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### **Body Image**



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# Relationships between media influence, body image and sociocultural appearance ideals in Latin America: A systematic literature review

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#### ABSTRACT

The rapidly growing body of research investigating media influence on body image in Latin America has not been previously comprehensively synthesised. We systematically reviewed studies of the relationships between media use/influence, body image, and sociocultural appearance ideals in Latin America (CRD42021254607). We searched PsycINFO/Medline, Pubmed, Web of Science, ERIC, Scopus, ProQuest Dissertations, SciElo, and LILACS for quantitative and qualitative peer-reviewed articles and doctoral theses in English, Spanish, and Portuguese. Research conducted in Latin America, published 1991–2023, measuring a) media use/influence, and b) body image or appearance ideals was included. 68 articles met inclusion criteria, and quality appraisal concluded that most were of medium/high quality. A narrative review found consistent quantitative relationships, stronger in women than men, between media use/internalisation of media ideals and both body dissatisfaction and thinner appearance ideals. In contrast, participants in qualitative studies acknowledged media influence on their body image, but perceived greater influence from family and peers. Limitations included a predominance of cross-sectional research from Brazil and Mexico with adolescents and young adults. Additional longitudinal, experimental, and interventional work from elsewhere in Latin America is needed, recruiting more diverse samples and assessing more culturally salient appearance aspects (e.g., skin tone and hair texture).

#### 1. Introduction

A growing body of research demonstrates that body image concerns are prevalent in Latin American samples (Rodgers et al., 2023), however literature describing their relationship with media use and sociocultural influences in this region has yet to be comprehensively synthesised. Indeed, of seven systematic reviews published in the past decade summarising the relationships between body image, media, and/or sociocultural variables (da Silva Souza et al., 2021; Ferguson, 2013; Hausenblas et al., 2013; Holland & Tiggemann, 2016; Paterna et al., 2021; Rounsefell et al., 2020; Saiphoo & Vahedi, 2019), only two included research from Latin America (Paterna et al., 2021) or focused on Brazil (da Silva Souza et al., 2021) and (as we discuss below) likely missed a large number of studies. Latin America differs economically, socially, culturally, and politically from Western countries, and it shows the steepest association between economic development and eating disorder rates (Global Burden of Disease, 2022), which highlights the importance of examining sociocultural risk factors specifically in this region. Body image concerns predict the onset and maintenance of eating disorder symptoms, depressive symptoms, and unhealthy weight control behaviours (McLean et al., 2022; Stice, 2002), so understanding their correlates and antecedents in a diverse range of settings is vital. Consequently, the aim of the present study was to conduct a comprehensive systematic review of research between 1991 and 2023 examining the relationships between body image, appearance ideals, and media use amongst people in Latin America.

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For the purpose of this review, body image was conceptualised as emotional, cognitive, perceptual and behavioural components of individuals' relationships with their own body and/or its parts (Cash, 2012; Cash & Fleming, 2002). This includes both positive and negative body image. Body image concerns refer to negative or maladaptive feelings and thoughts about the appearance of one's body, including body and appearance ideals for size, shape, and composition. On the other hand, body appreciation, the most studied facet of positive body image, focuses on loving one's own body and appreciating its functionality, despite potential dissatisfaction with appearance (Tiggemann & McCourt, 2013; Tylka & Wood-Barcalow, 2015b). According to sociocultural and tripartite models of body image, perceived pressure from family, friends and the media to adhere to a certain appearance ideal can lead to internalisation of these ideals, which in turn can lead to body dissatisfaction (Thompson et al., 1999). Internalisation of appearance ideals refers to the degree to which a person embraces these ideals and engages in efforts to meet them (Thompson & Stice, 2001). Below, we describe how sociocultural theories encompassing these variables can help explain why body image concerns in Latin America may differ somewhat, in both form and magnitude, from those observed in Western populations and therefore warrant their own synthesis of the literature.

#### 1.1. The Latin American body image context

Latin America is a diverse region including 33 countries from Mexico to Chile and the Caribbean. The population of this extensive area includes those of afro-, European- and indigenous descent, speaking five colonial and countless indigenous languages, and living in a wide range of socioeconomic conditions (although almost all countries are classified as low- or middle-income by the World Economy Ranking). Latin American appearance standards and pressures to attain them show both similarities and differences with those in the global north. As noted by Rodgers et al. (2023), awareness and internalisation of the thin ideal are clearly present in many - typically urban and industrialised - Latin American contexts. Pressures towards muscularity are also prominent amongst men (Thornborrow et al., 2020) and, to a lesser extent, women (Campos et al., 2019; de Carvalho et al., 2019). On the other hand, strong pressures towards curviness have also been reported in some Latin American samples (Anderson-Fye, 2004), emphasising bodies that are both fuller below the waist than above (i.e., larger hips and buttocks) and larger overall than Western ideals (Thornborrow et al., 2022). Demographic factors, such as socioeconomic status (SES) and geographic location (urban vs. rural) might also influence appearance ideals. For example, studies have shown that body ideals were heavier in low compared to high SES neighbourhoods in Colombia (Gilbert-Diamond et al., 2009), and in rural compared to urban areas of Nicaragua (Boothroyd et al., 2020, 2016).

Research from outside Latin America demonstrates that ethnic identity may act in a protective manner against media internalisation or appearance pressure, especially the Western white thin ideal (Hart et al., 2016; Roberts et al., 2006; Schooler et al., 2004). Studies with African American women found that characteristics such as hair texture and skin tones were more salient appearance ideals than Western standards such as thinness (Awad et al., 2015; Watson et al., 2019). Arguably, this black-white dichotomy is not easily adaptable to Latin American populations, which descend from an amalgamation of ethnic backgrounds that occurred following the interaction and power struggles between Indigenous groups, Europeans, and Africans during the colonial period (i.e., mestizaje; see De Casanova, 2004). This history of colonisation and frontier settlement in Latin and North America imposes appearance pressures to alter afro-descendant and indigenous phenotypic features that are not limited to body shape (Lowy et al., 2021; Patton, 2006). Body ideals portrayed in Latin American media notably uplift Eurocentric standards of beauty (i.e., lighter skin, straight hair, and facial characteristics) and limit the visibility of other ethnic identities (Rahier, 1998; Rivadeneyra, 2011). A closer look into how ethnicity influences the association between media, body image and sociocultural appearance ideals in Latin America is needed.

While peers become an important source of social influence during adolescence (Berger et al., 2016), Latin American culture often posits a stronger influence of parents on their offspring during adolescence and adulthood in comparison to North American and European cultures (e. g., Carlo et al., 2007; O'Sullivan & Santamaría, 2023). This can lead to strong parental pressures and direct interventions to alter, or encourage alteration of, child and adolescent weight and appearance (Abdalla et al., 2020; Mellor et al., 2008).

Finally, there are points of appearance pressure particular to specific parts of Latin America. Brazil, Mexico, Argentina, and Colombia are amongst the countries with the highest cosmetic surgery procedures per capita (International Society of Aesthetic Plastic Surgery, 2020). Cosmetic surgeries are often used as means to gain social power and provide upward mobility (as described in Brazil; Edmonds, 2010). Additionally, local use of cosmetic surgery as part of the national health system (e.g., in Brazil; Jarrín, 2017) and surgical tourism leads to high visibility of cosmetic surgery clinics in several urban Latin American environments, adding a further source of sociocultural appearance standards and potential pressure.

Given that body ideals and appearance pressures in Latin America are culturally distinct, it would be inappropriate to attempt to understand them by generalising from findings from WEIRD populations (Western, educated, industrialised, rich and democratic; Henrich et al., 2010). Moreover, research into the relationships specifically between media use and influence, sociocultural variables, and body image in Latin America is sparse and so far, it has not been comprehensively synthesised. Understanding factors that influence the development of body image concerns, as well as potentially the rapidly increasing prevalence of eating disorders (Kolar & Mebarak, 2022; Kolar et al., 2016) and cosmetic procedures in the Latin American context, is crucial for the development of culturally adapted prevention, intervention, and treatment efforts.

#### 1.2. Existing syntheses and purpose of the current review

Only two previous systematic reviews of the association between media-related sociocultural factors and body image have included research from Latin America, but they were limited in scope. da Silva Souza et al. (2021) summarised Portuguese literature from Brazil, including 13 articles and focusing on the effects of media on female body image. Paterna et al. (2021) focused exclusively on the quantitative relationship between thin ideal internalisation and body dissatisfaction and included only specific self-reported questionnaires mostly developed in English-speaking, Western countries. The review identified five studies from Brazil (Amaral, Ribeiro, et al., 2013; Campos et al., 2021; Carvalho & Ferreira, 2020; de Carvalho et al., 2017; Uchoa et al., 2017) and one from Peru (Zevallos-Delzo et al., 2020). All except one (Uchoa et al., 2017) sampled young adults recruited exclusively or partly through universities. The relatively narrow inclusion criteria of these two reviews mean that a potentially vast body of Latin American literature remains to be synthesized. This encompasses studies that used Figure Rating Scales (e.g., Kakeshita et al., 2009; Stunkard, 1983) to measure body dissatisfaction, studies using the Spanish-language Questionnaire of Influences on the Aesthetic Body Shape Model (CIMEC; Toro et al., 1994), and qualitative studies, amongst others.

We therefore conducted a comprehensive systematic literature review of the relationship between media use/influence, body image and sociocultural appearance ideals in Latin America, including articles in English, Spanish and Portuguese. *A priori*, we planned to examine potential subgroup differences in relation to geographical region, participant age, participant gender and, if possible, assess the influence of potential moderators, including socioeconomic status (SES), urbanization and ethnicity. Additionally, we assessed the quality of included studies and summarised the most frequently used measurement tools and questionnaires. We summarised the findings using narrative synthesis and tabulated relationships amongst key variables. Based on Paterna et al. (2021) and da Silva Souza et al. (2021), we tentatively expected to find similar associations between body dissatisfaction and media internalisation to those found in Western countries (e.g., Huang et al., 2021; Saiphoo & Vahedi, 2019) at least in urban and student samples, but did not make any predictions using other instruments, populations, or research designs.

#### 2. Methods

This mixed-method systematic review is part of a bigger family of systematic literature reviews about the relationship amongst body image, sociocultural appearance ideals, and media influence in non-Western, low- and middle-income countries (operationalized as those ranked below the top 30 global nations on GDP). The review was preregistered on the PROSPERO database (registration number CRD42021254607) and we adhered to the 2020 Preferred Reporting Items for Systematic Reviews and Meta-Analysis guidelines (PRISMA; Page et al., 2021; see Supplementary Materials S1 for PRISMA checklist). All supplementary material can be found on osf (https://osf.io/fvnbg/).

#### 2.1. Search strategy

This review sought to identify English, Spanish, and Portuguese language quantitative or qualitative studies conducted at least partially

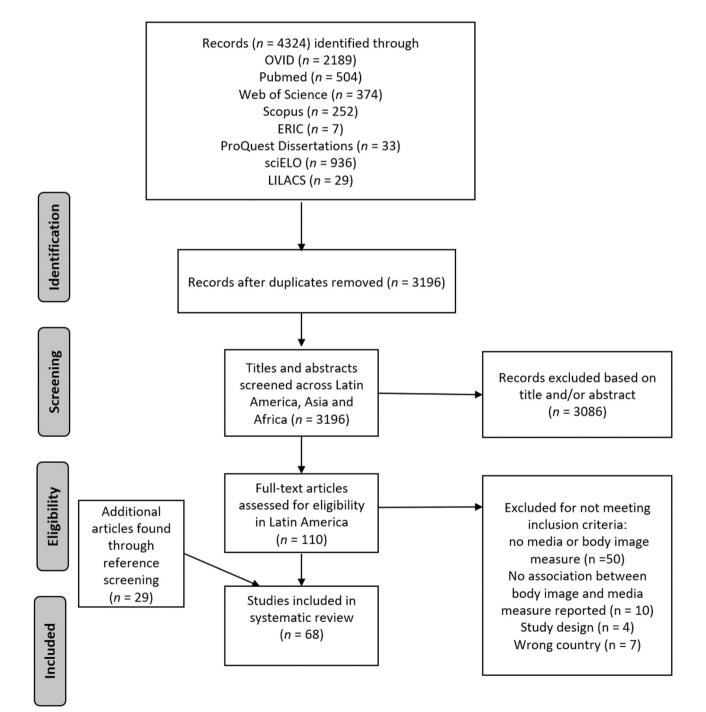


Fig. 1. PRISMA diagram of study selection.

in Latin America and the Caribbean and reporting a relationship or association between a measure or conceptualisation of media use/influence and a measure or conceptualisation of body image and/or sociocultural appearance ideals. Published, peer-reviewed journal articles and doctoral theses were included. Searches were conducted on the following electronic databases: OVID - PsycINFO/ Medline; PubMed; Web of Science; ERIC; Scopus; ProQuest Dissertations; SciElo; and LI-LACS. All databases were searched on the same day (20th May 2021) and the search was repeated in December 2023. Search constructs included keywords to describe media use, media influence, body image, and sociocultural appearance ideals, and the names of countries that comprise Latin America and the Caribbean. The full strategy, including truncations, and Spanish and Portuguese translations, is listed in Supplementary Materials S2. Of note, additional search terms for other lowand middle-income countries were also used in the initial 'umbrella' searches, because this review comes from a 'family' of reviews across all non-Western low-and middle-income countries. However, only papers from Latin America are included in this review.

The initial search yielded 1582 records across all included low- and middle-income countries which were collated using Endnote<sup>TM</sup>. After removing 606 duplicates, 976 articles were included in the initial title and abstract screening stage. 802 articles did not meet the eligibility criteria described below. 110 articles then progressed to full text screening. Of these, 71 were excluded as a consequence of full-text screening by two authors: 7 were excluded for being conducted outside of Latin America, 50 for the absence of a body image, media-related, or sociocultural variable, 10 for the absence of a reported relationship between at least two of the key variables and 4 on the basis of study design. Reference lists of included studies were then hand-searched to identify other eligible studies, which resulted in the inclusion of 29 further articles. The PRISMA diagram in Fig. 1 outlines the process of study selection.

#### 2.2. Inclusion and exclusion criteria

To be included, articles had to measure (qualitatively or quantitatively) both a) *at least one* subjective body image or sociocultural variable or construct and b) *at least one* media consumption or media influence variable or construct. Media use is defined as the total amount of media taken in by an individual, including both traditional media (e. g., magazines and television) and social networking sites. It encompasses both passive consumption, such as viewing or reading content, and active consumption such as 'liking' or commenting on content, as well as posting and/or editing photos or videos (Vandenbosch et al., 2022). Media influence was operationalised broadly, included awareness of appearance ideals, internalisation of appearance ideals, perceived influence of media on appearance related thoughts and feelings, and perceived pressures to attain appearance ideals in various social situations (Cafri, 2005; Toro et al., 1994).

Studies had to have been conducted in a Latin American country or territory, published between January 1991 and December 2023, and written in English, Spanish or Portuguese. Given the dearth of existing research syntheses in this area, and to ensure we captured all relevant research concerning the relationship between our variables of interest, we included a broad range of study designs: observational, longitudinal and cross-sectional studies, experimental (pre/post) studies, (un) controlled intervention studies, and studies reporting qualitative data. These articles could be peer reviewed research articles or doctoral dissertations.

Studies were excluded if they a) did not measure (qualitatively or quantitatively) both a subjective body image variable/construct and a media consumption or media-related variable/construct, b) included *only* participants based in a non-Latin-American country or countries, c) did not report new data (e.g., systematic reviews, comments, opinions, editorials), d) despite measuring relevant variables, did not report a relationship between them (i.e., no inferential statistics between the two variables were reported), e) had not undergone robust peer review (e.g., non-doctoral dissertations, non-peer-reviewed articles) or e) were not in a format that provided appropriate or sufficient information for extraction or quality appraisal (e.g., books or conference proceedings). For criterion d), where no relationship was reported we contacted corresponding authors three times to try to obtain either the raw data, or an appropriate summary of relevant relationships.

#### 2.3. Data extraction

Two authors independently extracted data using a coding framework developed for this systematic review. The two independent extractions were compared and all disagreements between authors were resolved through discussion, followed by the involvement of a third author, if necessary. All information was then collated into one comprehensive table which is provided in Supplementary Materials S3.

#### 2.4. Data synthesis

Data were summarised using narrative synthesis and relationships amongst key variables were tabulated, subdivided by study characteristics and type of measure(s) used. Narrative synthesis was selected because we anticipated a broad and heterogeneous range of studies, using diverse outcome measures, and focusing upon a wide range of populations. As such, the potential for statistical synthesis (e.g., metaanalysis) was low. After data extraction, we undertook a preliminary synthesis of key themes, grouping studies based on iterative discussions within the team. We then consolidated this into a framework of coherent sets of studies for tabulation and narrative description.

#### 2.5. Study quality

Two authors independently assessed study quality, using an adapted version of the critical appraisal tool to assess the quality of crosssectional studies AXIS (Downes et al., 2016). For longitudinal and experimental study designs, questions from the Quality Assessment Tool for Observational Cohort and Cross-sectional Studies (NHLBI, 2018) were used. Qualitative studies were evaluated with the Critical Appraisal Skills Programme for systematic reviews (CASP, 2023). Quality assessment focused on the evaluation of study design and analysis (i.e., target population, use of validated measures, specification of statistical analysis), quality of reporting of results (i.e., description of basic data and participant sample, internal consistency of results) and risk of bias (i.e., information about non-responders, sample size justification). The lead author scored all studies, other authors (LB, TT, MB, ND, EE) provided additional independent assessments.

#### 3. Results

#### 3.1. Study characteristics

After screening and final searches, we identified 68 articles, published between 2004 and 2023 with a total of 47,751 participants. Sample sizes ranged from 31 to 15,632 participants for quantitative studies, and 5 to 121 for qualitative studies.

Study designs were cross-sectional (N = 48), qualitative (N = 10), longitudinal (N = 3), experimental or intervention (N = 4) and mixed (N = 3). Most studies had mixed gender samples (N = 34), 22 studies included only girls and women, and 6 included only men. None of the studies included nonbinary or gender fluid participants. The included samples were from 10 different countries: Brazil (N = 37), Mexico (N = 11), Nicaragua (N = 7), Argentina (N = 8), Chile (N = 3), Colombia (N = 2), Belize (N = 1), Ecuador (N = 1), Guatemala (N = 1), and Peru (N = 1). Publications were written in English (N = 40), Portuguese (N = 14), and Spanish (N = 14). Tables 1–7 summarise study characteristics.

Cross-sectional studies evaluating the association between body image and media influence using SATAQ.

Author	Language	Country	Sample	% female	Body image measure	Media measure	Relationship between body image and media measures	Quality score
SATAQ-3 and SATAQ-4			-					
Amaral, Ferreira et al. (2013)	English	Brazil	506; university students (M <sub>age</sub> 20.9, SD 2.1, 17 –29)	58 %	BSQ	SATAQ-3 gen, athl int and press	BSQ*gen int $r = .41$ (M); r = .51 (F) BSQ*athl int $r = .29$ (M); r = .22 (F) BSQ*press $r = .48$ (M); r = .60 (F)	0.67
Austin and Smith (2008)	English	Mexico	137; adolescents (M <sub>age</sub> 11.9, 12 -15)	100 %	BSQ	SATAQ–3 gen int, info	BSQ and gen int were significantly related ( $\beta = .39$ , $p < .001$ ), gen int fully mediated the relationship between info and BSQ (a: $\beta = .61$ , $p < .001$ , b: $\beta = .62$ , $p < .001$ , c: $\beta = .03$ , ns)	0.72
Campos et al. (2021)	English	Brazil	382; adults (M <sub>age</sub> 22.7, SD 4.3, 18 –35)	100 %	BSQ; DMS; FMS	SATAQ-3 gen and athl int together	BSQ*int $r = .42$ DMS*int $r = .34$ FMS*int $r = .49$	0.61
Carvalho and Ferreira (2020)	English	Brazil	707; university students ( $M_{age}$ 23.9, SD 4.1, 21 –35)	0 %	BSQ; DMS	SATAQ-3 combined int; TIS media	BSQ*int $r = .24$ BSQ*TIS $r = .37$ DMS*int $r = .56$ DMS*TIS $r = .27$ Tripartite Influence Model was confirmed ( $\chi^2$ (2790) = 10,548.42; p < .001), internalisation had a significant effect on BSQ (B	0.89
de Carvalho et al. (2017)	English	Brazil	741; university students (M <sub>age</sub> 23.6, SD 4.1, 21 –35)	100 %	BSQ; DMS	SATAQ-3 combined int; TIS media subscale	=.4, SE = 0.07, $p < .001$ ). BSQ*int $r = .48$ BSQ*TIS $r = .46$ DMS*int $r = .40$ DMS*int $r = .21$ Tripartite Influence Model was confirmed ( $\chi^2$ 2064) = 6793.23; $p < .001$ ), media had a significant effect on BSQ ( $\beta =22$ , $SE = 0.05$ , $p < .001$ ).	0.78
Fortes et al. (2013)	Portuguese	Brazil	273; adolescents (M <sub>age</sub> 13, SD 1.6, 11 –15)	100 %	BSQ	SATAQ-3 gen and athl int	ANCOVA showed lower gen and athl int scores in those with low BSQ scores, compared to high BSQ scores. BSQ predicted by gen int ( $F =$ 33.81, $p = .001$ ) and athl int ( $F = 14.03$ , $p = .001$ ).	0.78
Moreno-Domínguez et al. (2019)	English	Argentina	290; university students (M <sub>age</sub> 24.7, SD 2, 18 –29)	100 %	BSQ	SATAQ—4 int, press	Awareness and pressure predict body dissatisfaction, this relationship is partly mediated by the internalisation of the thin ideal (ESP and ARG sample combined). The relationship between BSQ and internalisation was stronger in higher BMI, compared to lower BMI (84th BMI percentile: $\beta = 0.71$ , <i>SE</i> = 0.12, <i>CI</i> = 0.50 - 0.97; 16th BMI percentile: $\beta = 0.52$ , <i>SE</i> = 0.09, <i>CI</i> = 0.35 - 0.72).	0.67
Thornborrow et al. (2022) Study 2	English	Nicaragua	62; adults from rural communities (M <sub>age</sub> 19.8, SD 5.17, 14 –39)	100 %	BSQ; BAS	SATAQ-3 gen int; TV hours/ week	BSQ*int $r = -0.35$ c.72). BSQ*int $r = -38$ BSQ*TV hours $r = 0.29$ BAS*int $r = -0.34$ BAS*TV hours $r = -0.22$ (ns) Confirmed the sociocultural model; BSQ scores mediated the relationship between SATAQ and ED symptoms ( $\beta = 0.31$ , $SE = 0.22$ , p = .012).	0.67
Uchoa et al. (2017)	English	Brazil	450; adolescents from private and state schools ( $M_{age}$	48 %	BSQ	SATAQ-3 gen, athl int	BSQ*gen int $r = .30$ (private), $r = .20$ (state) BSQ*athl int $r = .17$ (private), $r = .20$ (state)	0.56

#### Table 1 (continued)

Author	Language	Country	Sample	% female	Body image measure	Media measure	Relationship between body image and media measures	Qualit score
			15.3, SD 1.2,					
Zevallos-Delzo et al. (2020)	Spanish	Peru	14 –16) 484; university students (M <sub>age</sub> 19.7, SD 2.4)	100 %	BSQ	SATAQ-4 thin, athl int, press	BSQ*thin int $r = .56$ BSQ*athl int $r = .35$ BSQ*media press $r = .51$	0.56
SATAQ internalisation : Alvarenga and Dunker (2014)	subscales and English	Figure Rating Brazil	<b>3 Scales</b> 2402; university students (M <sub>age</sub> 23.5, SD 3.5, 18 −50)	100 %	BD using Stunkard's Silhouette Scale	SATAQ-3 gen, athl int, press	BD*gen int $r = .25$ BD*athl int $r = .18$ BD*press $r = .35$ BD was significantly predicted by gen int ( $\beta = .22$ ) and pressure ( $\beta = .02$ ) in a multiple regression (R <sup>2</sup> =.61, $p < .001$ ).	0.94
Jaeger and Camara (2015)	English	Brazil	256; university students (M <sub>age</sub> 23.2, SD 5.8, 18 –57)	80 %	BD using Brazilian Silhouette Scale for adults	SATAQ–3 gen int, press; TV hours	P theory in the predicted by gen int $(\beta = 0.07, t = 3.54, p = .001)$ in a multiple regression ( $\mathbb{R}^2 = .56, p = .001$ ); press and TV hours were not significant predictors in the best fitting model.	0.78
Lira et al. (2017)	Portuguese	Brazil	212; adolescents (M <sub>age</sub> 14.8, SD 1.69, 10 –18)	100 %	BD using Brazilian Figure Rating scale	SATAQ-3 int; frequency of Facebook, Instagram, Snapchat, Twitter	Those wishing to be thinner ( $M = 26.46$ ) had significantly higher SATAQ scores, compared to those satisfied ( $M = 18.17; p < .001$ ). Those who used Instagram more than 10 times/day were more likely to show BD (OR adj 4.11, CI95 % 3.09 – 10.65, $p = .029$ ). This relationship was not significant for Facebook ( $p = .081$ ), Snapchat ( $p = .266$ ) or Twitter ( $p = .499$ ) use.	0.78
Neves et al. (2020)	English	Brazil	1158; children (M <sub>age</sub> 9.2, SD 1.24, 7 –11)	49 %	BD using Brazilian silhouette scale for children; open questions about body satisfaction and body concern	SATAQ-4R musc, thin and ideal appearance int	BD*musc int $r = .08$ (M); r = .05 ns (F) BD*thin int $r = .17$ (M); r = .41 (F) BD*ideal int $r = .06$ ns (M); r = .08 ns (F) body sat*musc int r =07 ns (M); $r =05$ ns (F) body sat*thin int $r =16$ (M); $r =19$ (F) body sat*ideal app int r =10 (M); $r =12$ (F) body con*musc int $r = .15$ (M); $r = .13$ (F) body con*thin int $r = .22$ (M); $r = .27$ (F) body con*ideal int $r = .15$ (M); $r = .19$ (F)	0.56
Other body image meas Andres et al. (2023)	sures and SAT. English	AQ Colombia	525; adults (M <sub>age</sub>	65 %	BESAA-LA	SATAO-4 thin,	BESAA*thin int $r = -0.46$	0.67
		Nicaragua	24.6, SD 10) (COL) 102; adults (M <sub>age</sub> 22.2, SD 4.7) (NIC)	(COL) 73 % (NIC)		athl int (COL) SATAQ-3 gen, athl int (NIC)	(COL) BESAA*athl int $r = -0.12$ (COL) BESAA*gen int $r = -0.63$ (NIC) BESAA*athl int $r = -0.5$ (NIC)	
Campana et al. (2012)	English	Brazil	198; adults (M <sub>age</sub> 28, SD 10.6, 18 –79)	50 %	BAS	SATAQ 3 gen, athl int, press and info	BAS*gen int $r = -0.20$ (M); r = -0.24 (F) BAS*athl int $r = -0.18$ ns (M); $r = -0.09$ ns (F) BAS*press $r = -0.19$ ns (M); r = -0.25 (F) BAS*info $r = -0.20$ (M); r = -0.09 ns (F)	0.56

(continued on next page)

#### Table 1 (continued)

Author	Language	Country	Sample	% female	Body image measure	Media measure	Relationship between body image and media measures	Qualit score
Escandón-Nagel et al. (2021)	Spanish	Chile	155; university students ( $M_{age}$ 22, SD 2.1, 18 –29)	100 %	DMS; EDI–2 drive for thinness	SATAQ–4 media pressure	DMS*media press $r = .14$ ns EDI*media press $r = 0.46$	0.67
unqueira et al. (2021)	English	Brazil	158; adults (M <sub>age</sub> 31.25, SD 9.17, 18 –50)	100 %	BAS; MBSRQ-AE	SATAQ-3 gen int	BAS*gen int $r =34$ MBSRQ-AE*gen int $r =23$	0.67
Jeves et al. (2021)	English	Brazil	1168; children (M <sub>age</sub> 9.2, SD 1.24, 7 –11)	49 %	Child body concerns and behaviour scale (CBCBS)	SATAQ-4R musc, thin and ideal appearance int	CBCBS*musc int $r = .38$ (F), r = .24 (M) CBCBS*thin int $r = .66$ (F), r = .44 (M) CBCBS*ideal int $r = .39$ (F), r = .29 (M)	0.61
'hornborrow et al. (2020) 'otal SATAQ (no subs	English	Nicaragua	95; adults from rural communities (M <sub>age</sub> 24.1, SD 7.9, 15 –49)	0 %	BAS; DMS; open questions about body goals (lose, gain, or not change weight and muscle)	SATAQ–3 int; PSPS media; TV hours watched per week	BAS*SATAQ $r = 0.00$ ns BAS*SATAQ $r = 0.00$ ns BAS*Media press $r = .03$ ns DMS*TV $r = -0.02$ ns DMS*ATAQ $r = .31$ DMS*Media press $r = .20$ ns DMS*TV $r = .22$ Body goals*SATAQ r = .05 ns Body goals* media press r = .28 Body goals*TV $r = .14$ ns DMS was predicted by SATAQ ( $b = -3.66, p < .001$ ) in a regression model (R <sup>2</sup> = .19, $p < .001$ ), media pressure and TV were not significant predictors. Body goals was significantly predicted by media pressure ( $b = 0.13, p = .01$ ), but not SATAQ and TV (R <sup>2</sup> = .07, p = .03).	0.56
maral et al. (2015)	Portuguese	Brazil	529; adolescents (M <sub>age</sub> 15.9, SD 1.7, 13 –23)	56 %	BSQ	SATAQ-3 total	BSQ*SATAQ $r = 0.33$ (M); r = 0.41 (F)	0.56
maral and Ferreira (2017) Baseline data of longitudinal study	English	Brazil	498; adolescents (M <sub>age</sub> 15.7, SD 0.8)	47 %	BSQ	SATAQ-3 total	BSQ*SATAQ $r = .51$ (mixed sample) SATAQ was a predictor of BSQ in multiple regressions in girls ( $\beta = .28$ , $SE = .04$ , $p < .001$ ) and boys ( $\beta = .28$ , $SE = .03$ , $p < .001$ ).	0.78
atista et al. (2015)	Portuguese	Brazil	207; university students (M <sub>age</sub> 22.9, SD 3.11, 19 -45)	81 %	BSQ	SATAQ-3 total	BSQ*SATAQ r = .44 (M) $BSQ*SATAQ r = .39 (F)$	0.78
ortes et al. (2016)	English	Brazil	1358; adolescents (M <sub>age</sub> 13.9, SD 1.0)	100 %	BSQ	SATAQ-3 total	BSQ*SATAQ $r = .72$	0.89
Neves et al. (2016)	English	Brazil	(hage 10.7, 50 Ho) 413; adolescent elite and non-elite gymnasts and controls (M <sub>age</sub> 13.1, SD 1.8, 10 –18)	89 % (gymnasts) 47 % (control)	BSQ	SATAQ—3 total	BSQ*SATAQ $r = .24$ (control), $r = .29$ (gymnasts), r = .4 (elite gymnasts) SATAQ predicted BSQ in a regression model in control ( $F = 16.92$ ) and gymnasts ( $F = 39.93$ ), but not in elite gymnasts.	0.78
Jchoa et al. (2019)	English	Brazil	1011; adolescents (M <sub>age</sub> 15.7, SD 1.1, 14 –18)	52 %	BSQ	SATAQ-3 total	BSQ*SATAQ $r = .43$ (M); r = .52 (F) SATAQ predicted BSQ in a regression model in girls ( $\beta = 0.45$ ; $t = 13.15$ ; $p < .001$ ) and boys ( $\beta = 0.41$ ; t = 11.03; $p < .001$ ).	0.89

*Note.* BSQ = Body Shape Questionnaire, SATAQ = Sociocultural Attitudes Towards Appearance Questionnaire general, athletic internalisation and pressure subscales, DMS = Drive for Muscularity Scale behaviour and attitudes subscales, FMS = Female Muscularity Scale, TIS = Tripartite Influence scale, BAS = Body Appreciation Scale, MAMS = Male Adiposity and Muscularity Scale, EDI-2 = Eating Disorder Inventory, BESAA-LA = Body Esteem Scale for Adolescents and Adults Latin-American Spanish version, MBSRQ-AE = Multidimensional Body-Self Relations Questionnaire-Appearance Scale, PSPS = Perceived Sociocultural Pressure Scale, subscale media pressure, BD = body dissatisfaction, BMI = Body Mass Index, ED symptoms = eating disorder symptoms, (M) = male, (F) = female, *ns* = non-significant, *r* = correlation coefficient,  $\chi^2$  = chi-square,  $\beta$  = standardized regression coefficient, *SE* = standardized error, *p* = p-value, *t* = t-value, CI = confidence interval, OR adj = odds ratio adjusted.

#### 3.2. Cross-sectional studies

Most cross-sectional studies used questionnaires to assess body image (N = 43). Others used open questions (N = 5) or Figural Rating Scales (N = 19) to assess body satisfaction/dissatisfaction, perceivedideal body size discrepancy, or body size ideals. Similarly, most studies used questionnaires to measure either media internalisation or sociocultural pressures (N = 48) and/or media use (N = 17). All questionnaires used are summarised in Supplementary Material S5.

## 3.2.1. Associations between body image and media internalisation measured using the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-3 and -4)

The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) is a multi-dimensional questionnaire which measures sociocultural pressures and information regarding appearance (from media, peers, and family, measured together or separately depending on the version), and internalisation of cultural appearance ideals (general, thin, or athletic). Twenty-nine studies examined the relationship between body image concerns and media internalisation using the SATAQ-3 or 4 (SATAQ; Calogero et al., 2004; Schaefer et al., 2015). All found significant associations (between r = .10 and r = .86), such that higher body dissatisfaction was associated with greater media internalisation in both men and women, irrespective of the questionnaire version used (see Table 1).

Within these, ten studies assessed the correlations between scores on the Body Shape Questionnaire (BSQ; Cooper et al., 1987) and SATAQ subscales measuring general, thin, or athletic ideal internalisation. Associations between BSQ scores and SATAQ subscales were generally stronger for women (r = .22 - .60), compared to men (r = .24 - .48). Associations between BSQ scores and general/thin ideal internalisation (r = .24 - .56) were larger than those between BSQ scores and athletic internalisation (r = .17 - .35) (Amaral, Ribeiro, et al., 2013; Austin & Smith, 2008; Campos et al., 2021; Carvalho & Ferreira, 2020; de Carvalho et al., 2017; Fortes et al., 2013; Moreno-Domínguez et al., 2019; Thornborrow et al., 2022; Uchoa et al., 2017; Zevallos-Delzo et al., 2020). Six further studies calculated associations between the whole SATAQ scale (versions 3 or 4) and BSQ and found that higher body dissatisfaction was associated with a higher total SATAO score (r = .33 - .72), but it was not possible to say which of the subscales accounted for this relationship and we were unable to obtain disaggregated data from the authors (Amaral et al., 2015; Amaral & Ferreira, 2017; Batista et al., 2015; Fortes et al., 2016; Neves et al., 2016; Uchoa et al., 2019).

SATAQ internalisation subscales were also significantly correlated with other body image measures, such as the Body Esteem Scale for Adolescents and Adults (BESAA; Mendelson et al., 2001), Body Appreciation Scale (BAS and BAS-2; Avalos et al., 2005; Tylka & Wood-Barcalow, 2015a), Multidimensional Body-Self Relations Questionnaire-Appearance Scale (MBSRQ-AE; Cash, 2000), Child Body Concerns and Behaviours Scale (CBCBS; Neves et al., 2021), with correlations ranging from r = .12 to.66 (Andres et al., 2023; Campana et al., 2012; Junqueira et al., 2021; Neves et al., 2021; Thornborrow et al., 2020).

Four studies evaluated the correlations between discrepancy scores on Figure Rating scales (the directional size difference between the perceived figure chosen and the ideal figure chosen) and SATAQ internalisation and found significant associations (between r = .08 and r = .25) across all adult samples, such that a greater perceived-ideal difference was associated with higher internalisation (Alvarenga & Dunker, 2014; Jaeger & Camara, 2015; Lira et al., 2017; Neves et al., 2020). In children, they found mostly significant associations, except for discrepancy scores and ideal internalisation in both boys and girls, and muscular internalisation in girls (Neves et al., 2020).

### 3.2.2. Associations between body image and sociocultural appearance influences using CIMEC

The Questionnaire of Influences on the Aesthetic Body Shape Model (CIMEC; Toro et al., 1994) is a multidimensional questionnaire developed in Spanish, which assesses sociocultural influences of advertisement, verbal messages, social models, and social situations on body image. Four studies examined the relationship between BSQ scores and CIMEC subscales. The strength of association varied considerably across studies and subscales, especially the subscale 'influence of social situations' (r = .01 ns to .63). Subscales 'influence of advertising' (r = .31 to .78), 'influence of social models' (r = .40 to .68) and 'influence of muscular models' (r = .41 to .69) showed a clearer picture of direction of the association (Barrientos Martínez et al., 2014; Franco et al., 2013; Ruiz et al., 2012; Venegas-Ayala & González-Ramírez, 2020). Overall, they found that CIMEC scores were associated with higher body dissatisfaction, in both men and women, with stronger associations in women.

Seven further studies examined the relationship between total CIMEC scores with BSQ (Espósito, 2015; Mancilla-Díaz et al., 2012), Figural Rating Scale discrepancy scores (de Jesús Saucedo-Molina et al., 2010, 2008; Zaragoza Cortes et al., 2011), subscales weight and shape concern of the Eating Disorder Examination-Questionnaire (Losada et al., 2015) and subscales drive for thinness and body dissatisfaction of the Eating Disorder Inventory-2 (Rivarola & Penna, 2006). Overall, they found that higher levels of negative sociocultural appearance influences were associated with greater body dissatisfaction, larger perceived-ideal discrepancy scores, and higher drive for thinness in both men and women (r = .22 to .84). See Table 2 for all results.

#### 3.2.3. Association between other body image and media measures

Other studies (see Table 3) assessed the association between body image concerns and sociocultural influences using a range of scales: the SATAQ-4 media pressure subscale (Escandón-Nagel et al., 2021), Tripartite Influence scale (Amaral, Ferreira, et al., 2013), Attitudes toward Body Figure Questionnaire (Chávez-Hernández et al., 2015), Media Exposure Questionnaire (Compte et al., 2020), Multidimensional Media Influence Scale (Cusumano & Thompson, 2001), and open questions about media pressure to lose weight and/or increase muscle (Mellor et al., 2008). Most of these studies found that body image concerns were significantly associated with (broadly defined) stronger sociocultural appearance influences in both men and women (r = .22 to r = 61.).

Eight studies measured drive for muscularity using the Drive for Muscularity Scale (DMS; McCreary et al., 2004). Seven found mostly significant associations, indicating that higher drive for muscularity is associated with stronger sociocultural appearance influences (r = .21 to .56), with stronger associations in men (Barrientos Martínez et al., 2014; Campos et al., 2021; Carvalho & Ferreira, 2020; Compte et al., 2020; de Carvalho et al., 2017; Ruiz et al., 2012; Thornborrow et al., 2020). One exception was Escandón-Nagel et al. (2021) who did not find a significant association between DMS scores and media pressure in young Chilean women.

Positive body image was assessed by five studies, using both the Body Appreciation Scale (Amaral et al., 2019) and Body Appreciation Scale-2 (Almeida et al., 2021; Junqueira et al., 2021; Thornborrow et al., 2022, 2020). Body appreciation was negatively correlated with general internalisation in Brazilian women (Junqueira et al., 2021), but was not significantly correlated with any media variables in both Nicaraguan men and women (Thornborrow et al., 2022, 2020). Body appreciation significantly improved in both men and women after participation in the Body Project, a body acceptance program using cognitive dissonance to

Cross-sectional studies evaluating the association between body image and media influence using CIMEC.

Author	Language	Country	Sample	% female	Body image measure	Media measure	Relationship between body image and media measures	Quality score
BSQ and CIMEC								
Barrientos Martinez et al. (2014)	Spanish	Mexico	467; gym-users and non- gym users (M <sub>age</sub> 26.6, SD 8.7, 13 –53 (gym); M <sub>age</sub> 21.0, SD 3.1, 17 –43 (non- gym)	29 %	BSQ; DMS	CIMEC ad, musc, soc mod, soc rel	BSQ*ad $r = .58$ (F gym), $r = .60$ (F non-gym); $r = .68$ (M gym), r = .36 (M non-gym) BSQ*musc $r = .65$ (M gym), r = .41 (M non-gym) BSQ*soc mod $r = .50$ (F gym), r = .44 (F non-gym) BSQ*soc rel $r = .06$ ns (F gym), r =01 ns (F non-gym) DMS*ad $r = .42$ (F gym), $r = .29$ (F non-gym); $r = .60$ (M gym), r = .30 (M non-gym) DMS*musc $r = .48$ (M gym), r = .43 (M non-gym) DMS*soc mod $r = .40$ (F gym), r = .35 (F non-gym) DMS*soc rel $r = .21$ ns (F gym),	0.67
Espósito (2015)	Spanish	Argentina	314; adolescents (M <sub>age</sub> 16.4, SD 1.0, 15 –19)	54 %	BSQ	CIMEC	r = .19 ns (F non-gym) BSQ*CIMEC $r = .84$ (F); $r = .51$	0.67
Franco et al. (2013)	Spanish	Mexico	289; university students (M <sub>age</sub> 20.5, SD 1.2)	100 %	BSQ	total CIMEC ad, soc mod, soc rel	(M) BSQ*total $r = .86$ BSQ*ad $r = .78$ BSQ*soc mod $r = .68$ BSQ*soc rel $r = .29$	0.67
Mancilla-Díaz et al. (2012)	English	Mexico	130; university students (M <sub>age</sub> 19.4, SD 1.3, 18 –22)	100 %	BSQ	CIMEC total, soc rel	CIMEC total (thin int) mediated the relationship between soc rel (peer influence) and BD (a: $\beta = 0.44, p < .001; b: \beta = 0.91, p < .001; c: \beta = 0.14, ns$ )	0.67
Ruiz et al. (2012)	Spanish	Mexico	179; adult gym-users and sedentary students (gym M <sub>age</sub> 26.3, SD 7.4; sedentary M <sub>age</sub> 21.5, SD 2.2)	0 %	BSQ; DMS	CIMEC ad, musc	P = (.50r, cr p = 0.1r, m) BSQ*ad $r = .67$ (gym), $r = .53$ (sedentary) BSQ*mod musc $r = .69$ (gym), r = .50 (sedentary) DMS*ad $r = .62$ (gym), $r = .44$ (sedentary) DMS*musc $r = .52$ (gym), $r = .54$ (sedentary)	0.67
Venegas-Ayala et al. (2020)	English	Mexico	206; adults (M <sub>age</sub> 22.1, SD 4.2)	100 %	BSQ	CIMEC ad, verbal, soc mod, soc sit	BSQ*ad $r = .73$ BSQ*verbal $r = .36$ BSQ*soc mod $r = .49$ BSQ*soc sit $r = .63$	0.56
Figural Rating Scale			0104 11 604	50.04		01/100 1		0.67
de Jesús Saucedo-Molina et al. (2008)	Spanish	Mexico	2194; adolescents (M <sub>age</sub> 13.2, SD 1, 11 –15)	52 %	BD using Figural Rating Scale	CIMEC ad	BD*ad $r = .31$ (F), $r = ns$ (M)	0.67
de Jesús Saucedo-Molina et al. (2010)	Spanish	Mexico	347; university students (M <sub>age</sub> 18.4, SD 1.4, 17 -23)	67 %	Figural Rating Scale	CIMEC	BD*ad $r = .40$ (F), $r = ns$ (M) BD* verbal $r = .26$ (F), $r = .22$ (M) BD*soc models $r = .21$ (F), $r = ns$ (M) BD*soc sit $r = .31$ (F), $r = ns$ (M)	0.56
Zaragoza Cortes et al. (2011)	Spanish	Mexico	490; university students (M <sub>age</sub> 19.6, SD 2.1, 16 –30)	57 %	BD using Figural Rating Scale	CIMEC ad, verbal	BD*ad CI95 % = 3.1, $\chi 2$ = 8.64 (F); CI95 % = 2.8, $\chi 2$ = 7.15 (M) BD*verbal CI95 % = 3.2, $\chi 2$ = 10.2 (F), ns (M)	0.56
Other body image q Losada et al.	Juestionnaire Spanish	Argentina	69; adolescents (M <sub>age</sub> 14.1,	100 %	EDE-Q, weight and	CIMEC	shape concern*CIMEC $r = .60$	0.67
(2015) Rivarola and Penna (2006)	Spanish	Mexico	11 -15) 100; adolescents (41) and university students (59), (adolescents: $M_{age}$ 13.1, SD 0.4, 12 -14; adults: $M_{age}$ 19.1, SD 0.7, 18 -20)	100 %	shape concern EDI–2 subscale body dissatisfaction and drive for thinness	total CIMEC total	weight concern*CIMEC $r = .64$ BD*CIMEC $r = .66$ (adults); r = .24 (adolescents) Drive for thinness*CIMEC $r = .83$ (adults); $r = .31$ (adolescents)	0.56

*Note.* BSQ = Body Shape Questionnaire, CIMEC = Questionnaire of Influences on the Aesthetic Body Shape Model, subscales influence of advertising, influence of verbal messages, influence of social models, influence of social relationships/situations, influence of muscular models, DMS = Drive for Muscularity Scale, EDE-Q = Eating Disorder Examination-Questionnaire, EDI-2= Eating Disorder Inventory, BD = body dissatisfaction, (M) = male, (F) = female, *ns* = non-significant, r = correlation coefficient,  $\chi^2 = \text{chi-square}$ ,  $\beta = \text{standardized regression coefficient}$ , *SE* = standardized error, *p* = p-value, *CI* = confidence interval.

Other questionnaires used to assess the associations between body image and media influence.

Author	Language	Country	Sample	% female	Body image measure	Media measure	Relationship between body image and media measures	Quality score
Amaral, Ribeiro et al. (2013)	Portuguese	Brazil	475; university students ( $M_{age}$ 20.8, SD 2.0,	59 %	BSQ; BD using Stunkard Silhouette scale	TIS	BSQ*TIS $r =37$ (M); r =56 (F) BD*TIS $r =03$ ns (M); r =03 (F)	0.67
Andrade et al. (2023)	Portuguese	Brazil	18 –29) 465; adolescents (age range 10 –17, 56 % younger than 13 years)	65 %	BD using Figural Rating Scale	TV hours/day	r =29 (F) Watching more than 3 h of TV/ day was not associated with BD (OR adj 1.2, CI95 % 0.7–1.9).	0.63
Carvalho et al. (2021)	Portuguese	Brazil	2480 adolescents, (M <sub>age</sub> 14.6, SD 1.6, 12 –17)	54 %	Open question about weight satisfaction	TV hours/day	More or less than 2 h of TV/ day were not associated with weight satisfaction ( $p = .554$ ).	0.88
Chávez-Hernández et al. (2015)	English	Mexico	889; adolescents, data collected in 2007 and 2010 (2007: M <sub>age</sub> 16.0, SD 1.0; 2010: M <sub>age</sub> 16.3, SD 1.0)	50 %	Risk Factors Associated to Eating Disorders in Pubescents Questionnaire	Attitudes toward Body Figure Questionnaire	body shape distress*advertising influence r = .61 (F) body shape distress*thin ideal internalisation $r = .31$ (M)	0.61
Compte et al. (2020)	English	Argentina	402; university students (M <sub>age</sub> 22, SD 3.6)	0 %	DMS	Media Exposure Questionnaire (MEQ); TV and internet hours/ week	DMS*MEQ-fashion $r = .29$ DMS*MEQ-body care $r = .26$ DMS*MEQ-music $r = .05 ns$ DMS*MEQ-sports $r = .04 ns$ DMS*TV $r = .05 ns$ DMS*Tinternet $r = .26$	0.67
Del Duca et al. (2010)	Portuguese	Brazil	5028; adolescents (M <sub>age</sub> 17.1, SD 1.13, 15 –19)	59 %	Open question about weight satisfaction	TV hours/day	Watching more or less than 4 h of TV/day was not associated with weight satisfaction (lose weight: OR adj 1.10, CI95 % = $0.94 - 1.29$ , increase weight: OR adj 1.06, CI95 % $0.91 - 1.32$ ).	0.83
Aartins and Petroski (2015)	Portuguese	Brazil	144; adolescents (M <sub>age</sub> 13.5, SD 2.4, 10 –21)	100 %	BSQ	TV hours/weekday; TV hours/weekend	Watching more than 2 h of TV/ day was not associated with BD on weekdays (OR adj 1.23, CI95 % 0.42 - 3.59) nor on the weekend (OR adj 1.24, CI95 % 0.39 - 3.90)	0.67
1ellor et al. (2008)	English	Chile	337; adolescents (M <sub>age</sub> 15.7, 12 –18)	67 %	Body Image and Body Change Questionnaire	Open questions about pressure from the media to lose weight and/or increase muscle	No significant effect of pressure from the media to lose weight or gain muscle on BD in neither boys (lose weight: $\beta$ =.06, increase muscle: $\beta$ =.13) nor girls (lose weight: $\beta$ =.12, increase muscle: $\beta$ = .11) in hierarchical regressions.	0.63
/iranda et al. (2018)	English	Brazil	120; adolescents (M <sub>age</sub> 16.5, SD 1.5, 14 –19)	100 %	BD using Figural Rating Scale; BSQ	screen time; cell phone time/day	BD*screen PR 0.88, CI95 % 0.53 - 1.48 <i>ns</i> BD*phone PR 1.18, CI95 % 0.77 - 1.81 <i>ns</i> BSQ*screen PR 3.21, CI95 % 0.86 - 11.90 BSQ*phone PR 1.83, CI95 % 1.03 - 3.24	0.75
Febar et al. (2020)	English	Brazil	15,436; adolescents (M <sub>age</sub> 13.8, SD 1.9, 11 –17)	55 %	Open question to assess body satisfaction	TV hours/day	No difference in hours of TV watched in those who were satisfied or dissatisfied with their bodies in boys $(p = 0.376)$ nor girls $(p = 0.860)$ .	0.56
Jander Wal, Gibbons, & del Pilar Grazioso (2008)	English	Guatemala	337; adolescents from grade 5 and 6 (11 –12 years)	100 %	BES-R	Multidimensional Media Influence Scale	BES mediated the relationship between media influence and disordered eating attitudes (a: $\beta =35$ , $p < .001$ , b: $\beta =33$ , $p < .001$ , c: $\beta = .28$ , $p < .001$ , overall fit: $\chi 2 = .00$ , p = .951)	0.61

*Note.* BSQ = Body Shape Questionnaire, TIS = Tripartite Influence scale, DMS = Drive for Muscularity Scale, BES-R = Body Esteem Scale for Children-Revised, BD = body dissatisfaction, (M) = male, (F) = female, ns = non-significant, r = correlation coefficient,  $\beta$  = standardized regression coefficient, p = p-value, CI = confidence interval, OR adj = odds ratio adjusted, PR = prevalence ratio.

Studies evaluating the association between appearance ideals and media influence.

Author	Language	Country	Sample	% female	Body image measure	Media measure	Relationship between body image and media measures	Quality score
Boothroyd et al. (2020) Study 1- includes participants from Boothroyd et al. (2016) and Jucker et al. (2017)	English	Nicaragua	314; adults from rural communities with partial TV access ( $M_{age}$ 29.2, 15 –79)	50 %	Ideal body size task to evaluate peak BMI and waist-to-hip ratio (WHR) preference	TV hours/week	BMI*TV $r =24$ WHR*TV $r =26$ TV was a significant predictor of peak BMI preference ( $\beta = 0.22, SE = 0.07$ ) and WHR preference ( $\beta = -0.15, SE =$ 0.66).	0.72
Daiy et al. (2020)	English	Argentina	273; Qom adults (M <sub>age</sub> 38, SD 13)	51 %	Healthiest body size using Figural Rating Scale	Age as a proxy for media exposure (older participants had lower lifetime TV exposure)	Age significantly predicted healthiest body size in women $(\beta = 0.126, SE = 0.041, p < .001, R^2 = 0.087)$ , but not in men $(\beta = -0.005, SE = 0.063, p = .937, R^2 = 0.035)$	0.67
Daiy et al. (2023)	English	Argentina	87; Qom adults (M <sub>age</sub> 31.9, SD 1.5, 15 –70)	74 %	BD, healthiest and ideal body size using Figural Rating scale	Media questionnaire factor 1 (WhatsApp, Facebook), 2 (snapchat, dating sites), 3 (Twitter, Instagram)	ideal*factor 1 $r = 0.17$ ns ideal*factor 2 $r =02$ ns ideal*factor 3 $r = .06$ ns healthy*factor 1 $r = .22$ healthy*factor 2 $r = .13$ ns healthy*factor 3 $r = .20$ ns In multiple linear regressions, media did not predict BD ( $p = .094468$ ), ideal body size ( $p = .122644$ ) nor healthy body size ( $p = .122644$ ).	0.67
Thornborrow et al. (2018)	English	Nicaragua	66; adults from rural communities with high and low TV access (M <sub>age</sub> 24.5, SD 9.4)	0 %	Ideal body size task to evaluate peak BMI and waist-to-hip ratio (WHR), Waist-to-bust ratio (WBR), bust-to- hip ratio (BHR) preferences	TV hours/week; US TV/week Spanish/ Lat Am TV/week	BMI*TV $r = -0.49$ BMI*US TV $r = -0.24$ BMI*SP TV $r = -0.28$ WHR*TV $r = -0.10$ ns WHR*US TV $r = -0.03$ ns WHR*SP TV $r = -0.04$ ns WBR*TV $r = -0.32$ WBR*US TV $r = -0.18$ ns WBR*SP TV $r = -0.40$ BHR*TV $r = 0.29$ BHR*US TV $r = 0.27$ BHR*SP TV $r = 0.43$ TV was a significant predictor of ideal BMI ( $F(1, 64) = 14.87$ , $p < .001$ , $R^2 = 0.19$ ) and WBR ( $F(1, 64) = 12.3$ , $p = .001$ , $R^2$ = 0.16) in stepwise regression models.	0.67
Thornborrow et al. (2022) Study 1	English	Nicaragua	62; adults from rural communities (M <sub>age</sub> 19.8, SD 5.17, 14 –39)	100 %	Ideal body size task to assess ideal BMI, Waist-to-hip ratio (WHR), Waist-to-bust ratio (WBR)	TV hours/week; US TV/week	BMI*TV hours $r = 0.013$ ns BMI* US TV $r = -0.05$ ns WHR*TV hours $r = -0.23$ ns WHR*US TV $r = -0.30$ WBR*TV hours $r = -0.28$ WBR*US TV $r = -0.34$	0.67

*Note.* BMI = Body Mass Index, BD = body dissatisfaction, ns = non-significant, r = correlation coefficient, F = explained variance,  $\beta$  = standardized regression coefficient, p = p-value, SE = standardized error,  $R^2$  = R-squared.

resist societal appearance pressures (Almeida et al., 2021; Amaral et al., 2019).

#### 3.2.4. Associations between body image and media consumption

Eleven studies assessed the association between body image and hours of media consumption. Half of them did not find any significant association between hours of TV watching and body image (Andrade et al., 2023; Carvalho et al., 2021; Del Duca et al., 2010; Jaeger & Camara, 2015; Martins & Petroski, 2015; Tebar et al., 2020). Others found significant associations between TV viewing and drive for muscularity or body dissatisfaction, but not body appreciation (Thornborrow et al., 2022, 2020). In another sample, drive for muscularity was not associated with amount of TV viewed, but with higher internet use in men (Compte et al., 2020). With respect to social media, body dissatisfaction (measured using the BSQ) was significantly associated with higher screen and cell phone time, but this association was not found with Figural Rating Scale discrepancy scores in adolescent girls (Miranda et al., 2018). Another study found that adolescents who used Instagram more than 10 times a day were more likely to show body dissatisfaction (measured with a Figural Rating Scale), but did not find this association with other social media platforms like Facebook or Twitter (Lira et al., 2017).

#### 3.2.5. Associations between appearance ideals and media consumption

Five studies evaluated the association between appearance ideals and media influence. A summary of these studies can be found in Table 4. Three of these studies were conducted in rural Nicaragua (Boothroyd et al., 2020; Thornborrow et al., 2022, 2018). They found that TV viewing was a significant predictor of preferences for thinner female figures, curvier lower bodies, and bigger breasts. This association was stronger in non-Mestizo and male participants. Similarly, two studies assessed whether media consumption affected perception of

#### Table 5 Longitudinal studies.

Author	Language	Country	Sample	% female	Length of follow- up	Body image measure	Media measure	Relationship between body image and media measures	Quality score
Amaral and Ferreira (2017)	English	Brazil	498; adolescents (baseline: M <sub>age</sub> 15.7, SD 0.8, follow-up: M <sub>age</sub> 16.4, SD 1.0)	47 %	12 months	BSQ	SATAQ-3 total	SATAQ-3 significantly predicted BSQ scores 1 year later in girls (8 =.33, SE = 6.47) and boys (8 =.21, SE = 5.18) in panel analysis.	0.78
Boothroyd et al. (2020) Study 2	English	Nicaragua	31; adults from rural communities with changing TV access (M <sub>age</sub> 30.9, SD 14.9)	50 %	3 years	Ideal body size task to evaluate peak BMI and waist-hip ratio (WHR) preference	TV hours/week	TV significantly predicted BMI preference ( $\beta = -0.23$ , $SE = 1.04$ ), but not WHR preference ( $\beta = -0.07$ , $SE = 3.36$ ns) across time.	0.63
Thornborrow (2018)	English	Nicaragua	83; children from rural communities (baseline M <sub>age</sub> 9.8, SD 1.76; follow-up: M <sub>age</sub> 11.2, SD 2.08)	57 %	3 years	Ideal child and adult body size using Figural Rating Scale	TV hours/week; prompts to main sources of sociocult influences (family, peers, or media)	Higher TV consumption covaried over time with ideal adult BMI for girls ( $\beta$ =.002, $p$ =.004), but not boys <i>ns</i> . No impact was observed on ideal self or perceived ideal- self discrepancy.	0.63

*Note.* BSQ = Body Shape Questionnaire, SATAQ = Sociocultural Attitudes Towards Appearance Questionnaire, BMI = Body Mass Index, ns = non-significant,  $\beta$  = standardized regression coefficient, SE = standardized error, p = p-value.

healthy or ideal body size in indigenous NamQom in rural Argentina (Daiy et al., 2020, 2023). They found that older participants, who had a lower lifetime media exposure, considered larger bodies as healthiest, compared to younger participants (Daiy et al., 2020). However, a study in the same region 10 years later did not find any effect of hours/frequency of media consumption on healthy body size, ideal body size, or body dissatisfaction (Daiy et al., 2023).

#### 3.3. Longitudinal studies

Table 5 summarises the three longitudinal studies that assessed the influence of media internalisation and/or media consumption on body satisfaction longitudinally (Amaral & Ferreira, 2017; Boothroyd et al., 2020; Thornborrow et al., 2018). One found that higher media internalisation (measured with SATAQ-3) predicted greater body image concerns one year later in Brazilian adolescents (Amaral & Ferreira, 2017). For adults with varying TV access in rural Nicaragua, higher TV access significantly predicted preferences for thinner, but not curvier female figures, across time (Boothroyd et al., 2020). In children from the same region, TV consumption did influence ideal adult body size over time in girls, such that girls watching more TV preferred a thinner adult body (Thornborrow, 2018).

#### 3.4. Intervention and experimental studies

Table 6 summarises intervention and experimental studies included in this review. Four intervention studies examined the effectiveness of programs to improve body image, prevent obesity and eating disorders, and improve nutrition. Interventions were conducted with adolescents and young adults in Brazil, Mexico, and Argentina. The Brazilian version of The Body Project, a body image intervention which includes media literacy and cognitive dissonance components, resulted in reduced appearance ideal internalisation, body dissatisfaction and increased body appreciation in both adolescent girls and young men (Almeida et al., 2021, 2019). An 8-session obesity and eating disorder prevention program (OBEyTA) in Mexico produced significant reductions in total SATAQ scores in young women, but not men. The program did not have significant effects on body dissatisfaction (Castillo et al., 2019). Similarly, an Argentinian prevention program designed to improve body image and nutrition led to significant reductions in CIMEC scores on the subscales body image concerns and influence of advertising, but not in body dissatisfaction when measured with the Eating Disorder Inventory (Rutsztein et al., 2019). Only one experimental study in Nicaragua assessed how a short exposure to either thin or plus-size media images impacted general female body size preferences. They found that 15 min of exposure changed participants' perceptions of ideal body size for women to be thinner or larger when exposed to thin or plus size models respectively (Boothroyd et al., 2020).

#### 3.5. Subgroup comparisons

#### 3.5.1. Gender

Significant positive associations between body image concerns and media internalisation were consistently present among girls and women. Among men however, the relationship was less clear, with some studies finding no significant correlation between body dissatisfaction and media influence. Studies employing discrepancy scores from Figural Rating Scales in particular found lower associations for both men and women, and often non-significant associations for men (Amaral, Ferreira, et al., 2013; de Jesús Saucedo-Molina et al., 2010, 2008; Zaragoza Cortes et al., 2011). However, men showed higher drive for muscularity compared to women, indicating a stronger focus on muscularity and stronger associations between drive for muscularity and sociocultural appearance influences (Barrientos Martínez et al., 2014). Yet, several studies with mixed gender samples did not report separate analyses for men and women (N = 13). No studies reported findings for nonbinary or gender expansive persons.

#### 3.5.2. Age

Most studies recruited adult participants, predominantly university students (N = 18) and community members (N = 16). A considerable number recruited adolescents between 11 and 18 years (N = 25), and a few studies investigated children (N = 3). Overall, associations between greater body image concerns and higher media influences were consistently significant across age groups. Only one study from Mexico directly compared adults and adolescents and found stronger correlations between body dissatisfaction, drive for thinness and media internalisation (using CIMEC) in adults, compared to adolescents (Rivarola & Penna, 2006). The three studies which focused on children also found results broadly consistent with those found in adults/adolescents (Neves et al.,

Intervention and experimental studies.

Author	Language	Country	Sample	% female	Intervention/ experimental manipulation	Body image measure	Media measure	Relationship between body image and media measures	Quality score
Interventior	n studies								
Almeida et al. (2021)	English	Brazil	180; university students ( $M_{age}$ 20.51, SD 2.45, 18 $-30$ )	0 %	The Body Project $(2 \times 2 h)$ , assessment only control	DMS; MBAS -R; MDDI; BAS	SATAQ-4 thin, athl int	Significant interaction effect of time X intervention on all variables ( $b = -0.18011$ , t = -6.06 - 4.39, <i>p</i> all <.001).	0.69
Amaral et al. (2019)	English	Brazil	140; adolescents (M <sub>age</sub> 16.3, SD 1.4)	100 %	The Body Project (4×1 h), assessment only control	BSQ; BAS	SATAQ-3 total	Significant interaction effect of time X intervention on BSQ, BAS and SATAQ (F $(1,49-56) = 9.07 \cdot 14.4,$ p < .05).	0.54
Castillo et al. (2019)	English	Mexico	361; healthy university students (M <sub>age</sub> 18.8, SD 2.1, 17 –28)	68 %	Obesity and ED prevention program (OBEyTA; $8 \times 1.5$ h), study skills program ( $8 \times 1.5$ h) and assessment only control	BSQ (F); MBAS (M)	SATAQ-3 total	Significant interaction effect of time X intervention on SATAQ score in women ( <i>F</i> (1, 96) = 3.44, $p < .05$ ), with the greatest decrease in OBEyTA intervention group. No significant effect was found in men ( <i>F</i> (1, 47) = 2.15, <i>ns</i> ). No significant effects were found for BD scores in women ( <i>F</i> (1, 96) = 1.10, <i>ns</i> ) nor men (( <i>F</i> (1, 47) = 0.17, <i>ns</i> ).	0.46
Rutsztein et al. (2019)	English	Argentina	88; adolescents (M <sub>age</sub> 14.5, SD 1.3, 12 –17)	100 %	Prevention program about body image and nutrition (PIA; 3×1 h)	EDI-3, BD and drive for thinness	CIMEC total	Significant reduction of CIMEC scores (thin ideal internalisation, $F(1,2)$ = 11.25, $p$ = .004), as well as drive for thinness ( $F(1,2)$ = 20.86, $p$ < .001), but not BD ( $F(1,2)$ = 5.03, $p$ = .081) and post-test and/or follow- up.	0.46
Experimenta	al studies							чр.	
Boothroyd et al. (2020) Study 3	English	Nicaragua	80; adults from rural communities with varying TV access ( $M_{age}$ 30.4, SD 12.9, 16 –78)	50 %	15 min of exposure to either thin or plus- size models	Ideal body size task to evaluate BMI preference	Exposure to media images (thin or plus- size models)	Significant interaction effect of time X condition ( $\beta$ =.09, SE = 2.7, $p$ = .001), participant's selected body sizes at post-test was larger in the plus size condition, compared to the thin model condition ( $t(69)$ = 2.107, p < .05).	0.85

*Note.* DMS = Drive for Muscularity Scale, MBAS-R = Male Body Attitudes Scale-Revised, MDDI = Muscle Dysmorphic Disorder Inventory, BAS = Body Appreciation Scale, SATAQ = Sociocultural Attitudes Towards Appearance Questionnaire thin and athletic internalisation subscales, BSQ = Body Shape Questionnaire, MBAS = Male Attitudes Scale, EDI-3 = Eating Disorder Inventory, CIMEC = Questionnaire of Influences on the Aesthetic Body Shape Model, ns = non-significant, BD = body dissatisfaction, BMI = Body Mass Index, b = regression coefficient,  $\beta$  = standardized regression coefficient, SE = standardized error, p = p-value, t = t-value, F = explained variance.

#### 2021, 2020; Thornborrow, 2018).

#### 3.5.3. Ethnicity

Only 18 studies provided information about participants' ethnic identity and/or skin colour. For studies providing this information, most participants identified as white or Latino. Since other groups were small, only a few studies conducted subgroup analyses. Tebar et al. (2020) found that overall, participants identifying as 'Caucasian' had a higher risk of being dissatisfied with their body compared to other ethnic groups (e.g., South American, African, Asian, and Indigenous). In Nicaragua, Mestizo participants (of predominantly European heritage) had a thinner appearance ideal and internalised media ideals more strongly than afro-descended or indigenous participants (Boothroyd et al., 2020; Thornborrow, 2018, 2022, 2020).

3.5.4. Geographical area (urban vs. rural) and socioeconomic status (SES) Even though most studies provided some information about SES and most were conducted in urban settings, only a few studies compared participants from different geographical areas or SES. There are mixed results as to whether geographical area and SES are associated with body image concerns. Del Duca et al. (2010) found that adolescents in urban areas of Brazil were more likely to be dissatisfied with their bodies compared to rural areas. Additionally, those with a higher family income were more likely to want a lower body weight than those with a lower family income (Del Duca et al., 2010). Along similar lines, adolescent girls in a private school in Brazil were more susceptible to internalise the general and athletic ideal compared to girls from state schools (Uchoa et al., 2017). However, Martins and Petroski (2015) did not find differences in body dissatisfaction between those with higher vs. lower family income.

#### 3.5.5. Trends across time

Most studies (N = 44) were published after 2014. Even though the media environment changed drastically with the introduction of social media, the strength of association between body image and media

#### Qualitative studies.

Author	Language	Country	Sample	% female	type of study	Analytic method	Relationship between media and body image	Quality score
Anderson-Fye (2004)	English	Belize	60; high school students (age not specified)	100 %	Semi-structured and open-ended interviews	ethnopsychology	Adolescents preferred a curvier ideal, not the thin ideal. Some participants felt pressure from family or peers to lose weight or change their appearance.	0.82
Conti et al. (2010)	Portuguese	Brazil	121; adolescents (M <sub>age</sub> 13.8, SD 2.1, 10 –18)	63 %	Semi-structured interviews	collective subject discourse analysis (Lefèvre and Lefèvre, 2005)	Most participants believed that TV had a negative effect on the body and the appearance ideal promoted in the media puts pressure on people to lose weight.	0.86
							Only a few participants stated that there is no relationship between media and body image. Some participants felt pressure to adhere to the appearance ideal in order to be socially accepted.	
Cortez et al. (2016)	Spanish	Chile	5; adolescents (M <sub>age</sub> 17, SD 0.63, 16 –18)	100 %	in-depth interviews	grounded theory	Light eyes, big breasts and a curvy body were described as ideal. Even though they were aware that the media only shows stereotypical appearance ideals that do not represent reality, participants still wanted to look like these ideals and felt negatively affected by media images. Participants noted that people often compare themselves with others, especially their friends and want to be attractive to the	0.91
Daiy et al. (2023)	English	Argentina	55; Qom adults (M <sub>age</sub> 31.9, SD 1.5, 15 –70)	73 %	Semi-structured interviews	inductive thematic analysis	opposite sex. Participants did not consider the media to have an impact on body ideal or body image. Body acceptance was considered a lifelong process that required active work and can be created through a positive state of mind. For some, this was related to religious beliefs of a God-given body. Media was seen as a valuable tool for communication, but also contributed to isolation of individuals and loss of cultural	0.95
De Casanova (2004)	English	Ecuador	81; adolescents (age range 11 –18)	100 %	open-ended interview	ethnography	values and identity. The beauty ideal was described as curvy, with long legs. Participants did not compare themselves with media images, as they show an unattainable and	0.9
Ganter Solís et al. (2018)	Spanish	Chile	83; adolescents and young adults (age range 18 – 25)	Mixed, not specified	observation	Multi-sited ethnography (Marcus, 2001)	artificial ideal. Through social media, group members would rate each other's pictures and compare themselves through likes, comments, or number of friends. Filters were used often in selfies, especially to smooth and/or lighten the skin.	0.7
Melo and Oliveira (2011)	Portuguese	Brazil	6; adults who took appetite inhibitors	100 %	Direct observation	Not specified	Participants felt pressure from family and peers and stated that these comments can be very hurtful. Participants stated that their motivation to lose weight was to feel good in their bodies and the clothes they wear, not because of	0.59
Santa Jiménez (2018)	Spanish	Colombia	30; adolescents (age range 12–21)	Mixed, not specified	Observation of Facebook profiles, semi-	Netnography Gebera (2008)	the thin ideal in the media. Participants criticized other people for being 'fara', which means posting revealing pictures to get attention on social media.	0.64

(continued on next page)

#### Table 7 (continued)

Author	Language	Country	Sample	% female	type of study	Analytic method	Relationship between media and body image	Quality score
					structured interviews		This was associated with low self- esteem and was an attempt to get socially accepted by their peers. On social media, people can also get bullied or receive negative comments about their appearance. Through filters, adolescents were able to create an improved version of themselves, without any imperfections.	
lva and Freitas (2020)	Portuguese	Brazil	10; adolescents (age range 13 –15)	50 %	Focus groups	Collective Subject Discourse (Lefevre and Lefevre, 2005)	Participants accepted dieting, exercise, and filters as acceptable measures to improve their appearance in selfies. They had negative opinions about cosmetic surgery, but some also stated that it might help to improve self-esteem and considered it themselves. Brazilian students recognized the culturally constructed appearance ideals that are showcased in the media, but they are themselves satisfied with their bodies and did not feel affected.	0.95
ilva et al. (2014)	English	Brazil	96; adolescents (age range 13 –18)	53 %	Separate focus groups for boys and girls	Qualitative analysis, as proposed by Minayo (2012)	Participants criticized the media for manipulating images and setting appearance ideals that are only achievable through cosmetic surgery or anabolic steroids and actively criticized the media for wanting to sell products. Media appeared to influence body image more in girls. Boys were more concerned about peer's opinions.	0.86
outo and Ferro-Bucher (2006)	Portuguese	Brazil	7; patients with AN and BN (age range 13 –52)	100 %	Semi-structured interviews	Not specified	Participants stated that the media affected their body image, encouraged them to go on diets and they wanted to look like the women in the media. They also mentioned that they felt pressure from family and friends to lose weight.	1
nornborrow et al. (2018)	English	Nicaragua	24; adults from rural communities (M <sub>age</sub> 27.3, SD 6.7, 17 –45)	0 %	Focus groups	Thematic analysis	Participants described the ideal as being a "guitar body", which signifies a curvy figure with broad hips. They also mentioned "Coca- Cola shape" or a "Barbie shape". They also stated that attractive women were featured in telenovelas (soap operas), beauty pageants, pornography, and music videos.	1
iornborrow (2018)	English	Nicaragua	24; adults from rural communities (age range 15 –42)	100 %	Focus groups	Thematic analysis	Participants agreed that for now, people are comfortable with their bodies. However, this could change through the media, which focuses on being in shape and dieting. For some participants, religious beliefs were related to body acceptance and they saw their body as 'God-given' and rejected cosmetic surgeries.	0.95
ago et al. (2018)	Portuguese	Brazil	9; adolescents (age range not specified)	100 %	Focus groups	Not specified	Posting selfies is seen as a way to measure attractiveness, which is determined by the number of likes and comments a selfie gets. Filters were considered acceptable measures to improve their appearance in pictures. However, other measures, such as photoshop were less accepted; while filters only "filter" and enhance the	0.86

(continued on next page)

#### Table 7 (continued)

Table 7 (contin	nueu)							
Author	Language	Country	Sample	% female	type of study	Analytic method	Relationship between media and body image	Quality score
							reality, photoshop "distorts" a picture.	

Note. AN = anorexia nervosa, BN = bulimia nervosa.

influence did not change considerably across time. Studies published after 2014 were more likely to use SATAQ to assess media internalisation, rather than CIMEC. Similarly, most studies using Figural Rating Scales to assess body dissatisfaction were published before 2014. All studies assessing appearance ideals, longitudinal studies and intervention studies were published after 2014, indicating a trend for more diverse research designs and paradigms in the last 10 years.

#### 3.6. Mediators and moderators

Included articles predominantly drew upon the tripartite or sociocultural influence models of body image in contextualising and justifying the research, and in interpreting findings. In contrast, none of the included studies was explicitly situated within objectification theory. As such, the mediators and moderators discussed below correspond purely to the components of the sociocultural model.

In Mexican adolescent girls, thin ideal internalisation fully mediated the relationship between thin ideal awareness and body dissatisfaction (Austin & Smith, 2008) and the relationship between peer influence and body dissatisfaction (Mancilla-Díaz et al., 2012). Similarly, thin ideal internalisation partly mediated the relationship between thin ideal awareness and body dissatisfaction in a sample of Argentinian women (Moreno-Domínguez et al., 2019). The sociocultural model of eating pathology was confirmed in adolescent girls in Guatemala (Vander Wal, Gibbons, & del Pilar Grazioso, 2008) and the tripartite influence model of body image was confirmed in both female and male university students in Brazil (Carvalho & Ferreira, 2020; de Carvalho et al., 2017). In rural Nicaraguan women, body dissatisfaction mediated the relationship between media internalisation and eating disorder symptoms (Thornborrow et al., 2022).

#### 3.7. Qualitative studies

Fourteen qualitative studies were included in this review, conducted in Brazil (N = 6), Nicaragua (N = 2), Chile (N = 2), Belize (N = 1), Colombia (N = 1), Ecuador (N = 1) and Argentina (N = 1). Most studies recruited female participants only (N = 7) or mixed samples (N = 6). Only one study specifically recruited men. A range of methods were used, including focus groups (N = 5), interviews (N = 6) and observation (N = 3). The majority of studies recruited adolescents (N = 8), some recruited both adolescents and adults (N = 2) or adults only (N = 4). Details about the studies can be found in Table 7.

#### 3.7.1. Characterisation of appearance ideals

Participants in most studies provided detailed characterisations of female appearance ideals, but they did not all agree on one appearance ideal (Anderson-Fye, 2004; Cortez et al., 2016; De Casanova, 2004; Silva & Freitas, 2020; Silva et al., 2014; Thornborrow, 2018; Thornborrow et al., 2018). Male appearance ideals on the other hand, were much less discussed and described in less detail (Conti et al., 2010; Silva & Freitas, 2020; Silva et al., 2014). In several studies, participants mentioned cosmetic surgeries as means to 'improve' their appearance, but these procedures were generally seen in a negative light (Silva & Freitas, 2020; Silva et al., 2014; Thornborrow, 2018).

Descriptions of what the ideal appearance is differed depending on the study and participant samples. For instance, adolescent girls from Ecuador described a large bust and hips, small waist, and long shapely legs as ideal: "*a bit thick … with a nice rear end.*" (De Casanova, 2004, p. 297). For Nicaraguan men, a pear-shaped "guitar body" was considered ideal (Thornborrow et al., 2018, p. 543). In Chile, adolescent girls focused on an hourglass shape and light eves: "the perfect prototype: that she has light eyes, that she is "busty" [with large breasts], [...]. and like '90-60-90' [measurements of breasts, waist and hips]." (Cortez et al., 2016, p. 119). Brazilian women stressed the importance of being thin: "I want to be thin and for me the most important thing is to be thin" (Souto & Ferro-Bucher, 2006, p. 698). However, excessive concern for having a slim body was seen as negative in another study with Brazilian adolescents; they considered a woman should be "normal", which was defined as "neither fat nor thin: neither overweight nor underweight" (Silva et al., 2014, p. 442). In Ecuador, adolescent girls classified the thin ideal as too thin, even "raquíticas" (sick-looking) (De Casanova, 2004, p. 298). The male appearance ideal mostly focused on muscularity and was defined as "being in shape, toned, healthy and athletic" by Brazilian male adolescents (Silva et al., 2014, p. 441). Most participants (both male and female) had negative opinions about cosmetic surgery to try to look like the appearance ideal, but some also stated that it might help some people to improve their self-esteem: "there are so many people who spend some time not feeling good about their bodies, so they put silicone on the thigh, butt, breast, I don't know, maybe I would do it, like plastic surgery to get pumped" (Silva & Freitas, 2020, p. 8).

#### 3.7.2. Media influence on body image

In stark contrast to the quantitative findings, participants in most qualitative studies did not feel that the media influenced their body image (Daiy et al., 2023; De Casanova, 2004; Melo & Oliveira, 2011; Silva & Freitas, 2020; Thornborrow, 2018). In only three studies from Brazil and Chile did participants report that their body image was affected by the media (Conti et al., 2010; Cortez et al., 2016; Souto & Ferro-Bucher, 2006). One study noted that girls seemed to be more affected by the media, whereas for boys, opinions of their peers were the most important influence on body image (Silva et al., 2014). Across several studies from Mexico, Brazil and Belize, participants recognized the culturally constructed nature of the appearance ideals, and criticized that are unrealistic to achieve without cosmetic surgery or anabolic steroids (Conti et al., 2010; De Casanova, 2004; Silva & Freitas, 2020; Silva et al., 2014).

On the other hand, even though participants were aware that the media only shows stereotypical appearance ideals that do not always represent reality, adolescent girls from Chile reported that they still get distracted by the models: "From what I see, catwalk models are very skinny ... some have bulimia and eating disorders. If you investigate, you discover that being skinny like them it's not a great deal; that is, they can have lower self-esteem than us, but when we see them in a magazine you don't think about that, but you think 'oh, so skinny! Oh, how stupendous!'" (Cortez et al., 2016, p. 120). Some participants noted that these media images can have negative consequences, especially for women: "TV reduces young women's happiness, who are less and less satisfied with their body [...] Everyone like wants to look as if they were models and it ends up discriminating against other people, even humiliating them" (Conti et al., 2010, p. 2098). Brazilian women noted that the media encouraged them to go on diets and they compared themselves to people they saw on television or in magazines: "you see it in the magazine [...] for example, the presenter of television [...] I wanted to be the same to this woman" (Souto & Ferro-Bucher, 2006, p. 701). In rural Nicaragua, some women predicted that the media might have a negative impact on the younger generation:

"Well as for now most women are comfortable with the way they are... but with the tendency of internet and TV shows and everyone want to be in shape and this diet stuff... so maybe that will change a little the way how the young people are" (Thornborrow, 2018, p. 139).

#### 3.7.3. Sociocultural pressure and appearance comments from family

In four studies, participants stated that they felt pressure from family members to change their appearance or lose weight. Most of these comments were perceived negatively, even though participants also considered that these comments might have been made with good intentions (Anderson-Fye, 2004; Cortez et al., 2016; Melo & Oliveira, 2011; Souto & Ferro-Bucher, 2006).

These comments put a lot of pressure on some participants, especially adolescent girls: "[...] my aunts [...] kept [...] asking, what weight we were, how much we were weighing, how much weight had to be lost, on a diet [...] I felt pressured" (Souto & Ferro-Bucher, 2006, p. 700). Others mentioned that these comments can be very hurtful, especially in the context of close-knit family units "It's everything you least want to hear. You know you're fat. No need to tell you that you are a whale. You have a mirror, right?" (Melo & Oliveira, 2011, p. 2528). However, some adolescent girls also stated that these comments were made with good intentions: "I think that beyond being skinny, it is important that I be within my natural weight. My parents also tell me that it is to prevent long-term illnesses, so it is preferable to be healthy, play sports and eat well" (Cortez et al., 2016, p. 121). For some adolescent girls, these comments motivated them to change their behaviour, but this also depended on who made the comments: "Honestly, my mother suddenly told me 'oh ... you're fat!', and I responded 'what?... I'm not fat!'... But my dad told me, 'well, you do have a little [belly] roll'... My dad is more subtle when saying things, so he motivated me to exercise..." (Cortez et al., 2016, p. 121).

#### 3.7.4. Pressure from peers through social media

Pressure from peers was discussed in 8 articles included in this review (Anderson-Fye, 2004; Conti et al., 2010; Cortez et al., 2016; Ganter Solís et al., 2018; Santa Jiménez, 2018; Silva et al., 2014; Souto & Ferro-Bucher, 2006; Zago et al., 2018). In contrast to pressure from family members, pressure from peers was felt both in person and on social media, through Likes or comments. However, the criteria for determining which pictures were acceptable and which were unacceptable were often unclear. For instance, adolescents were rewarded by their peers for posting revealing pictures or using filters to improve their appearance. On the other hand, they were also judged for these behaviours (Ganter Solís et al., 2018; Santa Jiménez, 2018; Silva & Freitas, 2020; Zago et al., 2018).

Adolescent girls from Mexico reported that comparisons with their peers are common: "There is competition in achieving the ideal weight or figure; for example, I have a classmate who stopped eating because she was the fattest in the group" (Cortez et al., 2016, p. 121). Brazilian adolescents stated that in order to be socially accepted, they needed to conform to the appearance ideal: "There is a stereotype and people have to follow that to be accepted, [...] otherwise it is outside of normal and you may feel excluded" (Conti et al., 2010, p. 2098). Posting selfies was a popular way among Brazilian adolescents to measure attractiveness, based on the amount of Likes and comments a Selfie got: "You took a selfie and thought it was beautiful. Then, you posted it, and five people liked it. You think you look ugly in the photo, because no one liked it" (Zago et al., 2018, p. 1108). Adolescents from Colombia also noted that another way to get more followers, Likes and friends was by posting revealing pictures: "some people upload photos or videos that show a lot, for example, in bras, and naked... I think they do it because at this moment there is something called being a 'fara', that is, having many views on social networks" (Santa Jiménez, 2018, p. 104). However, participants associated being 'fara' with low self-esteem and an attempt to get social acceptance from peers (Santa Jiménez, 2018). Similarly, adolescents liked to create 'improved' version of themselves by smoothing and/or lightening their skin using filters (Ganter Solís et al., 2018; Santa Jiménez, 2018; Silva & Freitas,

2020; Zago et al., 2018). However, the use of photoshop was not socially accepted, as it was described as "*distort[ing]*" and making the body "fake" (Zago et al., 2018, p. 1111).

#### 3.7.5. Body acceptance

Body acceptance was discussed in four articles (Daiy et al., 2023; De Casanova, 2004; Melo & Oliveira, 2011; Thornborrow, 2018). Adult participants from Argentina talked about how body acceptance can be created through a positive state of mind: "Sometimes I am fine with my body. The most important thing is what one thinks, that is what I am confirming now" (Daiy et al., 2023, p. 9). Brazilian women shared this focus on feeling good in their clothes, rather than focusing on adhering to the appearance ideal: "I don't want to be thin. I just want to look good in the clothes I'm going to wear. I don't have this beauty standard" (Melo & Oliveira, 2011, p. 2528). For some participants, body acceptance was related to their religious beliefs - for example, in rural Argentina: "God made me like this, and I have to accept how I am." (Daiy et al., 2023, p. 9) and rural Nicaragua: "even if I had lots of money to fix up my body I wouldn't do it because like this is how God made me" (Thornborrow, 2018, p. 136). This connection to religiosity was unique in the qualitative studies and has not been studied quantitatively.

#### 3.8. Study quality

Overall interrater correlation (ICC) of the two authors' quality appraisal ratings was good (ICC = 0.85, p < .001, 95 %IC 0.76 - 0.90). Scores of both raters were then collated for the final rating. Any discrepancies were resolved through discussions. The final quality scores can be found in Supplementary Materials S4. None of our assessment tools included a numerical scale to reflect quality. For this review, we defined studies which met at least 50 % of the quality assessment criteria to be of medium quality and those who met over 70 % of the criteria to be of high quality. With the exception of two intervention studies, all other quantitative studies were considered to be of either medium (N = 40) or high quality (N = 17). All quantitative studies clearly defined their participant population, had internally consistent results, and provided information about their ethical approval and/or consent procedure. The majority of studies (72 %) used validated measures that had been published previously in that language. However, only 39 % of studies justified their sample size and most (83 %) did not provide information about non-respondents. For qualitative studies, three studies were considered to be of medium and 11 studies were considered to be of high quality. All studies clearly stated the aims of their research and chose an appropriate methodology. However, only half of the studies (50 %) described their participants in sufficient detail.

#### 4. Discussion

The aim of this systematic literature review of quantitative and qualitative studies was to comprehensively survey and collate the extant literature on how media influence/use was related to body image and sociocultural appearance ideals in Latin America.

We can draw several key conclusions regarding the current state of knowledge about media impacts on body image in Latin America. Media consumption, and media influences including internalisation of media appearance ideals, were cross-sectionally associated with higher body image concerns and thinner body ideals. Overall, these associations were stronger and more consistent in women compared to men. These results are in line with recent meta-analyses conducted with mostly Western participants (Huang et al., 2021; Paterna et al., 2021; Saiphoo & Vahedi, 2019) and Brazilian literature (da Silva Souza et al., 2021).

The strength of the associations also varied depending on the assessment tools used. For instance, studies using Figural Rating Scale discrepancy scores to operationalise body dissatisfaction found lower associations compared to questionnaires assessing evaluative body dissatisfaction (e.g., Body Shape Questionnaire), especially in men. This

is not unexpected, since discrepancy scores do not capture the evaluative or affective valence of an individual's self-body relations: they only index body size perceptions and preferences. Use of such scales may be particularly problematic in men, due to the ideal male appearance being both slim and muscular and most figure choice scales not distinguishing between increased size due to adiposity or muscularity (Mutale et al., 2016).

Furthermore, most studies assessed media internalisation using questionnaires such as SATAQ-3 and 4 that only use the general term 'media' (i.e., "I feel pressure from the media to improve my appearance"). Although social media was unlikely to be a key influence in older studies, it is not possible to conclude whether social media or traditional media (or both) are currently the main driver of these associations. Additionally, few studies assessed the type of media participants consumed. When assessing associations of media use with body image concerns, half of the studies found significant associations between TV viewing and body image. A small number of studies suggested that internet or social media use is negatively associated with body image, especially photo-based platforms like Instagram (Lira et al., 2017). These results tentatively suggest that appearance-focused social media use might be a better predictor of body dissatisfaction than overall social media use, in line with findings in other populations (Huang et al., 2021; Jarman et al., 2022; Ryding & Kuss, 2020).

Only a few studies investigated the relationship between positive body image and media influence. The results of these were mixed: one study in Brazil found a negative association between these variables, but no link was found in studies in Nicaragua (Junqueira et al., 2021; Thornborrow et al., 2022, 2020). Findings from Brazil are in line with international results from a recent meta-analysis, where greater body appreciation was associated with lower thin and athletic ideal internalisation (Linardon et al., 2022).

We found inconsistent evidence regarding whether urban or higher income individuals were more at risk for body dissatisfaction, compared to those with lower income and/or from rural areas. Participant samples were relatively homogeneous in terms of demographic characteristics (i. e., age, urban subpopulations), which precludes strong conclusions about differential relationships between media and body image/sociocultural appearance ideals in different socio demographic groups. Similarly, limited conclusions can be drawn about the influence of ethnic identity on the relationship between media and body image/sociocultural appearance ideals. Some studies suggested that those identifying as white, or Mestizo (e.g., in Nicaragua) are at greater risk to internalise media ideals and feel greater body dissatisfaction compared to other ethnic groups, such as afro-descended ethnic groups. While this finding is in line with studies conducted in the US (Roberts et al., 2006), it may also indicate that the current conceptualisation of body image has not yet accounted for pressures that are specifically applied to people of indigenous and afro-descended identities.

In contrast to the quantitative findings, most of which found strong associations between media use/influence and body image variables, only a few participants in the qualitative studies acknowledged that they themselves felt affected by the media, although they described the media's effects on body image more generally. A similar pattern was found in a qualitative study with Australian men, who maintained that they themselves were not affected by the media, even though a textual analysis suggested otherwise (Waling, 2017). It might be that participants are reluctant to report the negative impact of the media on their body image in group discussion or interview situations, whereas they feel more comfortable to share these concerns through anonymous questionnaire surveys. However, this potential reluctance did not apply to other sources of appearance pressures. Rather than media pressure, all qualitative studies described some form of pressure or influence from family and peers. Some participants were negatively affected by appearance comments and felt pressured to change their appearance. Comparisons and appearance comments in peers often happened on social media, through number of Likes, comments, and pictures they

posted. Looking good in pictures was described as a way of getting socially accepted, both online and in real world settings.

Nonetheless, given the predominantly cross-sectional study designs and much lower number of longitudinal and experimental studies, we cannot draw clear conclusions about causality or the long-term effects of media use or influences on body image and sociocultural appearance ideals. While experimental designs are popular in Western countries, only one such study assessed body size preferences before and after the exposure to either thin or plus-size models in Latin America. Further longitudinal and experimental research to explore the potential directionality of this relationship is badly needed. A small number of studies showed promising efforts in testing culturally adapted intervention programs in Latin America, which support the premise that mediarelated variables may act as causal risk factors for body image and disordered eating outcomes in these populations. Similarly, a recent systematic review of 22 studies found that they were generally effective (albeit small samples in pilot studies) in reducing eating disorder symptoms in Latin American samples (Dunker et al., 2023).

#### 4.1. Strengths and limitations

To make our review as expansive as possible, a variety of outcome measures were included. Furthermore, with particular importance for our region of focus, we utilized not just the primary English language databases, but also included specialist Spanish and Portuguese databases (SciElo and LILACS) and used our key words in all three languages. However, we found 29 additional articles through hand-searching reference sections of included papers. It is unclear why these articles were not picked up by our database searches. One explanation is that several did not include relevant keywords or phrases in the title, abstract, or main paper, and we cannot discount the possibility that other eligible articles may have been missed.

An additional difficulty was the variation in approaches to relevant psychometric scales and subscales across studies. For instance, the SATAQ-3 and 4 and CIMEC have several different subscales and include not only measures of media internalisation, but also broader sociocultural influences such as pressure from family and peers, awareness of the appearance ideals and comparison tendencies. The division of these factors into subscales also varies across different versions of the questionnaires (see e.g., SATAQ-3 vs. 4). Not all studies reported the results of the subscales, making it harder to detangle the influence of broader *sociocultural* influence from more specific *media* influence.

Additionally, a meta-analysis of social media and body image literature in predominantly Western samples found that the effect size of correlational studies exceeded that of experimental studies (Huang et al., 2021). As such, and given that most of the studies included in this review were correlational, the influence of media on body image might be overestimated in this review. This conclusion gets support from the results of the qualitative studies, where most participants reported that the media did not affect their body image.

#### 4.2. Recommendations for future research

Based on the results of this review, we make several recommendations regarding key routes for future research on media use and influence, body image and sociocultural appearance ideals in Latin America.

#### 1) Strengthen study designs

First and foremost, more longitudinal and experimental studies are needed to reliably assess the causal relationship between media, body image and sociocultural appearance ideals. Likewise, more studies are needed that apply more complex analytical methods, such as mediation models or path analyses in order to assess the mechanisms behind these associations. When assessing such models, we recommend researchers to carefully choose appropriate questionnaires and subscales to measure specific aspects, such as media *internalisation* (e.g., by using SATAQ internalisation subscales, rather than the whole scale) or engagement with specific appearancerelated social media content, rather than the total hours of social media use.

Additionally, a few studies in this review showed promising efforts of ED prevention interventions in Latin America (see Dunker et al., 2023) and we urge researchers to test more culturally adapted intervention programs to improve the availability and accessibility of prevention programs. Moreover, efficacious eating disorder prevention or body image improvement interventions can provide evidence that a downstream variable (such as media influence) acts as a causal risk factor (Jacobi et al., 2004). This is because they show that reducing levels of the downstream variable result in changes to the outcome (e.g., body image concerns or eating disorder symptoms), as has been demonstrated in Western populations (Stice et al., 2021). However, this review focused on body image and the question of whether media has an influence on the development of eating disorders in Latin American countries is beyond the scope of this review and should be investigated in another systematic literature review or meta-analysis.

## 2) Assess more diverse aspects of body image and appearance ideals

Studies included in this review seldom addressed further aspects of physical appearance characteristics, other than body size and shape. However, commonly used questionnaires like the Body Shape Questionnaire (BSQ) or Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) might not have been able to capture other salient aspects of appearance that surfaced in qualitative studies. Future research would do well to broaden its scope and include positive body image, as well as assess the importance of physical characteristics, such as skin tone and hair texture (Fernández & Benítez, 2017; Rivadeneyra, 2011; Wyatt, 2018). For instance, a qualitative study with Afro-Colombian women found that they often underwent chemical alteration procedures to straighten their hair, as they did not consider their unaltered afro hair acceptable (Fernández & Benítez, 2017). Similar attitudes towards afro hair types have been reported in Afro-Dominican (Wyatt, 2018) and African American women (Randle, 2015). These findings demonstrate how colonial/Western appearance pressures are still salient for many women today. However, black feminist movements use afro hair as a key element to express resistance toward discrimination and promote empowerment (Goins, 2021; Harrington, 2015). Investigating how these sociocultural pressures on hair texture correlate with body satisfaction and other psychological outcomes (see e.g., Nkimbeng et al., 2023) will provide needed evidence to push the case for the introduction of awareness, positive affirmation legislation and consequently lay the foundation for anti-discrimination legislative amendments in Latin American societies (Harrington, 2015).

#### 3) Diversify participant samples

Most studies did not assess socioeconomic status or ethnic identity of participants; those that did produced mixed findings regarding their role in the relationships between body image, media, and appearance pressures. There is also a need for future studies to sample more widely to investigate sociocultural pressures on body image among diverse sexual and gender identities in Latin American samples (Corrales, 2012; Nkimbeng et al., 2023).

#### 4) Foster a productive and diverse research culture

Most studies included in this review were conducted in Brazil and Mexico and two thirds of Latin American countries and the Caribbean were not represented at all. Furthermore, most publications in included countries were published by one research team. Shifting towards more diverse research teams and using culturally embedded research tools would foster a more diverse and representative research culture. We therefore highly encourage academic publishing to be more inclusive and Western researchers to involve and be led by local researchers and methods.

#### 5) Apply mixed-methods approaches to deepen understanding

Mixed-method approaches enable a deeper understanding of phenomena from multiple perspectives. For example, Thornborrow et al. (2018) and Daiy et al. (2023) integrated quantitative and qualitative methods and identified a link between body appreciation and religious beliefs in different regions of Latin America (rural Nicaragua and Argentina). This association has not been assessed quantitatively in any of the included studies and future research is warranted.

#### 5. Conclusion

This review summarised research carried out in Latin America that considered the influence of media use and influences on body image and appearance ideals. Almost all studies found that media consumption, influence, and internalisation were maladaptively related to body image concerns and appearance ideals. However, these results cannot be confidently generalised to all Latin American countries as most studies were conducted in Brazil and Mexico with high school or university students. Diversification of participants and instruments used to assess these constructs, as well as other types of studies (longitudinal, intervention, experimental) are needed to identify the mechanisms to address the potential impact of media and sociocultural pressures on body image amongst Latin America's diverse population.

#### Author agreement statement

We the undersigned declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere. We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us. We understand that the Corresponding Author is the sole contact for the Editorial process. He/she is responsible for communicating with the other authors about progress, submissions of revisions and final approval of proofs.

#### CRediT authorship contribution statement

Lynda G. Boothroyd: Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Conceptualization. Tracey Thornborrow: Writing – review & editing, Methodology, Investigation, Formal analysis. Fabienne E. Andres: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. Manya Sawhney: Writing – review & editing, Investigation, Formal analysis. Elizabeth H. Evans: Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Formal analysis, Conceptualization. Ruby Woodward: Writing – review & editing, Investigation, Formal analysis. Neetu Malik: Writing – review & editing, Investigation, Formal analysis. Manjot Brar: Writing – review & editing, Investigation, Formal analysis. Ana Maria Chamorro: Writing – review & editing, Writing – original draft, Conceptualization. Natália B. Dutra: Writing – review & editing, Investigation, Formal analysis.

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#### **Declaration of Competing Interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

#### Data availability

All data used in this systematic review has already been published. All supplementary material can be found on osf (https://osf.io/fvnbq/).

#### Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.bodyim.2024.101774.

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