

How Adolescents Trust Health Information on Social Media: A Systematic Review

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ABSTRACT

BACKGROUND: Given the potential for social media to spread health misinformation, it is important to understand how trusts impact adolescents' engagement with health content on social media.

OBJECTIVE: To explore the concept of trust when adolescents (13–18 years) engage with health information on social media. Five relevant databases (MEDLINE, EMBASE, PsycINFO, ERIC, and CINAHL) were systematically searched alongside Google Scholar and reference lists of included papers. Studies were included if they examined adolescents' trust when engaging with health information on social media.

STUDY APPRAISAL AND SYNTHESIS METHODS: Thematic analysis was used to synthesize the findings from this review.

RESULTS: Thirty-four papers were included. Three key domains were explored: trust in the social media platform/service (general distrust of social media for health information; safety and privacy); trust in other users (mistrust of unknown users; fear of bullying or judgment; trust in friends or peers; celebrities and popularity; trust in others'

experience and the importance of social support); trust in content (tone and appearance of health information; expertise and verification; advertising, pushed, and suggested content).

LIMITATIONS: Narrow geographic representation of papers and limited quantitative studies.

CONCLUSIONS AND IMPLICATIONS OF KEY FINDINGS: Adolescents' trust in health information on social media involves a complex interplay between trust in: social media platforms, other users, and health content. Central to many of the findings is the social and identity work done by adolescents on and through social media.

KEYWORDS: adolescent; adolescent health; digital health literacy; eHealth Literacy; health communication; health education; information seeking behavior; Internet; social media; social networking; trust

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WHAT THIS SYSTEMATIC REVIEW ADDS

- To our knowledge, this is the first systematic review to explore how adolescents trust health information specifically on social media
- Friends and networks are important for adolescents' trust in this space
- The interface between adolescents' trust and identity is central

HOW TO USE THIS SYSTEMATIC REVIEW

- Clinicians caring for adolescents should understand how adolescents' evaluations of trust on social media influence adolescents' health-related knowledge
- Health care organizations and academic pediatricians designing health resources on social media should consider aspects of trust to ensure evidence-based information reaches adolescents

SOCIAL MEDIA IS a space that allows adolescents to create and nurture social relationships and explore their interests.¹ A 2018 survey in the United States found that 97% of adolescents (aged 13–17 years) use social media platforms, such as Facebook, Instagram, and Snapchat.² Social media is an increasingly important site for adolescents' acquisition of health information.^{3,4} There are important opportunities to reach adolescents through these compelling and accessible platforms,⁵ as well as reasons for caution around the potential spread of poor quality, biased, or harmful health information.⁶

Never has it been more apparent than during the COVID-19 pandemic that social media can widely and rapidly spread health information and *mis*-information.⁷ Adolescents are often highly skilled at using the Internet for social purposes and to meet their specific needs⁸; however, it is important that adolescents are armed with the

expertise and resources necessary to safely navigate health information on social media.

In this review, trust is understood as a belief in the reliability, accuracy, or credibility of something (eg, a social media post containing sexual health information). Additionally, trust is confidence that actors, objects, or processes will operate in a certain way. For example, confidence that social media platforms will maintain anonymity, or that other users will not respond negatively to health information posted on one's profile.

In previous reviews conducted by our research team, we have explored how adolescents search for and appraise health information online, and the role of trust when adolescents access this information.^{9,10} Trust in online health information is positively associated with self-efficacy in managing one's own health.¹¹ These previous reviews focus on health information on websites; however, given the importance of social media as a space for adolescents to encounter health information,^{3,4} there is a gap in understanding the role of trust in social media. To address this, the current review aimed to explore how adolescents trust health information on social media.

METHODS

We conducted a systematic review to answer the research question: What are adolescents' considerations of trust regarding health information on social media in terms of use of social media platforms and services, other social media users, content, and other related issues? We conducted this review in line with the enhancing transparency in reporting the synthesis of qualitative research (ENTREQ) statement¹² to ensure explicit and comprehensive synthesis of the qualitative studies included.

SEARCH STRATEGY AND SELECTION CRITERIA

Five databases (MEDLINE, EMBASE, PsycINFO, ERIC, and CINAHL) were systematically searched, from inception to 7th September 2022, for literature relevant to adolescents' trust in health information on social media. Reference lists of included papers and Google Scholar were searched for additional relevant papers. Papers were managed using EndNote 20 (Clarivate, 2022).

The search strategy was created with guidance from a health libraries research expert. The strategy was first prepared for MEDLINE (Table 1) and then applied to the other databases. Groups of terms, including Medical Subject Headings (MeSH) and "free terms," relating to 4 domains (social media, trust, health information, adolescents) were developed. The terms for "trust," "health information," and "social media" built on terms in previous related reviews.^{9,10,13–15}

All papers reporting primary data, including quantitative, qualitative, and mixed methods, studies, were included if they met the following criteria: participants were adolescents aged 13 to 18 years; papers explored health information on social media and examined adolescents' trust when engaging with this. The definition of social media for this review was restricted to websites and applications that enable social networking (eg, YouTube, Instagram, Facebook) as this is where existing research has focused to date. Any systematic reviews on the topic were searched for relevant primary studies. There was no exclusion by language. The definition of adolescence varies in the literature. Studies that included a broader age bracket were included if they covered a portion of the 13 to 18 age range and did not extend either below the age of 10 or above 28. Papers on trust in

Table 1. Search Strategy for MEDLINE

1	Social Media/
2	social media*.tw.
3	exp Social Networking/
4	Blogging/
5	(web 2* or user generated content or online community or online communities or virtual community or virtual communities or social media or social medium or Social network* or blog* or weblog* or microblog* or micro-blog* or Twitter or tweet* or mobile apps or mobile app or mobile applications or mobile application or online forum or online forums or bulletin board* or message board* or Skype or instant messag* or text messag* or texting or Patientslikeme or Patients Like Me or YouTube or Flickr or Facebook or LinkedIn or MySpace or SecondLife or Second Life or Listserv or listserv or mailing list* or podcast* or webcast* or wiki* or Snapchat or Instagram).tw.
6	1 or 2 or 3 or 4 or 5
7	Trust/
8	(Trust* or faith* or credibl* or confiden* or plausib* or belie* or rely or relied or reliance* or reliabil* or integrity or accept* or accuracy or accurate or quality or truth* or authentic* or depend or dependabil* or honest* or credence* or certain* or assur*).tw.
9	7 or 8
10	exp Health Education/
11	exp Health/
12	Health*.tw.
13	((health* or wellness) adj2 (information or info or advice (or messag* or news or notification* or fact* or material* or clue*))).tw.
14	10 or 11 or 12 or 13
15	6 and 9 and 14
16	Adolescent/
17	(teen* or young people or young person* or youth* or adolescen* or high school*).tw.
18	16 or 17
19	15 and 18

information on social media not related to health or reporting the results of interventions were excluded.

STUDY SELECTION

The titles and abstracts of all retrieved articles were screened by 2 authors: J.F. reviewed every title and abstract; K.S. and P.C. each reviewed half. The full text of prospective eligible studies were retrieved and assessed if the information in the abstract was insufficient to make an informed decision about relevance. Any discrepancies between the researchers were discussed until consensus was reached.

CRITICAL APPRAISAL OF INCLUDED STUDIES

All included studies reporting primary research were appraised for methodological quality using the Mixed Methods Appraisal Tool (MMAT).¹⁶ This framework included items relevant to areas including the clarity of research questions, adequacy of data collection methods, relevance of sampling strategy, and rationale of approach.

DATA COLLECTION

Data were extracted from all papers that met the inclusion criteria. The authors developed a data extraction table to record information regarding study design, year, location, setting, participants, recruitment, and potential risks of bias. In accordance with the research question, the authors used line-by-line coding to extract data in the form of descriptions and quotations, following Thomas and Harden.¹⁷ J.F. reviewed every paper; K.S. and P.C. each reviewed half. Each author's data inputs were combined into one data extraction table.

SYNTHESIS OF RESULTS

Following Thomas and Harden,¹⁷ thematic synthesis methodology was used to analyze and synthesize the information from the included papers to develop analytical interpretations beyond the original papers' findings.¹⁷ Concepts were identified to capture the meaning of each sentence, using NVivo 12 (QSR International Pty Ltd, 2019) software for data management. Similar concepts were compounded to form preliminary, descriptive themes. Quantitative data were included under the relevant theme. J.F. recorded the descriptive themes in an analytical framework with accompanying descriptions and quotations. This was reviewed by all authors and redeveloped as a higher-level theoretical framework with 11 analytical themes.

RESULTS

STUDY SELECTION

As illustrated in the PRISMA flow diagram (Fig. 1), the database search produced 8644 papers and a further 6 were identified through cited references, such as papers included in reviews that met our inclusion criteria, and Google Scholar. If relevance was unclear from the abstract alone and no full-text article was available, the

authors were contacted to seek more information. One author responded and forwarded the full text, which was later excluded. The other author of 2 abstracts did not respond, so the abstracts were excluded as they did not contain relevant data for our review. In total, 351 full-text papers were assessed for eligibility, of which 317 were excluded, resulting in the inclusion of 34 titles. Full-text papers were excluded for the following reasons: not about adolescents or no relevant adolescent subgroup analysis ($n = 61$); not about online health information ($n = 42$); not about social media ($n = 38$); not about trust ($n = 114$); intervention ($n = 54$); review paper ($n = 8$). The 34 included titles described 31 studies. In 2 cases, 2 texts provided alternative yet complementary analyses of the same study. As these offered unique insights, they were individually included as separate papers. There was one PhD thesis and one published paper from this thesis. In this case, we have quoted the most comprehensive of these in the findings but included both titles in our table of included studies.

CRITICAL APPRAISAL OF INCLUDED STUDIES

The 34 included papers reporting primary research underwent critical appraisal using the MMAT (Table 2). The MMAT analysis did not raise any significant concerns about the quality of the included papers and none were excluded on this basis.

STUDY CHARACTERISTICS

The characteristics of the included studies are in Table 3. All were published in English, mostly during or after 2017 ($n = 23$). Primary studies were undertaken in a range of countries, including: the United States ($n = 10$), the United Kingdom ($n = 10$), Canada ($n = 2$), and Kenya ($n = 1$). Two studies reported cross-national data. Qualitative methods were used by most papers, although 6 reported some quantitative data analysis. Common methods included: surveys and demographic questionnaires ($n = 11$), as well as focus groups ($n = 20$) and interviews ($n = 11$), from which descriptions and quotations were extracted for analysis. A few papers included adolescents in clinical settings ($n = 6$). Health topics included general ($n = 12$), sexual health ($n = 7$), and physical activity, nutrition, and weight ($n = 7$).

RESULTS SYNTHESIS

Themes were drawn out with findings relevant to each of our 3 key areas (trust in social media platforms/services; trust in other users; trust in content). We identified the concept of "identity formation and performance" within many of these; no other related issues were identified.

On trust in social media platforms/services, 2 themes were identified: i) general distrust of social media for health information; ii) safety and privacy.

With respect to trust in other users, 6 themes were identified: i) mistrust of unknown users; ii) fear of bullying or judgment; iii) trust in friends or peers; iv) celebrities and

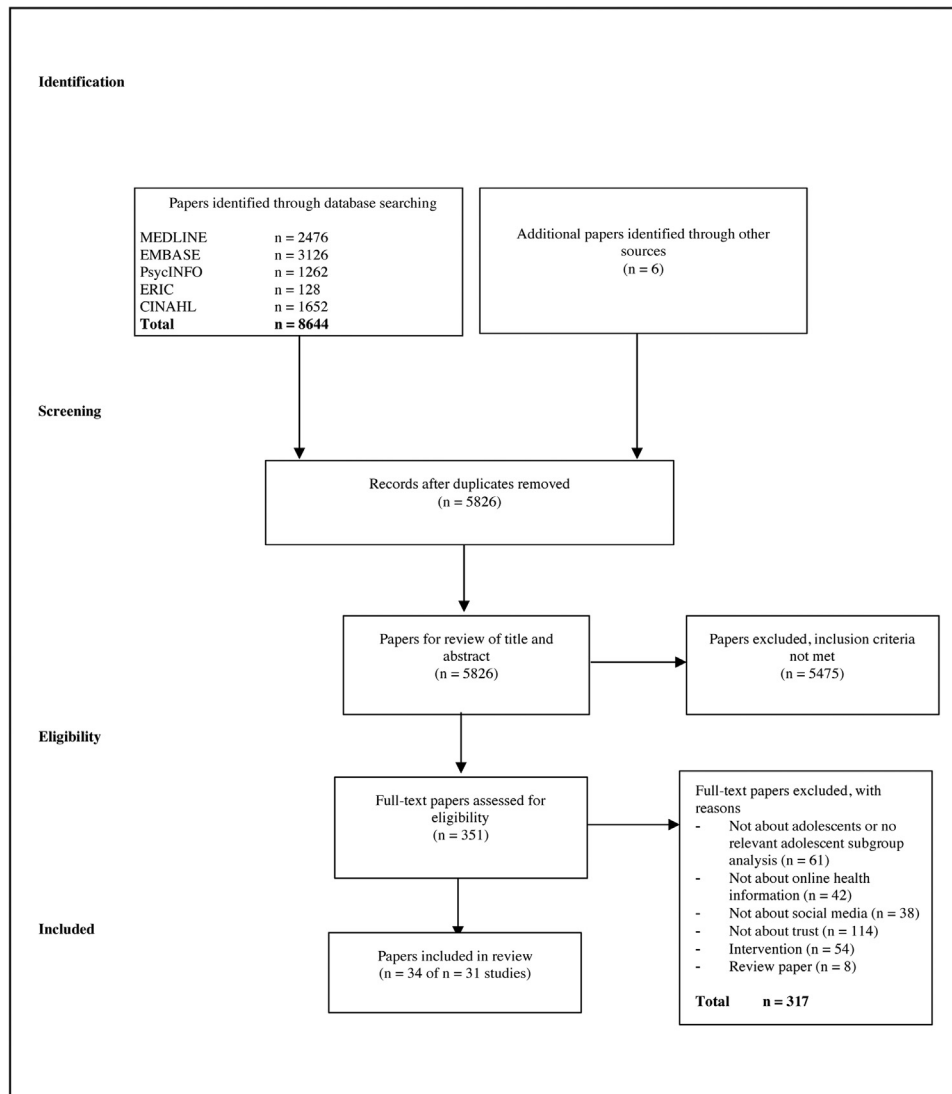


Figure 1. PRISMA flow diagram illustrating search results.

popularity; v) trust in others' experience; vi) the importance of social support.

Three themes were established under trust in content: i) tone and appearance of health information; ii) expertise and verification; iii) advertising and pushed or suggested content.

Quotations from adolescents illustrating each theme are in Table 4 and highlighted below. The authors have separated these into 3 key areas to provide structure in this review; in practice, these themes are inextricably linked and feed into and out of one another. This emphasizes the complexity of adolescents' trust in health information on social media and its role in adolescents' identity formation and performance.

TRUST IN SOCIAL MEDIA PLATFORMS OR SERVICES

GENERAL DISTRUST OF SOCIAL MEDIA FOR HEALTH INFORMATION

Some adolescents differentiated between more "traditional" websites and social media for health information.^{18–21} Websites were trusted over social media:

*"You can get information from the Internet, but not online communication...because they might be lying."*¹⁸ There was a general distrust toward Facebook²² and only half (50.74%) of youths thought health information on Facebook was reliable.²³ Perceptions of health information on social media were mediated by factors including gender and educational level of the user, and interpersonal influences from Facebook (eg, talking to new people on social media).²³

Some adolescents recognized the potential to encounter misinformation or "fake news" on social media.^{21,24,25} Many expressed a general distrust of health information from social media,^{18,26–28} however, these sources were still popular as they are convenient while using social media for other purposes, easily accessible, highly familiar, and relevant.^{18,20–22,27,29–32} Pinterest was identified as a source with a more trustworthy reputation for health and fitness content.²²

SAFETY AND PRIVACY

One of the most pressing concerns for adolescents was the assurance of safety and privacy afforded by the social

Table 2. Results From MMAT Analysis of Included Papers

First author	Year	Screening Questions		Appraisal by Study Type					Score (%)
		S1. Are There Clear Research Questions?	S2. Do the Data Allow to Address the Research Questions?	1.1. Is the Qualitative Approach Appropriate to Answer the Research Question?	1.2. Are the Qualitative Data Collection Methods Adequate to Address the Research question?	1.3. Are the Findings Adequately Derived From the Data?	1.4. Is the Interpretation of Results Sufficiently Substantiated by Data?	1.5. Is There Coherence Between Qualitative Data Sources, Collection, Analysis, and Interpretation?	
Qualitative Studies									
Ahola Kohut ³⁶	2017	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Booth ²²	2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Booth ⁵⁸	2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Byron ³¹	2013	No	No	Yes	Yes	Yes	Yes	Yes	100
Byron ³⁷	2015	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Fergie ²⁰	2013	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Goodyear ⁴⁵	2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Goodyear & Armour ("Young People, Social Media, and Health") ⁴⁷	2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Goodyear & Quennerstedt ⁴³	2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Gray ⁴¹	2005	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Harris ²⁹	2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Holland ^{42b}	2017	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Holmberg ³⁰	2019	Yes	Yes	Yes	Yes	Can't tell	Yes	Can't tell	80
Kenny ³³	2016	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Lariscy ¹⁸	2011	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Lavis ⁴⁰	2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Macharia ²¹	2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Malik ³⁴	2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Ortiz ⁴⁴	2015	Yes	Yes	Yes	Yes	Can't tell	Yes	Can't tell	80
Patterson ²⁶	2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Raeside ⁴⁹	2022	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Selkie ³⁸	2011	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Selkie ³⁹	2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Simon ⁴⁰	2013	Yes	Yes	Yes	Yes	Can't tell	Yes	Can't tell	80
Thianthai ²⁷	2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Van Dyck ⁴²	2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Veinot ⁴⁸	2013	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Quantitative Descriptive Studies									
Best ¹⁹	2016	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	90
Esmailzadeh ³²	2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Zhang ²³	2017	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	90
Mixed Methods Studies									
Evans ²⁴	2015	Yes	Yes	Yes	Yes	Yes	No	No	80
Leary ²⁵	2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Nikolaou ³⁵	2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Plaisime ⁴⁶	2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100

media platform or service.^{21,31–37} Adolescents had to balance the tension between anonymity, which affords users the opportunity to be more open, with concerns about privacy if others found out that information was associated with them.^{31,32,38} For some, anonymity and privacy controls made social media advantageous for accessing and sharing health information, particularly for sensitive health concerns^{19,20,29,31,36,38–41}: “I think it’s more comfortable to have anonymous postings, because if they

don’t know who you are then you’re a little bit more comfortable saying something.”³⁸ Anonymity provided adolescents with an opportunity to ask questions that they felt uncomfortable asking in other settings (eg, offline), while simultaneously offering a personal and social environment in which to express themselves.³⁹

Adolescents stressed the importance of password protection for preserving privacy, and distinguished between information for sharing publicly and for certain

Table 3. Characteristics of Included Studies

Study, Country and Sample	N	Sex Distribution	Age Range, Years	Conceptual Methodological Framework	Data Collection	Analysis	Topic
Ahola Kohut et al (2017) ³⁶ Canada Clinical sample from 3 pediatric hospitals	33	65% female; 36% male	12–18 (M = 15.3, SD = 1.8)	Qualitative	Semistructured interviews	Inductive content analysis	Needs and preferences of adolescents with chronic conditions for online support programs specific to living with a chronic condition
Best et al (2016) ¹⁹ United Kingdom Nonclinical sample from 7 secondary schools in Northern Ireland	527	100% male	14–15	Quantitative	Survey	Statistical analyses (including chi-square tests for independence, <i>t</i> -tests, analyses of variance and standard linear regression for correlational analyses)	The impact of online help-seeking behaviors on the mental wellbeing of adolescent males
Booth (2018) ²² United States Nonclinical sample from 2 charter schools and 2 Parent-Teacher Associations (PTA)	30	76.7% female; 23.3% male	13–18	Qualitative	Semistructured interviews and practical task (participants accessed known fitness content on social media)	Thematic analysis	Strategies young people use to assess fitness information online and intersecting identity characteristics that relate to how young people make these decisions
Booth & Trauth (2019) ⁵⁸ United States Nonclinical sample from 2 low-SES and 2 high-SES school districts	30	77% female; 23% male	13–18	Qualitative	Semistructured interviews and practical task (participants accessed known fitness content on social media)	Thematic analysis	How teenagers interact with and make decisions about the quality of video-based exercise and nutrition content they interact with via social media
Byron et al (2013) ³¹ Australia Nonclinical sample from urban and regional communities	22	50% female; 50% male	16–22	Qualitative	Focus groups and design of delivery strategies for hypothetical social media sexual health campaigns for young people	Situated discourse analysis	Sexual health promotion for young people via Facebook and other social media
Byron et al (2015) ³⁷ Australia Nonclinical sample from urban and regional communities	22	50% female; 50% male	16–22	Qualitative	Literature review and focus group	Thematic analysis	How formal “expertise” is leveraged through the subjugation of young people’s knowledge, and how this is problematic for sexual health promotion; seeking to engage with young people through social media
Esmaeilzadeh et al (2018) ³² Iran Nonclinical sample of public school students	392	51.8% female; 48.2% male	15–18	Quantitative	Survey	Statistical analyses (including descriptive statistics, independent <i>t</i> -test, one-sample <i>t</i> -test, chi-square, Pearson correlation coefficient, and Mann-Whitney)	Adolescent health information seeking behavior related to high-risk behaviors
Evans et al (2015) ²⁴ United States Clinical sample of self-identified transgender youth	15	20% trans-feminine; 47% trans-masculine; 33% other	14–22 (M = 18)	Mixed methods	Focus groups, interviews [plus online survey for caregivers (not adolescents) outside the scope of this review]	Thematic analysis	What online resources transgender youth and their caregivers use to acquire information about transgender health
Fergie et al (2013) ²⁰ United Kingdom Nonclinical sample of adolescents from a range of socioeconomic areas in Scotland	34	70.5% female; 29.5% male	14–18	Qualitative	Focus groups and practical task (participants looked for examples of health-related content on social media)	Thematic analysis	Young people’s perceptions and experiences of engaging with health content online, particularly through social media, and their strategies for negotiating reliability online

(Continued)

Table 3. (Continued)

Study, Country and Sample	N	Sex Distribution	Age Range, Years	Conceptual Methodological Framework	Data Collection	Analysis	Topic
Goodyear et al (2019) ⁴⁵ "Young people and their engagement with health-related social media: new perspectives" United Kingdom Nonclinical sample from 10 schools in the West Midlands and the South of England	1296	Phase 1: 40% female; 60% male Phase 2: 57.2% female; 23.8% male Phase 3: 67.1% female; 23.9% male	13–18	Mixed methods	Phase 1: piloting and coconstructing participatory class activities Phase 2: participatory class activities and interviews Phase 3: survey	Descriptive statistics and thematic analysis	The ways in which young people engage with health-related social media and the influences they report on their health in the specific areas of physical activity, diet/nutrition and body image
Goodyear & Armour (2019) ⁴⁷ "Young People, Social Media and Health" United Kingdom Nonclinical sample from 10 schools in the United Kingdom	1346	Phase 1: Participatory activities (57.2% female; 42.8% male); Focus groups (58.3% female; 41.7% male); survey (66.5% female; 32.9% male) Phase 2: Stakeholders (not adolescents) Phase 3: Unspecified	13–18	Case study methodology	Phase 1: participatory activities, focus groups, survey Phase 2: workshop with key stakeholders Phase 3: workshop with young people	Case study analysis	The opportunities and risk-related impacts of social media on young people's health
Goodyear & Quennerstedt (2020) ⁴³ United Kingdom Nonclinical sample from 10 schools in the United Kingdom	84	58.3% female; 41.7% male	13–15	Practical Epistemology Analysis (PEA)	Participatory class activities (including a questionnaire) and focus group interviews (Note: paper focuses on analysis of focus group interviews)	Thematic analysis	Young boys' health-related learning in relation to social media
Gray et al (2005) ⁴¹ "Health information-seeking behavior in adolescence: The place of the Internet." United Kingdom and United States Nonclinical sample from UK high schools and US middle schools and high schools	157	NS	11–19	Qualitative	Focus groups	Thematic analysis	UK and US adolescents' perceptions and experiences of online health information seeking
Harris et al (2021) ²⁹ United Kingdom Nonclinical sample from 3 secondary schools and sixth-form colleges in North West England	85	53% female; 47% male	13–18	Qualitative	Focus groups	Thematic analysis	Young people's perceptions and experiences of YouTube-produced health content
Holland (2017) ²⁸ Canada Nonclinical sample from McMaster University, Mohawk college, and the community in Hamilton, Ontario	60	50% female; 50% male	17–30	Qualitative	Sociodemographic questionnaire and semistructured interviews	Descriptive statistics and thematic analysis	Sources and types of information young adults consult for information on nutrition and bone health
Holmberg et al (2019) ³⁰ Sweden Clinical sample of pediatric patients undergoing treatment for obesity at a Swedish University Hospital	20	55% female; 45% male	13–16	Qualitative	Semistructured interviews and practical search task	Content analysis	How patients search for and select online information regarding food, body weight, and health, and how they experience this information

(Continued)

Table 3. (Continued)

Study, Country and Sample	N	Sex Distribution	Age Range, Years	Conceptual Methodological Framework	Data Collection	Analysis	Topic
Kenny et al (2016) ³³ Ireland Nonclinical sample from 2 single-sex secondary schools in Dublin, Ireland	34	40% female; 60% male	15–16	Qualitative	Focus groups	Thematic analysis	Adolescents' needs from mental health mobile apps and adolescents' perspectives on a mental health mobile app prototype
Lariscy et al (2011) ¹⁸ United States Nonclinical sample of rural and urban seventh-grade students	42	50% female; 50% male	Seventh-grade students	Grounded theory	Focus groups	Thematic analysis	Adolescents' health concerns and the sources they rely on most for health information
Lavis & Winter (2020) ⁵⁰ United Kingdom Online ethnography and nonclinical sample for interviews recruited on social media	10	100% female	10–24 for online ethnography	Ethnography	Online ethnography (Instagram, Twitter, and Reddit) [plus semistructured interviews with those over 18 years, outside the scope of this review]	Thematic analysis	The harms and benefits of young people's engagements with self-harm content on social media, including why and how young people engage in online self-harm discussions and what they post
Leary et al (2019) ²⁵ United States Nonclinical sample from middle schools and high schools	27	100% female	12–18	Mixed methods	Focus groups and surveys for adolescents and adults	Descriptive statistics and content analysis	Use of and exposure to social media among adolescent girls with regard to health-related content
Macharia et al (2021) ²¹ Kenya Nonclinical sample from Kibra, a suburb in the city of Nairobi	133	54% female; 46% male	15–19	Qualitative	Focus groups	Thematic analysis	Adolescents' current sexual and reproductive health information sources, existing information gaps, and the role of technology in accessing this information
Malik et al (2019) ³⁴ United States Clinical sample of adolescents with Type 1 Diabetes from Seattle Children's Hospital Diabetes Clinics	45	42% female; 58% male	13–19 (M = 15.9, SD = 1.7)	Qualitative	Focus groups and demographic questionnaire	Descriptive statistics and thematic analysis	The experiences and perspectives of adolescents with type 1 diabetes on the feasibility of social media use as a tool to collaboratively manage their diabetes with their diabetes care team
Nikolaou et al (2019) ³⁵ United Kingdom, Belgium, Finland, Greece, Singapore, and New Zealand Nonclinical sample recruited via an online advertisement service	2285 (610)	adolescents)	Survey: 70% female; 30% male Focus groups: 57–67% female; 33–43% male	13–24	Mixed methods	Survey and focus groups	Descriptive statistics, inferential statistics, and thematic analysis Young people's attitudes and motivations toward social media and mobile apps for weight control
Ortiz et al (2015) ⁴⁴ United States Clinical sample from a pediatric and adolescent clinic in North Carolina	38	34% female; 66% male	11–21 (M = 15.86)	Qualitative	Focus groups	Thematic analysis	Feasibility and strategies for using social media to promote HPV vaccination to patients
Patterson et al (2019) ²⁶ United Kingdom Nonclinical sample of local youth in Scotland	49	61% female; 39% male	16–19	Qualitative	Interviews and practical search tasks	Thematic analysis	Barriers and challenges faced by adolescents when searching for sexual health information on the Internet

(Continued)

Table 3. (Continued)

Study, Country and Sample	N	Sex Distribution	Age Range, Years	Conceptual Methodological Framework	Data Collection	Analysis	Topic
Plaisime et al (2020) ⁴⁶ United States Nonclinical sample from schools in Philadelphia and Drexel University College of Medicine	178	Survey: 46% female; 46% male; 7.2% not reported Focus groups: 53.8% female; 46.3% male	13–18	Mixed methods	Social media usability survey and focus groups	Descriptive statistics and content analysis	Teen social media use and the role of social media as a health promotion tool
Raeside et al (2022) ⁴⁹ Australia Nonclinical sample from existing database and known networks	32	46% female; 41% male; 3% prefer not to say	13–18	Qualitative	Focus groups	Thematic analysis	Adolescent perceptions of obtaining information or advice related to lifestyle health from contemporary digital platforms
Selkie et al (2011) ³⁸ United States Nonclinical sample from recreational centers and schools in urban and suburban areas	29	34.5% male; 65.5% female	14–19	Grounded theory	Focus groups	Thematic analysis	Adolescents' views regarding uses of social networking websites and text messaging for sexual health education
Selkie et al (2020) ³⁹ United States Clinical sample from pediatric gender clinic in Midwestern United States	25	44% trans-feminine; 52% trans-masculine; 4% nonbinary	15–18 (average = 16)	Qualitative	Semistructured interviews	Thematic analysis	How transgender adolescents use social media to find social support
Simon (2013) ⁴⁰ Sweden Nonclinical sample of adolescents who had experiences of sexual learning on the Internet	15	NS	NS	Qualitative	Interviews	Thematic analysis	The personal motivations and interactive experiences of sex education for young people online at Reddit.com
Thianthai (2018) ²⁷ Thailand Nonclinical sample from public schools and a youth camp in the Bangkok metropolitan area	74	48.6% female; 51.4% male	15–24	Qualitative	Interviews and practical search task	Content analysis	How youths perceive social media affects their physical, psychological, social, and spiritual health
Van Dyck et al (2019) ⁴² Belgium Nonclinical sample of first graders from 3 secondary vocational schools in Flanders	41	49% female; 51% male	12–14	Mixed methods	Focus groups and demographic questionnaire	Descriptive statistics and thematic analysis	Opinions of adolescents toward the use of different behavior change techniques and toward Facebook/text messaging as a delivery mode for physical activity interventions
Veinot et al (2013) ⁴⁸ United States Nonclinical sample of African-American youth from urban areas in Midwestern United States	75	71% female; 29% male	14–24 (M = 18.3)	Qualitative	Focus groups	Content analysis	The user requirements of African-American youth inform the design of a culturally appropriate, network-based informatics intervention for the prevention of HIV and other sexually transmitted infections
Zhang et al (2017) ²³ Vietnam Nonclinical sample initially recruited from high schools and universities	1080	58.06% female; 41.94% male	15–25	Quantitative	Online survey	Statistical analyses (including chi-square, t-test, analysis of variance, and multivariate logistic Regressions)	Use of Facebook and youths' perception of the reliability and usefulness of health-related information that they previously encountered while using Facebook

Table 4. Illustrative Quotations From Included Studies

Theme	Quotations	References Where Theme Is Mentioned
General distrust of social media for health information	<p style="text-align: center;">Trust in the social media platform/service</p> <p><i>“Bea: [You] can’t always trust the information that you find. Alison: And if you do trust it, [. . .] you could do more harm than good. Cara: Yeah.”²⁰</i></p> <p><i>“[social media] isn’t reliable, it’s just someone’s opinion”²⁸</i></p> <p><i>“Tumblr, that’s a bad site. That’s a bad site to get your medical information from. People spread misinformation like it’s going out of fashion.”²⁴</i></p> <p><i>“Not all the social media information is true, the best thing to do is just look for a health organization providing reproductive health services.”²¹</i></p>	18–26,28–32,27
Safety and privacy	<p><i>“You can’t always rely on technology...if someone hacks into it for whatever reason”³⁶</i></p> <p><i>“I came out online first and then to friends in school including teachers. But I felt... I felt like I could. It’s . . . it’s really contradictory online because it’s so impersonal yet personal at the same time. But it felt like I was seen on as a male online, and if I can do that here then I can do that in school and in my home and in other places where that impacts my life.”³⁹</i></p>	19–21,26,29,31–44
Mistrust of unknown users Fear of bullying or judgment	<p style="text-align: center;">Trust in other users</p> <p><i>“if who you are talking to is really who you are talking to.”³⁶</i></p> <p><i>“On Facebook, simply ‘Liking’ sexual health content was deemed sufficient to attract judgement,” as Josie and Kyle explained: Kyle: Like you’ve liked it an’ then everybody’s like “Oh, why?” Josie: Like, “What’s he dae’in (doing) that for?!” Kyle: Yeah, “What are you dae’in that for, you dirty (a promiscuous person)?! (laughing)”²⁶</i></p> <p><i>“[Cyberbullying] occurs more on social media these days, [more] than it occurs in person. There are [like] new bullies. [Fights] start on social media — [someone writes something] on Instagram or whatever, and then it’s a problem in the [whole] school because of what [one] person wrote.”⁴⁶</i></p> <p><i>“...it should be moderated...in case somebody who is just out there to find a site to start a mess.”⁴⁸</i></p> <p><i>“ . . .if you could find other reasons that people should watch the videos without that direct link to the diseases that you are talking about – because that’s a lot of where the stigma comes from.”³¹</i></p> <p><i>“I don’t put it on Instagram. I don’t think I have the confidence to do that really. I feel like I’d get bullied, I’m not going to lie.”⁴³</i></p>	19,20,28,36,41 20–22,26,31,33,36,37,39,42–48
Trust in friends or peers	<p><i>“I’d definitely trust my friends more than celebrities although I do aspire and like them.”²⁵</i></p> <p><i>“It would be nice to create a Facebook page from our class on Facebook, to share activities Moderator: Can other people be allowed to join your group? No, only people I know!”⁴²</i></p> <p><i>“Female: ‘Yeah. With health information, I think it’s better if it’s anonymous because I don’t think everyone’s really comfortable about talking about that kind of stuff with random [people]... It’s something they want to keep to themselves.’ Female: ‘Close friends, yeah, but not like everyone I have on Facebook.’”³¹</i></p>	25,28,31,32,36–38,42,44,46,47
Celebrities and popularity	<p><i>“well, I feel, I get jealous sort of. . . that’s how I feel. . . I am happy for their sake, but still, I can feel like no, it will never work and stuff like that. . . and that is not so nice”³⁰</i></p> <p><i>“Interviewer: What’s a good amount of likes? Female 1: 500 Female 2: 100, or like 110. . . Interviewer: So if a picture of something—an exercise someone was doing—had 100 odd likes, does that show it’s good? . . . Female 1: It doesn’t appeal to us as much, because it’s only 100 likes—so it shows that if other people are not interested, why should we.”⁴⁵</i></p>	20,22,25,28–30,39,43–47,49

(Continued)

Table 4. (Continued)

Theme	Quotations	References Where Theme Is Mentioned
Trust in others' experience and the importance of social support	<p>"Darnell (18) explained that if a video has over 100,000 views, that means it has a good audience. When searching for videos, Jasmine (17) selects the video in her search results that has the most views."²²</p> <p>"on Facebook [. . .], reliability could be determined by how many people 'like' the page, cos that would mean that it's been around for a while and [. . .] it's a popularity sort of thing"²⁰</p> <p>"When you see someone on Instagram [and] you know they look good because of how they [look] and how they exercise"⁴⁶</p> <p>"it feels good. . . like they are helping me. . . and that we help each other since we have the same problem"³⁰</p> <p>"You can form really strong bonds over the internet and I think if you have something as big as diabetes in common then like you could probably bond really fast. I mean I trust you guys and I've only met you today"³⁴</p> <p>" . . .but it would have to be a real story, not a made up one."³¹</p> <p>"Sometimes it feels good to just let it out and then people comment and they're like yeah this happened to me too or they say something positive about that experience and how it is handled. It makes you feel good."³⁶</p> <p>"Peter: Social media is most likely to have personal opinions I think and the more informative like official sites they would have dry facts about the illness or any other problem you might have, so you kind of should look at both, to have the facts and then see how other people react to that, I think that's a great combination.</p> <p>Anya: It's true."²⁰</p> <p>"If you were talking to someone [on social media] that had a certain way they handled their diabetes, that you liked...you could exchange tips and tricks for treating diabetes."³⁴</p> <p>"that's the-the thing that. . . I get the most support out of right now, because [. . .] that's a part of my identity."</p>	20,22,24,29–31,34,36,39–41,44,47,49,50
Tone and appearance of health information	<p>Trust in content</p> <p>"If they really wanna put the websites, put stuff that we can relate to. Not just 'if you do this, [then you'll be] more like this.' [We] need, 'I tried this, and this is what happened,' be specific and maybe we would understand more. I think girls wouldn't be so insecure."⁴⁶</p> <p>"It doesn't matter as it is the same information. It is more that this [showing video clip on YouTube] is easier to understand"³⁰</p> <p>"if it makes sense and [it] all adds up; I believe it's true."⁴⁶</p> <p>"Male: 'You have also got to be aware that when you put something on the internet, there are a lot of clever people out there that can manipulate things really easily and in really funny ways and just turn things into huge jokes.'</p> <p>Female: 'Whereas if you are already making the jokes about it, people aren't going to take it and make jokes about it because it is already funny...'"³¹</p>	20,22,24,30,31,35–37,40,44–47,49
Expertise and verification	<p>"If there is a place where only doctors or medical professionals could post information and then if teenagers or other kids wanted to post information it would have to go through someone that would check all the information to make sure it was valid I guess. So that you knew it was reliable and like good information."³⁶</p> <p>"If you see similar information on different sites like a website and then on Facebook and then hear it from someone, it's most likely true."⁴⁶</p> <p>"Maybe I saw something that was happening and later I found out from the news that it was wrong"²⁵</p> <p>"Normally, if there is a verified tick or someone like known that's more trustworthy in that area, in health. So, it's like, if there is someone new with barely any followers...then it makes it less likely for you to follow that person."⁴⁹</p>	19,22,24,25,28,36–38,41,43–46,49,27

(Continued)

Table 4. (Continued)

Theme	Quotations	References Where Theme Is Mentioned
Advertising, pushed, and suggested content	<p><i>"it is like advertisements sort of . . . and if it is shown often then it gets stuck . . . and then you start to drink these [points at an Instagram depicting energy drinks] and that is not good for me"</i>³⁰</p> <p><i>"I usually ignore the ads. They say stuff about 'take this pill and make your body look better.' 'Ten foods that can kill you' I didn't believe it."</i>²⁵</p> <p><i>"It's not really our age, because they're like in their early 20s and just a bigger age group"</i>⁴⁵</p> <p><i>"Usually it's just crap, so I don't look at ads that are on a side bar or anything like that, I just ignore them."</i>³¹</p> <p><i>"When they advertise other websites or other things at the beginning of their videos, I don't usually trust those, because, I mean, I just don't know. I just don't trust those ads. . . Yeah, they're advertising something, like: 'Oh you should get this' or 'Oh, you should try out this,' then I usually don't trust it. . . It seems more of just a way to get publicity for something else that they need, rather than trying to help other people in that subject."</i>²²</p> <p><i>"M7: I was watching this video about like weight loss and stuff and then half way through they mention this diet pill that you can take and I was like ah no, I'll just get off it do you know what I mean. You can't trust any of it."</i>²⁹</p>	18,20,22,25,29–31,37,45,46,49

people.^{26,31,33–38,42,43} Adolescents differentiated access given to close friends compared with unknown users or acquaintances (ie, "friends" on Facebook), allowing them to perform different identities for different audiences.³¹ Private messages through social media platforms were often more appealing than public posts for sharing health information.^{26,31,34,38} This was not fool-proof as some adolescents were fearful of privacy breaches, and potential hacking of personal health information^{31,34,36,37}: *"Even in messages like in private, people forward them to each other."*³¹

Due to these concerns, some adolescents adopted different personas in different online spaces. For example, some used irony or humor in public spaces on social media, while reserving more literal or explicit health information for private spaces.⁴³ Adolescents described how humorous or ironic tones could be used to encourage comfort in the sharing of health information on social media^{26,31,37,43} and could help to counter stigma around sensitive mental health topics.

TRUST IN OTHER USERS

MISTRUST OF UNKNOWN USERS

The importance of anonymity for adolescent users was contrasted with the challenge of trusting unknown users^{19,36,41}: *"if who you are talking to is really who you are talking to."*³⁶ In response, adolescents highlighted the importance of being wary of opinions and verifying that user-generated content was trustworthy.^{20,28,41} This was difficult for adolescents in a social media landscape where *"people can just make up anything."*²⁰

FEAR OF BULLYING OR JUDGMENT

Adolescents expressed a hesitance to share and be identified with health information online for fear of bullying, stigma, or judgment; they did not trust others' responses to their shared health information.^{21,22,26,31,33,36,42–47} This was particularly apparent for young people with long term health conditions, sexual or mental health concerns, and transgender youth.^{26,31,33,37,39,44}

This fear was exacerbated by the public, anonymous nature of social media, which could enable cyberbullies to send abusive or hurtful responses to others^{33,36}: *"It's public. Which is both a blessing and a curse because you can connect with all these people but also you are open to a lot of hate."*³⁹ Witnessing victimization aimed at others could be harmful and influenced adolescents' approach to sharing health information on social media^{31,39}: *"people go out of their way to hate on certain people and even if it's not targeted at me, it makes me feel bad for the people it's targeted at."*³⁹

It was not only anonymous or unknown others that adolescents were concerned about. In sharing health information, adolescents sometimes lacked trust in friends', peers', or family's responses^{22,26} and this could impact on their conceptions of their own identity. For example, adolescents discussed fearing others' responses to images of themselves or their bodies on social media and highlighted its negative psychological effects^{45–47}: *"It promotes insecurity, lower self-esteem... like a girl posts a picture on Instagram.. And a bunch of guys leave negative comments."*⁴⁶

Distrust in others' responses was also seen in adolescents' concerns about the stigma surrounding health information, particularly for sensitive information

including mental or sexual health concerns^{31,33,37}: *“with the stigma of, if you found something about a sexual health infection, then you don’t really want to be like, hey it’s made me think of you. It just has that connotation.”*³⁷ Due to distrust in others’ online responses, some stressed the importance of social media moderation, “blocking,” and holding users and “trolls” accountable for online behaviors.^{20,33,48}

TRUST IN FRIENDS OR PEERS

Adolescents largely trusted their friends and peers online^{25,31,36–38,42,44,46} and information was often shared, or forwarded, through friends and networks.^{25,46} Friends were also trusted sources for recommendations of health information to look for on social media.^{28,32,47} Further, adolescents often engaged online with, and accepted as “friends,” those they trusted offline.^{28,36} For example, Ahola Kohut et al found adolescents *“rarely connected with individuals that they had not previously met through the hospital or been introduced to by a friend.”*³⁶

CELEBRITIES AND POPULARITY

Some adolescents described celebrities and influencers as aspirational and trustworthy, particularly with respect to health and fitness content^{28,43–47}: These figures could raise awareness and address stigma associated with certain health topics: *“because . . . he’s showing that males suffer with mental health problems too and it’s not a bad thing. It doesn’t make them any less of a person.”*²⁹ Transgender youth raised the importance of celebrities or public figures normalizing transgender-related content and validating their experiences and identity:³⁹ *“not a lot of people talk about it and so when somebody, like more well known, I guess in a way, talks about it, it just normalizes it and it just makes me feel that it’s okay to be this way.”*³⁹

Nonetheless, some adolescents were discouraged by celebrities such as fitness models whose success seemed unattainable or unrealistic.^{22,25,30,43,45} This inability to identify with celebrities could lead to a lack of trust in their health advice, which could be demotivating or distressing.³⁰ Adolescents described an awareness that many celebrity images were photoshopped or “fake.”²⁵ Instead, they trusted YouTubers who appeared sincere and familiar, they wanted them to be *“open and truthful... about your experience and this is what it’s like. . . learn from the experiences.”*²⁹ Information that was “trending” or appeared recurrently was considered popular and trustworthy; adolescents trusted that other users would be engaging with trustworthy content.⁴⁷ Some adolescents used others’ comments on content as an indicator of trustworthiness:^{22,49} *“I do go to the comments every single video or pretty much that I’m interested in to see what other people think about it, not for information purposes but sort of to see what other people’s opinion on that particular post is.”*⁴⁹ Many described using metrics of user interaction, such as numbers of likes, views, followers, and “thumbs up,” to determine the popularity of content and creators.^{20,22,30,44,45,47,49}

TRUST IN OTHERS’ EXPERIENCES AND GAINING SOCIAL SUPPORT

Peers with similar experiences were trusted sources of health information and advice.^{20,24,29,36,44,50} Personal experience was seen as a marker of trustworthiness as these individuals had expertise in the area.^{20,24} Adolescents were looking for solidarity and community, searching for others to affirm their own identity, beliefs, and experiences.^{20,30,39}

While different experiences or opinions were often reasons to mistrust others online, those with similar experiences could validate the feelings of young people and confirm they are not alone.^{20,30,40,41} Adolescents valued those who could relate to or understand their circumstances^{20,24,29–31,34,36,39,41,50} and appreciated a variety of opinions and perspectives on health-related topics.^{20,24,36,40} Blogs and communities such as Facebook Groups were useful sources of trusted information.^{24,30,51}

Positive stories or affirmations were particularly helpful^{36,39}: *“it feels good to just let it out and then people comment and they’re like yeah this happened to me too or they say something positive about that experience and how it is handled. It makes you feel good.”*³⁶ By contrast, negative views or stories could have harmful effects.^{36,39}

Adolescents valued health content on social media that was relatable and relevant, delivered best by “real people” in similar circumstances.^{20,24,29–31,47,49} For health and fitness information, adolescents trusted instructors who were the same age and gender as them because they could identify with them.²² Some health information, such as dieting advice, was viewed as targeting adults.⁴⁷

Adolescents articulated how social media could be used to build trusting and supportive relationships between young people who had experienced, or had questions about, similar health concerns.^{20,24,30,36,47,50} The two-way sharing of personal stories encouraged trusted peer support networks^{20,30,34,41} and “communities of care.”⁵⁰ Adolescents felt this could have positive effects on physical and mental health.^{20,30,50}

Some adolescents suggested social media sites could be vehicles through which they might develop trusting relationships with health care professionals outside clinics.³⁴ This could enhance trust, letting patients get to know doctors and vice versa, ultimately giving health care professionals a clearer understanding of patients’ particular needs³⁴: *“I think you would get a more personal relationship with your doctor [through social media] without it being creepy.”*³⁴

TRUST IN CONTENT

TONE AND APPEARANCE OF HEALTH INFORMATION

Adolescents trusted health information that was simple and easy to understand.^{30,31,36,49} Information that appeared too “heavy,” educational, or political would be out of place on social media, which ultimately still served a social purpose^{31,37}: *“If you kept things really simple, because no one wants to get a lecture whilst they are online and trying to be doing their social thing.”*³¹

Adolescents trusted information that seemed credible, logical and unbiased,^{22,40,44,46} including exercises with step-by-step explanations.²² By contrast, information that seemed overly negative, unrealistic or dangerous was considered untrustworthy.²² Professionalism was an important aspect of adolescents' assessment of health information on social media.^{20,22,35,36} Professionalism was assessed by language and the graphic quality of videos or images, with blurriness or lack of aesthetic appeal perceived to indicate untrustworthiness.²² Videos were seen as more trustworthy than photographs because photographs are too easy to manipulate or "Photoshop."²²

EXPERTISE AND VERIFICATION

Adolescents trusted health information from knowledgeable or expert users.^{19,27,28,36,38,44,45} Accounts verified by social media platforms (usually denoted by a blue check mark) were considered trustworthy; indicators of credentials and expertise were valued.^{24,25,38,41,49} Health content created by reputable organizations (eg, NHS, academic institutions, government, some commercial brands) and trained health care professionals was considered trustworthy on social media and other online sites.^{19,27,28,36-38,41,43,45} With regard to health and fitness, adolescents valued content demonstrating content creators' ability and confidence (eg, in videos), indicating authority and trustworthiness.²²

Some adolescents verified health information on social media by performing independent research or fact-checking.^{22,25,27} Adolescents trusted information they encountered repeatedly or that was in line with other information^{25,46} or what they had heard from teachers and coaches,²² and trust was compromised if they came across contradicting information.²⁵

ADVERTISING AND PUSHED OR SUGGESTED CONTENT

Health-related commercial content on social media, such as pop-up advertisements, sponsored content, "spam," and "clickbait" was seen as untrustworthy.^{18,20,22,25,30,31,37,46} Video content with many advertisements or sponsorships was considered untrustworthy^{22,29,30,49} as it "isn't real."²² Adolescents resisted or ignored targeted advertising;^{22,25,31} however, they reported that advertising is pervasive on social media and it can be challenging to differentiate between it and trustworthy health information.³⁰ For some adolescents, "suggested," "recommended," or "pushed" content was regarded as inappropriate as it often targeted adults.⁴⁵

Nonetheless, for some, health information linked to advertising on social media was an effective indirect, passive way of accessing information^{31,37} while maintaining a sense of "plausible deniability"³¹: "you wouldn't [think] you'd be found out if you just clicked on it through a Facebook thing. No one's going to go on a search engine and see that you've looked up herpes or chlamydia, or something."³¹ Further, adolescents thought that Facebook advertisements were a useful strategy for sharing health information with young audiences "because people don't really go looking for it unless it comes straight at them."³¹

DISCUSSION

This review demonstrates that adolescents' considerations of trust in health information on social media center on 3 key areas: trust in social media platforms/services, trust in other users, and trust in content. The findings show that adolescents carefully differentiate levels of access to their social media content given to friends, family, and others in their networks. Engaging with health content on social media is often just as much about self-presentation, community building, and communicating with others undergoing similar experiences as it is about factual learning.

This review benefited from a comprehensive and systematic search of 5 large databases. Although quantitative papers were not excluded from this review, most relevant articles reported qualitative findings. This is likely due to the nature of the research question; however, this suggests that further quantitative work may be useful to assess the degree to which the areas identified in this review impact adolescents' trust in health information on social media. The narrow geographic representation of papers is a limitation as only 4 papers were identified outside of the Global North. Future work would benefit from understanding what differences we might see in adolescents' determinations of trust in different cultural contexts.

Adolescents' insights concerning trust and social media emphasize the fundamentally *social* nature of social media. In contrast to trust in more "traditional websites," where adolescents are aware of the need to verify the trustworthiness of information (even if they may be unsure of how to do this effectively),⁹ the nature of trust in social media is different. In our findings, this is highlighted in the heavy weighting in themes related to "trust in other users"; on social media, users are both consumers *and* producers of content. Trust in health information on social media is only partly about factual knowledge; instead, conceptualizations of trust seen here rely heavily on trust in the relationships, stories, and responses of other social media users, known and unknown. The rise in influencers, with concomitant blurring between personal stories, advice, and advertising, challenges adolescents' capacity to determine trust.

In line with our previous work focused on more traditional websites,^{9,10} adolescents use content and visual heuristics to assess the trustworthiness of online health information on social media. As such, it can be difficult to distinguish content appeal and trust as content appeal appears to have some relationship to trust for adolescents. Nevertheless, what differs here is that effectively navigating health information on social media goes beyond eHealth Literacy skills⁵² and requires deft social and interpersonal competence. The importance of identity is central to many of the themes examined in this study (Fig. 2). Adolescence is a pivotal developmental stage for identity formation and performance^{8,53} and the majority of youth aged 9 to 16 years find it easier to be themselves online than when engaging face-to-face, at least sometimes.⁵⁴ Social media is an important site for individual

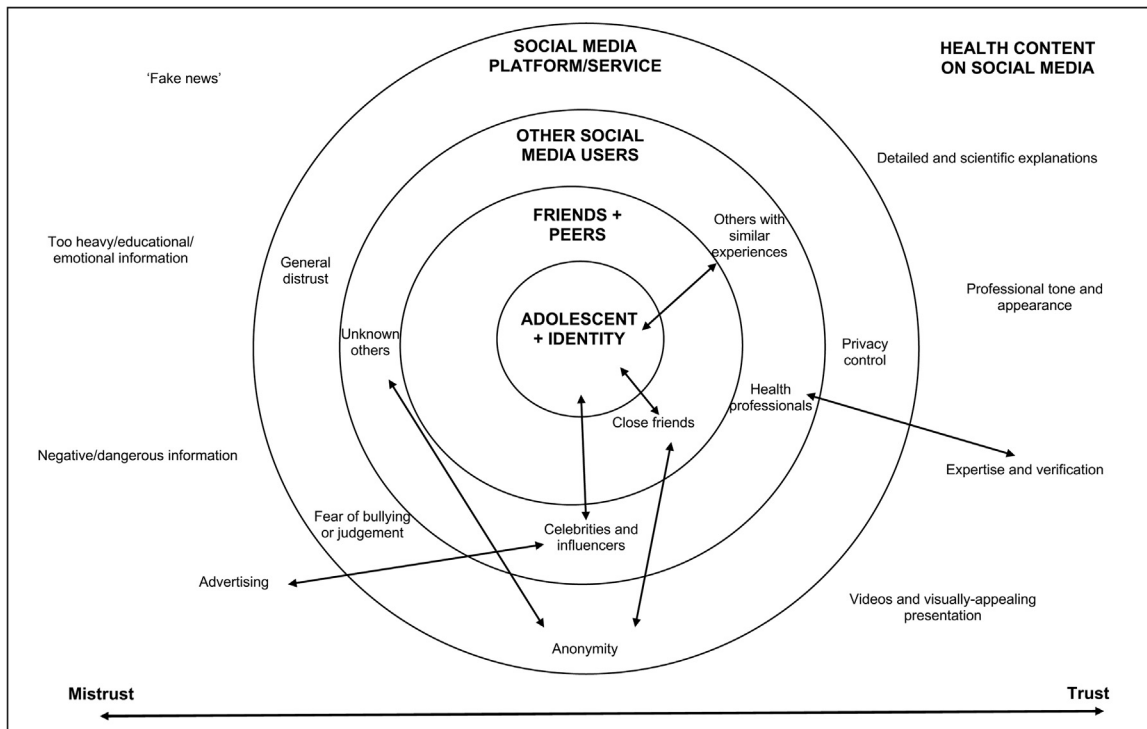


Figure 2. Thematic schema.

and group identity exploration as adolescents negotiate relationships within and between different communities and social contexts online.⁸

While this systematic search was conducted after the onset of the pandemic, it did not find any relevant papers specific to COVID-19. The COVID-19 pandemic has dramatically propelled interest in and understanding of the influence of the online landscape on health. For example, researchers have explored how TikTok, a popular platform for adolescents, might be mobilized in public health messaging.^{55–57} This aligns closely with the findings from adolescents in this review who expressed greater trust in visually appealing, video-based content rather than images. However, adolescents expressed the need to strike a balance between information that was relevant and easy to access and health information that might be too “heavy” or out of place on social media platforms. These distinctions were determined socially by preferences and norms within peer groups and wider user networks on different platforms, and may have changed with health communication concerning the global pandemic.

SUMMARY AND IMPLICATIONS

The findings of our review have important implications as they demonstrate the centrality of friends and networks in how adolescents trust health content on social media. Future research should consider parsing out how these networks impact considerations of trustworthiness and strategies that health care organizations and academic pediatricians might adopt to ensure high quality, relevant health information can reach adolescents on social media. For example, health care organizations might consider the strategic use of experts or influencers on social media,

combined with high-quality video content and a simple, clear message as a trusted health resource for adolescents. Academic pediatricians might consider undertaking future work to better understand how these considerations may differ across social media platforms or services (eg, between Instagram and TikTok), as well as between sub-groups of adolescents (eg, between those with and without chronic illnesses).

Social media is a promising vehicle for health promotion; however, as evidenced by the COVID-19 pandemic, it also has the potential to spread health mis-information.⁷ This has significant implications for adolescent health, given health content on social media influences adolescents’ health decisions and behaviors.⁴⁵ It is important for researchers, health care professionals, and other stakeholders to recognize that the publication of high-quality, evidence-based health information online is oftentimes insufficient for reaching adolescents in a meaningful way, and instead explore how more social and psychological factors such as identity and trust impact adolescents’ engagement with health content on social media.

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REFERENCES

1. The Lancet. Children and social media. *Lancet North Am Ed*. 2018;391:95. [https://doi.org/10.1016/S0140-6736\(18\)30049-7](https://doi.org/10.1016/S0140-6736(18)30049-7).
2. Anderson M, Jiang J. *Teens, Social Media & Technology 2018*. 2018:2018. May 31 2018. Available at: <https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/>. Accessed August 4, 2021.
3. Swist T, Collin P, McCormack J, et al. *Social media and the wellbeing of children and young people: a literature review*. 2015. Available at: http://www.uws.edu.au/_data/assets/pdf_file/0019/930502/Social_media_and_children_and_young_people.pdf. Accessed November 6, 2022.
4. Wartella E, Rideout V, Montague H, et al. Teens, health and technology: a national survey. *Media Commun*. 2016;4:13–23.
5. Hausmann JS, Touloumtzis C, White MT, et al. Adolescent and young adult use of social media for health and its implications. *J Adolesc Health*. 2017;60:714–719. <https://doi.org/10.1016/j.jadohealth.2016.12.025>.
6. Syed-Abdul S, Fernandez-Luque L, Jian W-S, et al. Misleading health-related information promoted through video-based social media: anorexia on YouTube. *J Med Int Res*. 2013;15:e30.
7. Mian A, Khan S. Coronavirus: the spread of misinformation. *BMC Med*. 2020;18:89.
8. Boyd D. *It's Complicated: The Social Lives of Networked Teens*. New Haven, CT: Yale University Press; 2014.
9. Freeman JL, Caldwell PHY, Scott KM. The role of trust when adolescents search for and appraise online health information. *J Pediatr*. 2020;221:215–223. <https://doi.org/10.1016/j.jpeds.2020.02.074>.
10. Freeman JL, Caldwell PH, Bennett PA, et al. How adolescents search for and appraise online health information: a systematic review. *J Pediatr*. 2018;195:244–255.
11. Ye Y. A path analysis on correlates of consumer trust in online health information: evidence from the health information national trends survey. *J Health Commun*. 2010;15(suppl 3):200–215.
12. Tong A, Flemming K, McInnes E, et al. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Med Res Method*. 2012;12:181.
13. Cheston CC, Flickinger TE, Chisolm MS. Social media use in medical education: a systematic review. *Acad Med*. 2013;88:893–901.
14. Taggart T, Grewe ME, Conserve DF, et al. Social media and HIV: a systematic review of uses of social media in HIV communication. *J Med Int Res*. 2015;17:e248.
15. Lange L, Peikert ML, Bleich C, Schulz H. The extent to which cancer patients trust in cancer-related online information: a systematic review. *Peer J*. 2019;7:e7634.
16. Hong QN, Fàbregues S, Bartlett G, et al. The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. *Educ Inform*. 2018;34:285–291.
17. Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Method*. 2008;8:45.
18. Lariscy R, Reber B, Paek H-J. Exploration of health concerns and the role of social media information among rural and urban adolescents: a preliminary study. *Journal articles reports - research. Int Elect J Health Educ*. 2011;14:16–36.
19. Best P, Manktelow R, Taylor BJ. Social work and social media: online help-seeking and the mental well-being of adolescent males. *Br J Social Work*. 2016;46:257–276.
20. Fergie G, Hunt K, Hilton S. What young people want from health-related online resources: a focus group study. *J Youth Stud*. 2013;16:579–596.
21. Macharia P, Pérez-Navarro A, Inwani I, et al. An exploratory study of current sources of adolescent sexual and reproductive health information in Kenya and their limitations: are mobile phone technologies the answer? *Int J Sex Health*. 2021;33:357–370.
22. Booth KM. Youth and information quality: An intersectional exploration of how teens assess fitness information on social media. [PhD Thesis]. Pennsylvania, PA: The Pennsylvania State University; 2018.
23. Zhang MW, Tran BX, Le HT, et al. Perceptions of health-related information on Facebook: cross-sectional study among vietnamese youths. *Interact J Med Res*. 2017;6:e16. <https://doi.org/10.2196/ijmr.8072>.
24. Evans YN, Gridley SJ, Crouch J, et al. Understanding online resource use by transgender youth and caregivers: a qualitative study. *Transgend Health*. 2017;2:129–139. <https://doi.org/10.1089/trgh.2017.0011>.
25. Leary MP, Clegg EN, Santella ME. Consumption of health-related content on social media among adolescent girls: mixed-methods pilot study. *JMIR Form Res*. 2019;3:e11404. <https://doi.org/10.2196/11404>.
26. Patterson SP, Hilton S, Flowers P, et al. What are the barriers and challenges faced by adolescents when searching for sexual health information on the internet? Implications for policy and practice from a qualitative study. Research Support, Non-U.S. Gov't. *Sex Transm Infect*. 2019;95:462–467. <https://doi.org/10.1136/sextrans-2018-053710>.
27. Thianthai C. What does social media have to do with health? A case study of Bangkok youths. *Int J Adolesc Med Health*. 2018;33:20180058. <https://doi.org/10.1515/ijamh-2018-0058>.
28. Holland A. Osteoporosis knowledge translation for young adults: new directions for prevention programs. *Health Promot Chronic Dis Prev Can*. 2017;37:229–237. <https://doi.org/10.24095/hpcdp.37.8.01>. L'application des connaissances sur l'ostéoporose chez les jeunes adultes: nouvelles orientations pour les programmes de prévention.
29. Harris J, Atkinson A, Mink M, et al. Young people's experiences and perceptions of youtuber-produced health content: implications for health promotion. Research support, Non-U.S. Gov't. *Health Educ Behav*. 2021;48:199–207. <https://doi.org/10.1177/1090198120974964>.
30. Holmberg C, Berg C, Dahlgren J, et al. Health literacy in a complex digital media landscape: pediatric obesity patients' experiences with online weight, food, and health information. *Health Inform J*. 2019;25:1343–1357.
31. Byron P, Albury K, Evers C. "It would be weird to have that on Facebook": young people's use of social media and the risk of sharing sexual health information. *Rep Health Matt*. 2013;21:35–44. [https://doi.org/10.1016/s0968-8080\(13\)41686-5](https://doi.org/10.1016/s0968-8080(13)41686-5).
32. Esmaeilzadeh S, Ashrafi-Rizi H, Shahrzadi L, et al. A survey on adolescent health information seeking behavior related to high-risk behaviors in a selected educational district in Isfahan. Research Support, Non-U.S. Gov't. *PLoS One*. 2018;13:e0206647. <https://doi.org/10.1371/journal.pone.0206647>.
33. Kenny R, Dooley B, Fitzgerald A. Developing mental health mobile apps: exploring adolescents' perspectives. *Health Inform J*. 2016;22:265–275. <https://doi.org/10.1177/1460458214555041>.
34. Malik FS, Panlasigui N, Gritton J, et al. Adolescent perspectives on the use of social media to support type 1 diabetes management: focus group study. Research support, N.I.H., Extramural. *J Med Int Res*. 2019;21:e12149. <https://doi.org/10.2196/12149>.
35. Nikolaou CK, Tay Z, Leu J, et al. Young people's attitudes and motivations toward social media and mobile apps for weight control: mixed methods study. Research support, non-U.S. Gov't. *JMIR Mhealth Uhealth*. 2019;7:e11205. <https://doi.org/10.2196/11205>.
36. Ahola Kohut S, LeBlanc C, O'Leary K, et al. The internet as a source of support for youth with chronic conditions: a qualitative study. *Child Care Health Dev*. 2018;44:212–220.
37. Byron P. Troubling expertise: social media and young people's sexual health. *Commun Res Pract*. 2015;1:322–334. <https://doi.org/10.1080/22041451.2015.1110085>.
38. Selkie EM, Benson M, Moreno M. Adolescents' views regarding uses of social networking websites and text messaging for adolescent sexual health education. *Am J Health Educ*. 2011;42:205–212.

39. Selkie E, Adkins V, Masters E, et al. Transgender adolescents' uses of social media for social support. *J Adolesc Health*. 2020;66:275–280.
40. Simon L. Adolescents' sex education using new digital media: the personal motivations and interactive experiences of young people online at Reddit.com. Conference Abstract. *Eur J Contracept Reprod Health Care*. 2013;18:S224–S225. <https://doi.org/10.3109/13625187.2013.793038>.
41. Gray NJ, Klein JD, Noyce PR, et al. Health information-seeking behaviour in adolescence: the place of the internet. Comparative study research support, non-U.S. Gov't. *Soc Sci Med*. 2005;60:1467–1478.
42. Van Dyck D, D'Haese S, Plaete J, et al. Opinions towards physical activity interventions using Facebook or text messaging: focus group interviews with vocational school-aged adolescents. Research support, non-U.S. Gov't. *Health Soc Care Commun*. 2019;27:654–664. <https://doi.org/10.1111/hsc.12679>.
43. Goodyear V, Quennerstedt M. #Gymnad - young boys learning processes and health-related social media. *Qual Res Sport Exerc Health*. 2020;12:18–33. <https://doi.org/10.1080/2159676X.2019.1673470>.
44. Ortiz R, Shafer A, Cates J, Coyne-Beasley T. Assessing feasibility and strategies for clinicians to communicate via social media with adolescent patients about HPV vaccination. Conference Abstract. *J Adolesc Health*. 2015;56:S22. <https://doi.org/10.1016/j.jado-health.2014.10.045>.
45. Goodyear VA, Armour KM, Wood H. Young people and their engagement with health-related social media: new perspectives. *Sport Educ*. 2019;24:673–688. <https://doi.org/10.1080/13573322.2017.1423464>.
46. Plaisime M, Robertson-James C, Mejia L, et al. Social media and teens: a needs assessment exploring the potential role of social media in promoting health. *Soc Media Soc*. 2020;6. <https://doi.org/10.1177/2056305119886025>.
47. Goodyear VA, Armour KM. Young people, social media and health. Abingdon, Oxon: Routledge; 2019.
48. Veinot TC, Campbell TR, Kruger DJ, et al. A question of trust: user-centered design requirements for an informatics intervention to promote the sexual health of African-American youth. *J Am Med Inform Assoc*. 2013;20:758–765. <https://doi.org/10.1136/amiainjnl-2012-001361>.
49. Raeside R, Jia SS, Redfern J, et al. Navigating the online world of lifestyle health information: qualitative study with adolescents. *JMIR Pediatr Parent*. 2022;5:e35165. <https://doi.org/10.2196/35165>.
50. Lavis A, Winter R. #Online harms or benefits? An ethnographic analysis of the positives and negatives of peer-support around self-harm on social media. *J Child Psychol Psychiatry*. 2020;61:842–854. <https://doi.org/10.1111/jcpp.13245>.
51. Blower S, Swallow V, Maturana C, et al. Children and young people's concerns and needs relating to their use of health technology to self-manage long-term conditions: a scoping review. *Arch Dis Child*. 2020;105:1093–1104. <https://doi.org/10.1136/archdischild-2020-319103>.
52. Norman CD, Skinner HA. eHealth literacy: essential skills for consumer health in a networked world. *J Med Int Res*. 2006;8:e506.
53. Erikson EH. Identity: Youth and crisis. New York, NY: WW Norton & Company; 1968.
54. Smahel D, Machackova H, Mascheroni G, et al. *EU Kids Online2020: Survey results from 19 countries*. 2020. Available at: <https://www.lse.ac.uk/media-and-communications/assets/documents/research/eu-kids-online/reports/EU-Kids-Online-2020-10Feb2020.pdf>. Accessed October 8, 2022.
55. Basch CH, Hillyer GC, Jaime C. COVID-19 on TikTok: harnessing an emerging social media platform to convey important public health messages. *Int J Adolescent Med Health*. 2020;34:367–369.
56. Song S, Zhao YC, Yao X, et al. Short video apps as a health information source: an investigation of affordances, user experience and users' intention to continue the use of TikTok. *Int Res*. 2021;23:e30409.
57. Li Y, Guan M, Hammond P, et al. Communicating COVID-19 information on TikTok: a content analysis of TikTok videos from official accounts featured in the COVID-19 information hub. *Health Educ Res*. 2021;36:261–271.
58. Booth KM, Trauth EM. Moving beyond text: How teens evaluate video-based high stakes health information via social media. Cham: Springer International Publishing; 2019:516–525.