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TARGETED LITERATURE REVIEW REPORT

Perception of Negative Emotions in Young People

Prepared for the Health Action Research Group

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Contents

Abbreviations

Abbreviation	Definition
ACAMH	Association for Child and Adolescent Mental Health
ACE	Adolescent Cognition and Emotion
ACQ	Adolescent Cognitive Style Questionnaire
APA	American Psychological Association
BDI	Beck's Depression Inventory
CASQ	Children's attributable style Questionnaire
CCSQ	Children's Cognitive Style Questionnaire
CES-D	Centre of Epidemiological Studies — Depression
CI	Confidence interval
CRSQ	Children's Response Styles Questionnaire
CYPMHC	Children and Young People's Mental Health Coalition
DERS	Difficulties in Emotion Regulation Scale
ECQ	Emotional Clarity Questionnaire
EIS	Emotional Intelligence Scale
MMAT	Mixed Methods Appraisal Tool
MSCEIT	Mayer-Salovey-Caruso Emotional Intelligence Test
NED	Negative emotion differentiation
NHS	National Health Service
(N)MA	(Network) meta-analysis
OR	Odds ratio
PANAS-X	Positive and Negative Affect Schedule – Expanded
PHQ-9	9-question Patient Health Questionnaire
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
SE	Standard error
SLR	Systematic literature review
TLR	Targeted literature review
TMMS	Trait Meta-Mood Scale
UK	United Kingdom
US	United States
WHO	World Health Organisation
WLEIS	Wong & Law Emotional Intelligence Scale

Lay Summary

Background

Across the UK there has been growing concern about young people's mental health. However, many young people reporting 'mental health problems' are not clinically diagnosed and the problems reported include a range of temporary negative feelings and emotions not previously considered to be mental health problems. In addition, some research has reported the relationship between emotional intelligence and mental health outcomes, whereby poor emotional intelligence can be associated with poor mental health outcomes. This suggests the value of researching how young people perceive negative feelings and emotions and the mental health implications.

Objective

The objective of this targeted literature review (TLR) was to explore how negative feelings and emotions are perceived by young people, through exploring studies illustrating how such perceptions can influence mental health, including through either placebo or nocebo effects.

Methods

The TLR was performed in accordance with a pre-specified protocol. Electronic databases including MEDLINE, Embase, PsycINFO and APA Journals, were searched to identify any relevant publications. Supplementary searches of bibliographies of any relevant narrative or systematic reviews or (network) meta-analyses ([N]MAs) identified during the review, Google, relevant newspaper sources and health society websites were also conducted. Potentially relevant studies were screened first by titles, then abstracts, then full texts, against pre-specified eligibility criteria by a single reviewer, with 10% of records checked by a second independent reviewer. Relevant studies were extracted by two independent reviewers with all included studies and 10% of excluded studies being checked by a second reviewer for consistency. The quality of each included study was assessed using the Mixed Methods Appraisal Tool (MMAT)[1] and qualitative data were synthesized using thematic synthesis.[2]

Results

A total of 46 publications reporting on 44 unique studies were included in the TLR. Thirty-two studies reported on adolescent populations, and 13 studies on young adult populations. The majority of studies were conducted in the United States and Spain, with only two identified from the United Kingdom.

The captured evidence suggests that a lower ability to identify and label negative emotions is associated with poorer mental health in young people, but the influence of this on future mental health outcomes is unclear. In addition, in longitudinal studies, negative beliefs about emotions were found to be associated with the presence of depressive symptoms at one timepoint, but did not predict the development of future depressive symptoms. For emotional intelligence and cognitive vulnerabilities, young people with a higher emotional clarity had lower levels of stress, depressive or anxiety symptoms. Conversely, paying too much attention to negative emotions may be more harmful than beneficial in young people. Young people with a negative inferential style may be at particular risk of experiencing negative mental health outcomes due to excessive emotional attention and rumination, and negative inferential styles were shown to prospectively predict depressive symptoms. Interestingly, depressive symptoms also predicted decreases in emotional clarity and increased negative inferential styles, suggesting a negative feedback loop. The thematic synthesis of qualitative findings identified three key themes: medicalisation of negative emotions and life experiences; devaluation of psychiatric labels in everyday conversation; and mental health literacy.

The majority of quantitative studies used appropriate recruitment methods considering the research objectives, and were somewhat considered representative of the respective target population, however no studies reported results for a population that could be confidently generalised to a UK population, even in the one quantitative study conducted in the UK, due to small sample size and unclear population characteristics.

All quantitative studies used validated measures of psychological health and demonstrated low risk of non-response bias, where reported. Overall, the statistical analyses were appropriate for answering the research question. Similarly, three of the four qualitative studies used a qualitative approach and the data collection methods appropriate and adequate to address the research question.

Discussion

The captured evidence predominantly explored the impact of emotional intelligence concepts and cognitive vulnerabilities on mental health, with few studies directly exploring how negative emotions are perceived by young people, and how this may impact mental health or distress. The TLR identified that, at present, there are few instruments available for directly exploring perceptions towards (negative) emotions in young people. The evidence captured in the TLR supports the nocebo hypothesis that negative perceptions and poor understanding of negative emotions, together with negative cognitive bias towards stressful life events, can negatively impact on mental health. Further research is required to explore whether these associations between emotional intelligence and cognitive vulnerabilities with mental health are observable in the UK and the potential implications for protecting young people's mental health; and there is a need to develop instruments to directly explore perceptions towards (negative) emotions in young people and apply these to consider possible negative mental health outcomes, including through a nocebo effect, and the associated mental health literacy implications.

1 Introduction

1.1 Rationale and Background for the Targeted Literature Review

According to the most recent World Health Organisation (WHO) Global Burden of Disease study, two mental disorders, depression and anxiety, rank amongst the top ten causes of global disability-adjusted life years (DALYs) for adolescents.[3] Additionally, a study has found approximately 50% of all lifetime events of mental disorders begin by 14 years, with 75% by 24 years.[4] There is a clear need for an improved understanding of mental health needs in young people, as reflected in the increasing demand for counselling services amongst this population within the UK.[5] Unfortunately, in most parts of the UK, this demand is not being met.[6] Further support is therefore required to improve and prevent mental health disorders amongst young people.

At the same time, many 'mental health problems' reported by young people are not clinically diagnosed. They are self-reported examples of distress.[7] This includes a range of temporary negative feelings and emotions previously viewed as normal responses to the developmental challenges everyday life can present, particularly as young people navigate adolescence and early adulthood – for example feeling stressed, anxious, panicky, worried, lonely, unsupported, or overwhelmed.[7] There are several reasons to be wary of over diagnosing such feelings, including (as indicated below) a potential nocebo effect.

Emotional intelligence, or clarity, refers to the ability to identify, perceive, and manage one's own emotions, as well as the emotions of others.[8] Emotional intelligence and clarity are considered to be an adaptive skill, that has been shown to contribute to psychological wellbeing and effective emotion regulation. Poor emotional intelligence or clarity has been found to be associated with poor mental health outcomes in both non-clinical and clinical populations.[9]

The nocebo effect, unlike it's positive counterpart, the placebo effect, refers to the development of adverse effects as a result of negative expectations, and is less frequently studied in clinical practise. In the mental health space, a large observational study reported the perception that stress affects health is independently associated with an increased likelihood of worse mental health outcomes.[10] Additionally, a German study found that participants who viewed anxiety as a source of energy were much less likely to suffer from emotional exhaustion than those who viewed anxiety as a threat or a sign of weakness.[11] Therefore, the way negative feelings and emotions are perceived could have the potential to influence mental health. Through understanding the relationship between the perception of emotions and mental health, it may be possible to contribute to the reduction of adolescent mental distress and possibly mental health disorders – with benefits for young people, their families, their schools and universities, and ultimately for society.

The objective of this TLR was to explore how negative feelings and emotions are perceived by young people, through exploring studies illustrating how such perceptions can influence mental health, through either placebo or nocebo effects.

2 Methods

2.1 Search Strategy

The TLR was performed in accordance with a pre-specified protocol. This involved searching electronic databases, searching of the bibliographies of any relevant narrative or systematic reviews or (network) meta-analyses ([N]MAs) identified during the review, targeted searches in Google, and supplementary searches of relevant newspaper sources and health society websites.

2.1.1 Electronic Databases and Search Terms

The following databases were searched on 12th May 2023 using the search terms presented in Table 6, Table 7 and Table 8:

- MEDLINE, including MEDLINE In-Process, MEDLINE Daily and MEDLINE Epub Ahead of Print (via Ovid SP) (Table 6)
- Embase (via Ovid SP) (Table 6)
- PsycINFO (via APA PsycNET platform) (Table 7)
- APA Journals (via APA PsycNET platform) (Table 8)

MEDLINE and Embase were searched simultaneously via the Ovid SP platform. PsycINFO and APA Journals were searched separately via the APA PsycNET platform.

2.1.2 Grey Literature Searching – Google

Hand searches were carried out using Google for further relevant articles. Search strings were devised based on the terms used for the electronic database searches and iteratively adapted based on the available evidence. The first 20 results from each search were screened for relevance.

2.1.3 Grey Literature Searching – News Sources

Searches of the following newspaper sources were conducted to identify relevant articles:

- The Times Educational Supplement
- Times Higher Education
- The Guardian – Education

2.1.4 Grey Literature Searching – Mental Health Organisations

Searches of websites of the following mental health organisations were also searched to identify relevant sources:

- The Association for Child and Adolescent Mental Health (ACAMH) (https://www.acamh.org/)
- Children and Young People's Mental Health Coalition (CYPMHC) (https://cypmhc.org.uk/)
- Mental Health Foundation (https://www.mentalhealth.org.uk/)
- Anna Freud National Centre for Children and Families (https://www.annafreud.org/)
- Student Minds (https://www.studentminds.org.uk/)

2.1.5 Grey Literature Searching – Bibliography Searches

The bibliographies of relevant narrative reviews, SLRs and (N)MAs identified during the TLR were also hand-searched, to identify any additional, relevant studies for inclusion.

2.2 Study Selection

2.2.1 Eligibility Criteria

Table 1. Eligibility criteria for the TLR

Category	Inclusion Criteria
Sample	♦ **Highest priority:** Adolescents (aged 10–19 years)* without diagnosed mental illness or with sub-clinical symptoms ♦ **Lower priority:**[a] Young adults (aged 18–24)* without diagnosed mental illness or with sub-clinical symptoms
	**Age ranges were specified according to the definitions utilised by the World Health Organization. Studies whereby the mean/median age aligns with the definitions for adolescents or young adults were eligible for inclusion*
Phenomenon of interest	Perception of negative emotions and feelings, including: ♦ Emotional intelligence concepts, including the ability to perceive, recognise and understand emotions in self and others ♦ Medicalisation of negative emotions and feelings, including classifications of mental health and 'looping effects' ♦ Negative inferential style
Design	♦ Observational studies and case reports, involving data collection methods such as interviews, quantitative questionnaires, observation ♦ Interventional studies e.g., of emotional intelligence training
Outcome	♦ Perceptions, experiences and understanding of negative emotions in self and in others ♦ How perception of negative emotions has been measured e.g., TMMS-Clarity, EIS ♦ Associations between the perception of negative emotions and wellbeing or mental health outcomes (i.e., through placebo or nocebo effect)
Research type	Primary research studies, including: ♦ Quantitative studies ♦ Qualitative studies ♦ Mixed-methods studies
	SLRs/NMAs were included during the abstract review and hand searched, these study designs were ultimately be excluded from the TLR unless they themselves presented primary research
Other considerations	♦ No date limit[b] ♦ English language ♦ UK studies were of highest priority[c] ♦ Humans

Footnotes: [a]Both studies in adolescents and young adults were initially eligible for inclusion in the TLR, with adolescents representing the population most of interest. Studies conducted in both adolescents and young adult populations were ultimately included in the TLR. [b]No date limit was applied to the searches, however changes in trends over time were considered in analysis of the findings. [c]Studies from other countries were initially considered eligible for inclusion in the TLR, with UK studies of highest priority.

Abbreviations: EIS, Emotional Intelligence Scale; TLR, targeted literature review; TMMS, Trait Meta Mood Scale.

2.2.2 Study Selection Process

The review process was as follows:

- The titles of all identified articles were first reviewed against the eligibility criteria by a single, senior reviewer, and obviously irrelevant articles were excluded.
- Remaining abstracts were then reviewed against the eligibility criteria by a single reviewer. A second reviewer checked all included articles and 10% of excluded articles. Where the applicability of the inclusion criteria was unclear, the article was included at this stage to ensure that all potentially relevant studies were captured.

- Costello Medical conducted a search for freely available full-text articles required for the full-text review stage and acquired any additional articles from the Cambridge University Library. A list of articles that were not freely available at the Cambridge University Library were reviewed to determine whether they should be purchased.
- Each full-text publication was then reviewed against the eligibility criteria by a single reviewer. A second reviewer checked all included articles and 10% of excluded articles. In cases where the publication did not give enough information to be sure it meets the eligibility criteria, the publication was excluded at this stage to ensure that only relevant publications were ultimately included in the literature review.

The inclusion/exclusion decisions for each record at each stage of the review were recorded within an Excel database in which all retrieved references were stored.

2.3 Data Extraction

For each included study, key quantitative and qualitative data were extracted into a pre-specified data extraction grid in Microsoft Excel. Data extraction was performed by a single individual for each included study. In cases of uncertainty over data extraction from any sources, a second individual provided input. A second individual checked 10% of data extractions for quality and consistency.

2.4 Quality Assessment Strategy

As multiple different research types (quantitative, qualitative or mixed methods) and study designs were eligible for inclusion in the TLR, the quality of each included study was appraised using the Mixed Methods Appraisal Tool (MMAT).[1]

2.5 Data Synthesis

Qualitative data were synthesised using thematic synthesis as described by Thomas and Harden,[2] a process which involves coding and identification of themes across multiple qualitative studies. Quantitative findings were synthesised narratively, with key findings, similarities and differences across the identified studies identified and discussed. Quantitative findings were also transformed into qualitative data during the synthesis process, allowing for integration of these findings with the qualitative themes identified. The synthesis and subsequent reporting of findings aligned with the Synthesis Without Meta-analysis (SWiM) guidelines where applicable.[12]

3 Results

3.1 Searches and Screening

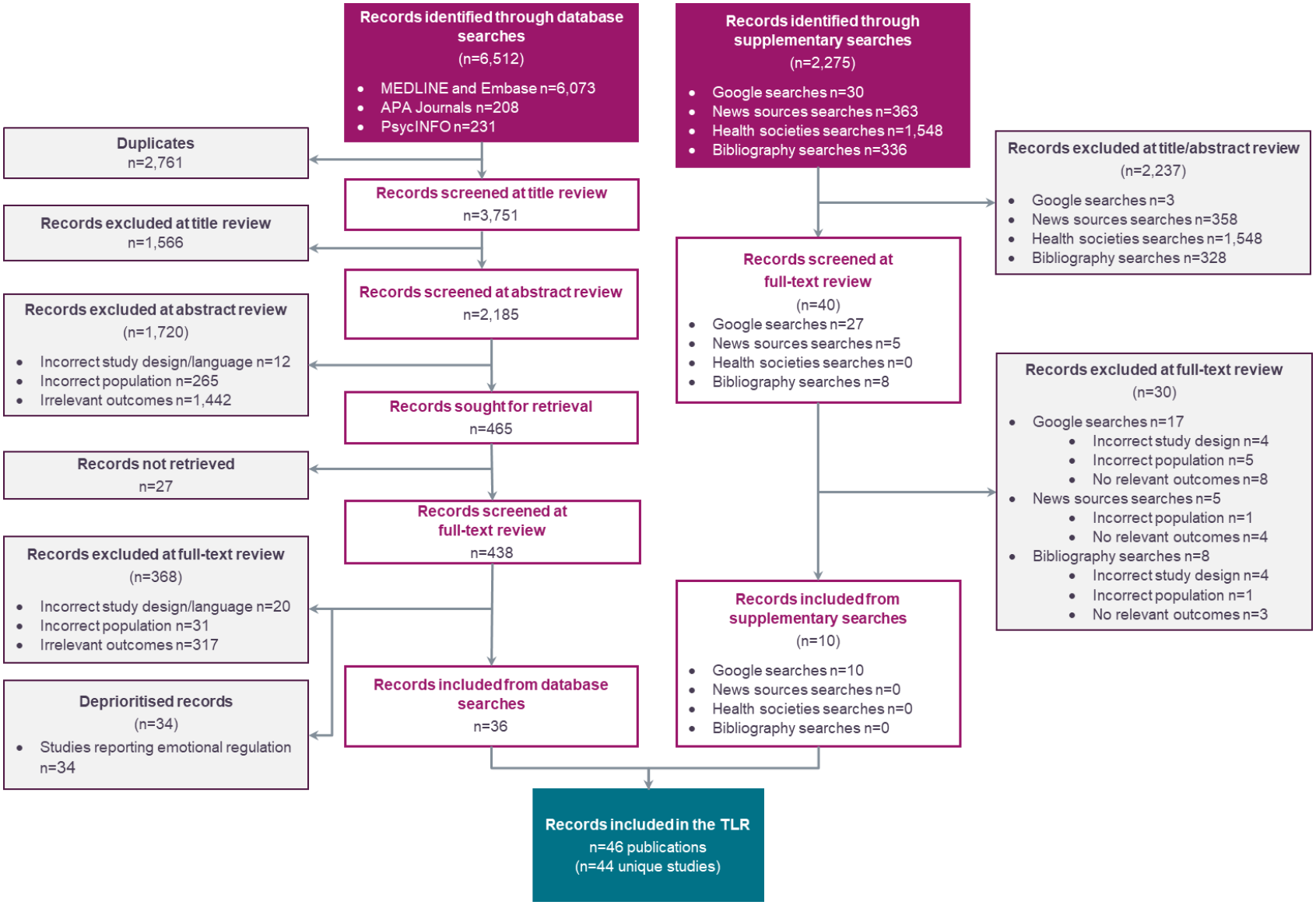
3.1.1 Included and Excluded Studies

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram for the TLR is presented in Figure 1.

A total of 6,512 records were retrieved from the electronic databases, of which 2,761 were duplicates, resulting in 3,751 novel records that were screened at the title review stage. Following this, 2,185 records were screened at the abstract review stage. Subsequently, 438 full publications were screened against the eligibility criteria at full-text review. Following this, 368 publications were excluded; these have been listed in Table 11, along with a brief rationale for exclusion. In addition, 34 publications were deprioritised. This resulted in the inclusion of 36 publications from the electronic database searches. Additionally, 10 records were included from the supplementary searches.

Ultimately, 46 publications reporting on 44 unique studies were included in the TLR. A full list of included studies is presented in Table 10.

Figure 1. PRISMA flow diagram



Abbreviations: APA, American Psychological Association; PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses; TLR, targeted literature review.

3.2 Summary of Included Studies

3.2.1 Study Characteristics

Thirty-two studies included in the TLR reported on adolescent populations, while 13 studies reported results for young adult populations. The results reported in this section are stratified according to these age categories where possible.

Research Type

Adolescents

Of the studies reporting results for adolescents, the majority collected quantitative data (29/32 studies). Four studies collected qualitative data, via focus groups and semi-structured individual interviews.[13-16]

Young Adults

In studies reporting results for young adults, 12 out of 13 were of quantitative research types. The remaining one study collected qualitative data via ethnographic observations.[17]

Study Design

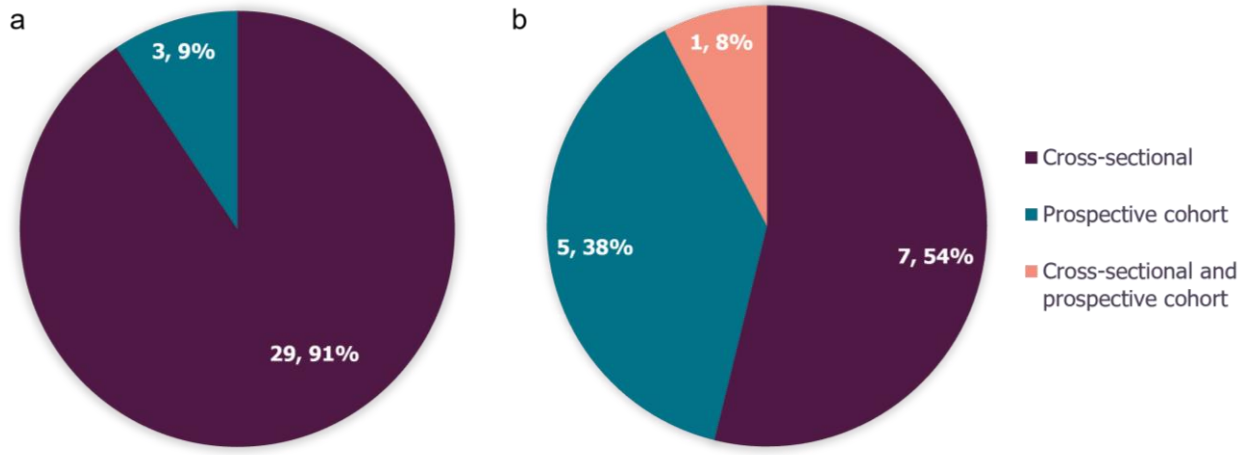
Adolescents

Thirteen studies in adolescents were of a cross-sectional design. The other 19 studies were prospective cohort studies (Figure 2a).

Young Adults

Seven of the studies in young adults were of a cross-sectional design.[18-24] Five studies were prospective cohort analyses,[17, 25-28] with one further study reporting both cross-sectional and prospective cohort analyses (Figure 2b).[29]

Figure 2. Design of included studies in the a) adolescent and b) young adult populations



Country

Adolescents

The highest number of studies in adolescents were conducted in the United States, followed by Spain (Figure 3a). One study was identified from the United Kingdom.[16]

Young Adults

Similarly, the highest number of studies in young adults were conducted in the United States, followed by Spain (Figure 3b). One study was also identified from the United Kingdom.[19]

Figure 3. Mapped location of included studies in the a) adolescent and b) young adult populations

Publication Year

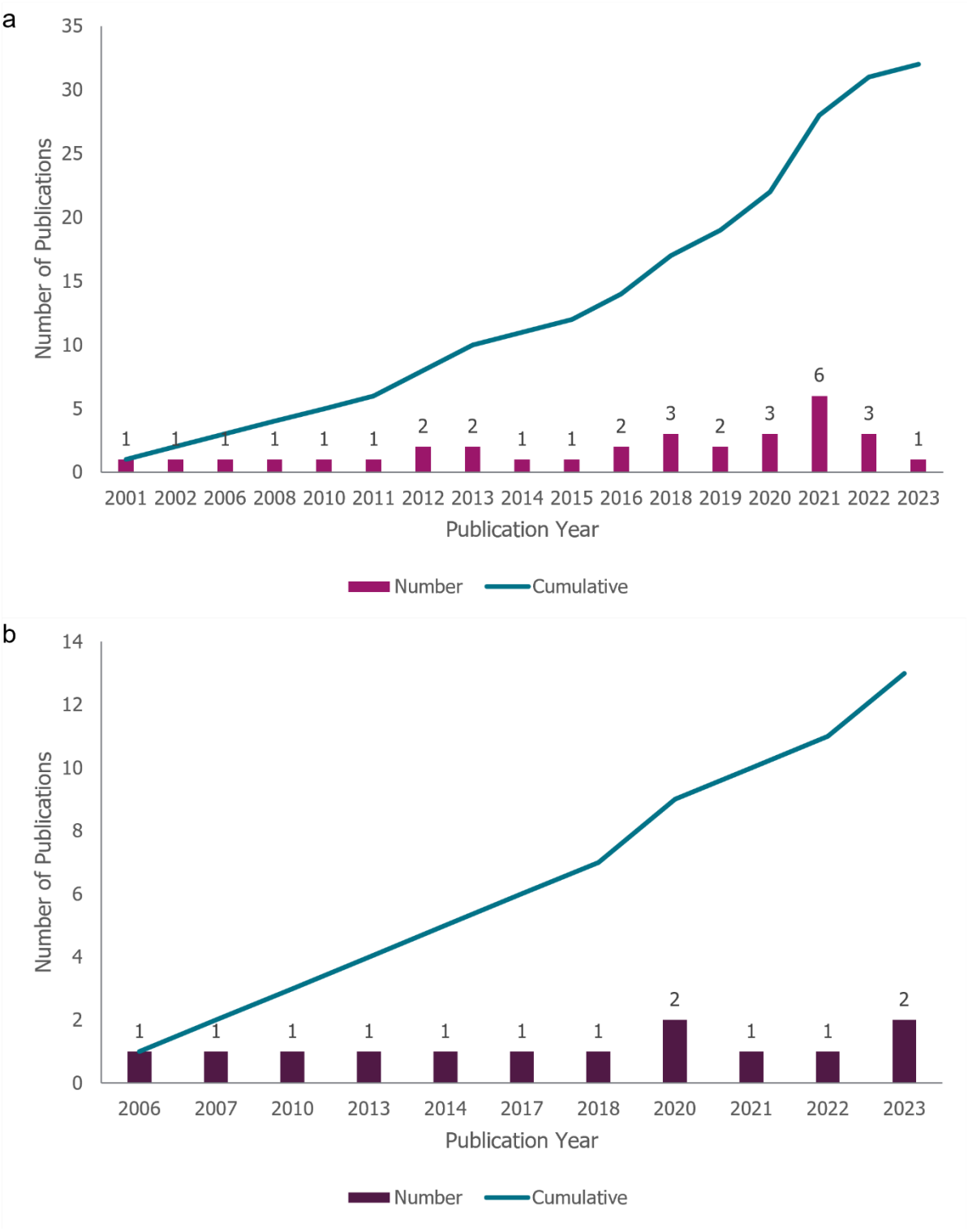
Adolescents

The publication years of the 32 studies in adolescents ranged from 2001–2023. However, the majority of evidence (18/32 studies) was published within the last 5 years (Figure 4a).

Young Adults

The publication years of the 13 studies in young adults ranged from 2006–2023. However, similarly to adolescents, the majority of evidence (7/13 studies) was published within the last 5 years (Figure 4b).

Figure 4. Publication year of included studies in the a) adolescent and b) young adult populations



Sample Size

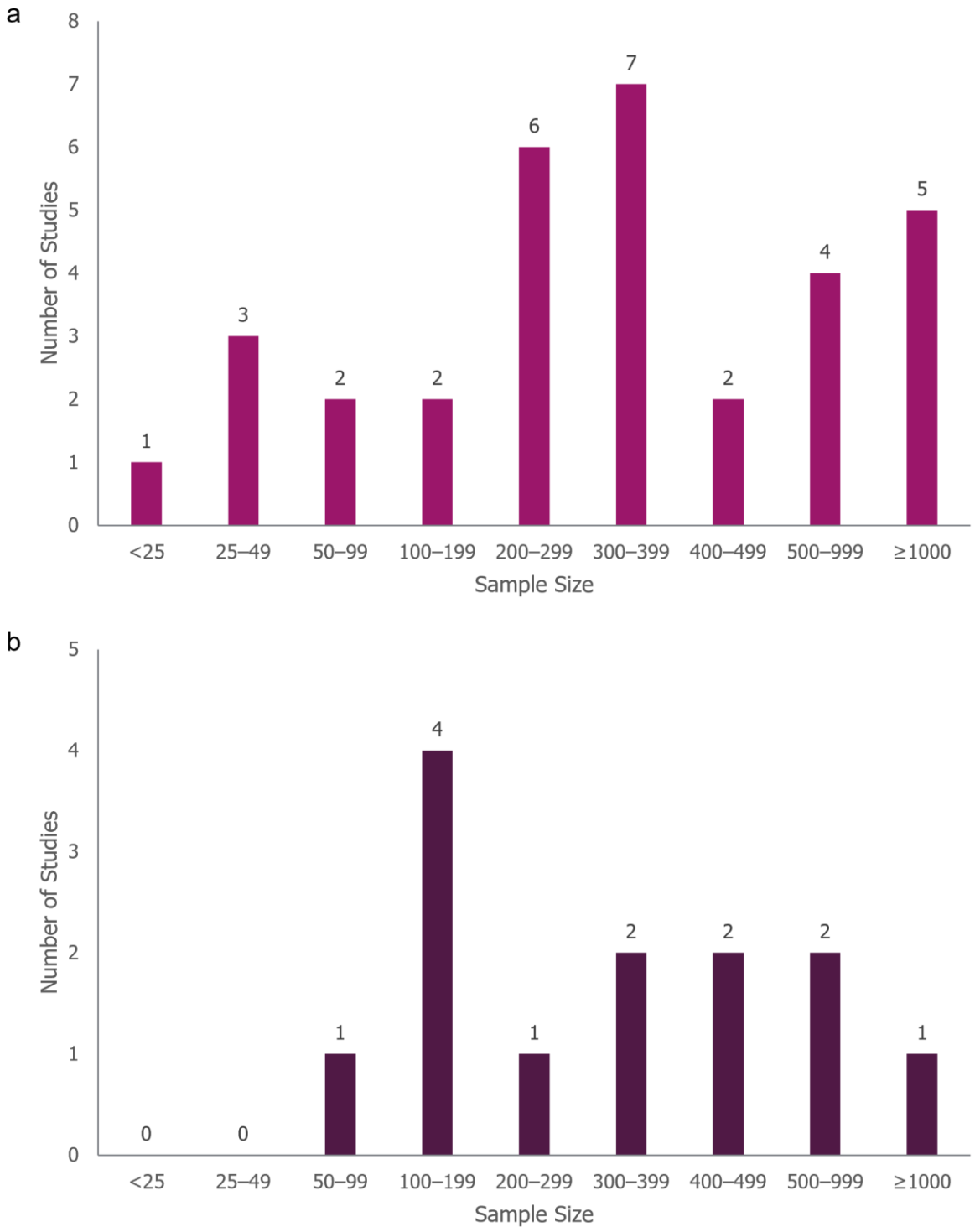
Adolescents

Adolescent study population ranged from 12 to 2,068 participants, with the majority of studies enrolling fewer than 400 participants (Figure 5a).

Young Adults

In the young adult population, sample size ranged from 72 to 1,003 participants, with the majority of studies enrolling fewer than 400 participants (Figure 5b).

Figure 5. Total sample size of the included studies in the a) adolescent and b) young adult populations



Setting and Population Evaluated

Adolescents

The age of participants was reported in 22 adolescent studies, with the mean age ranging between 8.91 and 16.52 years (Figure 6a). The breakdown of the patient population by sex was reported in 24 studies. In one study, only female participants were enrolled;[30] otherwise sex distribution in the remaining studies was between 47.5% and 71% female.

All studies recruited adolescents from school-based settings. Two studies recruited participants from public schools only,[16, 31] one study recruited from private schools only,[32] with the majority of studies recruiting from both public and private schools (11/32). One study reported participants from public, Catholic, Episcopalia and Quaker schools.[33] The remaining studies did not report the school type (17/32).

Most studies did not report the socio-economic status of participants (24/32). Six studies reported participants included were from an inclusive range of socio-economic backgrounds,[13, 34-38] with the remaining two studies including only participants from lower income backgrounds.[39, 40]

Overall, nine studies reported on whether participants enrolled had a history of mental health difficulties. In Adolescent Cognition and Emotion (ACE) Study, which was reported on by six publications, adolescents with a psychotic disorder or any other disorder that would interfere with their participation were excluded; with inclusion of participants with lifetime or current diagnoses of depressive, anxiety and other disorders, at a high prevalence of 40.2% in the Alloy 2012 population. The prevalence of these disorders were not clearly reported in other publications reporting on different analyses within the ACE Study.[41-43] Outside of the ACE study three other studies allowed for inclusion of participants with mental health difficulties.[30, 44, 45] In particular, Nook 2012 reported that more than half (60%) of the sample having had experienced a lifetime mood or anxiety disorder when they enrolled in the study, with 40% meeting criteria for an internalising disorder during the year of the study. Two studies clearly reported excluding participants with or receiving treatment for mental health disorders,[16, 35] whilst the remaining studies in adolescents did not report this information.

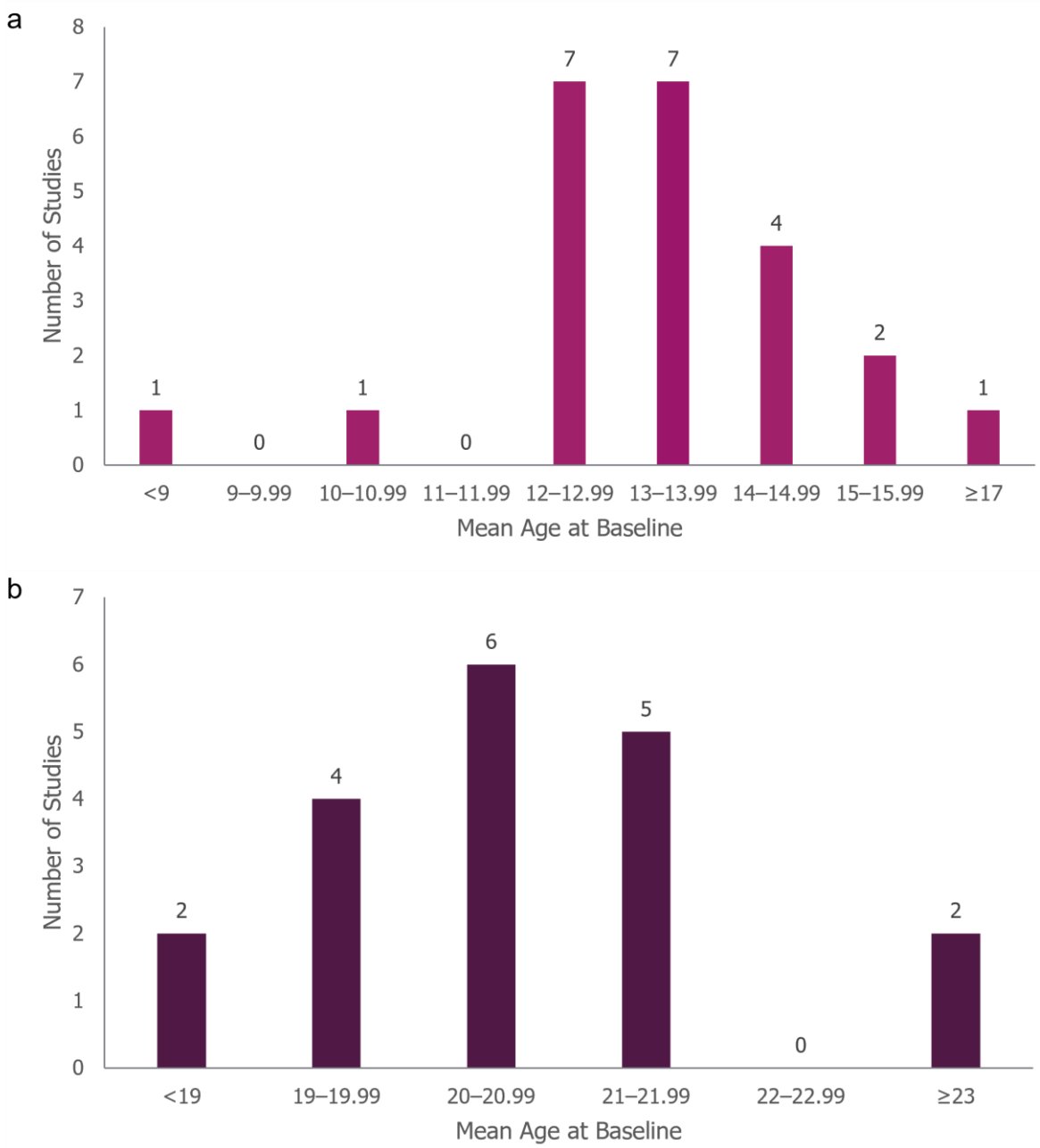
Young Adults

The age of participants was reported in all 13 studies in young adults, with the mean age ranging between 18.14 and 23.35 years (Figure 6b). The breakdown of the patient population by sex was reported in 10 studies. In one study, only female participants were enrolled;[24, 26] otherwise sex distribution in the remaining studies was between 41.4% and 85.2% female (12.5% to 42% male).

The majority of studies recruited participants from a university setting, with one qualitative ethnographic study recruiting students who then collected data from variable settings (observations of everyday life).[17] Of those recruiting from universities, three specified that participants were enrolled on psychology courses,[18, 21, 29] two in medical-based courses (including medical school, physiotherapy, nursing, occupational therapy and chiropody)[26, 27] and the remainder did not specify course type (8/13).

Three studies reported on whether participants had a history of mental health difficulties. One study only enrolled participants without a history of depression or anxiety disorders, and screened for axis I disorders at enrolment, excluding those who met criteria for a diagnosis.[19] The other two studies included a small number of patients who had either been diagnosed with psychiatric conditions (<3.6% of sample)[22] or were receiving psychiatric medication (3% of sample) but did not have any DSM-V diagnoses.[23] The remaining nine studies in young adults did not report this information.

Figure 6. Mean age at baseline of a) adolescents and b) young adults



Footnotes: 23 datapoints included in a) as some studies reported mean age for multiple subgroups; 19 datapoints included in b) as some studies reported mean age for multiple subgroups

3.2.2 Study Outcomes and Instruments

The captured outcomes and instruments by which they were measured in the included studies are summarised in Table 2.

Few studies directly explored how young people perceive negative emotions. Harvey 2021 used an existing questionnaire, the Beliefs about Emotions Scale,[46] which had been previously investigated in another adolescent sample not captured in this TLR.[44, 47] The questionnaire examined attitudes towards negative emotions in oneself, including items such as "it is stupid to have miserable thoughts", "it is a sign of weakness if I have miserable thoughts", and "I should not let myself give in to negative feelings".[46] Other studies developed custom scales. In the Ozawa 2010 study, the authors highlighted that there were no questionnaires available that aim to investigate attitudes towards negative emotions in Japan, therefore the

authors developed a custom questionnaire for use in the study.[48] This questionnaire asked the participants how often they experienced "pleasant" and "unpleasant" emotions, as well as stress. The questionnaire then asked how participants felt when they experienced negative emotions, for example "I think it can't be helped", or "I felt ashamed of myself". A factor analysis was used to explore common patterns in the data, which were used to inform a model further exploring stress reactions and coping mechanisms.

Willroth 2023 used a similar method to explore "emotion judgements", which were defined as thoughts and feelings in response to and about one's own emotional experiences.[29] The authors defined four types of emotion judgements, which were informed by existing research on conceptually-related constructs such as affect valuation, emotion preferences, attitudes towards emotions, emotion motives, fear of happiness, stress mindsets, meta-emotions and emotional acceptance. Similarly to Ozawa 2010, a scale was developed to measure individual differences in emotion judgements, followed by a factor analysis to test the hypothesised structure of positive and negative judgements of negative (and positive) emotions. Participants were also requested to complete daily diaries to explore habitual emotion judgements, which were considered to relate to broader personality traits such as neuroticism or extraversion.

Four studies utilised qualitative semi-structured interview or ethnographic methods to more widely explore attitudes towards both negative emotions and mental health disorders in young people.

The literature and available psychometric instruments related to emotional intelligence and cognitive/inferential styles is more developed, with multiple existing instruments validated for use in young people reported and used by multiple studies captured by this TLR. The most commonly used questionnaires were the Trait Meta-Mood Scale (TMMS-24) to measure emotional intelligence, and the Adolescent Cognitive Style Questionnaire (ACQ) for inferential style.

Table 2. Outcomes and instruments

Perception of negative emotions	Emotional intelligence	Negative inferential style
♦ Beliefs about Emotion Scale[44] ♦ Examines beliefs related to the unacceptability of experiencing and expressing negative affect e.g. "I should not let myself give in to negative feelings" ♦ Judgements (positive or negative) of negative emotions, evaluated through custom surveys and daily diaries[29] ♦ Positive judgement: approving of one's emotions and believing that the emotions are good, appropriate, useful and beneficial ♦ Negative judgement: rejecting, disapproving, or being critical of one's own emotions, and believing that the emotions are bad, inappropriate, or harmful ♦ Statement items for attitudes towards negative emotions, such as "I think it can't be helped", "I felt ashamed of myself" or "I hate myself for being sad") ♦ (Negative) emotion differentiation ♦ Laboratory task whereby participants viewed 20 negative images from the International Affective Picture System and rated how strongly each induced a set of emotions ♦ Qualitative data collection methods, including semi-structured interviews, focus groups, and ethnographic observation	♦ Emotional Clarity Questionnaire (ECQ)[43, 49] ♦ Wong & Law Emotional Intelligence Scale (WLEIS)[50] ♦ Difficulties in Emotion Regulation Scale (DERS) – Lack of Emotional Awareness and Emotional Clarity subscales[18, 23] ♦ Trait Meta-Mood Scale[23] or TMMS-24 (Spanish version)[20, 21, 31, 35, 36, 51] ♦ Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT)[26] ♦ Experience Sampling Method, previously described by Hektner, Schmidt & Csikszentmihalyi (2007)[a]	♦ Adolescent Cognitive Style Questionnaire (ACQ)[38, 41, 42, 45, 49, 52, 53] ♦ Children's Cognitive Style Questionnaire (CCSQ)[33, 54] ♦ Children's Attributable Style Questionnaire (CASQ)[32-34] ♦ Children's Response Styles Questionnaire (CRSQ)[41, 52]

Footnotes: [a]Further information on this method was not provided in the publication included in this TLR.[40]

Abbreviations: ACQ, Adolescent Cognitive Style Questionnaire; CASQ, Children's attributable style Questionnaire; CCSQ, Children's Cognitive Style Questionnaire; CRSQ, Children's Response Styles Questionnaire; DERS, Difficulties in Emotion Regulation Scale; ECQ, Emotional Clarity Questionnaire; MSCEIT, Mayer-Salovey-Caruso Emotional Intelligence Test; TLR, targeted literature review; TMMS-24, Trait Meta-Mood Scale-24; WLEIS, Wong & Law Emotional Intelligence Scale.

3.3 Study Findings

A summary of the key findings from the included quantitative studies is presented in Table 3.

Table 3. Summary of Findings Reported by Quantitative Studies

Type of Emotion Perception	Key Findings	Applicability to young people in the UK	References
Perception or judgement of negative emotions	**Negative feelings about negative emotions increased maladaptive avoidable coping, which in turn increase stress reactions** ♦ Capability of switching from negative emotions was related to reduced avoidable coping ♦ Feelings of denial or rejection towards negative emotions were more likely to lead to problem-solving in girls, but more likely to lead to avoidance coping in boys	Low, the study was conducted in Japan, although the sample was large (N=1,500)	Adolescents:[48]
	Negative feelings about negative emotions were uniquely associated with worse psychological wellbeing concurrently and over time, supporting the nocebo hypothesis	Low, the study was conducted in psychology undergraduate students from one university in the US, although the overall sample was large (N=768)	Young adults:[29]
	Negative beliefs about experiencing and expressing negative emotions and depressive symptoms are associated cross-sectionally, but longitudinal analyses suggest that these beliefs may emerge *following* depressive symptoms, rather than *predisposing* adolescents to depression	Low, the study was conducted in Australia, with 20.8% of the sample having previously received support for mental health difficulties from a professional. Therefore, the study was not completely representative of a sub-clinical population. However, the sample size was large (N=506)	Adolescents:[44]
	There was no association between positive judgements of negative emotions and psychological wellbeing	Low, the study was conducted in psychology undergraduate students from one university in the US, although the overall sample was large (N=768)	Young adults:[29]
Negative emotion differentiation *The ability to identify and precisely label negative emotional states*	**Lower NED was cross-sectionally associated with worse psychological wellbeing**	Medium, no UK studies evaluated NED, however, this finding was supported in adolescent populations from countries in both North America (US) and Europe (The Netherlands), suggesting that this association may be applicable to young people in the UK, and should be investigated in future research. Two of the four supporting studies having applicability concerns due to enrolment of samples narrower than their respective target populations and	Adolescents: [30, 40, 55] Young adults: [24]

Type of Emotion Perception	Key Findings	Applicability to young people in the UK	References
		small sample size (N=30 to 70), therefore future research should aim to enrol a large, representative sample of adolescents in the UK	
	Lower NED did not significantly predict psychological wellbeing at a later timepoint (no longitudinal relationship)	Low, the study was conducted in a small female-only sample (N=30) in the US	Adolescents: [30, 55]
Emotional clarity *The ability to identify, describe, and distinguish emotions*	**Lower emotional clarity was significantly associated with worse psychological wellbeing** Better emotional clarity may allow young people to regulate emotions more effectively and promote adaptive coping strategies such as problem-solving and to recognise negative emotions as only transient. Young people with lower emotional clarity may spend more time trying to understand negative emotions, which may be particularly harmful amongst negative thoughts and stressful environments[49]	Medium, no UK studies evaluated emotional clarity, therefore the findings cannot confidently by applied to young people in the UK. However, this finding was supported in adolescent populations from countries in North America (US) and Europe (Spain), suggesting that this association may be applicable to young people in the UK, and should be investigated in future research.	Adolescents: [31, 35, 36, 49, 51] Young adults: [21, 23]
	Depressive symptoms also prospectively predicted decreases in emotional clarity	Low, the study was conducted in middle schools in one region of the US (N=223)	Adolescents:[43]
	There was no statistical association between emotional clarity and psychological wellbeing	Low, the study was conducted in Spain, although the sample was moderate (N=373) and participants enrolled irrespective of course from two universities, increasing applicability to a young adult population in Spain	Young adults: [20]
Emotional attention *The extent to which one observes and considers their emotions and mood*	**Paying more attention to emotions was significantly associated with worse psychological wellbeing** Excessive attention to negative emotions can increase the risk of rumination, hypervigilance, and catastrophising	Medium, no UK studies evaluated emotional attention, therefore the findings cannot confidently by applied to young people in the UK. However, this finding was supported in adolescent populations from the US and Spain, suggesting that this association may be applicable to young people in the UK, and should be investigated in future research.	Adolescents: [31, 35, 36, 53] Young adults: [20, 21]
	Emotional attention was not associated with happiness (when defined as low, moderate, or high)	Low, the study was conducted in Spain with a moderate sample size of university students primarily enrolled in health or related courses (N=264)	Adolescents: [51]

Type of Emotion Perception	Key Findings	Applicability to young people in the UK	References
Negative inferential style *The tendency to make internal (e.g., "it's my fault"), stable ("it's always going to happen"), and global ("it will affect everything in my life) attributions about the causes and consequences of negative life events*	**Negative inferential style concurrently and prospectively predicted depressive symptoms, first onset of a depressive episode, suicidal ideation, and anxious symptoms in young people**	Medium. No studies evaluated negative inferential style in a UK population or setting, therefore the findings cannot confidently by applied to young people in the UK. However, this finding was supported in adolescent populations from multiple countries including in North America (US, Canada) and Europe (Spain, France), suggesting that this association may be applicable to young people in the UK, and should be investigated in future research. While some of the study populations included participants with mental health diagnoses or with symptoms at baseline, these were controlled for as covariates in the analyses, increasing applicability to healthy adolescent populations (N=111 to 1,325; 63% N>300)	Adolescents: [28, 33, 34, 38, 41, 42, 45, 49, 54, 56-58] Young adults: [28]
Negative information processing	**Students with high neuroticism were quicker at classifying negative personality characteristics than the low neuroticism group, and also had higher levels of rumination and dysfunctional attitudes** **Negative information processing bias was present in students with high neuroticism (who are at risk of depression) prior to the development of depression**	While the study was conducted in the UK, the sample size was relatively small (N=72), and age and setting of the included participants were not clearly reported, therefore the findings cannot be confidently generalised to young people in the UK	Young adults: [19]

Abbreviations: NED, negative emotion differentiation; UK, United Kingdom; US, United States.

3.3.1 Perception and Judgement of Negative Emotions

Overall Take-Homes

- A lower ability to identify and accurately label negative emotions is associated with poorer mental health in young people cross-sectionally, but there was conflicting evidence on whether this can influence or predict the development of mental health problems in the future. Therefore, the direction of this association remains unclear
- Similarly, negative beliefs about emotions were found to be associated with the presence of depressive symptoms at a single timepoint, but did not predict the development of depressive symptoms in the future. Instead, adolescents with higher levels of depressive symptoms at the start of the study were more likely to have negative beliefs about emotions at the end of the study, suggesting that these beliefs may emerge following depressive symptoms, rather than predisposing adolescents to depression
- In undergraduate students, having negative perceptions of negative emotions was found to predict poorer psychological health cross-sectionally and over time, supporting the nocebo hypothesis. Further supporting this, being accepting of negative emotions was shown to be beneficial for the psychological health of young people experiencing life stressors

Adolescents

In total, five studies evaluated how negative emotions are understood or perceived by adolescents.[30, 40, 44, 48, 55]

Three prospective cohort studies explored negative emotion differentiation (NED) in adolescents in schools in the US (N=2 studies)[30, 55] and the Netherlands (N=1 study).[40] NED refers to the ability identify and precisely label negative emotional states.

Nook 2021 investigated whether NED protects adolescent girls from the negative effects of stress in a small cohort of US students aged 15 to 17 years (N=30). In "moment-level" analyses (assessment of feelings in the current moment), psychological health was assessed three times per day for three weeks, across four time periods during the year of study follow-up. Depressed and anxious affect (which is a term in psychology that refers to the underlying experience of feeling, emotion, attachment, or mood) was assessed by asking participants to rate their current feelings (e.g., "how depressed/anxious do you feel right now?") on 7-point scales. Over the study period, NED and perceived stress together predicted depressed affect (p=0.001). When adolescents reported greater perceived stress, they also reported higher levels of depressed affect, with perceived stress more strongly associated with depression in adolescents with low NED scores (p<0.001). However, there was no significant interaction between perceived stress and NED on anxious affect (p=0.563). In longitudinal analyses in the same study, whereby data were collected monthly for one year, the interaction between NED, stressful life events and symptoms of depression anxiety and depression (instead measured using the PHQ-9) was investigated. In months when adolescents experienced greater stressful life events than usual, they reported greater anxiety symptoms. NED moderated this relationship (p=0.021), meaning that adolescents with lower NED experienced greater anxiety symptoms while experiencing stressful life events. By contrast to the study hypotheses, this relationship was not observed for depressive symptoms (p=0.094), or for the interaction between stressful life events and NED with depressive symptoms (p=0.622).

Taken together, the authors concluded that high NED buffered adolescent girls from developing internalising problems such as symptoms of depression or anxiety amid perceived stress and life stressors. However, it should be considered that over half of this very small sample had experienced a mood or anxiety disorder in their lifetime, with 40% meeting criteria for an internalising disorder during the study, representing a particularly at-risk sample. This limits the applicability of these findings to the TLR target population.[30]

Starr 2020 evaluated the impact of NED in a larger sample of 233 US adolescents aged 14 to 17 years old (mean 15.9). In cross-sectional correlation analyses, NED was significantly related to depression; adolescents with lower NED reported higher levels of depression (p<0.01). However, when evaluated over time, baseline NED was only slightly negatively correlated with depression at follow-up (1.5 years after baseline) when

controlling for baseline depression (p=0.622). The effect of this relationship reduced further when controlling for emotional intensity (p=0.654). **The authors therefore concluded that NED was cross-sectionally related to depression, but did not appear to predict longitudinal changes in depression as a key factor**.[55]

Lennarz 2018 recruited 72 adolescents from the Netherlands with a mean age of 13.9 years (majority female, 71%). As the authors anticipated, a higher level of NED was cross-sectionally associated with less intense negative emotions, and a higher belief in the flexibility of emotions among adolescents. The authors speculated that **being able to differentiate emotions and believing they are adjustable may allow young people to feel like they are in control of their emotions**, since specific, more discrete emotions may be less overwhelming than global negative emotional states.[40]

Harvey 2021 explored whether beliefs about the unacceptability of experiencing and expressing emotions would predict greater depressive symptoms in the future (8 months follow-up) in 506 high school students in Australia.[44] Cross-sectional correlations were observed between negative beliefs about emotions and depressive symptoms at both the start of the study and at the follow-up visit 8 months later, demonstrating consistency. However, similar to the relationship observed between NED and depressive symptoms in the Starr 2020 study, this relationship was not observed in longitudinal analyses. In other words, negative beliefs about experiencing emotions recorded as the start of the study did not predict depressive symptoms eight months later. By contrast, depressive symptoms at baseline were observed to predict negative beliefs about emotions at the follow-up visit. It was there concluded that **beliefs about unacceptability of emotions and depressive symptoms are associated, but these beliefs may emerge following depressive symptoms, rather than predisposing adolescents to depression**, with a recommendation for further research over a longer period of time to further explore this relationship.[44]

A study published in Japanese evaluated attitudes towards negative emotions among 1,500 elementary school and high school students in Japan. A custom questionnaire was used to evaluate items of emotional self-efficacy were collected, related to the attitudes towards emotions e.g. "I think it can't be helped", "I felt ashamed of myself" or "I hate myself for being sad"). The results indicated that **negative attitudes about negative emotions, such as feelings of denial, or rejecting negative emotions, increased maladaptive avoidable coping, which in turn increased stress reactions**.[48]

Young Adults

Two studies explored how the perception of negative emotions in young adults can influence psychological health.[24, 29]

Willroth 2013 recruited a total of 768 psychology undergraduates at a US university across three separate samples, to evaluate habitual judgements of emotions through custom surveys, validated instruments and daily diaries. Positive judgement of negative emotions included approval of one's emotions, believing one's emotions are good, appropriate, useful and beneficial. Negative judgements comprised items such as rejection, disapproval, or being critical of one's emotions, and believing one's emotions are bad, inappropriate, or harmful. Examples of negative emotions included sadness, anxiety, or anger. In cross-sectional analyses, negative judgements of negative emotions were significantly associated with worse psychological health in two different samples, as assessed by the Beck Depression Inventory, the Anxiety Screening Questionnaire (Generalised Anxiety Subscale), the Ryff Psychological Wellbeing Scale, and the Satisfaction with Life scale (mean of the four z-scores). In longitudinal analyses, negative judgements of negative emotions were associated with poorer psychological health one month later, while adjusting for baseline psychological health (p=0.048) or initial emotional responses to daily stressors assessed through the daily diaries (p=0.001). By contrast, judging negative emotions more positively was not associated with psychological health one month later (p=0.963). As part of simple correlation analyses, a correlation was observed between negative judgements of negative emotions and emotional acceptance ($p<0.05$).[29] **The results of this study support the nocebo hypothesis, whereby negatively perceiving negative emotions enhanced psychological distress further.**

Similarly, Ford 2018 aimed to explore whether habitually accepting one's thoughts and emotions, instead of judging, had an impact on psychological health in three samples of undergraduate students (N=1,003 in total) from the University of California, Berkeley. Across two cohorts (both 67% female; mean age 20.7 to 21.0),

habitual acceptance of negative emotions was associated with better psychological health ($p<0.05$), greater satisfaction with life ($p<0.05$), less depressive ($p<0.05$) and anxiety symptoms ($p<0.05$). These findings were supported in a third sample of 219 female students (mean age 20.6). Moreover, these associations were not significantly moderated by demographic characteristics such as gender, ethnicity or socioeconomic status, or life stress, suggesting that **being accepting of negative emotions is beneficial for the psychological health of young people experiencing life stressors**.[24]

3.3.2 Emotional Intelligence and Cognitive Vulnerabilities

- Young people with a higher ability to identify, describe and distinguish their negative emotions (emotional clarity) had lower levels of stress, depressive symptoms and anxiety symptoms
- Conversely, paying excessive levels of attention to negative emotions may be more harmful than beneficial in young people; higher emotional attention was associated with more rumination, physiological and perceived stress, and depressive symptoms
- Young people with a negative inferential may be particularly at risk of experiencing negative mental health outcomes due to excessive emotional attention and rumination
- Negative inferential styles were shown to be prospectively predict depression symptoms, first onset of a depressive episode, suicidal ideation, and anxious symptoms in young people
- Depressive symptoms also predicted decreases in emotional clarity and increased negative inferential styles, suggesting a negative feedback loop

Adolescents

Emotional Attention

Emotional attention refers to the the extent to which one observes and considers their emotions and mood. Across six studies in adolescents, **the majority of the captured evidence suggested that higher levels of attention to emotions leads to poor psychological wellbeing**.[31, 35, 36, 51, 53]

Emotional attention was a strong predictor of physiological (hair cortisol concentration) and psychological perceived stress in an adolescent population (N=132) without diagnosed mental illnesses in the Valencian region of Spain (De la Barrera 2021).[35] This finding was supported by Gascó 2018, which reported on a large cohort (N=1,273) also in Valencia (therefore likely overlapping with the De la Barrera 2021 study cohort). Gascó 2018 found that emotional attention was significantly associated with somatic complaints ($p<0.05$) and perceived stress ($p<0.05$). Both studies measured emotional attention using the Spanish version of the Trait Meta-Mood Scale-24.[36] Rifkin 2021, reporting on 364 adolescents in the US as part of the larger ACE Study, detected a significant prospective indirect effect of sustained attention on depressive symptoms via rumination.[53] Adolescents with strong and sustained attention at baseline were more likely to have higher levels of rumination at the second follow-up, which was related to worse depressive symptoms at the final follow-up (length or timepoint unclear). However, this effect was only observed in adolescents who were found to have high negative inferential style at baseline, with no significant associations found in those with low or moderate negative inferential styles. **These results suggest that some adolescents are particularly at risk of excessive attention leading to depressive symptoms**.

Similarly, Rifkin 2021 (a US study with 364 participants) found that in adolescents who had a high negative inferential style and strong sustained attention led to more rumination, which in turn led to greater depressive symptoms at the end of the follow-up period. However, the relationship between sustained attention, rumination and depressive symptoms was not significant in adolescents with a low or moderate negative inferential style.[53]

By contrast, no association between emotional attention and happiness (defined as low, medium, or high) was detected in another Spanish adolescent population (N=646) conducted in Extremadura.[51]

In summary, the majority of the studies detected a relationship between the level of attention paid to negative emotions and psychological wellbeing. **Study authors suggested that paying less attention to**

emotional states increased the likelihood of less stress, with paying excessive attention to negative emotional states linked to rumination, hypervigilance, and catastrophisation. However, these findings were cross-sectional, limiting clear conclusions to be drawn about causality.

Emotional Clarity

Emotional clarity refers to the ability to identify, describe, and distinguish emotions. Across five studies in adolescents, of which four were conducted in Spain, **lower emotional clarity was found to be significantly associated with worse psychological wellbeing**.[31, 35, 36, 49, 51]

Among 132 adolescents in Spain, lower emotional clarity was significantly associated with higher perceived stress ($p<0.01$) but not physiological stress ($p>0.05$), while controlling for emotional attention. [35] In another study that likely reported on a similar or overlapping population, lower levels of emotional clarity were associated with more somatic complaints ($p\leq0.05$), higher perceived stress ($p\leq0.05$), and lower satisfaction with life ($p\leq0.05$).[36]

Based on multinomial regression analyses, Guerra-Bustamante 2019 concluded that better emotional clarity is associated with better perceived happiness of adolescents (N=646), with adolescents who classed as those who "should improve emotional clarity" being 5.6 times more likely to have low perceived happiness ($p<0.05$).[51] Similarly, Martinez-Marin 2019 found that emotional clarity was positively associated with subjective wellbeing outcomes among 365 adolescents in Spain, including positive and negative affect (assessed through the Positive and Negative Affect Schedule) and satisfaction with life.[31]

Stange 2013 explored the relationship between emotional clarity, negative life events, and negative inferential style, and the impact on depressive symptoms in 256 US adolescents.[49] Among **adolescents with lower emotional clarity and more negative inferential styles, experiencing more negative life events predicted greater depressive symptoms among adolescents** ($p<0.0001$), but not among adolescents with less negative inferential styles ($p>0.99$). Reflective of a two-way interaction, among adolescents with lower emotional clarity and higher levels of negative life events, negative inferential style predicted increases in depressive symptoms ($p<0.0001$), but not among those with fewer life events ($p=0.94$). The results suggest that negative inferential styles may increase vulnerability to depression, particularly in adolescents with poor emotional clarity (i.e., have low insight into their emotions).

Negative Inferential Style

Negative inferential style can be defined as the tendency to make internal (e.g., "it's my fault"), stable ("it's always going to happen"), and global ("it will affect everything in my life") attributions about the causes and consequences of negative life events.[49] In total, 14 publications evaluated how having a negative inferential style can impact on the mental health of adolescents.

Six publications reported on the larger Adolescent Cognition and Emotion (ACE) Project, which was a prospective longitudinal cohort evaluating the onset of depression in adolescence in middle school students in the US.[41-43, 52, 53, 58] These publications reported on different analyses and cohorts, although it is likely that there is some overlap between the cohorts.

Alloy 2012 was a cross-sectional analysis in 413 adolescents, finding that more negative cognitive styles on the consequences and self-dimensions were associated both with higher lifetime episodic depression and externalizing disorders, controlling for comorbid diagnoses.[52] **Adolescents with more negative cognitive styles had a small but statistically significant increase in risk of any lifetime diagnoses of a mental health disorder**($p=0.01$). Subgroup analyses found that this risk was greater for African American adolescents than Caucasian adolescents. Other psychological behaviours such as rumination and distraction as a response to experiencing emotions were also evaluated in connection to negative inferential style. Controlling for demographics and comorbid diagnoses, higher rumination was associated with greater likelihood of depression ($p=0.04$) and general anxiety disorder diagnoses ($p=0.03$), while distraction was associated with lower risk of lifetime anxiety ($p=0.03$) or separation anxiety disorder ($p=0.00$) diagnoses.

Rifkin 2021 evaluated the relationship between negative inferential style, depressive symptoms, and other psychological concepts or behaviours.[53] **In adolescents who had a high negative inferential style and strong sustained attention led to more rumination, which in turn led to greater depressive**

symptoms at the end of the follow-up period. However, the relationship between sustained attention, rumination and depressive symptoms was not significant in adolescents with a low or moderate negative inferential style.[53]

Across other studies, **negative inferential styles were shown to be longitudinally associated with depression symptoms,[28, 33, 34, 38, 42, 45, 49, 54, 56, 57] first onset of a depressive episode,[58] suicidal ideation,41 and anxious symptoms.[34]** In particular, a negative inferential style and experiencing higher stress levels and/or more negative life events, increased the risk of more depressive symptoms further.[38] In females, negative inferential styles were associated with depressive symptoms at any level of negative events, whereas among men, negative inferential styles were only associated with higher depressive symptoms in the presence of high levels of negative events.[28] Preliminary analyses reported by Calvete 2011 found that negative inferential style was higher in female adolescents than males at baseline.[56]

Three studies that likely reported on cohorts in Spain that overlapped additionally showed that **depressive symptoms predicted a worsening of inferential styles, which in turn produced an increase in depressive symptoms**, demonstrating a negative feedback loop.[45, 56, 57]

Emotional Disconnection and Emotional Contagion

In one cross-sectional study of 321 middle school students in the US, higher levels of emotional disconnection was found to be associated with lower social self-efficacy and lower emotional contagion (defined as the automatic replication of another person's emotions).[39] Higher levels of emotional contagion was associated with greater negative affect, with the authors suggested that **emotional contagion may promote emotional hypersensitivity to experiencing negative emotions in others, which can lead to mental distress**. By contrast, emotional disconnection was not related to negative affect, despite the expectation that the ability to distance oneself from emotions could be advantageous to avoiding negative emotions. In subgroup analysis, girls in particular scored higher in emotional contagion and lower in emotional disconnection than boys.[39]

Young Adults

Emotional Attention

Two studies in young adults in Spain investigated the influence of emotional attention on wellbeing outcomes.[20, 21] Among 467 psychology undergraduate students, **higher levels of emotional attention were statistically associated with increased state anxiety** (95% CI 0.10 to 0.39).[21] Duran 2006 reported that emotional attention was statistically associated with cynicism in a cohort of undergraduate students studying different degrees (N=373), even when controlling for gender, sex, perceived stress and self-efficacy. There was also evidence that experiencing negative emotions led to increased emotional attention in university students.[21]

Emotional Clarity

Four studies investigated the effect of emotional clarity on wellbeing in young adults,[20, 21, 23] or the effect of depressive symptoms on emotional clarity.[43] Higher levels of emotional clarity was significantly associated with lower levels of state anxiety in the Guil 2020 study of 467 undergraduates in Spain. One study evaluated emotional clarity as a single linear effect (meaning that as the predictor variable changes, so does the outcome variable by a constant amount) and as a quadratic effect (U-shape, where particularly low or high levels of the predictor variables are anticipated to be associated with the outcome variable). In two different student samples, clarity as a linear effect was significantly associated with dysphoria, social anxiety, traumatic intrusions, with an association with panic in only one of the samples. However, when examined as a quadratic predictor, there were no significant associations between emotional clarity and the internalising symptoms listed previously.[23] In the Duran 2006 study, emotional clarity was not significantly associated with the investigated cynicism or engagement dimensions in a population of 373 university students in Spain.[20]

Rubenstein 2015 (ACE Study) reported that among 223 middle school students in the US (mean age 12.3), having depressive symptoms at the start of the study predicted decreases in emotional clarity over an approximate two-year follow-up. For girls specifically, the results indicated that this was related to rumination,

in which girls focus exclusively on negative emotions and subsequently negatively affecting their emotional clarity.[23]

Negative Inferential Style

One study explored whether there were differences in inferential styles between male and female university students in the US (N=458), and whether this may help to explain the differences in depression between them.[28] It was found that there were differences in levels of depressive symptoms between men and women (higher in women), but that there were no sex differences in any of the inferential styles evaluated or in the trajectories of negative life events. However, there was a significant observed interaction between inferential style and negative life events in men (not in women).

Negative Information Processing

A study of 72 college students (age unclear) in the UK who had never met the criteria for depression using the Diagnostic and Statistical Manual of Mental Disorders (Version 4) were divided into groups with low and high neuroticism, which is a robust risk factor for depression (measured using the neuroticism scale of the shortened Eysenck Personality Questionnaire).[19] The authors aimed to understand whether negative information processing biases, which are well-documented in clinical depression populations and recovered patients, were present prior to the first depressive episode.

There was a significant association between neuroticism and emotional categorisation, in that students in the high neuroticism group were quicker at classifying negative personality characteristics than the low neuroticism group. Students in the high neuroticism group also demonstrated higher levels of rumination and dysfunctional attitudes, with the authors ultimately concluding that **negative information processing bias was present in students with high neuroticism (who are at risk of depression) prior to the development of depression**. A limitation of this study did not prospectively follow-up participants to evaluate whether any went on to develop depression, and the median age or age range of the included participants were unclear, therefore applicability of the study findings to this TLR are unclear. Furthermore, while this study did not directly explore the perception of negative emotions, it supports the general finding that negative processing biases towards emotions precede depression rather than exclusively arising as a result of having depression.[19]

Perception of Negative Emotions in Others

A three-year prospective study in US medical students found that those who experienced increases in loneliness became worse at accurately detecting negative emotions in others and were also more likely to mislabel emotions as anger or pain.[27]

3.3.3 Thematic Synthesis of Qualitative Findings

Medicalisation of Negative Emotions and Life Experiences

In several studies, the psychiatric labels of anxiety and depression were applied to regular life experiences or everyday inconveniences. Data from each study supported more than one theme in some cases.

Anxiety as a Descriptor of Everyday Life Events or Conflicts

Two publications reporting on one study highlighted frequent medicalisation of low mood and responses to everyday life stressors among a sample of 41 15-year-old students (78% female) in Sweden. It was reported that adolescents often using the psychiatric label of anxiety when discussing their general wellbeing and pressures at school. For example:

> **Interviewer***: You mention anxiety. What does anxiety mean, according to you?* **Anna***: Sort of, will I fail this test? Will I succeed? In the ninth grade, what school should I pick? What will my future look like if I choose this?* Female, aged 15, Sweden (Lindholm & Wickstrom 2020)[13]

> **Interviewer**: *Why do you have a hard time falling asleep?* ***Kalle****: Stress and such stuff, sort of anxiety and so on.* ***Interviewer****: You mention stress and anxiety. What causes it would you say?* **Kalle**: *I get stressed from school. That it becomes too much and...perhaps we have problems at home or perhaps I got into an argument with someone.* Male, aged 15, Sweden (Lindholm & Wickstrom 2020)[13]

The label of 'anxiety' was also applied to concerns about social acceptance in adolescence:

> **Hanna**: *Stress and anxiety are words that we often use. 'I'm so stressed' and 'I have so much anxiety over this' we commonly say./.../* **Interviewer**: *You mentioned anxiety, what is it that causes anxiety would you say?* **Hanna**: *Lots of things, but sort of you're afraid what people might think.* **Stina**: *There are so many ideals that you should...you sort of must be a certain way.* **Hanna**: *You must be a certain way to be accepted (kind, good looking, funny, not too keen). Otherwise you will be excluded.* Females, aged 15, Sweden (Lindholm & Wickstrom 2020)[13]

When young people in the study used a psychiatric label, the authors prompted them to further describe what they meant by using that label. Adolescents in some cases described applied the label of anxiety to everyday inconveniences, devaluing anxiety as a mental illness:

> *Me and my friends we use it just for example, '[When] I can't find the shoehorn I get anxiety'* Unknown sex, aged 15 (Lindholm & Wickstrom 2020)[13]

Depression as a Descriptor of Low Mood

Three studies reported data supporting that the label of depression can be understood to equivalate to low mood among adolescents,[13, 16, 17] with recognition that there has been a shift in understanding among young people:

> **Oscar**: *Being depressed is not such a heavy word anymore because it is used so much.* **Philip**: *yes, I think 'to be a little depressed' is the same thing as being a bit low.* **Oscar**: *yes today, that's what it means.* Males, aged 15, Sweden (Lindholm & Wickstrom 2020)[13]

In an ethnographical study of undergraduate students and their real-world interactions in The Netherlands, it was discussed how low mood related to a situation that the authors had interpreted to be a 'mild but common' relational conflict, had been medicalised:

> **Female 1**: *She is really depressed! You know.* **Female 2**: *Why?* **Female 1**: *Well just, she's so negative about everything.* **Female 2**: *About what?* **Female 1**: *She dislikes everything and thinks it's no fun. It's just not nice anymore.* **Female 2**: *Oh, yeah ...* Aged 23 and 25, The Netherlands (Bröer & Besseling 2017)[17]

Devaluation of Psychiatric Labels through Language

Devaluation of mental illnesses and their associated labels due to normalised use in conversation in association with quantitative adjectives was reported in two of the studies (these data also support the theme 'depression as a descriptor of low mood' described previously), for example:

> ***Oscar:*** *Being depressed is not such a heavy word anymore because it is used so much.* ***Philip****: yes, I think '****to be a little*** *depressed' is the same thing as being a bit low.* ***Oscar:*** *yes today, that's what it means.* Male, aged 15, Sweden (Lindholm and Wickstrom 2020)[13]

> **Interviewer**: *Why do you have a hard time falling asleep?* ***Kalle****: Stress and such stuff,* ***sort of*** *anxiety and so on.* Male, aged 15, Sweden (Lindholm and Wickstrom 2020)[13]

> *"At home, I actually felt like shit. I did not sleep so well, and the next day, I stayed home all day. Did not feel well ... really* ***a bit*** *depressed."* Male, aged 21, The Netherlands (Bröer and Besseling 2020)[17]

Bröer and Besseling suggested that this manner of self-labeling constructs 'depression' as representing a state that lies between regular sadness and clinical depression, which may be related to uncertainty about the label. This way of a speaking about depression and other mental health problems was described as a 'looping effect' by Lindholm & Wickstrom 2020, whereby mental health disorders themselves are not interpreted as binary diagnostic categories, but as dynamic categories.[13]

Mental Health Literacy

The understanding of what constitutes a "real" mental health problem among adolescents was explored in three qualitative studies. There was some level of awareness about the difference between experiencing negative emotions and having a mental illness, such as depression:

> *"You'll hear, "Depression is sadness." It's more than that, it's a lot more than that. A lot of people don't understand"* Female, aged 15, UK (Spencer 2022)[16]

> *"For me, feeling down one evening doesn't count as having mental health problems. Then you're down one night a week for many weeks (…) To me, mental health problems are more severe and last for a longer period of time"* Adolescent, age unclear, Sweden (Hermann 2023)[15]

Similarly, it was found that there was some awareness of a line between experiencing anxiety as an emotion, and having an anxiety disorder, termed "real anxiety":

> *Even if I'm irritated or feel low, I can't say that I've got anxiety because there are still people with real anxiety…I have anxiety but I don't have real anxiety sort of.* Female, aged 15 (Lindholm & Wickstrom 2020)

One adolescent expressed how using the labels of depression and anxiety are normalised whilst recognising them to be diagnosable disorders, highlighting the variation in mental health literacy among adolescents:

> *"I don't think it's good. That we almost normalise these things because then it feels like depression and anxiety become something people just blurt out and just use, when in fact it is something really serious."* Sex unclear, aged 15, Sweden (Lindholm and Wickstrom 2020)[13]

On the other hand, an animated discussion was reported from one focus group, about whether depression is a diagnosable condition or a description of ongoing emotions. One adolescent suggested that self-diagnosis of depression is common among adolescents, with little knowledge about the condition.[15] It was also reported that adolescents perceived specific mental health issues to lie along a spectrum of severity, with anxiety related to stress deemed to be a minor mental health problem, and depression or schizophrenia representing more severe problems.[15]

3.4 Quality Assessment

Quantitative Studies

The quality of the quantitative studies is presented in Table 4.

Recruitment

Five studies were judged to have inappropriate sampling strategies; due to recruiting from a source (psychology students) narrower than the target population (college students or 'people'),[18, 21, 29] while in two studies, recruitment was solely based on advertisements on social media or on campus of one university, substantially increasing the risk of volunteer bias.[22, 25] However, in the majority of included studies, recruitment was appropriate considering the research objectives, for example through random sampling or purposeful selection of schools in a specified area to ensure diversity in demographic and socioeconomic characteristics. The sampling strategy was not clearly reported in 12 studies.

Representativeness

The study population in 20 studies were considered representative of the respective target population, through use of random sampling methods, or convenience sampling across multiple schools with broad eligibility criteria (i.e., no additional or over-selective criteria applied) and moderate-to-large sample sizes (>200). Concerns about the representativeness of the sample to the target population among studies of adolescents included unjustified overrepresentation from particular socioeconomic groups (e.g., only schools in upper middle class areas,[32] or in high risk areas[40]), of female participants,[30] or enrolment of students from only one school where the majority of participants had low literacy levels. Among the studies in young adults,

three studies specified university students as the target population, but exclusively enrolled university students studying psychology without justification.[18, 21, 29] Psychology students are likely to have greater psychological and mental health literacy, which may have influenced scores in the assessments of emotional intelligence and perception of emotions, but a greater interest in the emotion perception increased the risk of volunteer bias in these studies.

A key area of focus for this TLR was to identify studies from the UK. Only one quantitative UK study was identified, meaning that the majority of the findings may not necessarily translate to UK settings.

Outcome Measurement

All studies used validated measures of psychological health including widely used scales for evaluating symptoms of depression, anxiety, and stress. A limitation of these instruments was that these studies were self-reported measures of psychological health, with the exception of publications reporting on the ACE study, in which clinician-administered structured diagnostic interviews for depression were also conducted.[41, 42, 52, 53] However, the use of self-reported measures is not a key concern for this TLR, in which perceptions of negative emotions and subsequently perceptions of mental health were of interest. In some studies, adolescents completed the study questionnaires in small groups, which may have led to discussion and subsequent influence in how questionnaire items were answered, however this considered acceptable considering the school setting and age of the participants.

Non-Response Bias

Where reported, the risk of non-response bias was generally low in the majority of studies; demonstrated by clear and transparent reporting of response rates (ranging from 86.1% to 98.9%) and/or statistical comparison of participants who completed the study and those who were not included due to drop-out or incomplete assessments. In three studies, there was a demonstrated difference or risk that participants lost-to-follow-up differed to completers in at least one of the study measures (e.g., depressive symptoms), increasing the risk of selection bias.[25, 38, 41] No information was provided in the remaining 12 studies.

Statistical Analysis

The statistical analysis was appropriate for answering the research question of each study in all but two studies. Dillons-Owens did not clearly report or justify the statistical methods used,[39] while the statistical analysis was considered unclear in Ozawa 2010. However, this was may have been related to limitations of using automated translation services.[48]

Table 4. Quality assessment of quantitative descriptive studies using the MMAT Checklist[1]

Study	Sampling strategy relevant to address the research question?	Sample representative of the target population?	Appropriate measurements?	Risk of non-response bias low?	Statistical analysis appropriate for the research question?
Adolescents					
Abela 2001	Y	Y	Y	N	Y
Abela 2002	Y	N	Y	Y	Y
Arrivillaga 2022	U	U	Y	U	Y
Brozina 2006	Y	Y	Y	Y	Y
Calvete 2011	U	U	Y	Y	Y
Calvete 2013	U	U	Y	Y	Y
De la Barrera 2021	Y	U	Y	U	Y
Dillon-Owens 2022	U	N	Y	U	U
Gascó 2018	Y	Y	Y	Y	Y
Gomez-Baya 2016	Y	Y	Y	Y	Y
Guerra-Bustamante 2019	Y	U	Y	U	Y
Hankin 2008	Y	Y	Y	N	Y
Harvey 2021	Y	Y	Y	Y	Y
Lennarz 2018	U	N	U	U	Y
Lombas 2014	Y	Y	Y	Y	Y
Martinez-Marin 2019	Y	Y	Y	U	Y
Nook 2021	Y	N	Y	Y	Y
Ozawa 2010	U	U	U	U	U
Ruiz-Alonso 2021	Y	Y	Y	Y	Y
Stange 2013	Y	Y	Y	Y	Y
Starr 2020	U	Y	Y	Y	Y
Young 2012	Y	U	Y	Y	Y
ACE Study					
Alloy 2012 (ACE Study)	Y	Y	Y	Y	Y
Burke 2016 (ACE Study)	Y	Y	Y	N	Y
Giollabhui 2018 (ACE Study)	Y	Y	Y	Y	Y
Graham 2021 (ACE Study)	Y	Y	Y	Y	Y
Rifkin 2021 (ACE Study)	Y	Y	Y	U	N

Study	Sampling strategy relevant to address the research question?	Sample representative of the target population?	Appropriate measurements?	Risk of non-response bias low?	Statistical analysis appropriate for the research question?
Rubenstein 2015 (ACE Study)	Y	Y	Y	Y	Y
Young Adults					
Bridges-Curry 2021	N	N	Y	U	Y
Chan 2007	U	U	Y	Y	Y
Duran 2006	Y	Y	Y	Y	Y
Feng 2023	N	N	Y	N	Y
Ford 2018	U	N	Y	Y	Y
Guil 2020	N	N	Y	U	Y
Hong 2013	N	U	Y	Y	Y
Park 2020	U	U	Y	U	Y
Ruiz-Aranda 2014	Y	Y	Y	Y	Y
Smith 2022	U	N	Y	U	Y
Stone 2010	U	Y	Y	U	Y
Willroth 2023	N	N	Y	U	Y

Abbreviations: N, no; U, unclear; Y, yes

Qualitative Studies

A summary of the quality assessment of the four qualitative studies is presented in Table 5. Across three of the four qualitative studies, a qualitative approach and the data collection methods used were appropriate and adequate to address the research question(s), with adequate interpretation and coherence between the methodology and presented findings. For Spencer 2022, the only qualitative study conducted in the UK, semi-structured interviews were appropriate however the sample size of adolescents was very small (N=12). Furthermore, the addition of focus groups in this study (as observed in the other interview studies) may have generated wider discussion and richer data. Furthermore, only one supporting quotation was provided for the theme of interest to this TLR.[16]

Table 5. Quality assessment of qualitative studies using the MMAT Checklist[1]

Study	Is the qualitative approach appropriate to answer the research question	Are the qualitative data collection methods adequate to address the research question?	Are the findings adequately derived from the data?	Is the interpretation of results sufficiently substantiated by data?	Is there coherence between qualitative data sources, collection, analysis and interpretation?
Adolescents					
Hermann 2023	Y	Y	Y	Y	Y
Lindholm & Wickström 2020	Y	Y	Y	Y	Y
Spencer 2022	Y	N	Y	N	Y
Young Adults					
Bröer & Besseling 2017	Y	Y	Y	Y	Y

Abbreviations: N, no; Y, yes

4 Discussion

4.1 Overview

Overall, 46 publications reporting on 44 unique studies were included in this TLR, including 40 quantitative studies and four qualitative studies. The captured evidence predominantly explored the impact of emotional intelligence concepts and cognitive vulnerabilities on mental health, with few studies directly exploring how negative emotions are perceived by young people, and how this may impact mental health or distress. Overall, 32 studies were conducted in adolescents and 13 were conducted in young adults (primarily university students).

Emotional Intelligence and Negative Bias Towards Negative Emotions

In summary, the findings of this TLR support that a lower ability to identify, precisely label and understand negative emotions is associated with negative mental health outcomes such as depressive or anxiety symptoms. On the other hand, paying excessive attention to negative emotions may be harmful to mental health, with multiple studies supporting that young people who scored high on measures of emotional attention had greater concurrent symptoms of depression or anxiety. By looking for or focusing on negative emotional states, young people may ruminate, catastrophise and become mentally distressed, hindering the use of adaptive coping techniques. Young people with a negative inferential style in particular were consistently shown to be at higher risk of having symptoms of, or later developing, depression and other mental health disorders, especially while experiencing stressful life events or having poor emotional clarity. Together, this evidence supports the nocebo hypothesis in young people, that negative perceptions of negative emotions or stressful life events and situations may put young people at higher risk of developing mental health problems.

Medicalisation of Negative Emotions

Qualitative research captured in this TLR explored how young people understand negative emotions in relation to diagnosable mental health conditions.[13, 15-17] The findings suggest that mental health literacy varies among adolescents, with some distinguishing "real" and "serious" mental illnesses from experiencing normal negative emotions such as sadness or "feeling down one evening".[13, 16] On the other hand, other adolescents described applying these labels to regular experiences associated with growing up or everyday inconveniences. Adolescents expressed that using the labels of anxiety and depression was normalised in regular conversation, and the application of these labels to pressures at school or other everyday life events was observed across multiple studies. Lindholm and Wickstrom 2020 described a 'looping effect', in which young people perceive mental illnesses such as depression and anxiety as dynamic categories, as opposed to discrete diagnosable illnesses[13]. By applying clinical labels to sub-clinical emotions such as sadness or worry, this could disempower the young person and lead to worsening distress in a negative feedback loop that could progress to worsening symptoms or clinical mental illness. An example raised by UK psychologist Lucy Foulkes suggested how negatively judging or labeling anxious feelings could lead a young person to define themselves as an "anxious person" or believe that they have an anxiety disorder. This could lead to changes in behaviour such as avoidance, which ultimately can prolong and exacerbate anxiety symptoms. This concern was supported by evidence captured in this TLR, with several studies indicating that negative judgements or beliefs about experiencing negative emotions are associated with maladaptive coping and worse psychological health outcomes, in line with the nocebo hypothesis.[24, 29, 44, 48]

The medicalisation of negative emotions has been discussed in the wider literature as conceptual papers and in the media by psychologists and health professionals in the UK, with concerns that it is leading to a mental health pandemic in young people and the general public more widely.[59-62] In 2016, it was suggested that children are learning to interpret their experiences through the language of mental health deficits, with the normal challenges of growing up considered to be a source of psychological distress.[59] A leading UK psychiatrist expressed concerns that a focus on raising awareness of mental health issues in the university setting specifically, for example labeling university as a 'uniquely toxic environment' risks over-medicalisation of normal emotions due to an unbalanced pessimistic view of the university experience.[62] Indeed, it has been

recently suggested that increased awareness of mental illness could be problematically leading to interpretation of mild distress as mental health problems.[60] These concerns about over-medicalisation of emotions are supported by studies exploring the use and perception of anxiety and depression in the literature and wider media. A review of psychology articles published from 1970–2018 and a variety of American English sources such as television shows, fiction, newspapers and spoken language, found that the concepts of anxiety and depression are being simultaneously broadened, intensified and pathologised. The authors subsequently raised concerns that the general public is now more likely to refer to anxiety and depression in terms of symptoms and disorders than it did previously, which the authors speculated may increase the risk of excessive self-diagnosis.[63, 64]

4.2 Implications and Recommendations

At present, there are few instruments or questionnaires available for directly exploring the perceptions and beliefs towards (negative) emotions in young people, demonstrated by the development of custom questionnaires and scales by the authors of studies captured in this review.[29, 48] Ozawa 2010 and Willroth 2023 both conducted factor analyses of attitudes or judgements of negative emotions, captured as statements such as "it is a sign of weakness if I have miserable thoughts" and "I felt ashamed of myself". The questionnaire developed by Ozawa 2010 has not yet been formally translated into and published in the English language, or validated for use in non-Japanese populations in the available literature (available as a report addendum). Only one study directly assessing perceptions of negative emotions used an existing instrument – the Beliefs about Emotions scale. Other existing scales which were not identified in this review include the Attitudes Toward Emotions Scale (ATE),[65] Emotion and Regulation Beliefs Scale (ERBS),[66] and the Implicit Theories of Emotions (ITES) scale.[67] However, it has been reported that these scales may not adequately cover both the usefulness of emotions (whether emotions are considered good or bad, helpful or harmful) and controllability (whether emotions can be changed at will, or are transient) of emotions (based on the theoretical framework of beliefs about emotions from Ford and Gross 2019).[68] Becrerra et al. (2020) subsequently developed a new scale, the Emotions Belief Questionnaire (EBQ), which explores beliefs about both the usefulness and controllability of emotions, in oneself and in others, and for both negative and positive emotions.[69] This questionnaire has been validated in the adults in Australia and the US, and Iranian adolescents.[70] Validation of this instrument in a UK population of adolescents would be beneficial, to facilitate future studies aiming to explore the perception of negative emotions in a UK setting using a robust psychometric measure. Parallel qualitative studies designed to explore the perception of negative emotions directly in populations of adolescents in UK settings would further complement quantitative investigations, and may help to provide wider context around beliefs and perceptions towards emotions in young people, in relation to factors such as their mental health, and home, social and school environments. For evaluation of inferential style, it does not appear the Adolescent Cognitive Style Questionnaire (ACQ) utilised in the ACE study from the US has been used in the UK. However, another tool named the Cognitive Style Questionnaire-Short Form (CSQ-SF), which was not used in any studies identified in this review, has been shown to be reliable and valid for use in adolescents, and has been utilised in UK-based research.[71, 72] For emotional intelligence, it does not appear that the most commonly used instrument in the studies captured by this TLR (TMMS) has yet been explored or validated for use in a UK population.

Overall, the evidence captured in this TLR support the nocebo hypothesis that negative perceptions and poor understanding of negative emotions, together with negative cognitive bias towards stressful life events, can negatively impact on mental health. Adolescents with lower emotional intelligence and those with high negative inferential style or other negative cognitive biases towards emotions and life events, represent populations particularly at risk. These findings were supported by studies both from the US and Europe, supporting that these mechanisms may be present in adolescent or young adult populations in other countries such as the UK. Qualitative research suggest that young people may be over-medicalising subclinical negative emotions such as sadness, stress and worry, which are natural emotions in response to experiences in life. In light of wider discussion in the literature and media that increasing awareness of mental health among the general public, there are concerns that without parallel improvements in mental health literacy, young people may be more likely to self-diagnose, which could lead to a further decline in mental health, both putting further strain on the UK National Health Service (NHS). To minimise overburdening the NHS, a focus on prevention, rather than treatment, of mental health problems in young people in the UK is paramount.

Further research is required to understand whether these associations between emotional intelligence and cognitive vulnerabilities with mental health are also observable in UK populations to identify particular young people at risk for poor mental health outcomes, as well as to understand the wider perceptions and beliefs around negative emotions and mental illnesses in relation to mental health literacy. Foulkes et al. (2023) further recommend that research should be conducted to evaluate whether increases in mental health awareness lead to an increase in mental health symptoms, through randomized controlled trials (RCTs), studies of social media, and qualitative studies to further explore how young people may interpret and understand information included in mental health awareness efforts.[60]

4.3 Strengths of the Review

This TLR was adhered to a pre-specified protocol to conduct a thorough search of the literature, including of multiple electronic databases as well as manual searching of conference proceedings, websites of organisations or charities related to mental health, reference lists of SLRs and targeted Google searches.

A second reviewer checked all included and 10% of excluded articles, minimising selection bias as far as possible within the confines of the pragmatic approach.

No date restrictions were applied, allowing for evaluation of the key relevant evidence published to date. Inclusion of both quantitative and qualitative evidence in this TLR has allowed for exploration of how negative emotions are perceived by young people (through qualitative interviews), but also how emotional intelligence in relation to negative emotions or negative cognitive biases, may mechanistically put young people at risk of developing mental health problems such as depression in the future.

4.4 Limitations of the Review

Evidence Limitations

- Few studies were identified that directly explored how negative emotions are perceived by young people, with the majority of research investigating the relationship between measures of emotional intelligence and cognitive vulnerabilities with depression. This suggests that further research either through quantitative surveys or qualitative research methods in adolescents and young adults would be beneficial, to formally explore the concerns that have been raised by psychologists about the understanding and medicalisation of negative emotions among young people.
- Only two studies conducted in the UK were identified, which each reported limited data relevant to the TLR objectives. As there are many factors that may influence the perception and beliefs associated with negative emotions, such as cultural, sociodemographic, educational and environmental factors, the overall findings of this review may not be directly applicable to young people in the UK. With concerns about perception and medicalisation of negative emotions discussed more widely in the media and in conceptual papers, further research exploring this specifically in UK populations of adolescents and young adults is required.
- The studies conducted in young adult populations were particularly at high risk of selection bias and low applicability to the target population of this TLR. Three studies exclusively enrolled students from psychology undergraduate courses. Research has indicated that volunteer participants in psychology studies are more likely to have symptoms of depression, anxiety or personality disorders (compared with people who had never participated in a psychology study before.[73] Another study explored the impact of loneliness on emotion perception in the specific context of students in medical school. The findings from these populations are likely not generalisable to general young adult populations.
- The target population for this TLR was young people without existing diagnoses of mental health disorders, or with sub-clinical symptoms. The mental health history or status at enrolment of study participants was generally poorly reported, with either no information provided, or exclusion of participants with specific mental illnesses such as bipolar or psychotic disorders. This could have implications for the findings in this TLR if there were participants with diagnosable mental illness included in the study populations, as this could have exaggerated the observed relationship between measures related to

perception of emotions, and psychological health outcomes. However, the majority of studies measured psychological outcomes such as depressive or anxious symptoms at baseline, allowing for these variables to be controlled for in the analyses.

- The evaluated concepts related to the perception of negative emotions, and the instruments or methods used to evaluate this, differed widely between studies. Similarly, the mental health outcomes and associated instruments used to measure them differed across studies. This limits direct comparison of the study findings. For example, in the Park 2020 study, the relationship between emotional clarity and internalising symptoms was found to be significant in one sample but not the other, which the authors suggested could have been related to the use of different instruments to measure emotional clarity, but also acknowledged this could have been related to differing characteristics between the samples.[23]

Methodological Limitations

- While conference abstracts were eligible for inclusion in the TLR, searches of congress proceedings were not conducted, therefore more recent evidence exploring the perception of negative emotions in young people may not have been captured. However, impact of this on the findings is expected to be small, due to the limited information available in conference abstracts.
- Secondly, this TLR included two publications not published in the English language. While this articles has abstracts available in English, and were translated using freely available translation services and language abilities of the reviewers, it is possible that information on the methods, results or author interpretations were not fully captured.
- Lastly, extracted data from only 10% of the included studies were checked by a second reviewer for accuracy. However, this approach is considered justified as a pragmatic approach as part of a TLR.

4.5 Conclusion

The findings of this TLR support that lower emotional clarity and higher emotional attention, as well as having a negative inferential style, can increase the risk of negative mental health outcomes, including depressive or anxious symptoms. By focusing on negative emotional states, young people may ruminate and become increasingly distressed. Together, this evidence supports the nocebo hypothesis in young people, that negative perceptions of negative emotions or stressful life events and situations may put young people at higher risk of developing mental health problems. Qualitative research also suggests that young people may be applying psychiatric labels of mental illness to regular life experiences, and to subclinical and transient negative emotions. Further research is required to explore whether the association between emotional intelligence and cognitive vulnerabilities with mental health outcomes are observable in UK populations, in order to identify young people particularly at risk for poor mental health outcomes; understand the wider perceptions and beliefs around negative emotions and mental illness; and apply these to consider possible negative mental health outcomes, including through a nocebo effect, and the associated mental health literacy implications. Validation of available psychometric instruments that investigate perceptions and attitudes towards emotions in a UK population would be beneficial, along with qualitative interview studies in order to provide greater context and understanding of how negative emotions are perceived among young people.

5 Appendices

Appendix 1 – Search Strategies

Database Search Terms

Search strategies are presented below for:

- MEDLINE, including MEDLINE In-Process, MEDLINE Daily and MEDLINE Epub Ahead of Print and Embase (via Ovid SP): Table 6
- APA Journals (via APA PsycNET platform): Table 7
- PsycINFO (via APA PsycNET platform): Table 8

Table 6. Search terms for use in MEDLINE and Embase (searched via the Ovid SP platform)

Term group	#	Search terms	Results (12/05/2023)
Young people/adolescents	1	*Adolescent/ or *young adult/ or *student/	103,264
	2	(Adolescen* or child* or teen* or youth* or minor* or student* or juvenile* or (young adj (people* or person* or adult*))).ti,ab.	5,945,743
	3	1 or 2	5,958,596
Emotion perception	4	*Emotional intelligence/	3,885
	5	Emotion* adj (intelligence or awareness or literacy).ti,ab,kf.	8,756
	6	(emotion*) adj2 (understand* or percept* or perceiv* or interpret* or aware* or attitude* or feel* or recogni* or identif* or clarity or conceptual* or clarif* or interoception or classif*).ti,ab.	42,398
	7	(inferential style* or looping effect*).ti,ab.	163
	8	Or/4-7	48,933
	9	(negativ* or unhapp* or depress* or "stress" or panic or anx* or (feel* adj down) or "mental health" or "mental distress" or wellbeing or well being).ti,ab.	7,378,496
	10	8 and 9	22,117
	11	(emotion* or feeling* or "mental distress") adj3 (medicali* or pathologi*).ti,ab.	506
	12	10 or 11	22,606
Exclusion terms	13	("conference abstract" or "conference review").pt.	4,769,205
	14	limit 13 to yr="1974-2021"	4,425,272
	15	exp animals/ not exp humans/	10,294,410
	16	(comment or editorial or historical article).pt.	2,579,269
	17	editorial/	1,392,420
	18	or/14-17	16,873,696
Combination terms	19	3 and 12	6,833
	20	19 not 18	**6,073**

Databases: Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily 1946 to May 08, 2023, Embase 1974 to 2023 May 11.

Table 7. Search terms for use in APA Journals (searched via the APA PsycNET platform)

Term Group	#	Search Logic	Terms	Search in	Results (12/05/23)
Sample	1	-	Adolescen* OR child* OR teen* OR youth* OR minor* OR student* OR juvenile* OR "young people" OR "young person" OR "young adult"	Title	26,830

Term Group	#	Search Logic	Terms	Search in	Results (12/05/23)
	2	-	Adolescen* OR child* OR teen* OR youth* OR minor* OR student* OR juvenile* OR "young people" OR "young person" OR "young adult"	Abstract	61,054
	3	OR	Combined Total	-	62,777
Emotional intelligence and perception concepts	4	-	{emotional intelligence}	Index Terms	182
	5	-	emotional intelligence	MeSH	164
	6	-	(emotion*) NEAR/1 (intelligence OR awareness OR literacy)	Title	128
	7	-	(emotion*) NEAR/1 (intelligence OR awareness OR literacy)	Abstract	251
	8		(emotion*) NEAR/1 (intelligence OR awareness OR literacy)	Keywords	290
	9	-	(emotion*) NEAR/2 (understand* OR percept* OR perceive* OR interpret* OR aware* OR attitude* OR feel* OR recogni* OR identif* OR clarity OR conceptual* OR clarif* OR interoception OR classif*)	Title	386
	10	-	(emotion*) NEAR/2 (understand* OR percept* OR perceive* OR interpret* OR aware* OR attitude* OR feel* OR recogni* OR identif* OR clarity OR conceptual* OR clarif* OR interoception OR classif*)	Abstract	1,443
	11	-	inferential style* or looping effect*	Title	1
	12	-	inferential style* or looping effect*	Abstract	7
	13	OR	Combined Total	-	1,876
Negative emotions and mental distress	14	-	(negativ* OR unhapp* OR stress* OR depress* OR anx* OR panic OR "mental health" OR "mental distress" OR wellbeing OR well being) OR ((feel*) NEAR/1 (down))	Title	17,912
	15	-	(negativ* OR unhapp* OR stress* OR depress* OR anx* OR panic OR "mental health" OR "mental distress" OR wellbeing OR well being OR ((feel*) NEAR/1 (down))	Abstract	56,261
	16	OR	Combined Total	-	56,972
Combination	17	AND	Combined Total (*13 AND 16*)		719
Medicalisation of mental health	18	-	(emotion* OR feeling* OR "mental distress") NEAR/3 (medicali* OR pathologi*)	Title	1
	19	-	(emotion* OR feeling* OR "mental distress") NEAR/3 (medicali* OR pathologi*)	Abstract	6
	20	OR	Combined Total	-	6
Combination	21	OR	Combined Total (*17 OR 20*)	-	725
Total combined	22	AND	Combined Total (*3 AND 21*)	-	**208**

Database: APA Journals 1967 to May 12 2023.

Table 8. Search terms for use in PsycINFO (searched via the APA PsycNET platform)

Term Group	#	Search Logic	Terms	Search in	Results (12/05/23)
Sample	23	-	Adolescen* OR child* OR teen* OR youth* OR minor* OR student* OR juvenile* OR "young people" OR "young person" OR "young adult"	Title	716,643
Emotional intelligence	24	-	(emotion*) NEAR/1 (intelligence OR awareness OR literacy)	Title	5,124
	25	-	(emotion*) NEAR/2 (understand* OR percept* OR perceive* OR interpret* OR aware* OR attitude* OR feel* OR recogni* OR identif* OR clarity OR conceptual* OR clarif* OR interoception OR classif*)	Title	5,215
	26	-	inferential style* or looping effect*	Title	44
	27	OR	Combined Total	-	9,935
Negative emotions and	28	-	(negativ* OR unhapp* OR stress* OR depress* OR anx* OR panic OR "mental health" OR "mental	Title	380,168

Term Group	#	Search Logic	Terms	Search in	Results (12/05/23)
mental distress			distress" OR wellbeing OR well being) OR ((feel*) NEAR/1 (down))		
Combination	29	AND	Combined Total (*5 AND 6*)	-	969
Total combined	30	AND	Combined Total (*1 AND 7*)	-	**231**

Database: PsycINFO 1967 to May 12 2023.

Grey Literature Searching

No relevant primary studies were identified from the hand-searching of websites of mental health organisations or of news sources. The majority of identified sources were news articles or blog posts, which referenced primary studies already captured in this TLR through the database searches or targeted Google searches.

Table 9. Search strategies for hand-searching of Google

Search Strategy	Search Terms	Search Date	Results
In the Google search bar, type the search term and screen the first 20 results.	(perception OR perceiv) AND negative emotions AND study	15/06/2023	Results: 1 Included: 0
	(perception OR perceiv) AND negative feelings AND study	15/06/2023	Results: 0 Included: 0
	aware* AND negative emotions AND study	15/06/2023	Results: 1 Included: 1
	aware* AND negative feelings AND study	15/06/2023	Results: 0 Included: 0
	adolescent AND ("negative emotion" OR "negative emotions")	15/06/2023	Results: 2 Included: 0
	teen AND ("negative emotion" OR "negative emotions")	15/06/2023	Results: 0 Included: 0
	young AND ("negative emotion" OR "negative emotions")	15/06/2023	Results: 0 Included: 0
	student AND ("negative emotion" OR "negative emotions")	15/06/2023	Results: 0 Included: 0
	negative emotions AND wellbeing AND study	15/06/2023	Results: 0 Included: 0
	negative inferential style AND mental health AND (adolescent OR young OR teen)	15/06/2023	Results: 3 Included: 0
	medicalisation AND emotion AND (adolescent OR young OR teen OR student)	15/06/2023	Results: 4 Included: 0
	medicalisation AND emotion AND young	15/06/2023	Results: 2 Included: 1
	pathologisation AND emotion	15/06/2023	Results: 1 Included: 0
	pathologisation AND emotion and young	15/06/2023	Results: 0 Included: 0
	"emotional attention" AND (adolescent OR young OR teen OR student)	15/06/2023	Results: 0 Included: 0
	"emotional acceptance" AND (adolescent OR young OR teen OR student)	15/06/2023	Results: 1 Included: 0
	accept* AND negative emotion AND study	20/06/2023	Results: 0 Included: 0
	qualitative AND negative emotion AND (young OR adolescent OR teen OR student)	21/06/2023	Results: 1 Included: 0
	perspective AND negative emotion AND (adolescent OR young OR teen OR student)	21/06/2023	Results: 0 Included: 0
	(adolescent OR young OR teen OR student) AND ("negative emotion" OR "negative emotions") AND (UK OR "United Kingdom"	21/06/2023	Results: 1 Included: 0

Search Strategy	Search Terms	Search Date	Results
	or England OR Wales OR Scotland) AND study		
	"negative emotion differentiation" AND (adolescent OR young OR teen OR student)	29/06/2023	Results: 4 Included: 4
	label AN effectD "negative emotion*"	29/06/2023	Results: 0 Included: 0
	(United Kingdom OR "UK" OR England OR Scotland OR Wales OR Ireland OR "NI") AND "negative emotion*"	10/07/2023	Results: 2 Included: 0
	"looping effect"	17/07/2023	Results: 3 Included: 2
	qualitative AND emotion AND (adolescent OR youth OR student OR teenager OR student)	20/07/2023	Results: 1 Included: 0
	qualitative AND mental health AND (adolescent OR youth OR student OR teenager OR student) AND (United Kingdom OR "UK" OR England OR Scotland OR Wales OR Ireland OR "NI")	20/07/2023	Results: 1 Included: 0
	(United Kingdom OR "UK" OR England OR Scotland OR Wales OR Ireland OR "NI") AND "emotion" AND (adolescent OR youth OR student OR teenager OR student)	20/07/2023	Results: 0 Included: 0
	(medicalisation OR pathologisation) AND (emotion OR feeling OR sadness)	20/07/2023	Results: 1 Included: 1

Abbreviations: UK, United Kingdom; NI, Northern Ireland.

Appendix 2 – Included Studies

Table 10. Studies included in the TLR

#	Reference
1	Abela JR. The hopelessness theory of depression: a test of the diathesis-stress and causal mediation components in third and seventh grade children. Journal of Abnormal Child Psychology 2001;29:241-54.
2	Abela JRZ, Sarin S. Cognitive vulnerability to hopelessness depression: A chain is only as strong as its weakest link. Cognitive Therapy and Research 2002;26(6):811-829.
3	Alloy LB, Black SK, Young ME, et al. Cognitive vulnerabilities and depression versus other psychopathology symptoms and diagnoses in early adolescence. Journal of Clinical Child & Adolescent Psychology 2012;41:539-60.
4	Arrivillaga C, Rey L, Extremera N. A mediated path from emotional intelligence to problematic social media use in adolescents: The serial mediation of perceived stress and depressive symptoms. Addictive Behaviors 2022;124:107095.
5	Bridges-Curry Z, Glenn LE, Felton JW. Are emotions better left unknown? Sex-specific effects of emotional awareness and daily hassles on internalizing symptoms among college students. Journal of American College Health 2021;69:113-117.
6	Bröer C, Besseling B. Sadness or depression: Making sense of low mood and the medicalization of everyday life. Soc Sci Med 2017;183:28-36.
7	Brozina K, Abela JR. Symptoms of depression and anxiety in children: specificity of the hopelessness theory. Journal of Clinical Child & Adolescent Psychology 2006;35:515-27.
8	Burke TA, Connolly SL, Hamilton JL, et al. Cognitive Risk and Protective Factors for Suicidal Ideation: A Two Year Longitudinal Study in Adolescence. Journal of Abnormal Child Psychology 2016;44:1145-60.
9	Calvete E, Orue I, Hankin BL. Transactional relationships among cognitive vulnerabilities, stressors, and depressive symptoms in adolescence. Journal of Abnormal Child Psychology 2013;41:399-410.
10	Calvete E. Temporal relationships between inferential style and depressive symptoms in adolescents. International Journal of Cognitive Therapy 2011;4:438-457.
11	Chan SW, Goodwin GM, Harmer CJ. Highly neurotic never-depressed students have negative biases in information processing. Psychological Medicine 2007;37:1281-91.
12	De la Barrera U, Villanueva L, Montoya-Castilla I, et al. How much emotional attention is appropriate? The influence of emotional intelligence and subjective well-being on adolescents' stress. Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues 2021:No Pagination Specified-No Pagination Specified.
13	Dillon-Owens C, Findley-Van Nostrand D, Ojanen T, et al. Early adolescent cognitive and affective empathy: Associations with social–emotional adjustment. Social Psychology 2022;53:292-302.
14	Duran A, Extremera N, Rey L, et al. Predicting academic burnout and engagement in educational settings: assessing the incremental validity of perceived emotional intelligence beyond perceived stress and general self-efficacy. Psicothema 2006;18 Suppl:158-64.
15	Feng G, Xu X, Lei J. Tracking perceived stress, anxiety, and depression in daily life: a double-downward spiral process. Frontiers in Psychology 2023;14:1114332.
16	Ford BQ, Lam P, John OP, et al. The psychological health benefits of accepting negative emotions and thoughts: Laboratory, diary, and longitudinal evidence. J Pers Soc Psychol 2018;115:1075-1092.
17	Gascó VP, Badenes LV, Plumed AG. Trait emotional intelligence and subjective well-being in adolescents: The moderating role of feelings. Psicothema 2018;30:310-315.
18	Giollabhui NM, Hamilton JL, Nielsen J, et al. Negative cognitive style interacts with negative life events to predict first onset of a major depressive episode in adolescence via hopelessness. Journal of Abnormal Psychology 2018;127(1):1-11.
19	Gomez-Baya D, Mendoza R, Paino S. Perceived emotional intelligence as a predictor of depressive symptoms after a one year follow-up during adolescence. The International Journal of Emotional Education 2016;8:35-47.
20	Graham AA, Mac Giollabhui N, Stumper A, et al. Negative Inferential Style Mediates the Association between Racial Identity and Depressive Symptoms among African American Adolescents. Journal of Youth & Adolescence 2021;50:1726-1737.
21	Guerra-Bustamante J, Leon-Del-Barco B, Yuste-Tosina R, et al. Emotional Intelligence and Psychological Well-Being in Adolescents. International Journal of Environmental Research & Public Health [Electronic Resource] 2019;16:16.
22	Guil R, Gomez-Molinero R, Merchan-Clavellino A, et al. Lights and Shadows of Trait Emotional Intelligence: Its Mediating Role in the Relationship Between Negative Affect and State Anxiety in University Students. Frontiers in Psychology 2020;11:615010.
23	Hankin BL. Cognitive vulnerability-stress model of depression during adolescence: investigating depressive symptom specificity in a multi-wave prospective study. Journal of Abnormal Child Psychology 2008;36:999-1014.

#	Reference
24	Harvey LJ, White FA, McAulay CE. Depression predicts emotion acceptance beliefs in early adolescence: A longitudinal investigation. British Journal of Clinical Psychology 2021;60:513-529.
25	Hermann V, Durbeej N, Karlsson AC, et al. 'Feeling down one evening doesn't count as having mental health problems'-Swedish adolescents' conceptual views of mental health. J Adv Nurs 2023;79:2886-2899.
26	Hong RY. From dispositional traits to psychopathological symptoms: Social-cognitive vulnerabilities as intervening mechanisms. Journal of Psychopathology and Behavioral Assessment 2013;35(4):407-420.
27	Lennarz HK, Lichtwarck-Aschoff A, Timmerman ME, et al. Emotion differentiation and its relation with emotional well-being in adolescents. Cogn Emot 2018;32:651-657.
28	Lindholm SK, & Wickström, A.,. 'Looping effects' related to young people's mental health: How young people transform the meaning of psychiatric concepts. Global Studies of Childhood 2020;10:26–38.
29	Lombas AS, Martin-Albo J, Valdivia-Salas S, et al. The relationship between perceived emotional intelligence and depressive symptomatology: the mediating role of perceived stress. Journal of Adolescence 2014;37:1069-76.
30	Martínez-Marín MD, Martínez C. Subjective well-being and gender-typed attributes in adolescents: The relevance of emotional intelligence. Australian Journal of Psychology 2019;71:296-304.
31	Nook EC, Flournoy JC, Rodman AM, et al. High emotion differentiation buffers against internalizing symptoms following exposure to stressful life events in adolescence: An intensive longitudinal study. Clin Psychol Sci 2021;9:699-718.
32	Ozawa E. [Stress and attitudes toward negative emotions in adolescence]. Shinrigaku Kenkyu - Japanese Journal of Psychology 2010;81:501-9.
33	Park J, Naragon-Gainey K. Is more emotional clarity always better? An examination of curvilinear and moderated associations between emotional clarity and internalising symptoms. Cognition & Emotion 2020;34:273-287.
34	Rifkin LS, Giollabhui NM, Kendall PC, et al. Attention, rumination and depression in youth with negative inferential styles: A prospective study. Journal of Affective Disorders 2021;291:209-217.
35	Rubenstein LM, Hamilton JL, Stange JP, et al. The cyclical nature of depressed mood and future risk: Depression, rumination, and deficits in emotional clarity in adolescent girls. Journal of Adolescence 2015;42:68-76.
36	Ruiz-Alonso E, Orue I, Calvete E. Relaciones bidireccionales longitudinales entre victimización, estilos inferenciales de desesperanza y síntomas de depresión en adolescentes: Un modelo transaccional. [Longitudinal bidirectional relationships between victimization, inferential styles of hopelessness, and symptoms of depression in adolescents: A transactional model.]. Revista de Psicopatología y Psicología Clínica 2021;26:121-130.
37	Ruiz-Aranda D, Extremera N, Pineda-Galan C. Emotional intelligence, life satisfaction and subjective happiness in female student health professionals: the mediating effect of perceived stress. Journal of Psychiatric & Mental Health Nursing 2014;21:106-13.
38	Smith KE, Norman GJ, Decety J. Increases in loneliness during medical school are associated with increases in individuals' likelihood of mislabeling emotions as negative. Emotion 2022;22:740-750.
39	Spencer L, McGovern R, Kaner E. A qualitative exploration of 14 to 17-year old adolescents' views of early and preventative mental health support in schools. J Public Health (Oxf) 2022;44:363-369.
40	Stange JP, Alloy LB, Flynn M, et al. Negative inferential style, emotional clarity, and life stress: integrating vulnerabilities to depression in adolescence. Journal of Clinical Child & Adolescent Psychology 2013;42:508-18.
41	Starr LR, Hershenberg R, Shaw ZA, et al. The perils of murky emotions: Emotion differentiation moderates the prospective relationship between naturalistic stress exposure and adolescent depression. Emotion 2020;20:927-938.
42	Stone LB, Gibb BE, Coles ME. Does the Hopelessness Theory Account for Sex Differences in Depressive Symptoms Among Young Adults? Cognitive Therapy & Research 2010;34:177-187.
43	Wickström A, & Lindholm, S. K. Young people's perspectives on the symptoms asked for in the Health Behavior in School-Aged Children survey. Childhood 2020;27:450–467.
44	Willroth EC, Young G, Tamir M, et al. Judging emotions as good or bad: Individual differences and associations with psychological health. Emotion 2023.
45	Young CC, Dietrich MS, Lutenbacher M. Brooding and reflection as explanatory of depressive symptoms in adolescents experiencing stressful life events. Issues in Mental Health Nursing 2014;35:175-80.
46	Young CC, LaMontagne LL, Dietrich MS, et al. Cognitive vulnerabilities, negative life events, and depressive symptoms in young adolescents. Archives of Psychiatric Nursing 2012;26:9-20.

Appendix 3 – Excluded Studies

Table 11. Studies excluded after full-text review

#	Reference	Reason for Exclusion
1	Abas NAH, Perveen A, Jusoh AJ. Decreasing students' stress through destressmenow mobile app. European Journal of Molecular and Clinical Medicine 2020;7(2):5945-5953.	Irrelevant outcomes reported
2	Abdali N, Nobahar M, Ghorbani R. Evaluation of emotional intelligence, sleep quality, and fatigue among Iranian medical, nursing, and paramedical students: A cross-sectional study. Qatar Medical Journal 2019;2019:15.	Irrelevant outcomes reported
3	Abdollahi A, Abu Talib M, Motalebi SA. Emotional Intelligence and Depressive Symptoms as Predictors of Happiness Among Adolescents. Iranian Journal of Psychiatry & Behavioral Sciences 2015;9:e2268.	Irrelevant outcomes reported
4	Abdollahi A, Abu Talib M. Self-esteem, body-esteem, emotional intelligence, and social anxiety in a college sample: the moderating role of weight. Psychology Health & Medicine 2016;21:221-5.	Irrelevant outcomes reported
5	Abela JR, McGirr A, Skitch SA. Depressogenic inferential styles, negative events, and depressive symptoms in youth: an attempt to reconcile past inconsistent findings. Behaviour Research & Therapy 2007;45:2397-406.	Irrelevant outcomes reported
6	Abrahams L, Pancorbo G, Primi R, et al. Social-emotional skill assessment in children and adolescents: Advances and challenges in personality, clinical, and educational contexts. Psychological Assessment 2019;31:460-473.	Irrelevant outcomes reported
7	Adibsereshki N, Hatamizadeh N, Sajedi F, et al. The Effectiveness of a Resilience Intervention Program on Emotional Intelligence of Adolescent Students with Hearing Loss. Children 2019;6:21.	Irrelevant outcomes reported
8	Ain NU, Munir M, Suneel I. Role of emotional intelligence and grit in life satisfaction. Heliyon 2021;7:e06829.	Irrelevant outcomes reported
9	Alconero-Camarero AR, Sarabia-Cobo CM, Gonzalez-Gomez S, et al. Nursing students' emotional intelligence, coping styles and learning satisfaction in clinically simulated palliative care scenarios: An observational study. Nurse Education Today 2018;61:94-100.	Irrelevant outcomes reported
10	Alloy LB, Hamilton JL, Hamlat EJ, et al. Pubertal Development, Emotion Regulatory Styles, and the Emergence of Sex Differences in Internalizing Disorders and Symptoms in Adolescence. Clinical Psychological Science 2016;4:867-881.	Irrelevant outcomes reported
11	Antiniene D, Lekaviciene R. Psychological and physical well-being of Lithuanian youth: Relation to emotional intelligence. Medicina (Kaunas, Lithuania) 2017;53:277-284.	Irrelevant outcomes reported
12	Aradilla-Herrero A, Tomas-Sabado J, Gomez-Benito J. Associations between emotional intelligence, depression and suicide risk in nursing students. Nurse Education Today 2014;34:520-5.	Irrelevant outcomes reported
13	Aradilla-Herrero A, Tomas-Sabado J, Gomez-Benito J. Perceived emotional intelligence in nursing: psychometric properties of the Trait Meta-Mood Scale. Journal of Clinical Nursing 2014;23:955-66.	Irrelevant outcomes reported
14	Arora S, Ashrafian H, Davis R, et al. Emotional intelligence in medicine: a systematic review through the context of the ACGME competencies. Medical Education 2010;44:749-64.	Irrelevant outcomes reported
15	Augusto-Landa JM, Garcia-Martinez I, Leon SP. Analysis of the Effect of Emotional Intelligence and Coping Strategies on the Anxiety, Stress and Depression Levels of University Students. Psychological Reports 2022:332941221144603.	Irrelevant outcomes reported
16	Azanedo CM, Sastre S, Artola T, et al. Social Intelligence and Psychological Distress: Subjective and Psychological Well-Being as Mediators. International Journal of Environmental Research & Public Health [Electronic Resource] 2020;17:24.	Incorrect population
17	Azpiazu L, Fernández-Zabala A, Rodríguez-Fernández A, et al. Perceived emotional intelligence and subjective well-being during adolescence: The moderating effect of age and sex. Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues 2022:No Pagination Specified-No Pagination Specified.	Irrelevant outcomes reported
18	Ballespi S, Vives J, Nonweiler J, et al. Self- but Not Other-Dimensions of Mentalizing Moderate the Impairment Associated With Social Anxiety in Adolescents From the General Population. Frontiers in Psychology 2021;12:721584.	Irrelevant outcomes reported
19	Balluerka N, Aritzeta A, Gorostiaga A, et al. Emotional intelligence and depressed mood in adolescence: A multilevel approach. International Journal of Clinical and Health Psychology 2013;13:110-117.	Irrelevant outcomes reported

#	Reference	Reason for Exclusion
20	Balluerka N, Gorostiaga A, Alonso-Arbiol I, et al. Peer attachment and class emotional intelligence as predictors of adolescents' psychological well-being: A multilevel approach. Journal of Adolescence 2016;53:1-9.	Irrelevant outcomes reported
21	Barahmand U, Abolghasemi A, Jahanmohammadi S. Using metacognitions to identify emotionally vulnerable college students. American Journal of Health Behavior 2008;32:604-13.	Irrelevant outcomes reported
22	Barnett JR. Coping style as a mediator to the influence of emotional intelligence on self-esteem and anxiety for juvenile delinquent males. Volume 72. US: ProQuest Information & Learning, 2012:4002-4002.	Irrelevant outcomes reported
23	Berle D, Moulds ML. Emotional reasoning processes and dysphoric mood: cross-sectional and prospective relationships. PLoS ONE [Electronic Resource] 2013;8:e67359.	Irrelevant outcomes reported
24	Berube A, Turgeon J, Blais C, et al. Emotion Recognition in Adults With a History of Childhood Maltreatment: A Systematic Review. Trauma Violence & Abuse 2023;24:278-294.	Irrelevant outcomes reported
25	Birks Y, McKendree J, Watt I. Emotional intelligence and perceived stress in healthcare students: a multi-institutional, multi-professional survey. BMC Medical Education 2009;9:61.	Irrelevant outcomes reported
26	Bodzy ME, Barreto SJ, Swenson LP, et al. Self-Reported Psychopathology, Trauma Symptoms, and Emotion Coping Among Child Suicide Attempters and Ideators: An Exploratory Study of Young Children. Archives of Suicide Research 2016;20:160-75.	Irrelevant outcomes reported
27	Bolton C, Barrowclough C, Calam R. Parental criticism and adolescent depression: does adolescent self-evaluation act as a mediator? Behavioural & Cognitive Psychotherapy 2009;37:553-70.	Irrelevant outcomes reported
28	Bonduelle SLB, Chen Q, Wu GR, et al. Exposure to Criticism Modulates Left but Not Right Amygdala Functional Connectivity in Healthy Adolescents: Individual Influences of Perceived and Self-Criticism. Frontiers in psychiatry Frontiers Research Foundation 2021;12:673805.	Irrelevant outcomes reported
29	Bradley B, DeFife JA, Guarnaccia C, et al. Emotion dysregulation and negative affect: association with psychiatric symptoms. Journal of Clinical Psychiatry 2011;72:685-91.	Incorrect population
30	Brand S, Kirov R, Kalak N, et al. Perfectionism related to self-reported insomnia severity, but not when controlled for stress and emotion regulation. Neuropsychiatric Disease & Treatment 2015;11:263-71.	Irrelevant outcomes reported
31	Branscum P, Bhochhibhoya A, Sharma M. The role of Emotional Intelligence in mental health and Type D personality among young adults. International Quarterly of Community Health Education 2013;34:351-65.	Irrelevant outcomes reported
32	Brejard V, Bonnet A, Pasquier A, et al. Depressive symptoms in adolescence: Role of personality and emotion awareness. [French]. Neuropsychiatrie de l'Enfance et de l'Adolescence 2011;59(3):157-162.	Irrelevant outcomes reported
33	Brejard V, Bonnet A, Pedinielli JL. Emotional-cognitive development, emotion regulation and risk-taking behaviours: An exploratory study with adolescent. [French]. Neuropsychiatrie de l'Enfance et de l'Adolescence 2005;53(8):395-400.	Irrelevant outcomes reported
34	Brejard V, Pasquier A, Bonnet A, et al. [Comparative study of the subjective emotional experience among adolescents showing depressive symptoms associated or not with risk-taking behavior]. Encephale 2011;37:257-65.	Irrelevant outcomes reported
35	Brejard V, Pedinielli JL, Rouan G. [Emotional dysfunction hypothesis in adolescent with problem behaviour: an exploratory study]. Encephale 2006;32:413-20.	Irrelevant outcomes reported
36	Briones-Buixassa L, Ali I, Schmidt C, et al. Predicting Non-Suicidal Self-Injury in Young Adults with and without Borderline Personality Disorder: a Multilevel Approach Combining Ecological Momentary Assessment and Self-Report Measures. Psychiatric Quarterly 2021;92:1035-1054.	Incorrect population
37	Broquard AG. College student mental health: The relationship between depression and emotional intelligence using the Student Relationships Assessment. Volume 72. US: ProQuest Information & Learning, 2012:2283-2283.	Irrelevant outcomes reported
38	Brown M, Hochman A, Micali N. Emotional instability as a trait risk factor for eating disorder behaviors in adolescents: Sex differences in a large-scale prospective study. Psychological Medicine 2020;50:1783-1794.	Irrelevant outcomes reported
39	Brown RF, Schutte NS. Direct and indirect relationships between emotional intelligence and subjective fatigue in university students. Journal of Psychosomatic Research 2006;60:585-93.	Incorrect population

#	Reference	Reason for Exclusion
40	Bufferd SJ, Levinson CA, Olino TM, et al. Temperament and psychopathology in early childhood predict body dissatisfaction and eating disorder symptoms in adolescence. Behaviour Research & Therapy 2022;151:104039.	Irrelevant outcomes reported
41	Burrus J, Betancourt A, Holtzman S, et al. Emotional Intelligence Relates to Well-Being: Evidence from the Situational Judgment Test of Emotional Management. Applied Psychology. Health and Well-being 2012;4:151-66.	Irrelevant outcomes reported
42	Butera CD, Harrison L, Kilroy E, et al. Relationships between alexithymia, interoception, and emotional empathy in autism spectrum disorder. Autism 2023;27(3):690-703.	Irrelevant outcomes reported
43	Butler L, Park SK, Vyas D, et al. Evidence and Strategies for Including Emotional Intelligence in Pharmacy Education. American Journal of Pharmaceutical Education 2022;86:ajpe8674.	Irrelevant outcomes reported
44	Butt FM. Emotional intelligence, religious orientation, and mental health among university students. Pakistan Journal of Psychological Research 2014;29:1-19.	Irrelevant outcomes reported
45	Calero AD, Barreyro JP, Injoque-Ricle I. Emotional Intelligence and Self-Perception in Adolescents. Europes Journal of Psychology 2018;14:632-643.	Irrelevant outcomes reported
46	Camara SG, Carlotto MS, Cabello R, et al. Adaptation and validity of the Trait Meta-Mood scale for Brazilian adolescents. Frontiers in Psychology 2023;14:1058426.	Irrelevant outcomes reported
47	Camayo G, Leon G, Alvitez J, et al. Emotional Intelligence, Depression, and Risk Factors in Pregnant Peruvian Andean Adolescents: A Multivariate Logistic Regression Study. International Journal of Preventive Medicine 2022;13:148.	Irrelevant outcomes reported
48	Cameron LD, Carroll P, Hamilton WK. Evaluation of an intervention promoting emotion regulation skills for adults with persisting distress due to adverse childhood experiences. Child Abuse & Neglect 2018;79:423-433.	Incorrect population
49	Canas E, Estevez JF, Estevez E, et al. The Role of Emotional Intelligence on Psychological Adjustment and Peer Victimization in a Sample of Spanish Adolescents. Frontiers in Psychology 2020;11:600972.	Irrelevant outcomes reported
50	Carapeto MJ, Domingos R, Veiga G. Attachment and Depressive Symptoms in Adolescence: The Mediatory Role of Emotion Awareness. Behavioral sciences 2022;12:21.	Irrelevant outcomes reported
51	Carranza-Lira S. [Correlation between psychological state and emotional intelligence in residents of gynecology, and obstetrics]. Revista Medica del Instituto Mexicano del Seguro Social 2016;54:780-786.	Irrelevant outcomes reported
52	Carter B, Paranjothy S, Davies A, et al. Mediators and Effect Modifiers of the Causal Pathway Between Child Exposure to Domestic Violence and Internalizing Behaviors Among Children and Adolescents: A Systematic Literature Review. Trauma Violence & Abuse 2022;23:594-604.	Irrelevant outcomes reported
53	Carvalho D, Neto F, Mavroveli S. Trait emotional intelligence and disposition for forgiveness. Psychological Reports 2010;107:526-34.	Irrelevant outcomes reported
54	Carvalho VS, Guerrero E, Chambel MJ. Emotional intelligence and health students' well-being: A two-wave study with students of medicine, physiotherapy and nursing. Nurse Education Today 2018;63:35-42.	Irrelevant outcomes reported
55	Casino-Garcia AM, Garcia-Perez J, Llinares-Insa LI. Subjective Emotional Well-Being, Emotional Intelligence, and Mood of Gifted vs. Unidentified Students: A Relationship Model. International Journal of Environmental Research & Public Health [Electronic Resource] 2019;16:05.	Irrelevant outcomes reported
56	Casino-Garcia AM, Llopis-Bueno MJ, Llinares-Insa LI. Emotional Intelligence Profiles and Self-Esteem/Self-Concept: An Analysis of Relationships in Gifted Students. International Journal of Environmental Research & Public Health [Electronic Resource] 2021;18:23.	Irrelevant outcomes reported
57	Castilho P, Carvalho SA, Marques S, et al. Self-compassion and emotional intelligence in adolescence: A multigroup mediational study of the impact of shame memories on depressive symptoms. Journal of Child and Family Studies 2017;26:759-768.	Irrelevant outcomes reported
58	Castro-Lopez VR, Franco-Paredes K, Pelaez-Fernandez MA, et al. Emotional intelligence subdimensions as moderators in the association between body dissatisfaction and symptoms of eating disorders among female Mexican adolescents. International Journal of Eating Disorders 2023;56:770-777.	Irrelevant outcomes reported

#	Reference	Reason for Exclusion
59	Castro-Sanchez M, Zurita-Ortega F, Ubago-Jimenez JL, et al. Relationships between Anxiety, Emotional Intelligence, and Motivational Climate among Adolescent Football Players. Sports 2019;7:01.	Irrelevant outcomes reported
60	Cejudo J, Rodrigo-Ruiz D, Lopez-Delgado ML, et al. Emotional Intelligence and Its Relationship with Levels of Social Anxiety and Stress in Adolescents. International Journal of Environmental Research & Public Health [Electronic Resource] 2018;15:25.	Irrelevant outcomes reported
61	Chan MF, Creedy DK, Chua TL, et al. Exploring the psychological health related profile of nursing students in Singapore: a cluster analysis. Journal of Clinical Nursing 2011;20:3553-60.	Irrelevant outcomes reported
62	Chang C, Kaczkurkin AN, McLean CP, et al. Emotion regulation is associated with PTSD and depression among female adolescent survivors of childhood sexual abuse. Psychological Trauma:Theory, Pesearch, Practice and Policy 2018;10:319-326.	Patients with diagnosed mental illness, psychiatric or neurological disorder
63	Changgun Lee T, Herbert M, Manassis K. Do anxious boys and girls differ in emotion recognition accuracy? Journal of the Canadian Academy of Child and Adolescent Psychiatry 2014;23(1):61-64.	Incorrect population
64	Chen C, Chen F, Liu X, et al. Relationship between parental negative family expressiveness and internalizing problems among adolescents: Mediating roles of emotional clarity and emotion dysregulation. Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues 2022:No Pagination Specified-No Pagination Specified.	Irrelevant outcomes reported
65	Chen Y, Baram TZ. Toward Understanding How Early-Life Stress Reprograms Cognitive and Emotional Brain Networks. Neuropsychopharmacology 2016;41:197-206.	Incorrect study design/language
66	Cheng P, Langevin R. Difficulties with emotion regulation moderate the relationship between child maltreatment and emotion recognition. Child Abuse & Neglect 2023;139:106094.	Irrelevant outcomes reported
67	Cheng P, Langevin R. Unpacking the effects of child maltreatment subtypes on emotional competence in emerging adults. Psychological Trauma:Theory, Pesearch, Practice and Policy 2022;28:28.	Irrelevant outcomes reported
68	Cho S, Galehan J. Stressful Life Events and Negative Emotions on Delinquency Among Korean Youth: An Empirical Test of General Strain Theory Assessing Longitudinal Mediation Analysis. International Journal of Offender Therapy & Comparative Criminology 2020;64:38-62.	Irrelevant outcomes reported
69	Cho SM, Shin YM. The promotion of mental health and the prevention of mental health problems in child and adolescent. Korean Journal of Pediatrics 2013;56:459-64.	Incorrect study design/language
70	Chong WH, Chan CSY. The mediating role of self-talk between parenting styles and emotional intelligence: An Asian perspective with Singaporean adolescents. International Perspectives in Psychology: Research, Practice, Consultation 2015;4:195-208.	Irrelevant outcomes reported
71	Chu LC. The benefits of meditation vis-a-vis emotional intelligence, perceived stress and negative mental health. Stress and Health 2010;26(2):169-180.	Irrelevant outcomes reported
72	Ciarrochi J, Heaven PC, Supavadeeprasit S. The link between emotion identification skills and socio-emotional functioning in early adolescence: a 1-year longitudinal study. Journal of Adolescence 2008;31:565-82.	Irrelevant outcomes reported
73	Ciarrochi J, Kashdan TB, Leeson P, et al. On being aware and accepting: a one-year longitudinal study into adolescent well-being. Journal of Adolescence 2011;34:695-703.	Irrelevant outcomes reported
74	Clarke AM, Bunting B, Barry MM. Evaluating the implementation of a school-based emotional well-being programme: a cluster randomized controlled trial of Zippy's Friends for children in disadvantaged primary schools. Health Education Research 2014;29:786-98.	Incorrect population
75	Clarke AM, Sixsmith J, Barry MM. Evaluating the implementation of an emotional wellbeing programme for primary school children using participatory approaches. Health Education Journal 2015;74(5):578-593.	Incorrect population
76	Clauss JA, Bhiku K, Burke A, et al. Development of a transdiagnostic, resilience-focused intervention for at-risk adolescents. Journal of Mental Health 2022:1-10.	Irrelevant outcomes reported
77	Clauss JA. 3.97 Development of a Transdiagnostic, Resilience-Focused Intervention for At-Risk Adolescents. Journal of the American Academy of Child and Adolescent Psychiatry 2022;61(10 Supplement):S259.	Irrelevant outcomes reported

#	Reference	Reason for Exclusion
78	Clavo CFR, Cordova GMV, Villarreal JLM, et al. Development of emotional competencies in classrooms in times of pandemic-Covid-19: Systematic review. Archivos Venezolanos de Farmacologia y Terapeutica 2022;41(10):714-721.	Incorrect study design/language
79	Cole DA, Peeke L, Dolezal S, et al. A longitudinal study of negative affect and self-perceived competence in young adolescents. Journal of Personality & Social Psychology 1999;77:851-62.	Irrelevant outcomes reported
80	Cole PM, Llera SJ, Pemberton CK. Emotional instability, poor emotional awareness, and the development of borderline personality. Development & Psychopathology 2009;21:1293-310.	Incorrect study design/language
81	Colpan M, Eray S, Eren E, et al. Perceived Expressed Emotion, Emotional and Behavioral Problems and Self-Esteem in Obese Adolescents: A Case-Control Study. Journal of clinical research in pediatric endocrinology 2018;10:357-363.	Irrelevant outcomes reported
82	Conley CS, Durlak JA, Dickson DA. An evaluative review of outcome research on universal mental health promotion and prevention programs for higher education students. Journal of American College Health 2013;61:286-301.	Incorrect study design/language
83	Corbett BA, Muscatello RA, Baldinger C. Comparing stress and arousal systems in response to different social contexts in children with ASD. Biological Psychology 2019;140:119-130.	Irrelevant outcomes reported
84	Corcoran CM, Keilp JG, Kayser J, et al. Emotion recognition deficits as predictors of transition in individuals at clinical high risk for schizophrenia: a neurodevelopmental perspective. Psychological Medicine 2015;45:2959-73.	Irrelevant outcomes reported
85	Corwin LA, Ramsey ME, Vance EA, et al. Students' Emotions, Perceived Coping, and Outcomes in Response to Research-Based Challenges and Failures in Two Sequential CUREs. CBE Life Sciences Education [Electronic Resource] 2022;21:ar23.	Irrelevant outcomes reported
86	Costa D, Kogien M, Hartwig SV, et al. Dispositional mindfulness, emotional regulation and perceived stress among nursing students. Revista Da Escola de Enfermagem Da Usp 2022;56:e20220086.	Irrelevant outcomes reported
87	Costa H, Ripoll P, Sanchez M, et al. Emotional intelligence and self-efficacy: effects on psychological well-being in college students. Spanish Journal of Psychology 2013;16:E50.	Irrelevant outcomes reported
88	Costarelli V, Demerzi M, Stamou D. Disordered eating attitudes in relation to body image and emotional intelligence in young women. Journal of Human Nutrition & Dietetics 2009;22:239-45.	Irrelevant outcomes reported
89	Crowell SE, Baucom BR, Yaptangco M, et al. Emotion dysregulation and dyadic conflict in depressed and typical adolescents: evaluating concordance across psychophysiological and observational measures. Biological Psychology 2014;98:50-8.	Irrelevant outcomes reported
90	Cuartero N, Tur AM. Emotional intelligence, resilience and personality traits neuroticism and extraversion: predictive capacity in perceived academic efficacy. Nurse Education Today 2021;102:104933.	Irrelevant outcomes reported
91	Cunningham JN, Kliewer W, Garner PW. Emotion socialization, child emotion understanding and regulation, and adjustment in urban African American families: differential associations across child gender. Development & Psychopathology 2009;21:261-83.	Irrelevant outcomes reported
92	D'Amico A, Geraci A. The Role of Emotional and Meta-Emotional Intelligence in Pre-adolescents' Well-Being and Sociometric Status. Frontiers in Psychology 2021;12:749700.	Irrelevant outcomes reported
93	Dasor MM, Jafridin AA, Azhar AA, et al. Emotional Intelligence, Depression, Stress and Anxiety Amongst Undergraduate Dental Students During the COVID-19 Pandemic. International Journal of Public Health 2023;68:1604383.	Irrelevant outcomes reported
94	Dave HP, Keefer KV, Snetsinger SW, et al. Stability and Change in Trait Emotional Intelligence in Emerging Adulthood: A Four-Year Population-Based Study. Journal of Personality Assessment 2021;103:57-66.	Irrelevant outcomes reported
95	Davis SK, Humphrey N. Ability versus trait emotional intelligence: Dual influences on adolescent psychological adaptation. Journal of Individual Differences 2014;35:54-62.	Irrelevant outcomes reported
96	Davis SK, Humphrey N. Emotional intelligence as a moderator of stressor–mental health relations in adolescence: Evidence for specificity. Personality and Individual Differences 2012;52:100-105.	Irrelevant outcomes reported
97	Davis SK, Humphrey N. Emotional intelligence predicts adolescent mental health beyond personality and cognitive ability. Personality and Individual Differences 2012;52:144-149.	Irrelevant outcomes reported

#	Reference	Reason for Exclusion
98	Davis SK, Humphrey N. The influence of emotional intelligence (EI) on coping and mental health in adolescence: divergent roles for trait and ability EI. Journal of Adolescence 2012;35:1369-79.	Irrelevant outcomes reported
99	Davis SK, Nowland R, Qualter P. The Role of Emotional Intelligence in the Maintenance of Depression Symptoms and Loneliness Among Children. Frontiers in Psychology 2019;10:1672.	Incorrect population
100	Davis SK, Wigelsworth M. Structural and Predictive Properties of the Emotional Quotient Inventory Youth Version-Short Form (EQ-i:YV[S]). Journal of Personality Assessment 2018;100:197-206.	Irrelevant outcomes reported
101	de la Barrera U, Monaco E, Postigo-Zegarra S, et al. EmoTIC: Impact of a game-based social-emotional programme on adolescents. PLoS ONE [Electronic Resource] 2021;16:e0250384.	Irrelevant outcomes reported
102	De la Barrera U, Postigo-Zegarra S, Monaco E, et al. Serious game to promote socioemotional learning and mental health (emoTIC): a study protocol for randomised controlled trial. BMJ Open 2021;11:e052491.	Irrelevant outcomes reported
103	de la Barrera U, Villanueva L, Prado-Gasco V. Emotional and personality predictors that influence the appearance of somatic complaints in children and adults. Psicothema 2019;31:407-413.	Incorrect population
104	Deborde AS, Vanwalleghem Maury S, Aitel S. [Emotion regulation in adolescents with conduct disorder and controls]. Encephale 2015;41:62-9.	Irrelevant outcomes reported
105	Deepak A, Krishnamoorthy K. Emotional intelligence- A questionnaire based study. Research Journal of Pharmacy and Technology 2016;9(7):772-774.	Irrelevant outcomes reported
106	Dehghan F, Kaboudi M, Alizadeh Z, et al. The relationship between emotional intelligence and mental health with social anxiety in blind and deaf children. Cogent Psychology 2020;7.	Irrelevant outcomes reported
107	del Mar Diaz-Castela M, Hale Iii WW, Muela JA, et al. The measurement of perceived emotional intelligence for Spanish adolescents with social anxiety disorder symptoms. Anales de Psicología 2013;29:509-515.	Irrelevant outcomes reported
108	del Mar Molero Jurado M, del Carmen Perez-Fuentes M, Martinez AM, et al. Emotional intelligence as a mediator in the relationship between academic performance and burnout in high school students. PLoS ONE 2021;16(6 June) (no pagination).	Irrelevant outcomes reported
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115	Di Consiglio M, Merola S, Satta C, et al. NoiBene, a Group Intervention for Promoting Mental Health Among University Students: A Study Protocol for a Randomized Controlled Trial. Frontiers in Psychology 2022;13:877340.	Irrelevant outcomes reported
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174	Killian KD. Development and validation of the Emotional Self-Awareness Questionnaire: a measure of emotional intelligence. Journal of Marital & Family Therapy 2012;38:502-14.	Irrelevant outcomes reported
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221	Nyarko F, Peltonen K, Kangaslampi S, et al. Emotional intelligence and cognitive skills protecting mental health from stress and violence among Ghanaian youth. Heliyon 2020;6:e03878.	Irrelevant outcomes reported
222	Nyquist AC, Luebbe AM. An Emotion Recognition-Awareness Vulnerability Hypothesis for Depression in Adolescence: A Systematic Review. Clinical Child & Family Psychology Review 2020;23:27-53.	Incorrect study design/language
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225	Oldehinkel AJ, Hartman CA, Van Oort FV, et al. Emotion recognition specialization and context-dependent risk of anxiety and depression in adolescents. Brain and Behavior 2015;5:e00299.	Irrelevant outcomes reported
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229	Paricahua Peralta JN, Estrada Araoz EG, Zevallos Pollito PA, et al. Risk factors in the emotional management of Peruvian Amazonian university students. [Spanish]. Archivos Venezolanos de Farmacologia y Terapeutica 2022;41(6):420-424.	Incorrect population
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299	Sendzik L, J OS, A CS, et al. Emotional Awareness in Depressive and Anxiety Symptoms in Youth: A Meta-Analytic Review. Journal of Youth & Adolescence 2017;46:687-700.	Incorrect study design/language
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303	Shahin MA. Emotional intelligence and perceived stress among students in Saudi health colleges: A cross-sectional correlational study. Journal of Taibah University Medical Sciences 2020;15:463-470.	Irrelevant outcomes reported
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308	Singh Y, Sharma R. Relationship between general intelligence, emotional intelligence, stress levels and stress reactivity. Annals of Neurosciences 2012;19:107-11.	Irrelevant outcomes reported
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326	Thomassin K, Morelen D, Suveg C. Emotion reporting using electronic diaries reduces anxiety symptoms in girls with emotion dysregulation. Journal of Contemporary Psychotherapy 2012;42(4):207-213.	Incorrect population
327	Thompson RJ, Dizen M, Berenbaum H. The Unique Relations between Emotional Awareness and Facets of Affective Instability. Journal of Research in Personality 2009;43:875-879.	Irrelevant outcomes reported
328	Thompson RJ, Kuppens P, Mata J, et al. Emotional clarity as a function of neuroticism and major depressive disorder. Emotion 2015;15:615-24.	Incorrect population
329	Toriello HV, Van de Ridder JMM, Brewer P, et al. Emotional intelligence in undergraduate medical students: a scoping review. Advances in Health Sciences Education 2022;27:167-187.	Incorrect study design/language
330	Torres-Fernandez G, Rodriguez-Valverde M, Reyes-Martin S, et al. The Role of Psychological Inflexibility and Experiential Approach on Mental Health in Children and Adolescents: An Exploratory Study. Behavioral sciences 2022;12:22.	Irrelevant outcomes reported
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337	Tyagi T, Meena S. Online social networking and its relationship with mental health and emotional intelligence among female students. Clinical Epidemiology and Global Health 2022;17 (no pagination).	Irrelevant outcomes reported
338	Ugoji N. Perceived emotional intelligence and stress management among undergraduate students. IFE Psychologia: An International Journal 2012;20:148-155.	Irrelevant outcomes reported
339	Vaish A. Something old, something new: Leveraging what we know to optimize new directions in emotion development research. Developmental Psychology 2019;55:1998-2001.	Incorrect study design/language
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341	van der Veek SM, Nobel RA, Derkx HH. The relationship between emotion awareness and somatic complaints in children and adolescents: Investigating the mediating role of anxiety and depression. Psychology & Health 2012;27:1359-74.	Irrelevant outcomes reported
342	Velasco C, Fernandez I, Paez D, et al. Perceived emotional intelligence, alexithymia, coping and emotional regulation. Psicothema 2006;18 Suppl:89-94.	Irrelevant outcomes reported
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345	Wang K, Li Y, Zhang T, et al. The Relationship among College Students' Physical Exercise, Self-Efficacy, Emotional Intelligence, and Subjective Well-Being. International Journal of Environmental Research & Public Health [Electronic Resource] 2022;19:15.	Irrelevant outcomes reported
346	Wang R, Li H, Sang B, et al. Emotion regulation as a mediator on the relationship between emotional awareness and depression in elementary school students. Frontiers in Psychology 2023;14:1127246.	Incorrect population
347	Weems CF, Camp RD, Neill EL, et al. Developmental Differences in Child and Adolescent Reasoning about Anxiety Sensations. Cognitive Therapy & Research 2021;45:166-178.	Irrelevant outcomes reported
348	Weissman DG, Nook EC, Dews AA, et al. Low Emotional Awareness as a Transdiagnostic Mechanism Underlying Psychopathology in Adolescence. Clinical Psychological Science 2020;8:971-988.	Irrelevant outcomes reported
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352	Yadav V, Mohanty V, Balappanavar AY, et al. Emotional Intelligence and Perceived Stress among Dental Undergraduates in Delhi. Jaypees International Journal of Clinical Pediatric Dentistry 2020;13:344-347.	Irrelevant outcomes reported
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354	Ye J, Yeung DY, Liu ESC, et al. Sequential mediating effects of provided and received social support on trait emotional intelligence and subjective happiness: A longitudinal examination in Hong Kong Chinese university students. International Journal of Psychology 2019;54:478-486.	Irrelevant outcomes reported
355	Yildirim D, Vives J, Ballespi S. Individual differences in the experience of meta-mood and internalizing psychopathology. European Psychiatry 2022;65(Supplement 1):S705.	Irrelevant outcomes reported
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357	Yoo HH, Park KH. [Relationships among emotional intelligence, ego-resilience, coping efficacy, and academic stress in medical students]. Korean Journal of Medical Education 2015;27:187-93.	Irrelevant outcomes reported
358	You M, Laborde S, Dosseville F, et al. Associations of chronotype, Big Five, and emotional competences with perceived stress in university students. Chronobiology International 2020;37:1090-1098.	Irrelevant outcomes reported
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362	Zakirulla M, Mustafa MM, Fageeh SN, et al. Emotional intelligence and perceived stress among female dental students at King Khalid University, Saudi Arabia. Nigerian Journal of Clinical Practice 2021;24:262-268.	Irrelevant outcomes reported
363	Zhang L, Roslan S, Zaremohzzabieh Z, et al. Perceived Stress, Social Support, Emotional Intelligence, and Post-Stress Growth among Chinese Left-Behind Children: A Moderated Mediation Model. International Journal of Environmental Research & Public Health [Electronic Resource] 2022;19:07.	Irrelevant outcomes reported
364	Zhang P, Li CZ, Zhao YN, et al. The mediating role of emotional intelligence between negative life events and psychological distress among nursing students: A cross-sectional study. Nurse Education Today 2016;44:121-6.	Irrelevant outcomes reported
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Appendix 4 – Glossary

Concept	Definition
Emotional intelligence	The ability to perceive, recognise and understand emotions in self and others
Emotional clarity	The ability to identify, describe, and distinguish emotions
Emotional attention	The extent to which one observes and considers their emotions and mood
Looping effect	A phenomenon whereby mental health disorders themselves are not interpreted as binary diagnostic categories, but as dynamic categories
Medicalisation/pathologisation	The process of taking non-medical problems and converting them into illnesses and disorders
Negative emotion differentiation	The ability to identify and precisely label negative emotional states
Negative inferential style	The tendency to make internal (e.g., "it's my fault"), stable ("it's always going to happen"), and global ("it will affect everything in my life) attributions about the causes and consequences of negative life events
Neuroticism	The trait disposition to experience negative affect, including anger, anxiety, self-consciousness, irritability, emotional instability, and depression
Nocebo effect	It describes a situation where a negative outcome occurs due to a belief that the exposure or intervention will cause harm
(Positive/negative) affect	A collective term that refers to the underlying experience of feeling, emotion, attachment, or mood

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