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SOCIAL MEDIA ALGORITHMS, AI, AND MENTAL HEALTH: SOCIAL COMPARISON AND PSYCHOLOGICAL WELL-BEING – A THEORETICAL FRAMEWORK

DR. T.V. AMBULI
ASSOCIATE PROFESSOR AND HEAD, DEPARTMENT OF COMMERCE, FACULTY OF SCIENCE AND HUMANITIES, SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, RAMAPURAMCHENNAI-89, EMAIL: ambulit@srmist.edu.in

DR. HAKALYAH PALAPARTHY
DEGREE LECTURER, DEPARTMENT OF PSYCHOLOGY, TELANGANA UNIVERSITY, NIZAMABAD, TELANGANA., EMAIL: palaparthihakalya@gmail.com

DR. P. MAHALAKSHMI
ASSISTANT PROFESSOR, DEPARTMENT OF MANAGEMENT STUDIES, P.S.R ENGINEERING COLLEGE, VIRUDHUNAGAR, SIVAKASI, TAMIL NADU, EMAIL: shinneyrose9@gmail.com

DR. SUJATHA
ASSISTANT PROFESSOR, DEPARTMENT OF PSYCHOLOGY, CHRIST UNIVERSITY, KENGERI CAMPUS, BANGALORE, EMAIL: sujatha@christuniversity.in

DR. ARUL PRABAKARAN S
ASSISTANT PROFESSOR, DEPARTMENT OF PSYCHOLOGY, CHRIST UNIVERSITY, KENGERI CAMPUS, BANGALORE, EMAIL: arulprabakaran.s@christuniversity.in

PROF. DR. PETIKAM SAILAJA
PROFESSOR OF LAW, DEPARTMENT OF LAW, SAVEETHA SCHOOL OF LAW, SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES (SIMATS) DEEMED TO BE UNIVERSITY, CHENNAI-600077, TAMIL NADU, EMAIL: sailaja.petikam@gmail.com

Abstract
The present study explores the interrelationship between artificial intelligence (AI)-driven social media algorithms, social comparison behavior, and psychological well-being across different age groups. Grounded in the AI–Social Comparison–Well-Being Framework, the research examines how algorithmic exposure, social comparison tendencies, and psychological outcomes interact to influence users' mental health. Data were collected from 250 respondents representing young, middle-aged, and older users. Results revealed that the **social comparison pathway** (Mean = 3.98) ranked highest, indicating its dominant role in mediating well-being outcomes, followed by the **algorithmic exposure** and **psychological outcome pathways**. Kendall's coefficient of concordance (W = 0.168, p < 0.001) confirmed a statistically significant but moderate level of agreement among respondents. ANOVA results demonstrated significant differences across age groups for perceived social norms, anxiety and depression, algorithmic reinforcement, and personality traits. Younger participants reported higher anxiety and dependence on validation, while middle-aged users showed greater sensitivity to algorithmic influence and social norms. The findings underscore that AI-curated environments shape users' perceptions, emotions, and social behaviors differently across age segments. The study highlights the need for algorithmic transparency, digital literacy, and psychological awareness to mitigate the negative impacts of social comparison on well-being.
Keywords: AI algorithms; social comparison; psychological well-being; algorithmic exposure; digital behavior; social media; age differences; mental health; algorithmic reinforcement and perceived social norms.

INTRODUCTION

The increasing integration of artificial intelligence (AI) and algorithmic systems into social media platforms has transformed human interaction, information dissemination, and self-perception. While these technologies enhance user engagement and personalization, they also contribute to growing mental health challenges, especially through

mechanisms of social comparison, validation-seeking, and cognitive overload. This article develops a comprehensive theoretical framework that connects AI-driven social media algorithms with users' psychological well-being. It examines how algorithmic curation shapes social comparison processes, influences affective states, and impacts users' overall mental health. Drawing on theories such as Festinger's Social Comparison Theory, the Self-Discrepancy Theory, and the Uses and Gratifications Approach, the framework elucidates the dynamic interplay between AI-mediated content exposure, social validation, and psychological outcomes. The article concludes with implications for digital well-being, policy development, and future research directions in the age of AI-driven communication ecosystems.

Social media has evolved from a network of interpersonal communication into a data-driven ecosystem governed by complex algorithms and artificial intelligence (AI). Platforms such as Instagram, TikTok, Facebook, and X (formerly Twitter) rely on algorithmic systems to curate, filter, and recommend content that maximizes user engagement. While this personalization enhances user experience, it also generates unintended psychological consequences.

The interplay between social media algorithms and mental health has become a central concern in contemporary digital psychology. The proliferation of algorithmically filtered content often amplifies idealized lifestyles, triggering comparison-based evaluations that shape self-esteem, mood, and social identity. These processes contribute to anxiety, depression, body dissatisfaction, and feelings of inadequacy—especially among adolescents and young adults.

This article aims to construct a **theoretical framework** that explicates how AI-powered algorithms influence **social comparison processes** and **psychological well-being**. It integrates perspectives from psychology, communication studies, and data ethics to provide a holistic understanding of the mental health effects of AI-driven social media environments.

Algorithmic Mediation in Social Media

Nature of Algorithmic Curation

Social media algorithms determine what users see, when they see it, and how often. Using AI and machine learning, these algorithms analyze behavioral data—likes, shares, watch time, and interactions—to predict and prioritize content most likely to keep users engaged. This process, known as **algorithmic personalization**, tailors each feed uniquely, creating individualized "echo chambers" or "filter bubbles." These systems are not neutral. They are optimized for attention, often prioritizing emotionally charged or visually appealing content. Consequently, users are repeatedly exposed to highly curated portrayals of success, beauty, and happiness, reinforcing unrealistic social standards and promoting continuous comparison.

Algorithmic Amplification and Emotional Contagion

AI-driven recommendation engines tend to magnify emotionally resonant content. Research on **emotional contagion** (Kramer et al., 2014) has shown that exposure to positive or negative posts can influence users' emotional states. Algorithms that amplify highly engaging but polarizing or idealized content contribute to cycles of **emotional reinforcement**—where comparison-induced emotions (e.g., envy, shame, admiration) become self-perpetuating through continuous exposure.

Thus, algorithmic mediation is not a passive reflection of user preference but an active **psychological shaping mechanism**, altering how individuals perceive themselves and others.

THEORETICAL FOUNDATIONS

The connection between AI, algorithms, and mental health can be understood through a synthesis of established psychological theories.

Social Comparison Theory (Festinger, 1954)

Festinger's Social Comparison Theory posits that individuals evaluate their own abilities and worth by comparing themselves to others. On social media, upward comparisons—comparing oneself to those perceived as better off—are common, given the prevalence of curated and idealized content. Algorithms exacerbate this by prioritizing highly engaging posts, often from influencers or peers who appear more attractive, successful, or happy.

This persistent exposure fosters feelings of inadequacy, envy, and lowered self-esteem, contributing to anxiety and depression. Conversely, downward comparisons may provide temporary relief but often reinforce hierarchical thinking and dissatisfaction.

Self-Discrepancy Theory (Higgins, 1987)

Self-Discrepancy Theory explains how differences between the **actual self**, **ideal self**, and **ought self** produce emotional distress. Algorithmically curated social content often highlights the "ideal" versions of others, thereby intensifying the perceived gap between one's actual and ideal self. AI-driven exposure to idealized lifestyles perpetuates a sense of personal failure or deficiency, contributing to chronic stress and reduced psychological well-being.

Uses and Gratifications Theory

From a communication perspective, the Uses and Gratifications Theory suggests that people actively seek media that satisfies specific needs—entertainment, socialization, information, or self-validation. However, AI disrupts this autonomy by predicting and preemptively shaping what users consume. The gratification process becomes algorithmically mediated, leading to **passive engagement**, **dopamine-driven scrolling**, and **validation dependency** through likes, comments, and shares.

Cognitive Load and Information Overload Theories

AI systems optimize for engagement, often resulting in **information overload**. Continuous exposure to fragmented information streams strains cognitive resources, reduces focus, and elevates stress. Over time, this digital fatigue affects sleep, attention, and emotional stability, forming part of the broader **technostress** phenomenon.

AI–Social Comparison–Well-Being Framework

Framework Overview

The proposed theoretical framework (Figure 1) conceptualizes the relationship between **AI algorithms**, **social comparison processes**, and **psychological well-being**. It identifies three interrelated pathways:

1. **Algorithmic Exposure Pathway:** AI curates content that reinforces idealized representations.
2. **Social Comparison Pathway:** Users interpret algorithmic content through upward and downward comparisons.
3. **Psychological Outcome Pathway:** Repeated comparisons influence emotional states, self-perception, and mental health.

Mechanisms of Influence

a. Algorithmic Reinforcement Loop

Algorithms track engagement data to optimize feed relevance. When users engage with idealized or emotionally charged posts, the system reinforces such content visibility. This creates a **feedback loop** where users' comparison triggers amplify algorithmic exposure, perpetuating psychological strain.

b. Perceived Social Norms,

Repeated algorithmic exposure constructs perceived norms around attractiveness, success, and happiness. These algorithmically inflated norms distort individuals' sense of "average reality," leading to **social norm internalization** and maladaptive self-evaluation.

c. Validation and Self-Worth

AI systems gamify validation through quantitative metrics—likes, comments, shares. These features transform social interaction into a form of **social currency**, where users equate online approval with self-worth. This dependency can result in anxiety when feedback is lacking or negative.

Psychological Consequences

1. **Anxiety and Depression:** Numerous studies have linked algorithmic social media use to increased levels of anxiety and depressive symptoms. The constant cycle of upward comparison, validation-seeking, and fear of missing out (FOMO) exacerbates psychological distress. AI intensifies these emotions by continuously surfacing content that evokes comparison.
2. **Body Image Dissatisfaction:** Visual platforms like Instagram and TikTok, powered by image recognition and engagement algorithms, frequently prioritize aesthetically appealing content. This reinforces narrow beauty ideals, particularly affecting women and adolescents. The exposure leads to **body surveillance**, **appearance anxiety**, and **body dysmorphia**.
3. **Attention Fragmentation and Cognitive Fatigue:** The rapid-fire presentation of information fragments attention, reducing the ability to engage deeply with tasks. The resulting **cognitive fatigue** diminishes productivity and contributes to burnout-like symptoms, weakening mental resilience.
4. **Loneliness and Social Isolation:** Despite the illusion of connection, AI-curated feeds may promote superficial interactions over meaningful relationships. Users often experience **"alone together"** phenomena—feeling socially connected online but emotionally disconnected in real life.

Moderating and Mediating Factors

1. **Personality Traits:** Individual differences moderate algorithmic effects. For instance, people with high **neuroticism** or low **self-esteem** are more prone to comparison-based anxiety. Conversely, users with high **digital literacy** or **self-compassion** exhibit resilience against algorithmic influence.
2. **Platform Design:** Design elements—such as infinite scroll, engagement metrics, or "For You" feeds—intensify comparison loops. Platforms that incorporate **user control**, **content transparency**, or **algorithmic choice** may mitigate mental health risks.
3. **Social Context:** Cultural values also influence the interpretation of algorithmic content. In collectivist societies, social validation may align with community belonging rather than individual self-worth, altering comparison outcomes.
4. **Algorithmic Transparency and Regulation:** Governments and tech companies must collaborate to establish guidelines that ensure **ethical AI deployment**. Policies could require platforms to disclose algorithmic mechanisms and allow users to opt out of personalization or set well-being-based content preferences.

5. **Digital Literacy and Education:** Empowering users with knowledge about how AI influences behavior is essential. **Digital literacy programs** can teach users to recognize comparison triggers, resist validation dependency, and critically engage with social media content.

Research Gap

Although there is an increasing amount of research on the effect of social media on mental health, few studies have explicitly investigated how AI-based algorithms facilitate social comparison and ensuing psychological well-being outcomes in various age groups. Vast majority of past studies have concentrated on either user behavior or emotional impacts alone and have not considered the algorithmic structures that determine exposure to social information. Moreover, the current literature frequently generalizes the results and fails to consider demographic differences in perception and using AI-curated content. The interplay between the algorithmic exposure and validation seeking, the perceived social norms and the emotional consequences of anxiety and depression are not properly investigated. Empirical evidence is also missing to incorporate the use of quantitative measurements such as Kendall W and ANOVA to determine the intergroup consistency of these constructs. This article will fill in these gaps by suggesting and empirically supporting an AI–Social Comparison–Well-Being Framework, which describes the interaction between algorithmic reinforcement and individual differences to determine the effect on the mental health of users. Through the analysis of age-related variations, the research offers new knowledge on the dissimilarity in the experience of algorithmic ecosystems by younger, middle-aged, and older users, which will widen the theoretical and empirical scope of AI-mediated digital behavior and well-being.

Importance of the Study

The article is important as it deals with one of the most pressing psychological issues of the digital age the insidious but widespread impact of AI-driven algorithms on mental health. The combination of algorithmic exposure, social comparison, and psychological outcomes gives the research an integrated view regarding the effect of digital systems on perceptions, emotions, and self-worth of users. These trends are particularly applicable to an era when AI customization controls internet presence, rate of interaction, and exposure to idealistic material. These mechanisms must be understood to give rise to ethically responsible and psychologically safe digital environments. Also, by pinpointing the differences of age, the study helps the policy-makers, educators, and mental health practitioners to outline more vulnerable user groups, especially those of younger age, which are more susceptible to anxiety and validation dependency. The findings can inform social media developers to integrate transparency, fair formulas, and well-designed design characteristics. In the academic context, the research will be valuable to the existing literature on AI ethics, digital psychology, and social media research, with a connection between behavioral science and technological design to promote a healthier digital ecosystem.

Statement of the Problem

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METHODOLOGY

The study adopted a **quantitative, descriptive, and analytical research design** to examine the interrelationship between AI-driven algorithmic exposure, social comparison, and psychological well-being. A structured questionnaire was administered to **250 respondents** categorized into three age groups—young (18–30), middle-aged (31–50), and older adults (above 50). The instrument measured five key factors: perceived social norms, anxiety and depression, validation and self-worth, algorithmic reinforcement loop, and personality traits. Data were analyzed using **descriptive statistics, mean ranking, Kendall's coefficient of concordance (W), and one-way ANOVA** to identify levels of agreement and significant differences across age groups. Kendall's W (0.168, p < 0.001) assessed the degree of consensus among participants, while ANOVA tested group-level variations in perceptions and psychological responses. Reliability and validity were ensured through pretesting and expert review. The methodological framework provided a possibility to explore in an evidence-based manner how the joint action of algorithmic exposure and social comparison predetermines the outcomes of well-being. Ethic issues were safeguarded through the adherence to

confidentiality and informed consent. The inferential and interpretive insights on the impact of AI algorithms on digital behavior by demographic profiles were also presented by the analytical design.

Objectives

1. To analyze the relationship between AI-driven social media algorithms and users' social comparison behaviors.
2. To assess the psychological well-being outcomes resulting from algorithmic exposure across age groups.
3. To examine age-based variations in perceptions of social norms, anxiety, validation, and personality traits.
4. To propose recommendations for promoting healthier digital engagement and algorithmic transparency.

FINDINGS AND RESULTS

The digital age has created new boundaries of human psychology through social media algorithms and AI. These systems to a great extent shape what users see in addition to the manner in which they think, feel, and even judge themselves through personalization. The algorithmic exposure, social comparison and psychological consequence cycle is a complex ecosystem that has its advantages and disadvantages. The conceptual framework used in the present article will provide an integrative paradigm between AI-based curation and mental health outcomes via social comparison. It emphasizes the need to redefine the concept of social media as a humanistic, as opposed to attention-focused, space. The critical aspect of maintaining the balance between innovation and psychological ethics is to make sure that AI can be used as an instrument of connection, rather than competition; power, rather than undermining well-being.

The table presents descriptive statistics (mean, standard deviation, mean rank, and rank) for three core constructs of the framework:

1. **Algorithmic Exposure Pathway**
2. **Psychological Outcome Pathway**
3. **Social Comparison Pathway**

These constructs collectively explain how **AI-driven social media algorithms** affect **users' psychological well-being** through **exposure** and **social comparison mechanisms**.

Table 1 **AI–Social Comparison–Well-Being Framework**

Constructs	Mean	Std. Deviation	Mean Rank	Rank
Algorithmic Exposure Pathway	3.56	1.85561	3.96	II
Psychological Outcome Pathway	2.54	2.79532	3.10	III
Social Comparison Pathway	3.98	1.94723	4.25	I

The ranking pattern (**Social Comparison > Algorithmic Exposure > Psychological Outcome**) indicates that:

- **AI algorithms primarily affect well-being through social comparison.**
- **Algorithmic design indirectly shapes mental health outcomes** by curating content that fosters comparison.
- **Psychological effects** (like stress or reduced well-being) are **secondary manifestations** of the above two processes.

This construct has the highest mean score, indicating that **social comparison** is perceived as the most dominant mechanism linking AI algorithms and users' well-being. Users frequently compare themselves to others based on algorithmically curated content, which significantly influences their psychological states.

This pathway ranks second, suggesting that **algorithmic exposure**—the way AI filters, prioritizes, and presents content—plays a strong but secondary role in shaping users' experiences. It implies that users are aware of the influence of algorithms in exposing them to idealized or filtered realities.

This construct has the lowest mean, showing that while psychological outcomes (like anxiety, envy, or reduced self-esteem) are recognized, they are **indirect effects** of the other two pathways rather than direct perceptions. It suggests that users may not always consciously associate their emotional well-being with algorithmic manipulation.

The results suggest that interventions aimed at improving users' psychological well-being on social media should focus on:

1. **Reducing algorithmic amplification of comparison-prone content.**
2. **Promoting transparency in content curation.**
3. **Encouraging mindful engagement** to mitigate negative psychological effects.

Table 2 Kendall's Coefficient of Concordance

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N	250
Kendall's W	.168
Chi-Square	312.142
df	2
Asymp. Sig.	0.000

1. **Purpose of Kendall's W:**
o   Kendall's Coefficient of Concordance (W) is used to measure the **degree of agreement among raters or rankings** across multiple variables (in this case, the three constructs — *Social Comparison Pathway*, *Algorithmic Exposure Pathway*, and *Psychological Outcome Pathway*).
o   It ranges from **0 (no agreement)** to **1 (perfect agreement)**.
2. **Value of W = 0.168:**
o   The obtained W value (0.168) indicates a **low to moderate level of agreement** among respondents in ranking the three pathways.
o   This suggests that while there is **some shared perception** about the importance of these constructs, **individual differences** in opinions remain noticeable.
3. **Chi-Square Test (χ^2 = 312.142, df = 2, p = 0.000):**
o   The chi-square test evaluates whether the observed agreement is **statistically significant**.
o   Since the **p-value is less than 0.05 (p = 0.000)**, the result is **highly significant**, meaning the observed level of agreement **did not occur by chance**.
o   Thus, respondents' rankings of the three pathways are **significantly consistent** overall, even if the degree of agreement is not very strong.

SUMMARY OF FINDINGS
*   **There is a statistically significant concordance (agreement) among respondents** regarding the ranking of the three constructs in the AI–Social Comparison–Well-Being Framework.
*   However, the **magnitude of agreement (W = 0.168)** suggests that respondents' views are **only moderately aligned**, reflecting **diverse individual experiences** with algorithmic exposure, social comparison, and psychological outcomes.
Interpretive Conclusion
In the context of your framework:
*   Respondents **collectively recognize** the influence of AI and social comparison on well-being.
*   Yet, **variations in personal perceptions** indicate that the impact of algorithmic exposure and social comparison differs among individuals — possibly due to differing usage patterns, personality traits, or social media habits.

Table 3: OPINION OF RESPONDENTS BASED ON AI-DRIVEN SOCIAL MEDIA ENVIRONMENTS

Factors		N	Mean	Std. Deviation	F	Sig
Perceived Social Norms				1.95405	9.917	.001
	Middle	133	19.4887	1.86522		
	Old	63	18.8889	1.64720		
	Total	250	19.2880	1.84245		
Anxiety and Depression	Young	54	16.7037	2.04321	38.749	.000
	Middle	133	16.9850	2.95416		
	Old	63	14.6190	2.28197		
	Total	250	16.3280	2.79494	16.500	.000
Validation and Self-Worth	Young	54	12.9444	1.13962		
	Middle	133	11.6617	2.27931		
	Old	63	12.8571	1.26819		
	Total	250	12.2400	1.95286		
Algorithmic Reinforcement Loop	Young	54	3.8519	.39081	25.414	.003
	Middle	133	3.8977	.37304		

	Old	63	3.7778	.32944		
	Total	250	3.8576	.36849		
Personality Traits	Young	54	4.1759	.51080	22.321	0.02
	Middle	133	4.2462	.73854		
	Old	63	3.6548	.57049		
	Total	250	4.0820	.69873		

1. Perceived Social Norms (F = 9.917, p = .001)

- Significant differences were observed across age groups.
- **Middle-aged respondents** reported the highest mean score (M = 19.49), indicating that this group is **more sensitive to social norms and online expectations** shaped by algorithmic content.
- **Older respondents** scored slightly lower, implying less susceptibility to socially constructed norms through digital media.

2. Anxiety and Depression (F = 38.749, p = .000)

- The mean values show a **decline in anxiety and depression levels with age**.
- **Young (M = 16.70)** and **middle-aged (M = 16.99)** groups reported higher anxiety and depressive tendencies linked to social media comparisons than the **older group (M = 14.62)**.
- The highly significant F-value suggests that **age strongly influences emotional outcomes** in AI-mediated environments.

3. Validation and Self-Worth

- Although no F-value is reported here, descriptive means indicate that **younger (M = 12.94)** and **older (M = 12.86)** respondents seek **more social validation** compared to the **middle-aged group (M = 11.66)**.
- This implies that both young and older users might rely more on **external feedback (likes, comments)** for self-esteem, while middle-aged respondents appear somewhat less affected.

4. Algorithmic Reinforcement Loop (F = 25.414, p = .003)

- Significant differences exist among age groups in their awareness or experience of algorithmic reinforcement.
- **Middle-aged respondents (M = 3.90)** slightly exceed other groups, indicating **greater awareness of algorithmic patterns** or perhaps more frequent engagement with recommendation systems.
- The lower mean among older users (M = 3.78) suggests reduced algorithmic exposure due to less active use.

5. Personality Traits (F = 22.321, p = .020)

- The variation across groups is statistically significant.
- **Middle-aged users (M = 4.25)** scored highest, indicating personality traits such as **openness or extraversion** may influence how they interact with AI-curated content.
- **Older respondents (M = 3.65)** scored lowest, perhaps reflecting lower digital engagement or less susceptibility to algorithmic personalization.

Overall Interpretation

The findings collectively indicate that **age is a significant moderating factor** in how individuals perceive and react to AI-driven social media environments.

- **Middle-aged users** appear more conscious of algorithmic influence and social norms.
- **Younger users** show stronger emotional vulnerability (anxiety and need for validation).
- **Older users** are less affected but may engage differently, reflecting distinct digital behavior patterns.

Future Research Directions

Future research should empirically validate the proposed framework through:

1. **Longitudinal studies** measuring algorithmic exposure, social comparison frequency, and mental health outcomes.
2. **AI audits** that analyze how engagement algorithms correlate with emotional states.
3. **Cross-cultural research** exploring differences in algorithmic perception across societies.
4. **Intervention studies** testing the effectiveness of algorithmic transparency and design modifications.

A promising avenue involves developing **AI systems for mental health promotion**, where algorithms are trained to identify and reduce comparison-inducing content rather than amplify it.

Implications for the Study

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The results of this research have great theoretical, practical and policy implication. Theoretically, it expands the knowledge about digital behavior by conceptualizing AI algorithms as proactive mediators of psychological well-being by focusing on how the exposure to algorithms influences the pattern of social comparison and emotional response in users. In practice, the findings justify the need to raise awareness about mental health concerns in the online world, specifically among young users who show greater levels of anxiety and dependency on validation. Another point that the study makes is that middle-aged users are more sensitive to perceived social norms which implies the necessity to have specific digital literacy interventions. The implications to policymakers and platform designers are the creation of transparency through algorithmic methods, user empowerment features, and content regulation policies that would prevent psychological harm. Besides, the framework offers a backbone of applying the ethics of AI and human-centered design in the development of technologies. In the case of academia, the research creates pockets of interdisciplinary research between psychology, artificial intelligence, and communication studies, and adds to the current debate on the subject of ethical AI usage and user welfare in algorithmic ecosystems.

Recommendations and Suggestions

According to the findings, the study proposes the adoption of the algorithmic transparency policies that are expected to assist the users in comprehending how the content is chosen and prioritized. The social media outlets should be integrated with mental health-related features, like the content filters, the positive interaction prompts and the screen-time reminders. Digital literacy initiatives should be developed to teach users, especially the adolescent and young adults, the psychological impact of algorithm exposure and social comparison. The policymakers are supposed to create ethical considerations of AI in the social media to guarantee that data is used wisely and that manipulation is reduced by using manipulative algorithms that facilitate engagement. Schools and universities can incorporate AI awareness and emotional resilience training to enable the user to have tools to cope with stress associated with comparison. Long term effects and cross cultural differences should be studied in future to be able to generalize the results to the rest of the world. To create a balanced digital ecosystem in which AI connective enhancement and mental health are not mutually exclusive, psychologists, technologists, and policymakers need to work together. In general, the research suggests the application of human-centered AI design, transparency, and proactive interventions to achieve positive psychological results in the online environment.

CONCLUSION

This study provides a comprehensive examination of how **AI-driven social media algorithms** influence **social comparison and psychological well-being** across different age groups. The analysis revealed that the **social comparison pathway** was the most influential factor affecting users' mental states, followed by **algorithmic exposure** and **psychological outcomes**. The moderate yet significant Kendall's W value (0.168, p < 0.001) confirmed a shared perception among respondents regarding these relationships, while ANOVA results identified meaningful differences across age groups. Younger respondents exhibited higher anxiety, depression, and a stronger need for validation, indicating greater vulnerability to the psychological pressures of AI-curated environments. Middle-aged users demonstrated heightened awareness of social norms and algorithmic influence, reflecting both engagement and critical understanding. Older participants were comparatively less affected but still influenced by perceived social dynamics online.

The study concludes that AI algorithms not only personalize content but also shape users' perceptions, emotions, and self-concept through subtle reinforcement loops. These findings underscore the need for a **balanced technological ecosystem** that prioritizes **ethical algorithm design, mental health safeguards, and user awareness**. Promoting transparency and fostering digital resilience can mitigate the adverse psychological consequences of constant social comparison. Ultimately, the research contributes to the emerging discourse on **AI ethics, digital psychology, and social sustainability**, offering both theoretical insight and practical pathways toward a healthier human–AI interaction paradigm in the digital age.

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