

Impact Of Algorithmically Curated Content on Adolescents' Identity Development and Mental Health

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With the introduction and development of social media in recent days, adolescents' increased use of algorithmically curated content has raised concerns about their identity development and mental health. This paper explores the impact of algorithmically curated content on adolescents' identity development and mental health. A structured qualitative review of recent literature was conducted to evaluate the influence of algorithmic content in both areas. The results showed that the content can lead to framing their social/political identity, and even exploiting their vulnerabilities, leading to mental health problems. Specifically, the review on the impact of mental health showed that adolescents with long exposure to content driven by recommendation systems have a higher chance of mental problems, including eating disorders. Notably, there were also reported positive aspects of this recommendation system. To address these concerns, greater system transparency and ethical responsibility in these designs should be proposed, especially for content targeting adolescents.

Introduction

With the development of social media in recent years, algorithmic curation has risen as a central feature of digital platforms. Algorithm curation is defined as organising, selecting, and presenting a corpus of information for consumption. Many of these platforms use algorithms as social recommendation systems that determine what information should be exhibited¹. These recommendation systems are information filtering systems that employ data mining and analytics of individuals' behaviour, including preferences and activities, to predict users' interest in information, products, or services². This includes viewer history, likes, shares, and comments. Particularly, social media applications such as TikTok, Instagram and YouTube have been known to use these algorithmic systems. Specifically, TikTok being the most downloaded app worldwide in 2022, with over 875 million downloads from Google Play and Apple App Store users combined, suggests that the algorithm has become ubiquitous³. The primary goal of the algorithm system is to increase user engagement by consistently presenting content that aligns with individual preferences and anticipated interests.

This algorithmically curated content is especially widespread amongst adolescents. Adolescents are defined by the World Health Organisation as individuals in the 10-19 years age group, a key transitional phase between childhood and adulthood defined by rapid physical, psychological, and social development⁴. A recent survey, which covered 18 economically developed countries, found that 93%

of emerging young adults own social media, and estimated that the rate is similar or even higher for adolescents. This indicates Adolescents as one of the most active user groups on social media, with the majority engaging with applications daily. However, the roles of algorithmic systems have created concerns in the sense that they may create psychological issues⁵.

One central concern of the algorithmically curated content in adolescents is their identity development. According to Erikson's theory, Self-identity refers to the awareness of consistency in the self over time, integrating personal values. This theory emphasised that adolescence is characterised by the challenge of identity versus role confusion, suggesting that failure to develop a stable identity may result in confusion and distress. Successful identity development is associated with positive mental health outcomes, whereas identity confusion is linked to higher risks of mental disorders⁶. Another study suggested that adolescents are more susceptible to external influences due to ongoing neurological development, which results in heightened sensitivity to social feedback and increased need for peer approval⁷.

Another significant problem of algorithmic content in adolescents is its impact on mental health. According to the WHO, a mental disorder is characterised by a clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour⁷. Research indicates that the prevalence of mental disorders among adolescents has been increasing at an unprecedented rate in recent decades, with a major contributing factor being the role of social media and technology in framing adolescent brain development and emotional well-

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being⁸.

The objective of this literature review is to evaluate research findings and examine how algorithm-curated content shapes adolescents' identity development, and analyse the relationship between algorithm-driven social media exposure and adolescents' mental health outcomes. Moreover, this review aims to acknowledge that there are also cases of positive implications. The significance of the study comes from how it provides a comprehensive overview of both identity development and mental health from an adolescent's perspective.

Methodology

Search Strategy

The research used a qualitative literature review methodology to investigate the impact of algorithm-curated content on identity development and mental health of adolescents. The relevant studies were searched by academic databases, including Google Scholar, ResearchGate, and PubMed, from September 2025 to April 2026. The literature search was first done by each using the terms "identity development" and "mental health" in the algorithmic search engines. For "identity development", we first explored broad literature and narrowed the search to prevalent issues using more specific identified terms. For the "mental health" section, background research identified specific mental health disorders, and these combinations of key terms of mental health disorders were searched. Overall, a total of 18 studies were identified that met the inclusion criteria, and 14 of them were deeply covered.

Criteria

Inclusion criteria required that studies be peer-reviewed, primary research articles, and available in English. We considered all quantitative and qualitative studies, including surveys, longitudinal studies, and experimental designs.

Exclusion criteria included non-peer-reviewed reports, studies that focused exclusively on adults or only general social media use rather than algorithmic content curation. Studies with insufficient sample sizes or lacking methodological clarity were excluded. While studies from various regions were considered, we considered only those with available English translations.

While the studies were valued more for participants aged approximately 10-19 years old, studies for the general group were also included if found helpful. Similarly, while studies addressing both adolescents and algorithm-curated content were most valued, studies that focus on adolescents but not specifically on social media were also considered.

Acknowledging that the review covers multiple topics and many studies, the main studies' findings were integrated into

a table, which summarised the 14 main studies into different topics (Authors, Year, Algorithm-Curated content, Study Design, Sample, Platform Studied, Main finding).

Impact of Algorithm-curated content on identity development

How algorithmic curation is structured to shape adolescents' information environments: Algorithmic literacy

Social media algorithms now shape much of adolescents' daily information intake, filtering and personalising content in ways that narrow their exposure to wider perspectives. These algorithmically curated environments may form echo chambers and strategically designed misinformation, which may shape how adolescents interpret social reality. Here, many researchers have studied how users understand algorithms, a field known as algorithmic literacy. Algorithmic literacy is defined as the ability to evaluate algorithmic decision-making critically, be aware of the use of algorithms in online applications, platforms, and services, and possess the skills to handle or even influence them¹³.

In a qualitative study from the Netherlands, researchers interviewed adolescents aged from 12 to 16 years old on their awareness and understanding of algorithmically curated social media environments⁹. The findings showed that adolescents demonstrated basic and experience-based awareness of algorithms (e.g., 'if I do this'-'then X happens'), while they argued that this knowledge remains limited and non-transferable. Furthermore, they found out that participants largely failed to recognise the implications of algorithmic filtering on awareness of broader issues (e.g. they claimed that they were presented the whole story). Given that adolescents are still developing critical thinking, the study suggests that the algorithm potentially increases adolescents' vulnerability to filtered information, such as echo chambers. The finding is particularly relevant in the fact that it provided direct evidence from adolescents themselves with genuine interviews, while it still provides limited insight into how algorithmic curation directly leads to changes in identity development. Rather, it provides a possible circumstance behind which identity formation may be influenced.

In another study, M. Ahmmad synthesised peer-reviewed scholarship on filter bubbles, echo chambers, and youth engagement in algorithmically curated social environments¹⁰. Observations and simulation studies on the algorithm showed a consistent pattern that the curation system highlights "ideologically homogenous content", which may limit the opportunities for adolescents to be exposed to wider perspectives. The simulation studies further underscored how initial opinions and biases are sometimes exaggerated by recommender systems. Here, the adolescents' cultural identities were also

Table 1 Studies included in the review

Author, Year	Algorithm-Curated Content	Study Design	Sample	Platform Studied	Main Finding
T. de Groot, M. de Haan, M. van Dijken, 2023 ⁹	Adolescents' awareness and control of algorithms in social media	Qualitative duo-interview study	18 secondary school students (aged 12–16)	Algorithmic application	Adolescents demonstrated basic and experience-based awareness of algorithms, but this knowledge remains limited and non-transferable.
M. Ahmmad, K. Shahzad, A. Iqbal, M. Latif, 2025 ¹⁰	Synthesised bubbles, echo chambers, and algorithmic bias	Systematic literature review	30 peer-reviewed studies (2015–2025)	Facebook, YouTube, Twitter/X, Instagram, TikTok, Weibo	Algorithmic systems amplified ideological homogeneity and selective exposure among youth, who showed only partial awareness and limited ability to resist recommendation systems.
Y. Wang & S. Wang, 2024 ¹¹	Intensity of short-video/online game flow use related to self-concept clarity	Cross-sectional questionnaire, mediation analysis	721 Chinese adolescents	Short-video application	Greater short-video app use was negatively associated with self-concept clarity.
R. Billington, 2026 ¹²	Experience of social media platforms' algorithmic logic and filtering effects on adolescents	Mixed-method survey and interview study	494 adolescents (aged 16–19) from New Zealand	Multiple social media platforms	Adolescents develop political identities through experience, and social media plays a vital role in mediating these experiences.
L. Dogruel, P. Masur, S. Joeckel, 2022 ¹³	Algorithm literacy and users' understanding of algorithmic selection systems	Scale development and validation survey	Internet users from Germany	Internet platforms using algorithmic curation	An "Algorithmic Literacy Scale" found that users generally possessed limited understanding of how algorithms collect data and personalise content.
Y.-H. Chen, 2025 ¹⁴	Social media feedback loops, social comparison	Cross-sectional quasi-experimental study	240 Chinese participants (120 adolescents aged 13–18; 120 adults aged 25–40)	Simulated environments using WeChat Moments and Xiaohongshu	Adolescents were significantly more sensitive to social media feedback than adults; social comparison amplified these effects.
D. U. Gupta, M. N. Sharma, P. Rawat, N. Sriram, D. U. Kumar, 2025 ¹⁵	Personalised recommendations, autoplay features, algorithmically curated feeds	Mixed methods (survey and psychometric measures)	46 Indian Class 12 students (quantitative); 11 students (qualitative)	Instagram, TikTok, Snapchat	Higher exposure to algorithmically curated feeds was associated with psychological distress, loneliness, and sleep problems.
R. Engeln, R. Loach, M. N. Imundo, A. Zola, 2020 ¹⁶	Image-focused social media feed promoting appearance comparison	Experimental with assignments	308 undergraduate women aged 18–26	Instagram and Facebook	Instagram participants engaged in significantly more appearance comparison than Facebook users, with lower body satisfaction.
D. De, M. El Jamal, E. Aydemir, A. Khera, 2025 ¹⁷	Short-form video recommendation systems for adolescents	Narrative review	Existing neuroscience and social media research papers	Instagram, TikTok, Snapchat, YouTube, Facebook	Recommendation algorithms exploit reward processing mechanisms in the brain, resulting in addiction-like patterns.
H. Shannon, K. Bush, P. Villeneuve, K. Hellemans, S. Guimond, 2022 ¹⁸	Excessive social media usage	Systematic review	Adolescents and young adults	Multiple social media platforms	Consistent associations between problematic social media use and poorer mental health outcomes, including depression and anxiety.

S. Griffiths, E. A. Harris, G. Whitehead, F. Angelopoulos, B. Stone, W. Grey, S. Denn, 2024 ¹⁹	TikTok recommendation algorithms and eating-disorder-related content	Comparative algorithm audit study	TikTok accounts representing eating-disorder and healthy control users	TikTok	Eating-disorder accounts were recommended substantially more eating-disorder-related content, suggesting reinforcement of harmful content pathways.
C. A. Dekker, S. E. Baumgartner, S. R. Sumter, 2025 ²⁰	Algorithmic personalisation of social media feeds	Experimental study	Social media users	Social media platforms	Personalised “For You” style feeds generated higher user engagement than non-personalised content feeds.
K. Agrawal, S. Athey, A. Kanodia, E. Palikot, 2022 ²¹	Personalised recommendation algorithms in educational technology	Randomised controlled trial	Students using EdTech platform	Educational technology platform	Personalised recommendation systems improved student engagement and learning outcomes compared to non-personalised recommendations.
R. Mannerström, L. Hietajärvi, J. Muotka, K. Salmela-Aro, 2018 ²²	Digital engagement and internet activities	Cross-sectional survey study	932 Finnish high school students	Social media	Adolescents with stronger identity commitments showed higher digital competence and lower excessive ICT use.

influenced by the algorithmic content that creates memes and humour. This is part of the ‘filter-bubbles’ where their identity, humour, and norms develop in a group set by the algorithms. The review suggested that this may lead to adolescents who are unable to distinguish what information to accept, potentially prioritising externally imposed identities. The review also demonstrated how, in countries with censorship or polarisation, such as China, Turkey, and Morocco, algorithmic effects are intensified. However, the review also challenges the idea that young people are completely controlled by algorithms, since many adolescents are aware of personalisation and actively try to diversify their feeds by using different accounts or platforms. Hence, the study concluded that adolescents are not fully independent, yet active participants in algorithmic systems. It emphasised the importance of algorithmic literacy education and structural reform in platform governance.

Both studies covered that adolescents may recognise that personalisation occurs, but they may not fully understand the broader implications of algorithmic filtering or information diversity.

Ways Algorithm-Curated Content Influences Adolescents’ Self-Exploration and Self-Identity

One of the algorithm recommendation systems’ dominant influences is how it shapes our thinking and self-categorisation. Especially along with the increasing usage of short-video apps, which allow users to access content only curated by recommendation algorithms, adolescents have struggled to clarify their self-concept, which may be associated with passive

thinking. In a study conducted in China involving 721 participants aged 11 to 16 years old, researchers measured adolescents’ intensity of algorithm usage by short-video app use and online game flow state¹¹. The self-concept clarity was then measured by the social-expansion questionnaire and the self-concept clarity scale. The results revealed that greater short-video app use was associated with lower self-concept clarity, the same for flow and self-expansion. Self-concept clarity refers to the extent to which individuals possess a stable and coherent understanding of themselves. Especially since adolescents are in the process of forming their identity and are still vulnerable in consolidating their self-identity, the study suggests that algorithm-curated content might often contribute to disruption in self-concept clarity. However, because the study is correlational rather than causal, it does not determine whether algorithm social media usage reduces self-concept clarity or if it is the opposite. Other examples of algorithms’ self-categorisation include “Spotify Wrapped”, where listeners receive their algorithmic summaries of what they had listened to throughout the year, or the mood-tracking apps, which improve users’ behaviour based on data²³.

Another study conducted by R. A. Billington directly studies the adolescent population, which provides insight into how adolescents are influenced by algorithmic content¹². Research surveyed 494 adolescents with 21 in-depth interviews at a New Zealand school, where it gathered participants’ information on social media use, recognition, and worldviews. One of its findings (Chapter 5) showed that adolescents frequently described social media as a primary source of information about social news through encountering content passively through their feeds by algorithms rather than searching. In specific ex-

amples, the interviewees mentioned that “you’re more likely to agree with it” when surrounded by a certain viewpoint, and that algorithmic echo chambers “probably shaped a lot of my beliefs”. Even one student reported seeking an alternative perspective because the algorithm did not provide a sufficient viewpoint. This may suggest that the identities and perspectives of adolescents are influenced by the digital environment that they inhabit, where the participants are in epistemic bubbles and echo chambers. Nevertheless, one limitation of this study is that it relies on participants’ perception and does not observe unbiased observation of algorithmic behaviour.

Impact of Algorithmic Curations on the Mental Health of Adolescents

Algorithm Exploitation of vulnerabilities

A myriad of experimental research studies have shown that the algorithm curation of social media influences not only adolescents’ identity development but also mental health. During adolescence, self-esteem plays a particularly critical role in adolescents’ well-being. One study found that adolescents with lower self-esteem were more likely to exhibit body dissatisfaction when repeatedly exposed to idealised social media images, suggesting that it contributes to negative self-perceptions²⁴. In contemporary social media environments, this developmental sensitivity is intensified by platforms that encourage comparison. Social comparison theory is a theory proposed by psychologist L. Festinger in 1954, which explains how individuals evaluate their own opinions and desires by comparing themselves to others²⁵. Compared to offline situations, adolescents on algorithmic curation are exposed to idealised, selectively presented images by the system that prioritises highly engaging content¹⁴. This may result in a comparison on social media. Visible metrics such as likes and comments may serve as numerical indicators of social approval. These metrics are not neutral but are selectively promoted by algorithms.

Supporting this idea, Y-H. Chen found that adolescents were significantly more responsive to social media feedback than adults. The research investigated participants’ responses to social media by randomly assigning them to view positive, neutral, and negative reactions on a mock social media profile designed to resemble Chinese social media platforms. The participants’ self-esteem was measured using the State Self-Esteem Scale (SSES), and their tendency to engage in social comparison using the Iowa-Netherlands Comparison Orientation Measure (INCOM). The results showed that while adolescents’ mean self-esteem changed more than the adults, depending on the feedback (positive, neutral, negative) they received, which supports the developmental sensitivity hypothesis. Here, Chen demonstrated that adolescents are especially

more sensitive to algorithm-curated content than adults.

As mentioned in the previous subsection, the recommender system is progressively exposing adolescents to certain information to influence the way they live. The problem is that these algorithmic decisions can target humans’ vulnerable aspects. They often portray triggering aspects “such as depression or gambling addiction”, which links to the second section of the research paper. In one study, D.U. Gupta investigated how algorithmic curation on social media feeds affects adolescents’ emotions and psychological well-being¹⁵. The researchers developed an in-depth interview and survey with Indian secondary students, where they developed the Algorithmic Exposure Index (AEI) to measure the exposure to personalised recommendations and autoplay functions. Quantitative results demonstrated that higher algorithmic exposure was associated with increased negative thoughts, psychological distress, loneliness, or sleep problems. The qualitative results underscored that heightened personalised algorithms resulted in adolescents’ social comparison and difficulty regulating mood. The previously mentioned qualitative research conducted also supports this conclusion by real adolescents’ evidence¹². They found that adolescents are involuntarily exposed to uncomfortable and disturbing content, including pornography, extreme violence or animal cruelty, especially on platforms such as Instagram, Snapchat, and TikTok. This exposure to vulnerable adolescents has raised concerns in the mental wellbeing aspects of them.

While both studies provide valuable insights, one limitation of Chen and Gupta’s study was that it did not represent the whole population, and each studied school was in a specific area of China and India, with a very small sample size. This may limit the conclusion that can be drawn.

To sum up, algorithmically curated recommendation systems were reported to repeat exposure to emotionally demanding content, which has an impact on adolescents’ mental health. According to research, because such content maximises engagement, these algorithms amplify psychological distress, anxiety, and negative mood states²⁶. Rather than permitting diverse or balanced information, algorithmic filtering engenders feedback loops that can repeatedly reinforce distressing themes, increasing feelings of inadequacy, stress, and emotional exhaustion. Even short periods of interaction with algorithm-curated feed can elevate adolescents’ vulnerability to poor mental health. The next sections will cover specific vulnerabilities that adolescents are targeted with, which may harm their mental well-being.

Body-image

As algorithms’ fundamental purpose is to discourage users from moving away from their phones, the algorithmic curation features are constructed to optimise the amount of time

spent on services. Yet, this surpasses the limit and may psychologically harm younger generations. For example, adolescents' exposure to body image creates a conceptualisation of an "ideal" body²⁷. This may create body dissatisfaction, especially amongst young women, which then promotes unhealthy eating habits or even severe eating disorders.

Furthermore, the impact of algorithms in social media is shown through the general use of apps amongst the younger generations. While Twitter and Facebook reacted in 2004 and 2006, Instagram and TikTok were created more recently, targeting teenagers. One research showed that Instagram users reported increased appearance-related concerns compared to Facebook users, with decreased body satisfaction and negative energy¹⁶. TikTok and Instagram's "algorithm-driven content" were hence shown to signify the possible mental health issues among adolescents. While this study does not directly address adolescents, this suggests that the recent development of recommendation system models may negatively impact the mental health of the users, who are primarily composed of younger age groups.

Addiction, Anxiety, Depression, and Emotional Regulation

Building on the evidence, concerns about teen addiction arise as these systems encourage compulsive use patterns that further undermine adolescents' mental health. One research found that frequent interaction with highly personalised feeds repeatedly stimulates the brain's mesolimbic reward system, releasing dopamine in response to anticipated rewards. The study found that the cycle of reward anticipation leads to heightened emotional sensitivity, which may potentially lead to mental disorders like anxiety. In particular, a meta-analysis found a 13% increase in the incidence of depression for every additional hour spent on social media¹⁷. Over time, this contributes to reduced sensitivity to natural rewards, which is commonly associated with depressive states such as low motivation and reduced pleasure. Moreover, the study emphasised that the algorithms were shown to reduce activity and alter structure in the prefrontal cortex and anterior cingulate cortex, which are linked to decision-making and emotional control. Hence, this may be associated with weaker control of emotions and impulsivity. This study is valuable in the fact that it provides a biological explanation behind the adolescents' harmful influence from algorithmic curation.

One review analysed 14 peer-reviewed studies to summarise the meta-regression correlation between problematic social media use and depressive symptoms, anxiety and stress¹⁸. The analysis reported moderate positive correlations between problematic use and depressive symptoms ($r = 0.273$), anxiety ($r = 0.348$), and stress ($r = 0.313$), indicating a consistent relationship across studies. However, the analysis also revealed substantial heterogeneity ($I^2 > 90\%$), which in-

dicates adolescents' mental health cannot be explained solely by the amount of time spent, which shows how adolescents engage with social media. This implies that the algorithmically curated content, such as repeated exposure to emotionally charged material, plays a critical role in shaping mental health outcomes and suggests that the strength of these associations varies depending on contextual and behavioural factors. Other studies also supported the conclusion that algorithmic presentation of content can intensify upward social comparison and approval anxiety, which are associated with increased anxiety symptoms in adolescents²⁸.

Eating disorder

Moreover, the recommendation system itself has been reported to amplify harmful content, including eating disorders, especially for those who are already vulnerable and triggered by it. Seminal research comparing algorithmic feeds belonging to individuals with and without eating disorders found that algorithmic recommendation systems can disproportionately serve problematic content to users exhibiting vulnerability to eating pathology²⁹.

Specifically, TikTok's algorithm showed greater proportions of appearance-oriented videos, dieting, exercise, and eating disorder-related videos within a total set of algorithmically recommended videos for users with eating disorders. For example, the appearance-focused content was +146%, which means that appearance-focused content accounted for more than twice the proportion of recommendations in the eating-disorder group than the control group. Moreover, +4343% on the toxic eating disorder content indicates that this content appeared over forty times more frequently in the recommendation feed of vulnerable users. Collectively, these findings suggest how algorithms can exacerbate mental health issues¹⁹. While this does not directly address adolescents, it provides insight into how social media platforms that adolescents who are associated with eating disorders and mental health problems are exposed to may be exposed to more harmful content.

Positive implications of algorithmic curation in adolescents' identity development

While much of the literature only emphasises the harm, some emerging evidence suggests that the algorithmic personalisation may support certain developmental needs. The research was done by 88 TikTok users, with one week with a highly personalised feed and a less personalised feed for the other week, by changing the algorithms²⁰. The personalised feeds were more aligned with adolescents' interests. When the personalisation was reduced, the average daily screen time decreased by 40 minutes and app opening frequency by 5 times a day. For example, adolescents felt the content was much

more related to their own interests and identity when the feed was personalised. When the feed was less personalised, the personal relevance dropped significantly ($d = -2.46$), which shows that personalisation makes a massive difference in how teens connect with content. Additionally, the personalised feed was more enjoyable to watch, but the enjoyment dropped significantly when the feed was less personalised ($d = -1.82$). Hence, this indicates that the enjoyment and relevance help the adolescents better explore their own interests personalised to them, highlighting that algorithmic systems may not be inherently harmful but highly context-dependent. This personalised content can also be found to support marginalised teens with supportive communities. One review found that marginalised groups, such as LGBTQ+ youth, were able to find peers and community support online³⁰. This may reduce the feeling of loneliness and help teens feel understood by others. Hence, this review acknowledges there is a positive implication also in the support and help for adolescents.

Similarly, research on algorithmic personalisation in educational technology further shows that recommendation systems can have benefits for younger learners and their development²¹. In a children's educational app, users who experienced a personalised section compared to those who saw editorially selected material led to a 60% increase in content engagement. This means that they had completed more recommended modules, lessons, or learning activities. These findings indicate that the algorithm encourages adolescents to explore more material and spend additional time learning. This suggests that they can sometimes support self-directed learning and discovery, allowing for self-exploration and cognitive growth.

This is further shown in one survey research study where the researcher surveyed 932 Finnish high school students. While it was not directly addressing an algorithmic model, the research found that adolescents with stronger identity formation were shown to have higher digital competence and lower excessive ICT use, whereas adolescents with lower identity formation showed higher excessive ICT use. Here, the researcher concluded that digital engagement can support positive identity development when accompanied by stable and competent commitments²².

However, the conclusions drawn from these studies may be limited by their methodological design and scope. For example, the educational study by K. Agrawal was based on a learning environment rather than an everyday social media environment, which does not reflect real-life digital engagement of adolescents. Furthermore, C. A. Dekker's study was conducted in the short term, which can be limited in drawing conclusions.

Limitations of the review and future recommendations

Although the comprehensive overview of research on algorithmic curation and adolescent mental health, this review has several limitations.

Some relevant studies were difficult to access due to limited access to the papers, which may have led to the omission of pertinent findings. Moreover, many sources did not explicitly focus on both algorithms and adolescents simultaneously, requiring the inclusion of studies addressing broader social media or trends. This may limit the scope of the conclusions.

Furthermore, more studies to date are highly concentrated in Western contexts with higher income and often overlook the sociocultural factors that shape both algorithmic exposure and adolescent experiences globally. Hence, it might not be able to cover marginalised groups. Similarly, the review did not examine how these effects may differ across different cultural contexts and individual characteristics, which does not establish a cause-and-effect relationship.

Another limitation was that many of the studies included sometimes did not investigate both algorithmic curation and the adolescent population simultaneously. Hence, the review occasionally relied on evidence from general social media usage or young adults rather than specific adolescents.

Lastly, the study covered social media platforms as a homogeneous category, despite their specific differences in how algorithms operate across platforms such as TikTok, Instagram, and more. Because each platform employs distinctive recommendation systems, their effect on adolescents may vary. While the review tried to cover many algorithm systems, it may overlook platform-specific influences, limiting the conclusion that can be drawn.

Conclusion

In conclusion, this review has synthesised evidence that algorithm-curated social media environments significantly shape adolescents' identity development and mental health outcomes. Across the literature, the algorithmic recommendation systems are shown to reinforce existing interests, amplify emotionally salient and appearance-focused content, contributing to cycles of comparison. These mechanisms interact with developmental vulnerabilities in adolescents, where adolescents develop addiction to social media and develop mental health problems like anxiety, depression, and eating disorders.

However, the review also wants to acknowledge that algorithmic curation is not uniformly harmful. Under certain conditions, personalised content can facilitate identity exploration, even leading to a healthy connection to communities. This highlights that the impact of algorithms depends on the environments in which adolescents engage with them.

Consequently, future efforts should focus not only on mitigating the risk of algorithmically curated content but also on fostering digital environments that maximise its potential benefits. For example, social media platforms should ensure algorithmic transparency, and schools should encourage digital literacy education. This may assist adolescents in navigating algorithm spaces more safely and critically.

This literature review, hence, emphasises the need for comprehensive and coordinated strategies to protect young people's mental health in the digital age.

Overall, this review highlights the widespread use of algorithm-curation on social media and adolescents' heightened developmental vulnerability and mental health problems, underscoring the need for further research on how these systems affect mental health and identity development.

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