacy media to going viral: generational media use and citizen engagement.* Routledge. https://doi.org/10.4324/9781003390206