BMJ Open

Wellbeing-focused media literacy interventions in secondary schools: A systematic review and meta-analysis protocol

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To cite: Tibbs M, Francis G, Mountain J, *et al*. Wellbeing-focused media literacy interventions in secondary schools: A systematic review and meta-analysis protocol. *BMJ Open* 2026;**16**:e119555. doi:10.1136/bmjopen-2026-119555

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (https://doi.org/10.1136/bmjopen-2026-119555).

Received 12 March 2026
Accepted 26 May 2026

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ABSTRACT

Introduction Media and digital technologies shape adolescent development across interconnected online and offline contexts, offering opportunities for learning and connection while also exposing young people to risks that can affect wellbeing. Wellbeing-focused media literacy interventions aim to support young people in understanding and managing how media and technology shape their experiences and wellbeing. Schools are well placed to deliver such interventions at scale through curricular integration. However, existing interventions vary widely in focus, design and evaluation quality making it difficult to determine what works and why. This review synthesises school-based wellbeing-focused media literacy interventions and evaluates their effectiveness across well-being outcomes.

Methods and analysis A range of interdisciplinary databases (ACM Digital Library, British Education Index, CINAHL, ERIC, MEDLINE, PsycINFO, Scopus, Web of Science) alongside targeted grey literature searches of internal evaluation reports and dissertations were searched on 20 January 2026. Eligible studies will include school-based interventions for adolescents aged 11–18. Abstracts and full texts will be screened in Covidence, and relevant data extracted using an adapted Template for Intervention Description and Replication (TIDieR) framework. A three-level random effects meta-analysis will estimate pooled effects across psychological, social, physical and digital wellbeing domains. Narrative synthesis, informed by the adapted TIDieR framework, will explore intervention content, delivery and theoretical foundations to identify mechanisms of change and sources of heterogeneity.

Ethics and dissemination Ethical approval is not required for this systematic review, as it will only include published data. The review findings will be disseminated through a peer-reviewed publication and conference presentations.

PROSPERO registration number CRD420251269724.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ Uses a three-level random effects meta-analysis that accounts for dependency among multiple effect sizes within studies, allowing more accurate synthesis of complex intervention outcomes.
⇒ Comprehensive interdisciplinary search across psychology, education, public health and human computer interaction databases alongside grey literature sources to maximise coverage of relevant interventions.
⇒ Integrates interventions targeting well-being outcomes associated with media and technology use including psychological, social, physical and digital well-being within a single media literacy framework, helping consolidate previously fragmented areas of research.
⇒ Intervention characteristics will be systematically coded using an adapted Template for Intervention Description and Replication framework to identify intervention components and mechanisms of change.
⇒ Substantial heterogeneity in intervention content, theoretical frameworks, delivery formats and outcome measures may still limit comparability across studies despite the use of a multilevel meta-analytical approach and use of subgroup analyses.

INTRODUCTION

Rates of mental health difficulties among adolescents have risen globally in recent decades,[1–3] accompanied by declines in feelings of happiness and positive affect.[4–6] Most mental health difficulties emerge before the age of 25,[7] and in the UK one in five adolescents were reported to have a probable mental health disorder in 2023.[8] At the same time, there has been a rapid growth in youth digital technology use, with adolescents in the UK spending an average of 4–6 hours per day online.[9] While these trends have unfolded concurrently, existing evidence suggests that technologies are not inherently harmful to young people, but rather associations between digital technology use and mental health are complex and shaped by a wide range of social, developmental and contextual factors.

For contemporary adolescents, social life, learning and self-expression are increasingly shaped by media and digital technologies,

including social media platforms such as YouTube, TikTok, Snapchat and WhatsApp.[10–12] These technologies provide opportunities for connection, creativity and community. However, they can also expose young people to cyberbullying, harmful or distressing content, reinforce sedentary behaviours and promote upward comparison, all of which may undermine mental health and wellbeing.[8 13–17] Supporting young people to develop capable and informed engagement with media and technology is therefore a pressing public health and educational concern.[18]

Defining Wellbeing

Wellbeing is commonly defined as 'how people feel and how they function, both on a personal and a social level and how they evaluate their lives as a whole'[19] [p.6], though its conceptualisation and measurement vary considerably across the literature.[20 21] It is widely recognised as a multidimensional construct, encompassing psychological, physical and social domains.[22] Psychological wellbeing includes two components; subjective (hedonic) wellbeing, such as life satisfaction and affect balance[23 24] and psychological (eudaimonic) wellbeing, which focuses on qualities associated with flourishing, such as purpose and personal growth.[25 26] Physical wellbeing is frequently indexed through engagement in health-promoting behaviours (eg, physical activity[27]) and avoidance of health-risk behaviours (eg, smoking and substance use).[28] Social wellbeing captures the extent to which individuals feel integrated into and supported by their social networks and communities, encompassing experiences of belonging, acceptance and positive relationships.[29] wellbeing, at both the personal and social level, can also be measured using more objective indicators, including physical/mental health status, educational attainment, socio-economic security and housing quality.[30]

As young people's everyday lives have become deeply intertwined with digital technologies, scholars have increasingly argued that well-being frameworks must also incorporate a digital dimension. Digital wellbeing has been defined as the 'subjective individual experience of optimal balance between the benefits and drawbacks obtained from mobile connectivity'[31] (p.938). Promoting wellbeing in contemporary society therefore requires approaches that attend to multiple, inter-related dimensions of wellbeing and equip young people with the knowledge and skills to engage with media and technology in ways that support personal and social flourishing in an increasingly digital world.

Media Literacy Education

Media literacy education offers one potential pathway for promoting wellbeing among adolescents. Media literacy refers to the ability to access, analyse, evaluate and create media, with an emphasis on critically understanding media messages and their underlying intentions.[32 33] As media environments have become increasingly digitised, this framing has been extended to include digital literacy, applying the same core functional, critical and socioemotional competencies to online media, platforms and technologies, alongside related literacies such as information and artificial intelligence (AI) literacy.[34 35] Drawing on this perspective, digital literacy can be typically understood as a context-specific subfield of media literacy that encompasses the same underlying competencies. These include functional competencies such as searching for information, creating content and navigating platforms[36] and critical competencies such as evaluating online content and understanding how platform infrastructures and algorithms shape what users encounter and produce.[37–39]

Accordingly, in this review we use the term *media literacy interventions* as an umbrella to refer to interventions grounded in media literacy frameworks and traditions, including those applied to digital contexts (eg, AI literacy, social media literacy) and commonly described as digital literacy interventions. Increasingly, these competencies are viewed not only as educational outcomes in their own right, but also as important determinants of young people's wellbeing. In line with this perspective, there is growing recognition that media literacy includes an integral wellbeing dimension, involving the socioemotional knowledge and skills needed to navigate the psychological demands of modern-day media and digital technology and to understand how these experiences can affect wellbeing.[40] Emerging evidence suggests that these functional, critical and socioemotional skills are needed to help young people use technology in ways that maintain, enhance, support and protect wellbeing.[41–44]

WELLBEING-FOCUSED MEDIA LITERACY NTERVENTIONS

Schools have become a key setting for initiatives aimed at improving young people's media literacy in relation to wellbeing, as they reach learners during formative developmental periods, enable integration into curricula, and allow delivery at scale.[45] In the United Kingdom (UK), this importance is reflected in government efforts to improve media and digital skills,[46] as well as mandated education on some online harms through the Relationships, Sex and Health Education curriculum.[47]

As media literacy has become an established educational priority, a diverse range of interventions aim to foster media literacy in ways that support youth wellbeing in both online and offline contexts. For example, interventions have been developed to promote positive body image by fostering media literacy in relation to harmful appearance-related messaging across media and technology, while also teaching psychological and behavioural coping strategies.[48 49] Interventions have also been developed to promote social wellbeing in online spaces by providing education related to how the design features and social affordances of online media environments may shape and sustain cyberbullying behaviours and social relationships.[50 51] While these interventions vary in terms of content and approach, a commonality is that all aim to *develop the knowledge and skills needed to foster wellbeing in*

relation to media and technology through three interrelated sets of competencies:

1. *Critical* knowledge and skills to analyse and evaluate media and technology.
2. *Functional* knowledge and skills to navigate and operate media and technology.
3. *Socioemotional* knowledge and skills to recognise, reflect on, and manage emotional and social responses to media and technology.

In many cases, wellbeing is positioned as an assumed or downstream outcome arising from the development and application of these competencies, rather than as an explicit focus of intervention theory or evaluation. We refer to this diverse group of approaches as *wellbeing-focused media literacy interventions*.

Despite growing recognition of their educational and public health relevance,[52] little is known about which wellbeing-focused media literacy interventions work, for whom and why. Existing reviews have largely examined intervention effectiveness within specific domains, such as cyberbullying[53] and body image,[54] even though interventions often share elements that promote critical awareness, self-reflection and behavioural change.[55] This fragmentation prevents understanding of shared mechanisms or 'active ingredients' that drive positive outcomes across intervention types and limits understanding of what approaches are most effective or transferable to real-world educational settings.

OBJECTIVES

Accordingly, this systematic review aims to identify classroom-based wellbeing-focused media literacy interventions that are effective among adolescents aged 11–18. Furthermore, it aims to examine the components and characteristics that underpin effectiveness. Specifically, it addresses the following questions:

1. Do school-based well-being-focused media literacy interventions improve youth well-being outcomes (psychological/subjective, social, physical and digital)?
2. What active ingredients (components and characteristics) underpin effective school-based well-being focused media literacy interventions?

MATERIALS AND METHOD

This study will conduct a systematic review and meta-analysis examining the effectiveness of eligible interventions. The review will include experimental and quasi-experimental studies, including dissertations employing these designs, provided they meet the predefined eligibility criteria. Where sufficient comparable data are available, quantitative findings from eligible studies will be synthesised using meta-analysis to estimate the effects of the interventions under investigation.

PROTOCOL AND EGISTRATION

The current protocol is aligned with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P)[56] see online supplemental materials. The subsequent systematic review and meta-analysis will be reported following the PRISMA guidelines.[57]

This protocol has been preregistered on the Open Science Framework Platform (OSF; 10.17605/OSF.IO/APM7F) and PROSPERO (CRD420251269724). Any significant amendments made to the protocol will be documented and reported in the final systematic review manuscript. Database searches have been conducted, and title and abstract screening is currently ongoing, with completion anticipated by November 2026.

INFORMATION SOURCES AND SEARCH TRATEGY

The systematic search included both peer-reviewed and grey literature published in English, with no geographical restrictions. Peer-reviewed studies were identified through interdisciplinary databases to ensure comprehensive coverage across education, psychology, public health and human–computer interaction: ACM Digital Library, British Education Index, CINAHL, ERIC (Education Resources Information Centre), MEDLINE, PsycINFO, Scopus, Web of Science. Grey literature included doctoral theses and publicly available internal reports evaluating interventions with randomised designs, as these sources can provide valuable, otherwise unpublished evidence subjected to some level of independent scrutiny. Doctoral theses were identified through ProQuest Dissertations and Theses Global. All database searches were conducted on 20 January 2026. In addition to these interdisciplinary databases, websites of reputable media literacy and/or educational evaluation organisation websites (eg, Education Endowment Foundation, Internet Matters, PSHE Association) will be searched for relevant internal evaluation reports. The rationale for including each database is presented in table 1. To ensure all relevant articles will be captured, a process of forward reference and backward citation checking using *citationchaser*[58] will be conducted on eligible full texts.

The search strategy was developed in collaboration with a library specialist at the University of York and through examination of previous systematic reviews in the areas of digital literacy, media literacy and wellbeing. Search terms focused on the core domains under investigation: the population of interest, characteristics of the intervention, relevant outcomes, the setting within which interventions are implemented and study design, as well as MeSH terms or subject areas relevant to each database where applicable. Considering the breadth of potential wellbeing outcomes, the search strategy was conducted separately for each of the four wellbeing domains (psychological/subjective, social, physical and digital) to ensure sufficient and relevant

Table 1 Rationale for bibliographic databases

Database	Rationale
ERIC (Education Resources Information Centre)	Captures literature focused on education and learning contexts.
British Education Index	Covers educational literature focused within the British context that may not be captured within ERIC.
Web of Science	Broad, multidisciplinary database indexing a wide range of high-impact peer-reviewed research.
PsycINFO	Specialises in psychology and related behavioural sciences.
CINAHL	Covers nursing, allied health and applied healthcare research.
MEDLINE	Biomedical and public health database; includes extensive coverage of health interventions and uses MeSH terms, enhancing search precision.
SCOPUS	Indexes a broad range of journals across health sciences, technology and education.
ACM Digital Library	Houses studies from human–computer interaction, a field that often contributes to research on digital literacy and technology use.
ProQuest Dissertations and Theses Global	Grey literature database that houses doctoral theses.

MeSH, Medical Subject Headings.

retrieval of studies. See online supplemental material 1 for an example SCOPUS search strategy.

ELIGIBILITY RITERIA

To be included in the current systematic review, all studies, including those identified across the grey literature, will need to meet the predefined inclusion and exclusion criteria as informed by the Population, Intervention, Comparison, Outcome, Study Design model. For a summary of the inclusion criteria, see table 2.

Population

To be included in this review, studies must focus on young people engaged in formal second level education aged 11–18. This age range was selected to capture developmental stages typically corresponding to secondary-level

Table 2 Inclusion/exclusion criteria

	Inclusion	Exclusion
Population	Young people aged 11–18 attending postprimary, secondary or high school.	Young people not attending postprimary, secondary or high school. Young people aged <11 or >18.
Intervention	School or classroom-based media literacy interventions that include education on the knowledge and skills needed to foster well-being in relation to media and technology including critical, functional and socioemotional.	Interventions that: ► Are not conducted within education settings. ► Do not target students' knowledge and skills related to media and technology.
Comparator	Studies will be included if they compare the intervention with either a passive control (eg, no intervention, usual care or waitlist/delayed care) or active control (eg, an alternative intervention or the same intervention delivered at a different time point).	Studies without a comparison or control group (eg, pre–post, uncontrolled or observational designs) will be excluded.
Outcome	Studies will be included if their primary or secondary outcomes relate to either well-being and/or digital/media/information literacy.	Studies will be excluded if they do not assess well-being as an outcome
Study Design	Studies will be included if they: ► Employ experimental designs with a comparator group, RCTs (including cluster-RCTs) and non-randomised comparison group designs (e.g. quasi-experiments using matched control or non-equivalent control group). ► Include a quantitative comparison between intervention and control or comparison conditions to evaluate effectiveness or efficacy.	Studies will be excluded if they: ► Do not include a comparator group (e.g. single-group pre–post, purely observational or cross-sectional studies). ► Employ qualitative designs. ► Are systematic reviews and meta-analyses. ► Are intervention protocols without published findings available at the time of synthesis.
Time frame	2000 to present.	Studies published before the year 2000.

RCTs, randomised controlled trials.

schooling across international education systems, while excluding primary and postsecondary contexts.

Intervention

Eligible interventions must include a media literacy component, defined as educational content focused on developing adolescents' ability to access, analyse, evaluate and create media, with an emphasis on critically understanding media messages and their underlying intentions.[32 33] Media or technology must be an active target of the intervention, rather than solely the mode of delivery.

Interventions may contain one or more of the following media literacy components, which reflect different ways in which well-being-focused media literacy is operationalised in practice:

1. *Critical*: The knowledge and skills needed to critically analyse and evaluate media and technology through a well-being lens (eg, understanding persuasive intent, platform design, algorithms or how media features shape experiences relevant to well-being).
2. *Functional*: The knowledge and skills needed to navigate and operate media and technology in ways that may support well-being, including modifying engagement, using safety and support features, and enacting boundaries or help-seeking behaviours within digital environments.
3. *Socioemotional*: The knowledge and skills needed to recognise and reflect on emotional and social responses to media and technology, and to evaluate when media engagement supports or undermines well-being.

Comparators

Studies will be included if they evaluate the intervention against either a passive control condition (eg, no intervention, usual care or waitlist/delayed care) or an active control condition (eg, an alternative intervention or the same intervention delivered at a different time point). Studies that do not include a comparison or control group, such as pre–post, uncontrolled or purely observational designs, will be excluded.

Outcomes

The primary outcome is wellbeing, which we define broadly as 'how people feel and how they function, both on a personal and a social level, and how they evaluate their lives as a whole'[19] (p.6). To structure our analysis, we draw on the WHO's three-domain model of well-being, which includes psychological, social and physical dimensions.[22] We extend this framework by adding a fourth domain: digital well-being. This expanded model allows us to capture the full spectrum of experiences and risks associated with young people's digital lives. For the purposes of this review, we define these four domains as follows:

1. *Psychological/subjective wellbeing* reflects individuals' evaluations and lived experiences of their own lives, including their sense of life satisfaction, experiences of positive and negative emotions, self-concept, the absence of mental health difficulties and overall capacity to flourish.[59 60]
2. *Social wellbeing* refers to the extent to which individuals feel integrated into and supported by their social networks and communities.[29] This can include concepts such as belonging, friendship quality, as well as experiences of social isolation and loneliness.
3. *Physical wellbeing* can be described as the ability to maintain bodily health and energy through balanced behaviours such as exercise, diet, sleep, sexual health and avoidance of harmful habits.[61 62]
4. *Digital wellbeing* refers to individuals' ability to engage with digital technologies in ways that support well-being, including feeling safe, in control and supported in online environments, as well as minimising exposure to digital risks such as harmful content, excessive use or negative social interactions.

Secondary outcomes include indicators of digital, media and information literacy, reflecting young people's knowledge, skills and critical competencies in navigating online environments. For detail on the categorisation and representative measures, see online supplemental materials 2 and 3).

Study Design

This review will include English language, peer-reviewed experimental and quasi-experimental studies with a comparator or control group, including randomised controlled trials (cluster and individual) and non-randomised comparison designs (eg, matched or non-equivalent control groups). Eligible studies must provide a quantitative comparison between intervention and control conditions to assess effectiveness or efficacy.

Timeframe

The search period was set from 2000 to the present date to capture developments in digital literacy during a transitional period of conceptual overlap with traditional media literacy, when technologies were beginning to be integrated into media literacy education and regulation.[63] These developments are exemplified by the enactment of international policies such as the US Children's Internet Protection Act (2000), the UK Communications Act (2003) and the European Union Action Plan for a Safer Internet (1999–2004), which increasingly framed media literacy around online safety, responsible use and digital participation alongside traditional media.

DATA ANAGEMENT

Search results will be exported to Zotero reference managers and duplicates will be removed. Covidence systematic review software will be used to screen the abstracts and full texts of identified studies. Microsoft Excel will be used to extract relevant study data and to conduct quality appraisals of all included studies.

SELECTION OF STUDIES AND DATA EXTRACTION

Following the removal of duplicates, studies will be screened in two stages using Covidence. First, titles and abstracts will be assessed against the inclusion and exclusion criteria. Full texts of potentially relevant studies will then be retrieved and reviewed for eligibility. Four reviewers experienced in systematic review methodologies will contribute to the data screening and extraction process. At each stage studies will be double screened, and discrepancies will be resolved through a joint discussion by the two reviewers, and the opinion of a third reviewer will be obtained if agreement is not reached. Inter-rater reliability (eg, Cohen's κ) will be calculated to assess agreement between the two reviewers at title and abstract screening as well as full-text screening.

Similarly, two reviewers will duplicate data extraction and coding to ensure accuracy and consistency. One reviewer will extract and code all included studies, while the remaining three reviewers will each extract and code a proportion of the studies to enable cross-checking and verification. Extracted data will be compared for accuracy and completeness, with any discrepancies resolved through discussion and arbitration by a fourth author where necessary.

A prepiloted data extraction form will be used to capture bibliographic details, sample characteristics, intervention and comparison conditions, and quantitative outcomes from each included study. The form will capture:

1. *Key study characteristics*: including author details, study date, country, study aims and objectives.
2. *Participant and school characteristics*: including sample size and composition (eg, gender distribution, mean age, type of school (public/private) and contextual factors such as rural/urban setting of the school).
3. *Intervention characteristics*: We will record intervention characteristics using an adapted version of the Template for Intervention Description and Replication (TIDieR) framework.[64] Using this, we will extract details on:
   a. The rationale, goal and theoretical framing of the intervention.
   b. What is delivered (specific activities and intervention components). This will be extended to capture which well-being-focused media literacy components are targeted. These components include: (1) critical knowledge and skills; (2) functional knowledge and skills; and (3) socioemotional knowledge and skills. We acknowledge that these domains are interrelated and will not be mutually exclusive. The coding framework will therefore allow for dual or multiple categorisations where components span domains.
   c. Who the intervention is delivered by (eg, teachers, trained facilitators, peers).
   d. How the intervention was delivered (in-class online modules, group activities, presentations). This will be extended to extract details on mechanisms through which these interventions are theorised to achieve their outcomes. Specifically, we will code for teaching strategies and pedagogical approaches (eg, reflection, discussion, experiential learning) and behaviour change techniques (BCTs[65]) used to enact behaviour change.
   e. Where the intervention was delivered (eg, within subject specific classes, after school, during pastoral care).
   f. The frequency and duration of the intervention session(s).
   g. Evidence of any modifications during the process of intervention implementation.
   h. Details on adherence to any existing protocols.
   i. Details of any adaptations or tailoring for different contexts.
4. *Outcomes*: including outcome domains, measures used, time points of assessment (eg, pre, post, follow-up), directionality of well-being outcomes (positive or negative) and available relevant quantitative data (means, related effect sizes and associated variance estimates) for meta-analytical calculations.

QUALITY APPRAISAL AND CERTAINTY OF EVIDENCE

To examine risk of bias across studies (including those identified through grey literature searching), the Cochrane Risk of Bias Tool (RoB2[66]) will be used. This tool evaluates the risk of bias by assigning studies a quality rating of low, high or unclear across several domains of bias. Studies deemed low quality will be retained for both the systematic review and meta-analysis. However, in line with recent meta-analyses of school-based interventions,[67 68] sensitivity analyses will be conducted excluding low-quality studies to examine their influence on the magnitude and robustness of the overall effect. Funnel plots will be used to assess potential publication bias, and Egger's test will be employed to statistically evaluate the presence of small-study effects.

DATA SYNTHESIS

Narrative synthesis

Extracted data will be tabulated and narratively synthesised following Popay *et al*'s[69] guidance on narrative synthesis. First, study, participant and intervention characteristics will be summarised descriptively using the adapted TIDieR framework. Second, interventions will be compared according to their wellbeing-focused media literacy components (knowledge/understanding and skills) and the mechanisms of change identified (teaching strategies, pedagogies and BCTs). Finally, the synthesis will explore how variations in these components and mechanisms relate to wellbeing outcomes across domains (psychological/subjective, social, physical, digital). Using this approach, the synthesis will provide an overview of patterns in intervention content (what) and the mechanisms to enact behaviour change (how), providing a

working theory of how the intervention works to achieve its outcomes.[70]

Meta-analysis

All studies meeting the inclusion criteria will be included in the systematic review; however, only studies reporting sufficient quantitative data on well-being outcomes (eg, means and SD, change scores or effect estimates with variance) will be eligible for inclusion in the meta-analysis. Studies lacking extractable data or reporting outcomes that cannot be meaningfully standardised will be synthesised narratively. Where outcomes are reported on continuous scales, effect sizes are expected to be calculated as standardised mean differences (Hedges' g), which is commonly used in meta-analyses of school-based interventions to accommodate heterogeneous measures and small sample sizes. Effect sizes will be interpreted in relation to those reported in prior meta-analyses of school-based interventions, with emphasis on robustness and practical relevance rather than fixed magnitude thresholds.

We will perform a meta-analysis using an intention-to-treat approach, as opposed to a per-protocol approach, to minimise post-randomisation bias and overestimation of effects.[71] This means that all participants originally allocated to intervention and control groups will be analysed according to their initial assignment, regardless of adherence or dropout, ensuring a more conservative and unbiased estimate of effect. To account for probable correlation and dependence between multiple effect sizes reported within individual studies, we will adopt a three-level random-effects meta-analysis to estimate pooled effects. A three-level random-effects meta-analysis partitions variance into three components:

1. Sampling variance associated with each observed effect size (sampling error within studies).
2. Variance between effect sizes within the same study.
3. Variance between study effects.

In this analysis, effect sizes are nested within studies, and multiple outcomes reported by the same study are modelled as correlated at level two. This approach allows the inclusion of several non-independent outcomes per study while appropriately accounting for their clustering.[72 73]

To assess what proportion of the observed variance reflects variance in true effects, the I^2 statistic will be calculated, with cut-offs of 25, 50 and 75% denoting low, moderate and high levels of heterogeneity. 95% CIs for the I^2 values will be calculated using the method outlined by Borenstein.[74] Finally, to explore sources of heterogeneity, we will conduct moderator analyses. Moderators will include study design characteristics (eg, passive vs active control conditions, publication year), intervention characteristics (eg, mode of delivery, number and duration of modules or lessons) and participant characteristics (eg, gender composition). In addition, outcome domains (psychological/subjective, social, physical, digital) will be entered as categorical moderators alongside study-level characteristics such as intervention design and participant details. This will allow us to formally test whether effects differ across outcome domains, as well as to examine potential sources of between-study heterogeneity. Following guidance from Weisz *et al*,[75] analyses with categorical moderators will only be conducted if each category contains at least five cases.

As a robustness check, we will fit a correlated-hierarchical effects model, which combines a hierarchical variance structure with robust variance estimation to permit inference without requiring known within-study correlations.[76] This will be accompanied by further sensitivity analyses using examination of the potential impact of outliers and risk of bias. Where substantial or unforeseen heterogeneity is identified, and where sufficient data are available, we may additionally conduct separate three-level or standard meta-analyses within well-being domains (eg, psychological/subjective, social, physical, digital) to improve conceptual and methodological comparability of pooled estimates. Importantly, meta-analytical decisions will be guided by theoretical coherence, measurement comparability and the distribution of available data within each domain. Where measures within a domain are conceptually or operationally heterogeneous, outcomes that cannot be meaningfully compared will be synthesised narratively rather than pooled.

Statistical analyses will be conducted using the *metaSEM* package[77] in R statistical software.[78]

ETHICS AND DISSEMINATION

Ethical approval is not required for this systematic review, as it will only include published data. The review findings will be disseminated through a peer-reviewed publication and conference presentations.

PUBLIC AND PATIENT INVOLVEMENT

The current protocol has been presented and reviewed by n=10 key stakeholders including representatives from charities and advocacy groups, education specialists, methodological experts and academic researchers as well as n=2 young people.

DEVIATIONS FROM THE PROTOCOL

Any deviations from the registered protocol will be updated and recorded on the OSF and PROSPERO websites.

Strengths and Limitations

This review has several methodological and conceptual strengths. Existing systematic reviews have largely examined the effectiveness of interventions targeting specific online harms,[53 79 80] yet few have integrated these within a broader wellbeing framework [81]. To date, no review has examined the effectiveness of wellbeing-focused media literacy interventions, no meta-analysis has synthesised

the effectiveness of such interventions, and no evidence map has visualised the extent of the evidence base and associated research gaps. By synthesising evidence across school-based interventions that aim to develop young people's understanding of how digital experiences affect wellbeing and the skills needed to support it, this review addresses an important gap in the literature. The three-level meta-analysis will provide pooled estimates across psychological/subjective, social, physical, and digital wellbeing outcomes, while the accompanying narrative synthesis will identify intervention components and contextual factors associated with effectiveness. Findings will contribute to a clearer conceptualisation of wellbeing-focused media literacy and inform its implementation and evaluation in educational settings

Methodologically, the review is strengthened by preregistration on the Open Science Framework and PROSPERO and adherence to PRISMA-P guidance, supporting reproducibility and methodological rigour. The search strategy spans multiple interdisciplinary databases across education, psychology, public health and human–computer interaction, alongside grey literature sources, increasing the likelihood of identifying a comprehensive body of relevant evidence. Conceptually, the review integrates interventions targeting well-being outcomes associated with media and technology use including psychological, social, physical and digital well-being within a single media literacy framework. This approach helps consolidate previously fragmented areas of research. In addition, intervention characteristics will be systematically coded using an adapted TIDieR framework, enabling the identification of active components and mechanisms that may underpin effective well-being-focused media literacy interventions.

However, some limitations should be acknowledged. Considerable heterogeneity is also anticipated in intervention content, theoretical foundations, delivery formats and outcome measures across studies. Although this heterogeneity will be explicitly accounted for using a three-level random-effects meta-analytic model that accommodates dependency among multiple effect sizes within studies, variation in intervention design and measurement may still limit comparability and complicate interpretation of pooled estimates. Finally, the strength of the conclusions will depend on the methodological quality and reporting practices of the included primary studies.

Acknowledgements The authors would like to thank members of both the steering committee and the youth advisory board for their invaluable contributions to the drafting of this manuscript.

Contributors MT: Conceptualisation, Methodology, Investigation, Writing—original draft, Writing—review and editing, responsible for the overall content as guarantor. GF: Conceptualisation, Methodology, Investigation, Supervision, Funding acquisition, Writing—review and editing. JM: Investigation, Writing—review and editing. GP: Conceptualisation, Supervision, Funding acquisition, Writing—review and editing. BTB: Conceptualisation, Methodology, Investigation, Supervision, Funding acquisition, Writing—review and editing.

Funding This project has been funded by the Nuffield Foundation (Grant Number: EDO /FR-000025035), but the views expressed are those of the authors and not necessarily the Foundation. Visit nuffieldfoundation.org.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

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