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FACULDADE DE MEDICINA

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Revisão sistemática de fatores de proteção para transtorno alimentar e comer transtornado

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Revisão sistemática de fatores de proteção para transtorno alimentar e comer transtornado

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Programa de Fisiopatologia Experimental

Orientadora: Profª Drª Karin Louise Lenz Dunker

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Este trabalho é dedicado aos pacientes com transtornos alimentares, que poderiam ter sido protegidos para que, quem sabe, não precisassem lutar contra esse sofrimento.

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RESUMO

Dias MCF. Revisão sistemática de fatores de proteção para transtorno alimentar e comer transtornado [dissertação]. São Paulo: Faculdade de Medicina, Universidade de São Paulo; 2023.

Objetivo: Identificar fatores de proteção para transtornos alimentares (TA) e comer transtornado (CT) em adolescentes e adultos. **Método**: Foi realizada uma revisão sistemática da literatura até novembro de 2022, utilizando os bancos de dados *Pubmed*, *BVS*, *APA PsyInfo*, *Scopus*, *Web of Science* e *Embase*, usando a combinação dos termos "eating disorders", "disordered eating" e "protective factors". Estudos que mediram fatores de proteção para TA e CT publicados em inglês, espanhol e português foram elegíveis para inclusão. A escala *NewCastle Ottawa* foi usada para avaliar o risco de viés e a qualidade dos estudos incluídos. **Resultados:** Vinte e oito artigos foram incluídos. A maioria tem desenho transversal, são dos EUA e Canadá e tem baixo risco de viés. Inúmeros fatores de proteção foram identificados e categorizados em familiares, relacionados à imagem corporal, sociais, pessoais ou individuais e escolares, sendo os mais citados refeição em família, conexão familiar, aspectos da imagem corporal positiva, suporte social e autoestima positiva. **Conclusões**: Esta revisão destaca a importância do ambiente familiar, fatores individuais positivos e bem-estar psicológico como potenciais fatores de proteção para patologias alimentares. Registro da Revisão Sistemática no PROSPERO International Register of Systematic Reviews: CRD42021260974.

Palavras-chave: Transtornos da alimentação e da ingestão de alimentos. Comer transtornado. Fatores de proteção. Prevenção. Revisão sistemática. Imagem corporal.

ABSTRACT

Dias MCF. Systematic review of protective factors for eating disorders and disordered eating [dissertation]. São Paulo: "Faculdade de Medicina, Universidade de São Paulo"; 2023.

Objective: Identify protective factors for eating disorders (ED) and disordered eating (DE) in adolescents and adults. **Method**: A systematic literature search was conducted using Pubmed, Virtual Health Library APA PsyInfo, Scopus, Web of Science, and Embase databases up to November 2022. All studies that measured protective factors for ED or DE published in English, Spanish, or Portuguese were eligible. The New Castle Ottawa-Scale Risk of Bias criteria was used to evaluate the quality of the included studies. **Results**: Twenty-eight studies were included. Most of them were cross-sectional studies from USA and Canada and had low risk of bias. Many protective factors were identified and categorized into family, body image, social, personal or individual, and school-related factors. **Conclusions**: This review highlights that family ambiance, individual positive factors, and psychological well-being could be potential protective factors to prevent eating pathologies. Findings attempt to include content and strategies based on risk and protective factors for ED prevention programs. Systematic review record in the PROSPERO International Register of Systematic Reviews: CRD42021260974.

Keywords: Feeding and eating disorders. Disordered eating. Protective factors. Prevention. Systematic review. Body image.

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1 INTRODUÇÃO

1.1 Caracterização dos transtornos alimentares

Transtornos alimentares (TA) são caracterizados por uma perturbação persistente na alimentação ou comportamentos relacionados à alimentação, que têm por consequência a alteração do consumo e absorção de alimentos e que comprometem significativamente a saúde física ou o funcionamento psicossocial. Os principais e mais prevalentes são a Anorexia Nervosa (AN), Bulimia Nervosa (BN) e o Transtorno de Compulsão Alimentar (TCA) (APA, 2013).

A AN é definida por uma restrição alimentar levando ao baixo peso ou ao não desenvolvimento em crianças e adolescentes, medo mórbido de ganhar peso e ainda uma perturbação no modo como o peso e a imagem corporal são vivenciados ou ausência do reconhecimento da gravidade. Dois subtipos são descritos: o restritivo, em que o indivíduo alcança o baixo peso por meio de dieta, jejum e/ou atividade física excessiva, e o subtipo compulsão alimentar purgativa, em que o paciente apresenta compulsão alimentar seguida de método compensatório inadequado, como uso de laxantes, diuréticos, enemas e/ou vômito autoinduzido (APA, 2013).

Já a BN é caracterizada por episódios de compulsão alimentar e métodos compensatórios inapropriados a fim de impedir o ganho de peso – vômito autoinduzido, laxantes, diuréticos, enemas, jejum e/ou exercício físico exagerado. A autoavaliação é indevidamente influenciada pelo peso e forma corporal (APA, 2013).

No TCA, o indivíduo também apresenta episódios de compulsão alimentar marcados por aspectos como comer rápido, sozinho, na ausência de fome, entre outros, mas sem comportamentos compensatórios inapropriados. Há ainda, sofrimento marcante com os episódios (APA, 2013).

Com exceção do TCA, o início da maioria dos TA se dá entre 10 e 20 anos (Ágh et al., 2016), sendo 12,3 anos a idade média de início da AN (Swanson et al., 2011), e não raramente as comorbidades psiquiátricas estão presentes. Na AN, a depressão é a comorbidade mais prevalente, com taxas de 40% no subtipo restritivo e

82% no subtipo purgativo, seguido por transtornos de ansiedade (Miguel, Euripedes Constantino; Gentil, Valentim; Gattaz, 2011). Na BN, a depressão também é a comorbidade mais prevalente (50 a 65% ao longo da vida) (Linardon et al., 2017), seguido dos transtornos por uso abusivo de substâncias psicoativas (30 a 60%) (Franko et al., 2018). Já no TCA, observam-se comorbidades psiquiátricas, como fobia específica e social (32 a 37%) e depressão (32%) (Hudson et al., 2007), e obesidade como comorbidade clínica comum (Kessler et al., 2013). Em crianças e adolescentes, as comorbidades clínicas e psiquiátricas também estão presentes (Herpertz-Dahlmann, 2015; Pinzon et al., 2013).

1.2 Caracterização do comer transtornado

Comer transtornado (CT) não é um diagnóstico, se refere a comportamentos e atitudes de TA, mas sem frequência ou gravidade suficientes para fechar o diagnóstico (Graber et al., 1994). É um termo amplamente utilizado para caracterizar a presença de comportamentos de risco para o desenvolvimento de TA. Dentro do espectro dos problemas alimentares, o CT inclui práticas como jejuar ou comer muito pouca comida, pular refeições, usar substitutos alimentares como suplementos ou shakes, contar caloria, tomar remédios para emagrecer, fazer exercícios físicos excessivos ou fumar com o objetivo de emagrecer (ADA, 2006; Killen et al., 1994; Leon et al., 1995). Na literatura, encontram-se ainda os termos comportamentos não saudáveis de controle de peso ou comportamentos extremos de controle de peso.

Uma vez presentes, dificilmente os comportamentos de CT melhoram espontaneamente, podendo, inclusive, se intensificar, sugerindo que o preditor mais importante de comportamentos de CT no futuro é a intensidade desses comportamentos no passado (Johnson et al., 2002).

Além da progressão para um quadro completo de TA, o CT pode predizer inúmeros desfechos negativos, físicos, emocionais e sociais (Wu et al., 2019). Estudos mostraram associação entre comportamentos de CT e consequências físicas, tais como ganho de peso, obesidade (Neumark-Sztainer et al., 2006b) e má nutrição (Neumark-Sztainer et al., 2011).

No estudo (coorte) de Neumark-Sztainer et al., (2006ª), com adolescentes norte-americanos, os autores mediram se existia associação entre dieta, CT e ganho de peso após 5 anos de *follow-up*. Eles observaram que os participantes que mostravam comportamentos de CT no início tiveram um incremento a mais nos parâmetros do Índice de Massa Corporal (IMC) do que os adolescentes que não tinham, e ainda apresentaram três vezes mais chances de estar com sobrepeso ao final dos 5 anos.

Em uma análise longitudinal, Puccio et al., (2017) avaliou comportamentos de CT, sintomas de ansiedade e depressão em uma amostra de adolescentes e concluiu que CT é um importante fator de risco para sintomas de ansiedade. Na revisão sistemática com metanálise de Wu et al., (2019), que investigou associação entre CT e qualidade de vida e saúde em crianças e adolescentes, comportamentos de CT foram associados com saúde psicossocial pior e baixa qualidade de vida.

1.3 Prevalências e curso do TA e CT

Na população adolescente do sexo feminino, os TA são a terceira doença crônica mais prevalente, ficando atrás somente da obesidade e da asma (Smink et al., 2012).

Trabalhos sobre prevalência de TA são escassos e foram feitos, majoritariamente, em adultas jovens na Europa e América do Norte. Na AN, BN e TCA as prevalências são, respectivamente, 0,6%, 1% e 2,8% (Ward et al., 2019). Nos países da América Latina, Kolar and Mebarak (2022) apresentam prevalências levemente menores na AN (0,1%) e maiores na BN e TCA (1,1% e 3,5% respectivamente). Nos países asiáticos, a metanálise de Alfalahi et al., (2022) apresenta 1,6% de prevalência de AN e 2,4% de BN. No continente africano, a revisão sistemática de Van Hoeken et al., (2016) não encontrou valor de prevalência para AN, somente para BN (0,9%).

As prevalências de CT são maiores que as de TA (APA, 2013) e variam muito dependendo do método de avaliação e do comportamento medido. Entre universitários, um estudo (transversal) de 2018 mostrou uma prevalência de 31% de comer transtornado (Barrack et al., 2018). Em outro estudo (longitudinal, com *follow-up* de 8 anos) com quase 1.500 adolescentes norte-americanos, 43,1% dos indivíduos reportaram comportamentos não saudáveis de controle de peso no *baseline* e 51,9% no

follow-up (Hazzard et al., 2021). Em uma amostra de meninas com sobrepeso, 44% relataram algum comportamento de CT e 22,1% reportaram comportamentos extremos de controle de peso (Neumark-Sztainer et al., 2007).

Na revisão sistemática com metanálise de López-Gil et al., (2023), que se propôs a identificar estudos que medem CT em crianças e adolescentes, os autores encontraram que 22% dessa população apresentavam tais comportamentos, sendo mais presentes nas meninas do que nos meninos (30 e 16%, respectivamente) e aumentando com a idade e o IMC.

No estudo (longitudinal) de Oliveira Galvão et al., (2022), com 5.208 estudantes brasileiros, os autores avaliaram se o *bullying* foi preditor de insatisfação corporal ou comportamentos de CT, e encontraram, em sua análise inicial, que 45,96% dos participantes apresentavam dois ou mais comportamentos de CT. Outro estudo (transversal) de Leal et al., (2020), com 1.156 adolescentes brasileiros de ambos os sexos, identificou que 17,3% deles apresentavam CT, sendo a compulsão alimentar e o hábito de jejuar os mais frequentes.

Mesmo apresentando baixas prevalências quando comparados a outras condições, os TA têm associação com menor qualidade de vida, altos custos para os serviços de saúde e exibem as mais altas taxas de mortalidade entre as doenças psiquiátricas (van Hoeken and Hoek, 2020; Ward et al., 2019). De acordo com revisão sistemática de Ágh et al., (2016), os custos anuais de saúde por paciente podem variar de €888 a €55.270. Além disso, nos Estados Unidos, entre 1999 e 2006, as hospitalizações para TA aumentaram 119% para crianças menores de 12 anos (Zhao and Encinosa, 2011).

Em relação ao curso da doença, a revisão de van Hoeken and Hoek (2020), apontou uma taxa de mortalidade na AN de 5,2% a 5,9% e 1,5% a 1,9% na BN. O risco de mortalidade em pacientes com AN que já passaram por uma internação pela doença é cinco vezes maior do que na população geral. Outros estudos (Bühren et al., 2014; Khalsa et al., 2017) apresentam índice de mortalidade na AN de até 18% a longo prazo, sendo a principal causa o suicídio, em que aproximadamente 50% dos pacientes adultos referem ideação suicida e até 26% tentam efetivamente. Além disso, a remissão de sintomas é observada em apenas 30-40% dos pacientes com TA (McIntosh et al., 2016; Steinhausen, 2009).

1.4 Etiologia e fatores de risco

A etiologia dos TA tem apresentação multifatorial não havendo causa única para o surgimento e manutenção da doença. Há uma complexa interação entre fatores de risco biológicos, psicológicos, sociais, familiares e genéticos. A divisão em três componentes etiológicos é utilizada didaticamente para explicar o aparecimento de um TA, sendo eles fatores predisponentes (personalidade, fatores genéticos, histórico de TA na família), desencadeadores (dieta, menarca, mudanças) e mantenedores (purgação, distúrbios de imagem corporal) (APA, 2013).

Os fatores de risco predizem o desfecho de interesse, aumentam a probabilidade de resultados adversos, deletérios ou indesejáveis (como uma doença) e podem ser classificados como "fixos" ou "imutáveis" (etnia, gênero, idade), "variáveis" ou "mutáveis" (podem ser modificáveis com uma intervenção ou espontaneamente) ou "causais" (modificáveis e quando variam, mudam o desfecho) (Rosenvinge and Pettersen, 2015; Shisslak and Crago, 1995).

Na revisão sistemática com metanálise de Stice et al., (2021), os autores destacaram os fatores de risco sociais, psicológicos e biológicos por tipo de TA (AN, BN, TCA, Transtorno de Purgação e "qualquer TA"). Em relação aos fatores de risco para qualquer TA, dentre os fatores sociais, a pressão social pela magreza, busca pelo ideal de beleza magro e baixo suporte social foram identificados. Sobre os psicológicos, a auto-objetificação (percepção do corpo como um objeto), a insatisfação corporal e o afeto negativo foram destacados e os fatores de risco biológicos foram sobrepeso dos pais, dieta, consumo de álcool e ser do sexo feminino. Outros fatores de risco específicos para cada tipo de TA foram funcionamento psicossocial prejudicado (AN, BN), supervalorização do peso e forma corporal (AN, BN), medo de ganhar peso (AN, BN), perda de peso (AN), baixo IMC (AN), sentir-se gordo (BN), baixa consciência interoceptiva (BN), hiperfagia (BN), compulsão alimentar (BN) e comportamentos compensatórios (BN).

Na revisão de Solmi et al., (2021) os autores identificaram o abuso sexual infantil (para BN) e provocações relacionadas à aparência (para qualquer TA) como fatores de risco.

No estudo de Culbert et al., (2015), os fatores etiológicos dos TA e CT foram discutidos e divididos em fatores de risco ou fatores correlacionados ao diagnóstico de TA/CT. Segundo definição de Kraemer et al., (1997), um fator de risco é aquele que precede um desfecho, sendo identificado por desenhos de estudo longitudinais. Já fatores correlacionados às patologias são aqueles que apresentam somente associação com o desfecho, sendo identificados por artigos com desenhos de estudo transversal ou caso-controle. As variáveis apontadas como de risco incluem: influências socioculturais (exposição à mídia, pressão pela magreza, internalização do ideal de magreza e expectativas relacionadas à magreza) e características de personalidade (afeto negativo, neuroticismo e perfeccionismo). Inúmeras variáveis mostraram associação com TA/CT como distúrbios hormonais, controle inibitório, idade e puberdade.

1.5 Fatores de proteção e prevenção

Fatores de proteção, segundo definição de Rutter (1985), são aqueles que modificam, melhoram ou alteram a resposta a algum risco ou perigo ambiental que resultaria em um desfecho negativo ou indesejável.

Para Levine and Smolak (2016), os fatores de risco contribuem para o surgimento ou intensidade de doenças e os fatores de proteção reduzem significativamente a probabilidade de um desfecho negativo, aumentam a probabilidade de um desfecho positivo ou interrompem o processo de adoecimento. Eles são capazes de impedir tal processo de diferentes maneiras: a) diminuindo diretamente o desfecho negativo; b) prevenindo o aparecimento de um fator de risco; c) interagindo com um fator de risco e interrompendo seus efeitos deletérios.

Assim como os fatores de risco, os de proteção também precedem o desfecho de interesse (Shisslak and Crago, 2001) podem variar de acordo com a classe social, etnia, idade e gênero (Kraemer et al., 1997) e seus efeitos tendem a ser cumulativos e se relacionar entre si (Levine and Smolak, 2016). Também podem ser considerados gerais (quando associados a inúmeras desordens) ou específicos (associados a uma condição particular) (Shisslak and Crago, 2001). Em psiquiatria, muitos fatores não são específicos, uma vez que, quando presentes, podem reduzir a chance de um indivíduo desenvolver uma variedade de transtornos (O'Connell et al., 2009).

Devido à falta de assistência, custo do tratamento e cronicidade dos TA (van Hoeken and Hoek, 2020; Ward et al., 2019), intervenções de prevenção vêm sendo desenvolvidas baseadas na compreensão dos fatores que influenciam no seu desenvolvimento (Stice et al., 2021).

A maioria dos programas de prevenção é delineada de acordo com a população-alvo e com o objetivo de reduzir ou eliminar fatores de risco para TA, e são divididas em prevenção universal, seletiva e indicada. A prevenção universal visa atingir toda a população, independentemente do nível de risco, como intervenções com escolares meninas e meninos. A seletiva busca atingir um subgrupo da população em risco de TA, por exemplo, meninas/mulheres com alguns sintomas alimentares, sem fechar diagnóstico de TA. Por fim, a indicada se propõe a atingir um subgrupo da população que apresenta sintomas iniciais com risco alto para um TA (Rosenvinge and Pettersen, 2015).

Segundo a revisão e metanálise de Stice et al., (2021), os programas mais bem sucedidos encontrados na literatura são os seletivos, com abordagens baseadas na modificação de estilo de vida e dissonância cognitiva, os quais promoveram reduções de 54% a 77% no risco futuro de desenvolver um TA. Já os estudos com as intervenções universais produziram resultados controversos. Em uma metanálise anterior de Stice et al., (2007), os autores observaram que essas intervenções produziram efeitos mais fracos, enquanto a revisão sistemática de Dunker et al., (2023) com países latino-americanos aponta reduções significativas em sintomas de TA. Isso ocorre, em parte, devido a um artefato estatístico. Os grupos-alvo dessas intervenções são uma mistura de participantes que não estão em risco e aqueles que estão em risco, e talvez em alto risco. Portanto, suas pontuações típicas nas medidas basais de risco, incluindo CT, são mais baixas e menos capazes de obterem mudanças positivas (Schwartz et al., 2019).

Apesar dos evidentes resultados positivos das intervenções focadas nos fatores de risco, especialistas em TA e imagem corporal têm avaliado em seus estudos a necessidade da inclusão de fatores protetores, além dos fatores de risco, com o objetivo de reduzir a incidência de TA em crianças e adolescentes que estão iniciando algum comportamento não saudável e promover valores e práticas saudáveis. Os pesquisadores sugerem de forma empírica a inclusão de conteúdos de proteção como forma de melhorar a eficácia das intervenções, como por exemplo, a imagem corporal positiva (Levine and Smolak, 2016).

2 JUSTIFICATIVA

Os TA são doenças psiquiátricas graves, caracterizadas por sua cronicidade, presença de comorbidades psiquiátricas e clínicas, aumento da morbimortalidade e de tratamento custoso e nem sempre eficaz, uma vez que menos da metade dos pacientes tratados tem remissão dos sintomas.

Conforme descrito na introdução, classicamente as pesquisas de prevenção de TA e CT focam prioritariamente na redução e eliminação de fatores de risco. No entanto, alguns pesquisadores e especialistas em TA e imagem corporal têm destacado a necessidade do fortalecimento dos fatores de proteção para a prevenção, uma vez que eles seriam capazes de interromper o processo de adoecimento, diminuindo e/ou impedindo que fatores de risco se sobressaiam.

Dado que a única revisão que investigou fatores de proteção para CT focou exclusivamente em fatores familiares (Langdon-Daly and Serpell, 2017), esta revisão se faz necessária. Com a identificação e sistematização dos fatores de proteção na literatura científica, esta revisão poderá auxiliar no aperfeiçoamento dos conteúdos de protocolos de prevenção, e desta forma aumentar sua eficácia.

3 OBJETIVOS

3.1 Objetivo geral

Identificar fatores de proteção para transtornos alimentares e comer transtornado.

3.2 Objetivos específicos

- Identificar, por meio de revisão sistemática, os estudos que avaliam fatores de proteção;
- Analisar a qualidade dos estudos;
- Discutir o uso dos fatores de proteção em intervenções de prevenção.

4 METODOLOGIA

A revisão foi desenvolvida mediante o guia de diretrizes "Preferred Reporting Items for Systematic Reviews and Meta-Analyses" (PRISMA) (Page et al., 2021), seguindo o *checklist* de 27 etapas. Um protocolo foi desenvolvido previamente e registrado no PROSPERO International Prospective Register of Systematic Reviews (Número do registro: CRD42021260974).

4.1 Seleção dos estudos

Para delinear o trabalho, o critério PICO (população, intervenção/exposição, controle, *outcome*/desfecho) foi empregado de acordo com a descrição a seguir:

Tabela 1: Critérios de inclusão segundo estratégia PICO.

População	Adolescentes e adultos.
Exposição	Fatores de proteção para transtorno alimentar e comer transtornado.
Controle	Não se aplica.
***Outcome*/desfecho**	Transtorno alimentar/Comer transtornado (EAT, ChEAT, EDI, EDE-Q, BES).

As seguintes bases de dados foram selecionadas para busca: The Medical Literature Library of Medicine On-Line (Medline – Pubmed), Biblioteca Virtual em Saúde (BVS), Scopus/Elsevier, American Psychological Association (Apa PsychInfo), Web of Scicence/Clarivate e Embase. Foi feita a busca de estudos publicados até novembro de 2022 usando a combinação dos termos "Eating disorders", "Disordered eating behavior" e "Protective factors", de acordo com descrição no Anexo A.

Após a busca, todos os artigos foram exportados para o software *Rayyan* e dois pesquisadores (M.C.F.D. e H.S.A), de forma cega e independente, fizeram a seleção que foi guiada pelos seguintes critérios de inclusão: a) artigos originais que avaliaram e mediram fatores de proteção para transtornos alimentares e/ou comer transtornado; b)

artigos com metodologia observacional (transversal, caso-controle e coorte), uma vez que essa revisão não tem o intuito de avaliar intervenção/tratamento; c) artigos nas línguas inglesa, portuguesa e espanhola.

Em relação aos critérios de exclusão, podem-se destacar: a) artigos de revisão, editoriais, erratas, notas, capítulos de livro ou sem texto completo disponível; b) artigos com metodologia qualitativa; c) artigos descritivos de fatores de proteção (sem medidas estatísticas); d) amostra com crianças (idade <10 anos).

Para a tabela de extração os seguintes dados foram incluídos: autor, ano, país, idade, amostra (N), etnia, instrumentos/medidas utilizadas para o desfecho, instrumentos/medidas utilizadas para a exposição e fator de proteção identificado.

4.2 Análise do risco de viés

Os artigos incluídos foram avaliados por dois autores de maneira independente, usando a *NewCastle – Ottawa Quality Assessment Scale* (Lo et al., 2014). Para cada desenho de estudo (transversal, caso-controle e coorte) há uma escala específica. Dois pesquisadores (M.C.F.D. e H.S.A) independentes qualificaram cada artigo.

Essa escala possui três categorias (seleção, comparabilidade e desfecho/exposição) e um esquema de pontuação por "estrelas", sendo que escores mais altos representam estudos com metodologias mais robustas e com menor risco de viés. A depender da resposta (presença ou ausência da informação), o estudo recebe ou não uma estrela, podendo pontuar de 0 a 9. Os artigos foram classificados como tendo baixo risco de viés se pontuassem entre 7 e 9 estrelas, com alto risco de viés, de 4 a 6 estrelas, e com muito alto risco de viés, de 0 a 3 estrelas (Lo et al., 2014).

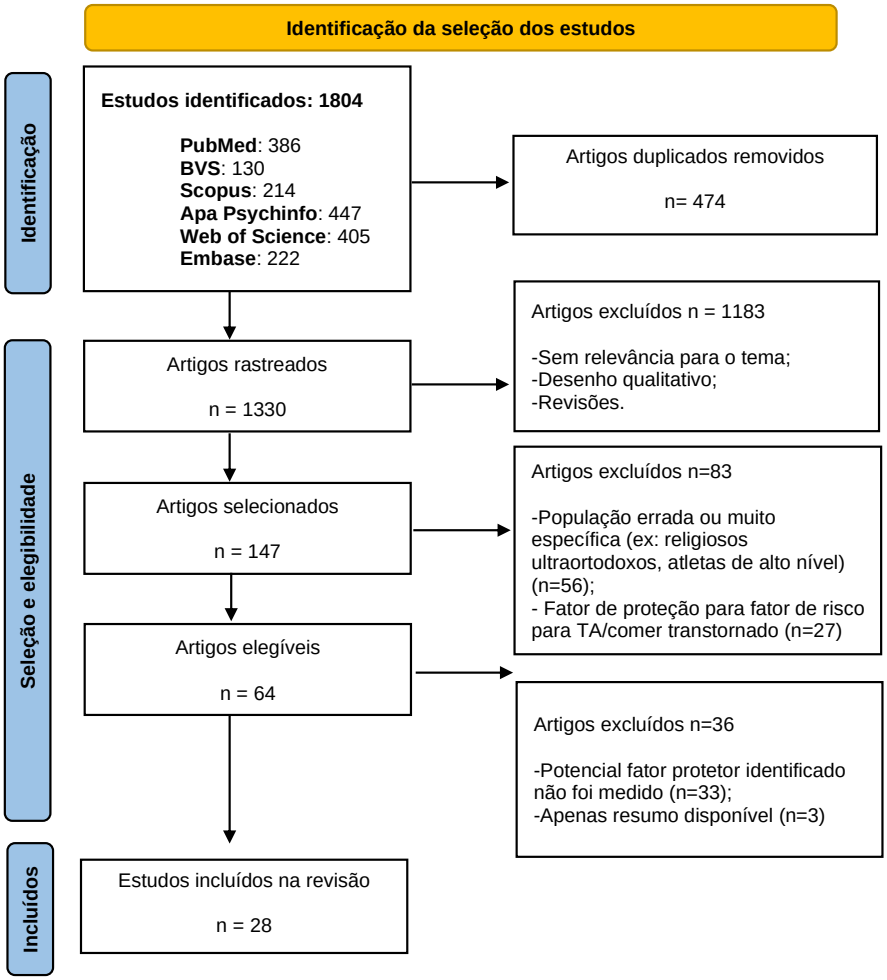
Através de quatro perguntas, a primeira categoria (seleção) explora a representatividade e tamanho da amostra, seleção da população exposta, não exposta, dos casos e controles, adequação da definição dos casos/controles e verificação da exposição. A segunda categoria diz respeito à comparabilidade entre os grupos de cada estudo e se houve controle de fatores importantes (como sexo, idade, IMC). A última categoria (desfecho/exposição) avalia a forma como o desfecho/exposição foram avaliados e a assertividade dos testes estatísticos.

5 RESULTADOS

5.1 Seleção dos estudos

No total, 1.330 artigos foram identificados para possível seleção após os duplicados serem removidos. Após leitura de título e resumo, 1.183 foram excluídos, pois não atendiam aos critérios de inclusão, portanto, 147 artigos foram selecionados. Após leitura mais detalhada, 83 artigos foram excluídos pela amostra ser composta por grupos muito específicos (como religiosos ultraortodoxos, meninas que sofreram abuso emocional/sexual e atletas de alto rendimento) ou por explorarem fatores de proteção para fatores de risco (insatisfação corporal, por exemplo) para TA e CT. Após leitura na íntegra dos 64 artigos, 36 foram excluídos por não medirem os fatores protetores ou pela indisponibilidade do artigo completo, sendo 28 estudos incluídos nesta revisão. Os detalhes do processo de inclusão e exclusão dos artigos podem ser encontrados na figura 1.

Figura 1: Fluxograma de seleção dos estudos.



5.2 Risco de viés

A maioria (n=17, 60,7%) dos artigos pontuou entre 7 e 9, seguido por pontuação entre 4 e 6 (n=11; 39,3%). Nenhum artigo pontuou entre 0 e 3 (muito alto risco de viés).

Entre os estudos com desenho transversal (n=19), na primeira categoria (seleção) a maioria dos estudos apresentou: 1) amostra representativa ou de alguma forma representativa (n=12; 63,1%); 2) cálculo do tamanho de amostra não justificada (n=12; 63,1%); 3) razão de participantes que responderam e não responderam foi insatisfatória ou o artigo não apresentou tal descrição (n= 18; 94,7%); 4) exposição medida por instrumentos validados ou disponíveis (n=14; 73,7%). Na segunda categoria

(comparabilidade), a maioria dos estudos (n=15; 78,9%) controlou para o fator confundidor mais importante e para algum outro. Na terceira categoria (desfecho), grande parte dos estudos (n=13; 68,4%) avaliou o desfecho de forma cega e independente e utilizou testes estatísticos adequados e claros (n=19; 100%).

Entre os estudos com desenho longitudinal (n=7), na primeira categoria (seleção) a maioria dos estudos apresentou: 1) amostra de alguma forma representativa (n=5; %); 2) população exposta e não exposta provenientes da mesma fonte (n=7; 100%); 3) exposição mensurada por questionário autoaplicável (n=7; 100%); 4) desfecho de interesse não apresentado no início do estudo (n=7; 100%). Na segunda categoria (comparabilidade) todos os estudos controlaram para mais de um fator. Na terceira categoria (desfecho) a maioria dos estudos avaliou o desfecho: 1) por autorrelato (n=6; 85,7%); 2) apresentou período de *follow-up* adequado (n=7; 100%); 3) apresentou perda pequena no *follow-up* (n=5; 71,4%). A tabela 2 mostra as pontuações de cada artigo.

Tabela 2: Avaliação do risco de viés pela *NewCastle-Ottawa Scale*.

	Seleção													Comparabilidade		Desfecho/ Exposição									Total
Artigo	**1ª**	**1b**	**1c**	**1d**	**2ª**	**2b**	**2c**	**3ª**	**3b**	**3c**	**4ª**	**4b**	**4c**	**1ª**	**1b**	**1ª**	**1b**	**1c**	**1d**	**2ª**	**2b**	**3ª**	**3b**	**3c**	**3d**	
French, 2001		*			*						**			**				*		*						8
Croll, 2002	*				*							*		**				*		*						7
Fonseca, 2002		*			*							*		*				*		*						6
McVey, 2002											**						**			*						5
Fulkerson, 2006		*			*							*		**			**			*						8
NeumarkSztainer, 2007		*			*						*			*	*					*			*			7
NeumarkSztainer, 2009		*			*						*			*	*					*						6
Haines, 2010					*						*			*	*					*			*			6

Ferreiro, 2011				*					*			*	*				*		*	6
Liou, 2011	*								**						**		*			6
Wal, 2011		*								*		**				*	*			6
Mazur, 2011		*		*					**			*	*			*	*			7
Sonneville, 2012				*					*			*	*				*		*	6
Hill, 2013							*		**			**			**		*			8
Lampis, 2013		*							**			*				*	*			6
Berge, 2014		*							**			**			*		*			7
Rakhkovskaya, 2014									**			**			**		*			7
Micali, 2015		*		*					*			*	*				*		*	7
Thurston, 2018						*			**			**			**		*			8
Dunne, 2019									**			**			**		*			7

Hazzard, 2019		*	*			*	*	*			*	*	7
Solis, 2019		*				*	**		**	*			7
Linardon, 2020		*			**		**		**	*			8
Argyrides, 2020					**		**		**	*			7
Izydorczy, 2021		*	*		**		**		**	*			9
Linardon, 2021		*	*		*		*	*				*	6
Romano, 2021		*	*		**		*		**	*			8
Robert, 2022		*	*		*		*	*		*			6

5.3 Características dos estudos

Os estudos incluídos são dos anos 2001 a 2022. A maioria dos estudos (n=17; 60,7%) foi conduzida em países norte-americanos (Estados Unidos e Canadá), seguidos por países europeus (n=8; 28,6%), da Oceania (n=2; 7,1%) e asiáticos (n=1; 3,6%). A maior parte dos estudos (n=19; 67,8%) tem desenho transversal, seguido de coorte (n=7; 25%), caso-controle (n=1; 3,6%) e desenho misto (n=1; 3,6%).

O tamanho das amostras variou de 59 a 99.426, totalizando 378.266 participantes. A idade dos indivíduos variou de 10 a 55 anos, sendo que a maioria (n=19; 67,8%) investigou a população escolar e/ou adolescente e, o restante, adulta (n=9; 32,1%). Em relação à etnia, houve predomínio de amostras majoritariamente branca/caucasiana (n=14; 50%). Um número considerável de trabalhos não apresentou descrição étnica (n=9; 32,1%).

Diversas medidas e instrumentos foram utilizados para avaliar sintomas de TA/CT (desfecho). A maioria dos artigos (n=15; 53,6%) utilizou instrumentos validados, sendo eles: Eating Disorder Examination Questionnaire (EDE-Q) (n= 5; 31,2%), Eating Attitude Test (EAT)/Children's Eating Attitudes Test (ChEAT) (n= 4; 25%), The Eating Disorders Inventory (EDI) (n= 4; 25%), Binge Eating Scale (BES) (n= 1; 6,2%); Sick Control One Fat Food (SCOFF) (n= 1; 6,2%) e The Three Factor Eating Questionnaire (TFEQ) (n=1, 6,2%).

O restante dos artigos (n=13; 46,4%) avaliou a presença de sintomas de TA/CT através de perguntas sobre frequência e/ou presença de restrição alimentar, compulsão alimentar e comportamentos não saudáveis de controle de peso.

Para avaliação dos fatores de proteção (exposição) diversas medidas e instrumentos foram utilizados. A grande maioria dos artigos (n=27;96,4%) utilizou instrumentos validados e muitos aplicaram mais de um instrumento. Os instrumentos que apareceram em mais de um trabalho foram: Profile of Student Life: Attitudes and Behaviors Questionnaire, Multidimensional Body-Self Relations Questionnaire (MBSRQ), Parental Bonding Instrument (PBI), McNight Risk Factor (MFRS), Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ), Rosenberg's Self-Steem Scale, Body Appreciation Scale (BAS) e Project Eating Among Teens (EAT).

Os fatores de proteção identificados nos estudos são agrupados em: familiares, relacionados ao peso, corpo e imagem corporal, sociais, pessoais/individuais e escolares, de acordo com a tabela 3, e as características dos estudos incluídos, por tipo de desenho de estudo, são apresentados nas tabelas 4, 5 e 6.

Tabela 3: Fatores de proteção identificados nos estudos, por categoria de classificação.

Classificação	**Fator protetor identificado**
Familiares	Refeição em família (OR 0,58–0,9/ β -0,7) Fulkerson et al., 2006; Neumark-Sztainer et al., 2007; Haines et al., 2010; Solis et al., 2019. Conexão familiar/com os pais (OR O,24 – 0,90) Croll et al., 2002; Fonseca et al., 2002; Neumark-Sztainer et al., 2009; Hazzard et al., 2019. Atmosfera positiva nas refeições (OR 0,61) Neumark-Sztainer et al., 2009. Cuidado materno (β -0,5), Cuidado paterno (β -0,06), Coesão familiar (β -0,08) Lampis et al., 2013. Comunicação familiar (OR 0,26), presença materna (OR 0,41 – 0,57), percepção dos filhos sobre o cuidado parental (OR 0,21) Fonseca et al., 2002. Melhor funcionamento familiar (OR 0,78) Berge et al., 2014. Conhecimento dos pais sobre os filhos (OR 0,76) Berge et al., 2014. Ter dois pais em casa (OR 0,8-0,9) Croll et al., 2002. Suporte paterno (β= - 0,12) McVey et al., 2002.
Imagem corporal	Imagem corporal positiva (OR 0,15-0,94/ β -0,16 a -0,66): • Satisfação corporal (Neumark-Sztainer et al., 2009; Sonneville et al., 2012). • Flexibilidade em relação à imagem corporal (Hill et al., 2013). • Apreciação corporal (Argyrides et al., 2020; Linardon, 2021). • Satisfação com áreas do corpo (Izydorzyk et al., 2021). Dar menos importância à aparência física (β= - 0,16) McVey et al., 2002. Estar com peso eutrófico e associado com baixo afeto negativo ou satisfação corporal (OR 0,27 – 0,44) Vander Wal et al., 2011.

Sociais	Suporte social (β -0,19 a -0,24) Ferreiro et al., 2011; Mazur et al., 2011.
	Influência positiva dos pares (OR 0,55-0,80) French et al., 2001.
	Sentir-se socialmente aceito (OR β -0,11) Mazur et al., 2011.
Pessoais/individuais	Autoestima positiva (OR 0,24-0,91) French et al., 2001; Croll et al., 2002; Neumark-Sztainer et al., 2007; Neumark-Sztainer et al., 2009; Micali et al., 2015.
	Fazer refeições com frequência (OR 0,43-0,84) Neumark-Sztainer et al., 2009; Liou et al., 2011.
	Resiliência (OR 0,56-0,67/β -0,20) Thurston et al., 2018; Robert et al., 2022.
	Sentir que a vida tem um propósito (OR 0,45-0,53) French et al., 2001.
	Valores positivos (OR 0,56-0,83) French et al., 2001.
	Empoderamento pessoal (OR 0,56-0,75) French et al., 2001.
	Bem-estar emocional (OR 0,15-0,32) Croll et al., 2002.
	Comportamentos saudáveis de controle de peso (OR 0,33) Neumark-Sztainer, et al., 2009.
	Dormir mais de 8h/d (OR 0,8) Liou et al., 2011.
	Identidade étnica (β -0,12) Rakhkovskaya and Warren, 2014.
	Mindfulness (β -0,61) Dunne et al., 2019.
	Comer intuitivo (OR 0,4) Linardon et al., 2021.
	Autoaceitação (β -0,28) Romano et al., 2021.
	Autocompaixão (β -0,3 a -0,5) Linardon et al., 2020.
Escolares	Boas notas (OR 0,64) Croll et al., 2002.
	Conexão com a escola (OR 0,69) Croll et al., 2002.
	Satisfação com a escola (β -0,27) Mazur et al., 2011.

Os fatores de proteção familiares descritos nos estudos foram: refeição em família (Fulkerson et al., 2006; Neumark-Sztainer et al., 2007; Haines et al., 2010; Solis et al., 2019); conexão familiar/ com os pais (Croll et al., 2002; Fonseca et al., 2002; Neumark-Sztainer et al., 2009; Hazzard et al., 2019); atmosfera positiva nas refeições (Neumark-Sztainer et al., 2009), cuidado materno (Lampis et al., 2013) e paterno (Lampis et al., 2013), coesão familiar (Lampis et al., 2013), comunicação familiar

(Fonseca et al., 2002), presença materna (Fonseca et al., 2002), percepção dos filhos sobre o cuidado parental (Fonseca et al., 2002), melhor funcionamento familiar (Berge et al., 2014), conhecimento dos pais sobre os filhos (Berge et al., 2014), ter dois pais em casa (Croll et al., 2002), suporte paterno (McVey et al., 2002).

Em relação a fatores protetores relacionados a imagem corporal, os estudos descrevem: satisfação com o corpo/peso (Neumark-Sztainer et al., 2009; Sonneville et al., 2012; Argyrides et al., 2020; Izydorzyk et al., 2021; Linardon, 2021), dar menos importância à aparência física (McVey et al., 2002), estar com peso eutrófico e associado com baixo afeto negativo ou satisfação corporal (Vander Wal, 2011) e flexibilidade em relação à imagem corporal (Hill, 2013).

Três fatores protetores sociais foram descritos nos artigos: suporte social (Ferreiro et al., 2011; Mazur et al., 2011), influência positiva dos pares (French et al., 2001) e sentir-se socialmente aceito (Mazur et al., 2011).

Fatores individuais ou pessoais identificados nos estudos foram: autoestima positiva (French et al., 2001; Croll et al., 2002; Neumark-Sztainer et al., 2007; Neumark-Sztainer et al., 2009; Micali et al., 2015), fazer refeições com frequência (Neumark-Sztainer et al., 2009; Liou et al., 2011), resiliência (Thurston et al., 2018; Robert et al., 2022), sentir que a vida tem um propósito (French et al., 2001), valores positivos (French et al., 2001), empoderamento pessoal (French et al., 2011), bem estar emocional (Croll et al., 2002), comportamentos saudáveis de controle de peso (Neumark-Sztainer et al., 2009), dormir mais de 8h/d (Liou et al., 2011); identidade étnica (Rakhkovskaya and Warren, 2014), *mindfulness* (Dunne et al., 2019), *intuitive eating* (Linardon, 2021), auto-aceitação (Romano et al., 2021) e auto-compaixão (Linardon et al., 2020).

Por fim, foram identificados nos estudos fatores relacionados especificamente à escola, como ter boas notas (Croll et al., 2002), estar conectado com a escola (Croll et al., 2002) e satisfeita com ela (Mazur et al., 2011).

Tais fatores tiveram associação inversa com comportamentos inadequados para controle de peso, comportamentos compensatórios e compulsão alimentar.

Tabela 4: Características dos estudos transversais incluídos

Autor, ano, país	Idade, N	Etnia	Instrumentos utilizados para medir o desfecho	Instrumentos utilizados para medir a exposição	Fator de proteção identificado
(French et al., 2001) EUA	11 a 18 95.395 (50% feminino)	86% Branco, 5% Multiracial, 4% Hispânico, 2%: Negro, Índio Americano e Asiático	Medidas não validadas para avaliar frequência de compulsão alimentar, purgação e presença de perda excessiva de peso	Profile of Student Life: Attitudes and Behaviors Questionnaire	Sentir que a vida tem um propósito (OR 0,45/0,53); autoestima positiva OR 0,55/0,76; influência positiva dos pares (OR 0,55/OR 0,80); valores positivos (OR 0,56/0,83); empoderamento pessoal (OR 0,75/0,56)
(Croll et al., 2002) EUA	14 e 18 81.267 (50,4% asculin)	87% Branco, 3,5% Asiático, 2% Negro, 1,5% Hispânico, 1% Índio Americano, 5,5% "não sabe"	Medidas não validadas para avaliar a presença de comportamentos não saudáveis de controle de peso e compulsão alimentar	Minnesota Student Survey	Autoestima positiva (OR 0,24/0,38); bem-estar emocional (OR 0,15/0,32); conexão familiar (OR 0,60/0,75); boas notas na escola (OR 0,64/0,64); ter os dois pais em casa (OR 0,8/0,9); conexão com a escola (OR 0,69 – só meninos)
(McVey et al., 2002) Canadá	M = 12,9 (DP=0,6) 363 meninas	78% Branco e o restante Asiático e Negro	ChEAT	The Harter Self-Perception Profile for Children; How important are these things to how you feel about yourself as a person Scale; The Child and adolescent perfectionism scale (CAPS); The Children's Perceptions of Parents Scale (CPPS); The Adolescent Perceived Events Scale (APES); Conditional Support Scale for Parents	Dar menos importância à aparência física (β= - 0,16); suporte paterno (β= - 0,12)
(Fulkerson et al., 2006) EUA	11 a 18 99.426 (50% feminino)	86% Branco, 5% Multiracial, 4% Latino, 2% Asiático, <2% Negro e Americano Nativo	Medidas não validadas para avaliar frequência de compulsão alimentar, purgação e presença de perda excessiva de peso	Profiles of Students Life: Attitudes and Behaviors Survey; Medidas de frequência de refeição em família	Refeição em família (OR 0,58)
(Liou et al., 2011) Taiwan	10 a 18 15.806 (55,4%	Sem descrição	Medidas não validadas para avaliar frequência de vômito e restrição alimentar	National Physical Growth and Development of Taiwanese Students International Physical Activity Questionnaire (IPAQ); Pittsburgh Sleep	Tomar café da manhã diariamente (OR 0,49/OR0,4); dormir mais de 8h/d (OR 0,8 – só meninas)

	feminino)			Quality Index	
(Vander Wal, 2011) EUA	14 a 16 4.529 (53,2% feminino)	51,6% Branco	Medidas não validadas para avaliar a presença de comportamentos não saudáveis de controle de peso e compulsão alimentar	Health Behaviors in School-Aged Children Survey (HBSC)	Peso eutrófico associado a um baixo afeto negativo (OR 0,44 – só meninas) ou satisfação corporal (OR 0,27- só meninas)
(Mazur et al., 2011) Polônia	13 605 (50,4% feminino)	Sem descrição	TFEQ-13	General Health Questionnaire (GHQ); Self-Perception Profile for Adolescents (SPPA); Oslo 3-Item Social Support Scale	Sentir-se socialmente aceito (β -0,11); suporte social (β -0,24), satisfação com a escola (β -0,27)
(Sonneville et al., 2012) EUA	M=11,8 (DP=1,6) 1.559 meninas	93% Branco	Medidas não validadas para avaliar frequência de compulsão alimentar e presença de comportamentos compensatórios	McKnight Risk Factor Survey (MFRS) (1 item)	Satisfação corporal (OR 0,15)
(Hill et al., 2013) EUA	M = 28,6 (DP=9) 258 mulheres	60% Branco, 24% Latino, 10% Negro, 6% outros	EAT – 26	Body Image Acceptance and Action Questionnaire (BI-AAQ); The Body Shape Questionnaire (BSQ)	Flexibilidade em relação à imagem corporal (β – 0,27)
(Lampis et al., 2013) Itália	M = 15,9 (DP = 1,4) 1083 (55% feminino)	Sem descrição	EDI-2	Parental Bonding Instrument (PBI); Family Adaptability and Cohesion Evaluation Scale	Cuidado materno (β -0,5); cuidado paterno (β -0,06) e coesão familiar (β -0,08)
(Berge et al., 2014) EUA	M = 14,4 (DP = 2) 2.793 (53,9% feminino)	29% Negro, 19,9% Asiático, 18,9% Branco, 16,9% Hispânico, 3,7% Americano Nativo, 11,6% Misto/Outro	Medidas não validadas para avaliar frequência de dieta, presença de comportamentos não saudáveis e extremos para controle de peso e de compulsão alimentar	Family Assessment Device (FAD)	Bom funcionamento familiar (OR 0,78 – só meninas); conhecimento dos pais sobre sua filha (OR 0,76 – só meninas)

(Rakhkovskaya and Warren, 2014) EUA	M = 21 (DP = 5,5) 816 mulheres	47% Branco, 22,5% Asiático, 19,3% Hispânico, 11% Negro	EDE – Q	Multigroup Ethnic Identity Measure (MEIM-EI); Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ)	Identidade étnica (β -0,12)
(Thurston et al., 2018) EUA	M = 19,2 (DP = 1,5) 279 mulheres	48,5% Branco, 26,9% Negro, 10,1% Hispânico, 7,7% Misto, 5,1% Asiático, 1% Havaiano, 0,3% Índio Americano, 0,3% sem resposta	BES	Perceived Stress Scale (PSS); Brief Resilience Scale (BRS)	Resiliência (β -0,20)
(Dunne et al., 2019) EUA	M = 25,7 (DP = 8,7) 59 mulheres	73% Branco, 15,3% Asiático, 6,8% Hispânico	EDE – Q	Cognitive Affective Mindfulness Scale; (CAMS-R); MOS 36-item Short-Form Health Survey (RAND-36); Patient Health Questionnaire 4 (PHQ-4)	Mindfulness (β -0,61)
(Solis et al., 2019) Espanha	M = 14,6 916 (54,6% feminino)	Sem descrição	EDI – 3	Medidas de frequência de refeição em família	Refeição em família (β -0,08)
(Linardon et al., 2020) Australia	M = 27,5 (DP = 8,6) 992 (62,4% feminino)	81,7% Branco, 7,8% Asiáticos, 3,6% Hispânico, 1,1% Negro, 0,6% Americano Nativo, 0,2% Ilhas do Pacífico, 5% Outros	EDE – Q	Self-Compassion Scale-Short Form (SCS-SF); Clinical Impairment Assessment (CIA); Patient Health Questionnaire 4 (PHQ-4)	Autocompaixão (β -0,3/ (β -0,5)
(Argyrides et al., 2020) Chipre	M = 15,2 (DP = 1,2) 2605 (59,2% feminino)	Sem descrição	EAT – 26	Multidimensional Body-self Relations Questionnaire – Appearance Scale (MBSRQ-AS); Rosenberg Self-Esteem Scale; Situational Inventory of Body Image Dysmorphia – Short version (SIBID-S); Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-3); Body Appreciation Scale-2 (BAS-2)	Satisfação corporal (β -0,56/ β -0,66)

(Izydorczyk et al., 2021) Polônia	M = 14,9 (DP = 1,3) 134 meninas	Sem descrição	EDI-3	Parental Bonding Instrument (PBI); Multidimensional body-self Relations Questionnaire (MBSRQ); Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-3)	Satisfação corporal (β -0,26)
(Romano et al., 2021) EUA	M=30 (DP= 10,7) 108 mulheres	90,7% Branco ou americano europeu, 3,7% hispânico ou latino, 3,7% outros, 1,85% americano asiático ou das ilhas do pacífico, 1,85% americano nativo ou nativo do Alasca, 0,93% americano africano	EDE-Q	Self-Acceptance Scale of Ryff's Scales of Psychological Well-Being (RSPWB)	Autoaceitação (β -0,28)

M = ascu; DP = desvio padrão; OR = Odds Ratio; β = coeficiente beta; ChEAT = Children's Eating Attitudes Test; TFEQ-13 = The Three-Factor Eating Questionnaire; EAT-26 = Eating Attitudes Test; EDI = Eating Disorder Inventory; EDE-Q = Eating Disorder Examination Questionnaire; BES = Binge Eating Scale. Quando dois valores são apresentados, o primeiro corresponde ao sexo feminino e o segundo ao masculino. Se há somente um valor significa que o estudo não fez análises separadas por sexo.

Tabela 5: Características dos estudos longitudinais incluídos

Autor, ano, país	**Idade, N**	**Etnia**	**Instrumentos/ medidas utilizadas para o desfecho**	**Instrumentos/ medidas utilizadas para exposição**	**Fator de proteção identificado**
(Neumark-Sztainer et al., 2007) EUA	12 a 17 2.380 (55% feminino)	48,5% Branco, 19,2% Asiático, 19% Negro, 5,8% Hispânico, 3,9% Misto/outro, 3,5% Americano Nativo	Medidas não validadas para avaliar presença de comportamentos não saudáveis de controle de peso, dieta e compulsão alimentar	Project Eating Among Teens (EAT); Kendel and Davie's Scale; Rosenberg's Self-Esteem Scale; Leisure-time Exercise Questionnaire	Refeição em família (OR 0,9); Autoestima positiva (OR 0,9)
(Neumark-Sztainer et al., 2009) EUA	12 a 17 412 (56% feminino)	45% Branco, 24% Negro, 16% Hispânico, 6% Asiático, 5% Americano Nativo, 4% Misto/outro	Medidas não validadas para avaliar presença de comportamentos não saudáveis de controle de peso e compulsão alimentar	Project Eating Among Teens (EAT); Kendel and Davie's Scale Rosenberg's; Self-Esteem Scale; Leisure-time Exercise Questionnaire	Conexão familiar (OR 0,90/0,86); fazer refeição regularmente (OR 0,84/0,75); satisfação corporal (OR 0,94 – só meninas) (; atmosfera positiva nas refeições em família OR 0,61 – só meninas); autoestima positiva (OR 0,91 – só meninas); comportamentos saudáveis de controle de peso (OR 0,33 – só meninos)

(Haines et al., 2010) EUA	11 a 17 10.540 (57% feminino)	Aproximadamente 93% Branco	Medidas não validadas para avaliar frequência de compulsão alimentar, dieta e comportamentos compensatórios	Growing Up Today Study (GUTS); McKnight Risk Factor Survey; medidas não validadas para avaliar fatores comportamentais, sociais, familiares	Refeição em família (OR 0,90 – só meninas)
(Ferreiro et al., 2011) Espanha	T1 M=10,8 (DP=0,7) T2 M=12,8 (DP = 0,7) 942 (51% asculine)	98,5% Branco 1% Marroquinos, 0,5% outros	ChEAT e EDI-2	Children's Depression Inventory (CDI); The Rosenberg Self-Esteem Scale (RSES); The Body Dissatisfaction & The Perfectionism subscale of the Eating Disorder Inventory (EDI-2); medidas não validadas para suporte social	Suporte social (β = - 0,19 – só meninos)
(Micali et al., 2015) Inglaterra	14 6.140 (misto)	Sem descrição	Medidas não validadas para avaliar presença de compulsão alimentar, purgação e dieta	The Avon Longitudinal Study of Parents and Children (ALSPAC); Youth Risk Behavior Surveillance System Questionnaire; McKnight Risk Factor Survey; Stunkard Figure Rating Scales; Harter's Self—Perception Profile for Children	Autoestima positiva (OR 0,81 – só meninos)
(Hazzard et al., 2020) EUA	T1 e T2: 11 a 17 T3: 18 a 26 13.532 (52,4% feminino)	68,1% Branco, 17,1% Outros, 14,8% Negro	Medidas não validadas para avaliar presença de compulsão alimentar, comportamentos compensatórios e restrição alimentar	National Longitudinal Study of Adolescent to Adult Health (Add Health); Youth Asset Survey (Relationship with Mother and Relationship with Father subscales)	Conexão com os pais (OR 0,82 – só meninas)
(Linardon, 2021) Australia	M = 33,1 (DP=8,4) 1.270 mulheres	78,8% Branco, 9,3% Asiáticos, 4,7% Hispânicos, 4% Misto, 0,6% Afro-Americano, 0,4% Ilhas do Pacífico, 0,1% Americanos Nativos	EDE-Q	Body Appreciation Scale-2 (BAS-2); Body Image Acceptance and Action Questionnaire (BI-AAQ); Functionality Appreciation Scale (FAS); Intuitive Eating Scale-2 (IES-2); Self-Compassion Scale-Short Form (SCS-SF)	Comer intuitivo (OR 0,40) e satisfação corporal (OR 0,56)

M = media; DP = desvio padrão; OR = Odds Ratio; β = coeficiente beta; ChEAT = Children's Eating Attitudes Test; EDI -2 = Eating Disorder Inventory; EDE-Q = Eating Disorder Examination Questionnaire. Quando dois valores são apresentados, o primeiro corresponde ao sexo feminino e o segundo ao masculino. Se há somente um valor significa que o estudo não fez análises separadas por sexo.

Tabela 6: Características dos estudos caso-controle e de desenho misto incluídos.

Autor (ano), país	Desenho	Idade, N	Etnia	Instrumentos/ medidas utilizadas para o desfecho	Instrumentos/ medidas utilizadas para exposição	Fator de proteção identificado
(Fonseca et al., 2002) EUA	Caso-controle	12 a 18 9.042 (51,1% feminino)	Sem descrição	Medidas não validadas para presença de comportamentos não saudáveis de controle de peso e dieta	Voice of Connecticut Youth Survey (VCY); medidas não validadas para fatores familiars	Conexão familiar (OR 0,24 – só meninas); comunicação familiar (OR 0,26 – só meninas); percepção do cuidado parental (OR 0,21 – só meninos); presença materna (OR 0,57/0,41)
(Robert et al., 2022) França	Misto	M = 55 (DP = 13,5) 25.000 (74,3% feminino)	Sem descrição	SCOFF	Coorte French NutriNet-Santé; Brief Resilience Scale (BRS)	Resiliência (análise transversal OR 0,56 e análise longitudinal OR 0,67)

M = media; DP = desvio padrão; OR = Odds Ratio; SCOFF = Sick Control One Fat Food. Quando dois valores são apresentados, o primeiro corresponde ao sexo feminino e o segundo ao masculino. Se há somente um valor significa que o estudo não fez análises separadas por sex

6 DISCUSSÃO

O objetivo deste estudo foi identificar fatores de proteção associados com os TA e CT. A busca da literatura identificou 28 estudos publicados, sendo que os fatores encontrados foram relacionados a aspectos familiares, imagem corporal, sociais, individuais e escolares.

Os aspectos familiares mais citados foram a refeição em família e a conexão familiar, os quais tiveram uma associação inversa com o desenvolvimento de comportamentos de risco como compulsão alimentar e uso de métodos de controle de peso não saudáveis.

Aspectos familiares têm sido, historicamente, incluídos em intervenções de tratamento dos TA, principalmente para anorexia e bulimia nervosa. O modelo de James Lock, "Family Based Treatment – FBT", bem utilizado na prática clínica e considerado referência no tratamento ao redor do mundo, propõe a responsabilização dos pais na realimentação dos pacientes com TA e a realização de atividades terapêuticas como incentivo a refeições em família (Hilbert et al., 2017; Lock and Le Grange, 2005).

Langdon-Daly & Serpell (2017), em sua revisão sobre fatores de proteção para CT dentro de sistemas familiares, identificaram como os mais citados as refeições em família e o funcionamento familiar positivo. Os autores, no entanto, reforçam que o fator refeição em família só era de fato protetor se não houvesse conversas sobre o peso e/ou corpo nestes momentos. Outras metanálises associam a qualidade, como a duração e a atmosfera positiva durante as refeições em família, com a melhora da alimentação das crianças (Dallacker et al., 2019) e menor risco de se envolverem em comportamentos danosos, como consumo de álcool, tabaco e drogas (Robson et al., 2020; Skeer and Ballard, 2013).

Já nas intervenções de prevenção, aspectos familiares nem sempre são incluídos e a literatura apresenta achados conflitantes quando o tema é o envolvimento dos pais e familiares. Na revisão de Hart et al., (2015), os autores encontraram que mesmo havendo a necessidade de envolver e responsabilizar os pais, poucos trabalhos se mostraram efetivos na prevenção da insatisfação corporal e TA quando os pais são

incluídos. Ainda que algumas intervenções melhorem o comportamento alimentar e a satisfação corporal de crianças e adolescentes, não é claro se tal desfecho se dá decorrente da intervenção em si ou do envolvimento dos pais na intervenção (Hart et al., 2015). A depender do programa e do nível de prevenção, os pais são mais ou menos envolvidos, podendo ser diretamente responsabilizados pelos comportamentos trabalhados com os participantes na intervenção, como no programa "*Parents Act Now*" (Jacobi et al., 2018) ou somente instruídos a reforçarem as mensagens, como no programa *"New Moves"* (Neumark-Sztainer et al., 2010).

No que diz respeito à imagem corporal, esta revisão identificou alguns aspectos da imagem corporal positiva, como a satisfação corporal (Neumark-Sztainer et al., 2009; Sonneville et al., 2012), a apreciação corporal (Argyrides et al., 2020; Linardon, 2021), a satisfação com áreas específicas do corpo (Izydorzyk, 2020) e a imagem corporal flexível (Hill, 2013) como fatores de proteção para TA e CT.

Imagem corporal é um construto complexo e multifacetado e diz respeito à percepção, crenças, pensamentos, sentimentos, comportamentos e atitudes de um indivíduo sobre o seu corpo (O'Dea, 2012) e representa, ainda, a imagem mental que uma pessoa tem do seu corpo e de suas partes (Slade, 1988). Didaticamente, há a divisão da imagem corporal em duas dimensões, a atitudinal e a perceptiva. A dimensão atitudinal se refere às crenças, sentimentos e comportamentos relacionados ao corpo e à aparência, e a dimensão perceptiva corresponde à compreensão do tamanho e da forma corporal (Muth and Cash, 1997).

De acordo com a revisão de Ciao et al., (2014), a maioria das intervenções de sucesso na prevenção de TA foca em pelo menos um fator de risco para TA (insatisfação corporal, restrição alimentar e/ou internalização do ideal de beleza magro). Mesmo assim, nem sempre há a descrição clara se é através do fortalecimento de fatores de proteção, como o aumento de algum aspecto da imagem corporal positiva. Os programas são delineados com base em teorias como a Social Cognitiva, Cognitiva-comportamental ou Teoria Comportamental e a Dissonância Cognitiva.

A imagem corporal positiva, especificamente a apreciação corporal, tem sido descrita em revisões sistemáticas como um importante fator de proteção para o desenvolvimento da insatisfação corporal e sintomas de TA (Guest et al., 2019; He et al., 2020). O programa "*Body Project"*, baseado na teoria da dissonância cognitiva, tem

sido avaliado mundialmente e é considerado um modelo efetivo de programa de prevenção tanto dos TA, como de obesidade. O programa, que tem como foco promover a crítica em relação às mensagens da mídia e gerar discussões sobre a pressão social da magreza, obteve resultados positivos no aumento da apreciação/aceitação corporal, na redução da insatisfação corporal e sintomas de TA (Amaral et al., 2019; Resende et al., 2022; Stice et al., 2015, 2008).

Sobre os fatores de proteção social, destaca-se o suporte social citado no trabalho transversal (Mazur et al., 2011) e longitudinal (Ferreiro et al., 2011) desta revisão. O conceito de suporte social diz respeito a quanto alguém percebe o apoio e suporte da família, amigos e entes queridos. É uma definição ampla e abarca características emocionais, como ter alguém com quem conversar, relacionamentos próximos e o sentimento de ser amado e cuidado, e práticas do dia a dia, como ter alguém em quem confiar para lidar com as demandas da vida diária e compromissos e a lidar com questões financeiras (Baiden et al., 2017; Sarason et al., 1987).

O suporte social é discutido em revisões que investigam a sua relação com saúde mental e física desde sua importância na prevenção como na recuperação de doenças psiquiátricas e manutenção de uma vida saudável (Bjørlykhaug et al., 2022; Leigh-Hunt et al., 2017; Wang et al., 2018). Especificamente na etiologia, desenvolvimento e manutenção dos TA, sabe-se que há uma relação entre suporte social e a patologia, mas não é claro como exatamente se dá esta interação. Discute-se que indivíduos com baixo suporte social percebem que seriam mais aceitos socialmente se fossem mais magros, o que aumenta a chance de buscarem comportamentos não saudáveis para controle de peso. Outra discussão aponta que comumente pessoas com TA apresentam maior isolamento social e, por conseguinte, menos suporte (Kim et al., 2023; Limbert, 2010).

Apesar de existirem evidências do suporte social como fator protetor, apenas um programa de prevenção (Neumark-Sztainer et al., 2010) destaca o estímulo ao suporte social dos amigos, professores e familiares. O programa "*New Moves*", ao avaliar o impacto do suporte dos pais, amigos e professores, observou uma relação positiva deste suporte com comportamentos saudáveis de controle de peso como, por exemplo, uma redução da disponibilidade de bebidas açucaradas, consumo de frutas e verduras, frequência de refeição em família e a prática de atividade física, reforçando a importância da inclusão/avaliação de programas com componentes de suporte social.

Sobre os fatores de proteção individuais, pode ser destacada a autoestima positiva, identificada em alguns trabalhos transversais (French et al., 2001; Croll et al., 2002) e longitudinais (Neumark-Sztainer et al., 2009; Micali, 2015) desta revisão. Tal conceito, definido como a avaliação individual subjetiva sobre o próprio valor como pessoa (Donnellan et al., 2013), é discutido em outros trabalhos que investigam sua relação com desfechos de saúde. Na revisão de Orth and Robins (2022), em que os autores investigaram as consequências da autoestima sobre as relações interpessoais, escola, trabalho, saúde física e mental e comportamentos antissociais, a autoestima positiva aparece como um fator que beneficiou todos os domínios estudados e seu poder, em tamanho de efeito, se mostrou maior do que algumas intervenções medicamentosas.

Nos TA, assim como na obesidade, é comum os pacientes apresentarem baixa autoestima, com consequente prejuízo no funcionamento psicossocial e qualidade de vida, além de estar associada à manutenção do quadro alimentar e maior dificuldade no tratamento (Linardon et al., 2019; Stewart et al., 2001). Por essa razão, desde o início dos delineamentos de programas de prevenção, a autoestima faz parte dos elementos da intervenção, sendo considerada um desfecho de impacto na redução dos fatores de risco de TA (Stice et al., 2021). As abordagens focadas em autoestima parecem contribuir diretamente para uma imagem corporal positiva e maior resiliência em relação às expectativas irreais sobre o corpo retratadas pela mídia (O'Dea, 2012).

Segundo Ciao et al., (2014), alguns programas que incluíram conteúdos relacionados à autoestima obtiveram resultados positivos na prevenção de sintomas de TA (Neumark-Sztainer et al., 1995; Stewart et al., 2001; Yager and O'Dea, 2010). Considerando somente os dados de países da América Latina, Dunker et al (2023) identificou sete programas que avaliaram a autoestima, sendo que quatro deles observaram mudanças significativas. Já a revisão metanalítica de Stice et al., (2021) aponta efeito positivo de somente uma intervenção direcionada a jovens atletas de elite da Noruega, baseada na Teoria Social Cognitiva, que reduziu em 100% a chance de as meninas desenvolverem TA no futuro (Tanofsky-Kraff et al., 2014).

Sobre os fatores de proteção relacionados à escola, boas notas, conexão e satisfação com a escola foram identificados nesta revisão. Desde o início dos estudos sobre prevenção de TA, o ambiente escolar é palco de inúmeras intervenções por sua

importância e influência na vida de crianças e adolescentes. Trabalhos mostram que, de acordo com alunos, pais e professores, a principal forma de assédio experienciado por jovens nas escolas são as provocações e *bullying* direcionados ao peso (Bucchianeri et al., 2013; Puhl et al., 2015). Além de seu potencial impacto no desenvolvimento dos TA, o *bullying* relacionado ao peso e corpo está associado a inúmeros desfechos negativos, como depressão, isolamento social, piora na autoestima, na imagem corporal e na performance escolar e ideação suicida (Bucchianeri et al., 2014; Greenleaf et al., 2014; Paxton et al., 2006).

Mesmo trabalhos discutindo extensivamente políticas e programas de prevenção *anti-bullying* e professores e educadores se mostrando apoiadores, a implementação de tais intervenções dentro das escolas ainda é rara (Puhl et al., 2015). De acordo com as diretrizes da Organização Mundial de Saúde (OMS), *Health Promoting Schools Framework*, um currículo escolar que preveja políticas *anti-bullying* e um ambiente escolar acolhedor, com professores alinhados com tais políticas, impactam diretamente na autoestima dos escolares, promovendo mais tolerância e diversidade de corpos (O'Dea, 2012). Alguns programas de prevenção de TA, através do treinamento e inclusão de professores e educadores nas intervenções, como, por exemplo, *"The Weight to Eat", "Planet Health"* e *"Helthy School-Healthy Kids"*, trabalham de forma mais efetiva com toda a comunidade escolar (Austin et al., 2012; McVey et al., 2007; Neumark-Sztainer et al., 1995).

As diretrizes sobre prevenção integrada de TA e obesidade da *American Academy of Pediatrics* e da *Academy of Eating Disorders* indicam cuidado nas mensagens dadas às crianças e adolescentes e propõem abordagens adequadas para diferentes temas (família, imagem corporal, profissionais de saúde, ambiente escolar, entre outros). Sobre a família, as diretrizes dizem que os pais devem incentivar refeições em família, em ambientes sem distrações, e não falar sobre peso, mas sim, serem modelos de comportamentos saudáveis em casa, tanto em relação à alimentação como atividade física. No que diz respeito à imagem corporal, promove-se uma imagem corporal positiva, sem enfoque na insatisfação corporal como motivação para a restrição alimentar. Em relação aos profissionais de saúde, as diretrizes sugerem que eles ampliem sua avaliação sobre alimentação e atividade física dos seus pacientes, incluindo a autoestima, o funcionamento social, o preconceito contra o peso e os fatores de risco para TA. Por fim, sobre o ambiente escolar, há a indicação de um local

saudável, incluindo refeições saudáveis, oferecendo oportunidades para atividades físicas divertidas, adoção de uma política para prevenir provocações, proporcionando aos estudantes e funcionários aulas educativas sobre imagem corporal, mídia e preconceito contra o peso (Golden et al., 2016).

Percebe-se que alguns programas de prevenção tidos como eficazes incluem certos fatores de proteção identificados nesta revisão a fim, principalmente, de reduzir fatores de risco para TA e CT, especialmente a autoestima e a imagem corporal positiva. Fatores familiares, sociais e relacionados ao ambiente escolar nem sempre são explorados em programas de prevenção de TA e CT, mesmo que muitas intervenções aconteçam no ambiente escolar.

7 LIMITAÇÕES E PONTOS FORTES DA REVISÃO

Em relação às limitações, como a maioria dos estudos incluídos nesta revisão apresenta desenho transversal, não é possível inferir causalidade entre a exposição e o desfecho, somente associação. Outro ponto importante é a diversidade de instrumentos de medidas utilizados, que dificulta a comparação dos resultados e a falta de representatividade das amostras, cuja grande maioria é de etnia branca (também chamados de caucasianos, europeus ou americanos) e feminina. Por fim, a maioria dos estudos utilizou questionários autoaplicáveis, o que aumenta o risco de viés nas respostas.

Além das limitações metodológicas dos estudos incluídos, deve-se considerar também as limitações da presente revisão. Apesar dos esforços feitos para capturar toda a literatura sobre o tema, a literatura cinzenta e dados de dissertações/teses não foram incluídos, uma vez que, geralmente, não são revisados por pares e sua validade interna pode ser difícil de avaliar devido ao relato incompleto dos resultados. Além disso, destaca-se a decisão de não realizar uma metanálise, também pela variabilidade metodológica e estatística dos estudos incluídos.

Sobre os pontos fortes, a maioria dos estudos apresentou baixo risco de viés (metodologia mais robusta), com o cuidado de controlar os fatores de confusão e análise estatística adequada.

8 CONCLUSÃO

O objetivo desta revisão foi identificar estudos que avaliaram e mediram fatores de proteção para TA e CT. Como forma didática, os fatores foram categorizados em familiares, relacionados à imagem corporal, sociais, pessoais/individuais e escolares. Cada grupo foi discutido, dando ênfase ao fator mais citado e fazendo um paralelo com intervenções de prevenção de TA. Foi constatado que alguns dos fatores identificados são explorados direta ou indiretamente em programas de prevenção universal ou seletiva, principalmente a autoestima positiva e os aspectos da imagem corporal.

Tais achados oferecem uma oportunidade importante para o delineamento de projetos de prevenção de TA em nível individual, familiar, escolar e da comunidade, e fortalece a relevância dos fatores de proteção, a fim de que programas de prevenção que já se baseiam nesses fatores continuem e que novos programas possam ser pensados incluindo tais aspectos.

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ANEXOS

ANEXO A – Descrição dos operadores booleanos por base de dados.

Base de dados	Operadores booleanos	Artigos encontrados
Pubmed	(“Eating disorders” OR “eating disorder” OR “ED” OR “feeding disorder” OR “eating pathology” OR “anorexia nervosa” OR “AN” OR “bulimia nervosa” OR “BN” OR “binge eating disorders” OR “binge eating disorder” OR “binge-eating disorder” OR “binge-eating disorders” OR “BED” OR “Disordered Eating behavior” OR “Disordered weight control behavior” OR “Disordered weight control behaviors” OR “disordered eating” OR “dysfunctional eating behaviors” OR “disordered eating practices”) AND (“protective factor” OR “protective factors”) NOT (“review*”)	386
BVS	(“Eating disorder” OR “anorexia nervosa” OR “binge eating disorder” OR “bulimia nervosa” OR “disordered eating” OR “Disordered Eating behavior”) AND (“protective factor” OR “protective factors”)	130
Apa PsyInfo	(“Eating disorders” OR “eating disorder” OR “ED” OR “feeding disorder” OR “eating pathology” OR “anorexia nervosa” OR “AN” OR “bulimia nervosa” OR “BN” OR “binge eating disorders” OR “binge eating disorder” OR “binge-eating disorder” OR “binge-eating disorders” OR “BED” OR “Disordered Eating behavior” OR “Disordered weight control behavior” OR “Disordered weight control behaviors” OR “disordered eating” OR “dysfunctional eating behaviors” OR “disordered eating practices”) AND (“protective factor” OR “protective factors”)	447
Scopus	((“Eating disorder” OR “anorexia nervosa” OR “binge eating disorder” OR “bulimia nervosa” OR “disordered eating*”) AND (“protective factor*”))	214

Web of Science	(‘eating disorder’ OR ‘anorexia nervosa’ OR ‘binge eating disorder’ OR ‘bulimia nervosa’ OR ‘disordered eating’ OR ‘disordered eating behavior’) AND (‘protective factor’ OR ‘protective factors’)	405
Embase	(‘eating disorder’ OR ‘anorexia nervosa’ OR ‘binge eating disorder’ OR ‘bulimia nervosa’ OR ‘disordered eating’ OR ‘disordered eating behavior’) AND (‘protective factor’ OR ‘protective factors’) NOT ‘review*’	222

ANEXO B – PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	

Section and Topic	Item #	Checklist item	Location where item is reported
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	
Study characteristics	17	Cite each included study and present its characteristics.	
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	

Section and Topic	Item #	Checklist item	Location where item is reported
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	
	23b	Discuss any limitations of the evidence included in the review.	
	23c	Discuss any limitations of the review processes used.	
	23d	Discuss implications of the results for practice, policy, and future research.	
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	
Competing interests	26	Declare any competing interests of review authors.	
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	

ANEXO C – NEWCASTLE- OTTAWA QUALITY ASSESMENT SCALE (CASE CONTROL STUDIES)

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE
CASE CONTROL STUDIES

Note: A study can be awarded a maximum of one star for each numbered item within the Selection and Exposure categories. A maximum of two stars can be given for Comparability.

Selection

1) Is the case definition adequate?
   a) yes, with independent validation ✸
   b) yes, eg record linkage or based on self reports
   c) no description

2) Representativeness of the cases
   a) consecutive or obviously representative series of cases ✸
   b) potential for selection biases or not stated

3) Selection of Controls
   a) community controls ✸
   b) hospital controls
   c) no description

4) Definition of Controls
   a) no history of disease (endpoint) ✸
   b) no description of source

Comparability

1) Comparability of cases and controls on the basis of the design or analysis
   a) study controls for _____ (Select the most important factor.) ✸
   b) study controls for any additional factor ✸ (This criteria could be modified to indicate specific control for a second important factor.)

Exposure

1) Ascertainment of exposure
   a) secure record (eg surgical records) ✸
   b) structured interview where blind to case/control status ✸
   c) interview not blinded to case/control status
   d) written self report or medical record only
   e) no description

2) Same method of ascertainment for cases and controls
   a) yes ✸
   b) no

3) Non-Response rate
   a) same rate for both groups ✸
   b) non respondents described
   c) rate different and no designation

ANEXO D – NEWCASTLE- OTTAWA QUALITY ASSESMENT SCALE (COHORT STUDIES)

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE
COHORT STUDIES

Note: A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability

Selection

1) Representativeness of the exposed cohort
   a) truly representative of the average _____ (describe) in the community ✸
   b) somewhat representative of the average _____ in the community ✸
   c) selected group of users eg nurses, volunteers
   d) no description of the derivation of the cohort

2) Selection of the non exposed cohort
   a) drawn from the same community as the exposed cohort ✸
   b) drawn from a different source
   c) no description of the derivation of the non exposed cohort

3) Ascertainment of exposure
   a) secure record (eg surgical records) ✸
   b) structured interview ✸
   c) written self report
   d) no description

4) Demonstration that outcome of interest was not present at start of study
   a) yes ✸
   b) no

Comparability

1) Comparability of cohorts on the basis of the design or analysis
   a) study controls for _____ (select the most important factor) ✸
   b) study controls for any additional factor ✸ (This criteria could be modified to indicate specific control for a second important factor.)

Outcome

1) Assessment of outcome
   a) independent blind assessment ✸
   b) record linkage ✸
   c) self report
   d) no description

2) Was follow-up long enough for outcomes to occur
   a) yes (select an adequate follow up period for outcome of interest) ✸
   b) no

3) Adequacy of follow up of cohorts
   a) complete follow up - all subjects accounted for ✸
   b) subjects lost to follow up unlikely to introduce bias - small number lost - > ____ % (select an adequate %) follow up, or description provided of those lost) ✸
   c) follow up rate < ____% (select an adequate %) and no description of those lost
   d) no statement

ANEXO E – NEWCASTLE- OTTAWA QUALITY ASSESMENT SCALE (CROSS SECTIONAL STUDIES)

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE
(adapted for cross sectional studies)

Selection: (Maximum 5 stars)

1) Representativeness of the sample:
   a) Truly representative of the average in the target population. * (all subjects or random sampling)
   b) Somewhat representative of the average in the target population. * (non-random sampling)
   c) Selected group of users.
   d) No description of the sampling strategy.
2) Sample size:
   a) Justified and satisfactory. *
   b) Not justified.
3) Non-respondents:
   a) Comparability between respondents and non-respondents characteristics is established, and the response rate is satisfactory. *
   b) The response rate is unsatisfactory, or the comparability between respondents and non-respondents is unsatisfactory.
   c) No description of the response rate or the characteristics of the responders and the non-responders.
4) Ascertainment of the exposure (risk factor):
   a) Validated measurement tool. **
   b) Non-validated measurement tool, but the tool is available or described.*
   c) No description of the measurement tool.

Comparability: (Maximum 2 stars)

1) The subjects in different outcome groups are comparable, based on the study design or analysis. Confounding factors are controlled.
   a) The study controls for the most important factor (select one). *
   b) The study control for any additional factor. *

Outcome: (Maximum 3 stars)

1) Assessment of the outcome:
   a) Independent blind assessment. **
   b) Record linkage. **
   c) Self report. *
   d) No description.
2) Statistical test:
   a) The statistical test used to analyze the data is clearly described and appropriate, and the measurement of the association is presented, including confidence intervals and the probability level (p value). *
   b) The statistical test is not appropriate, not described or incomplete.

APÊNDICES

APÊNDICE A – Manuscrito submetido à revista *European Eating Disorders Review.*

Systematic review of protective factors for eating disorders and disordered eating

Objective: Identify protective factors for eating disorders (ED) and disordered eating (DE) in adolescents and adults. **Method**: A systematic literature search was conducted using Pubmed, Virtual Health Library APA PsyInfo, Scopus, Web of Science, and Embase databases up to November 2022. All studies that measured protective factors for ED or DE published in English, Spanish, or Portuguese were eligible. The New Castle Ottawa-Scale Risk of Bias criteria was used to evaluate the quality of the included studies. **Results**: Twenty-eight studies were included. Most of them were cross-sectional studies from USA and Canada and had low risk of bias. Many protective factors were identified and categorized into family, weight, body and body image, social, personal or individual, and school-related factors. **Conclusions**: This review highlights that family ambiance, individual positive factors, and psychological well-being could be potential protective factors to prevent eating pathologies. Findings attempt to include content and strategies based on risk and protective factors for ED prevention programs.

Keywords: Feeding and eating disorders. Disordered eating. Protective factors. Prevention. Systematic review.

Introduction

Eating disorders (ED) are serious psychiatric illnesses, characterized by their chronicity, high mortality rates, presence of psychiatric and clinical comorbidities, and association with lower quality of life (van Hoeken and Hoek, 2020; Khalsa et al., 2017). Studies suggest that 80% of individuals with ED do not receive treatment and of those who do, less than half achieve remission of symptoms (Lock and Le Grange, 2005; Swanson et al., 2011).

The term disordered eating (DE) is widely used to characterize situations in which individuals present ED behaviors and attitudes but without sufficient frequency or

severity to confirm the diagnosis (Graber et al., 1994). In addition to progression to a full picture of ED, DE can predict numerous negative physical, emotional, and social outcomes (Wu et al., 2019).

Due to the lack of assistance, the cost of treatment and the chronicity of these diseases, (van Hoeken and Hoek, 2020; Streatfeild et al., 2021; Ward et al., 2019) prevention interventions have been developed based on understanding the factors that influence their development, such as the protective's ones (Stice et al., 2021). Protective factors are those that can significantly reduce the risk of a negative outcome, but also promote positive outcomes or even interrupt the illness process (Levine and Smolak, 2016; Rutter, 1985). They are able to prevent this process in different ways: a) directly reducing the negative outcome; b) preventing the appearance of a risk factor; c) interacting with a risk factor and interrupting its deleterious effects (Levine and Smolak, 2016).

Protective factors precede the outcome of interest (Shisslak and Crago, 2001). They may vary according to social class, ethnicity, age, and gender (Kazdin et al., 1997) and their effects tend to be cumulative and interrelated (Levine and Smolak, 2016). They can also be considered general (when associated with numerous disorders) or specific (associated with a particular condition) (Shisslak and Crago, 2001). In psychiatry, many factors are non-specific since, when present, they can reduce an individual's chance of developing a variety of disorders (O'Connell et al., 2009).

Regarding risk factors, controversial results have been observed in the literature regarding the effects of interventions focused on reducing it. In their review and meta-analysis, Stice et al., (2021) found that the most successful programs were the selective ones aimed at a subgroup of the population at risk of EDs (e.g., girls/women with some symptoms but who do not meet all the criteria diagnoses for an ED), which promoted reductions of 54% to 77% in the future risk of developing an ED. On the other hand, universal interventions, which aim to reach the entire population, have produced controversial results, regardless of risk level (e.g., school prevention for girls and boys). In a previous meta-analysis by Stice et al., (2007), the authors observed that these interventions generally produced weaker effects, while the systematic review by Dunker et al., (2023) with Latin American countries point to significant reductions in ED symptoms.

Despite the evident positive results of interventions focused on risk factors, additionally, specialists in ED and body image have evaluated in their studies the need to include protective factors. They aim to reduce the incidence of eating disorders in children and adolescents who are engaging in unhealthy behaviors promote healthy values and practices. The researchers empirically suggest the inclusion of protective content as a way to improve the effectiveness of universal interventions, such as positive body image, body acceptance, among others (Levine and Smolak 2016).

The complexity of the treatment and the consequences of ED and DE, as well as the constant advancement of studies in order to improve the design of prevention

programs, justifies the need to systematize and identify the existing protective factors in the scientific literature as a form of content additional instrumentation, mainly universal prevention programs.

Method

Information source and Search strategy

The review was developed using the guideline "Preferred Reporting Items for Systematic Reviews and Meta-Analyses" (PRISMA), following the 27-step checklist. A protocol was previously developed and registered in the PROSPERO International Prospective Register of Systematic Reviews (Registration number: CRD42021260974).

The PECO framework was used, considering adolescents/adults (population), protective factors for eating disorders and disordered eating (exposure), and risk assessment for eating disorders and disordered eating (outcome). There were no comparators in the present study. The following databases were selected for the search: The Medical Literature Library of Medicine On-Line, *Biblioteca Virtual em Saúde* (BVS), Scopus/Elsevier, American Psychological Association (Apa PsychInfo), Web of Scicence /Clarivate and Embase. A search was made for studies published until November 2022 using the combination of terms "Eating disorders", "Disordered eating behavior" and "Protective factors."

Inclusion and exclusion criteria

After identifying all articles, titles and abstracts were selected for inclusion and exclusion by two authors (M.C.F.D. and H.S.A) in a blind and independent way. Any disagreements in the selection of studies or extracted data were resolved through discussion with a third author (K.L.L.D) until a consensus was reached among all authors.

The studies were included if 1) they evaluated protective factors for eating disorders and/or disordered eating; 2) they included population samples with individuals older than 10 years; 3) they used an observational study design (cross-sectional, case-control and cohort); 4) they were published in English, Spanish or Portuguese in peer-reviewed journals.

The studies were excluded if 1) they did not meet the requirements of an observational study design (e.g., clinical trials, review articles, editorials, errata, notes, book chapters,

or no full text available); 2) they did not have descriptive measures statistics related to protective factors; 3) they evaluated the wrong population.

For each eligible study, relevant information was extracted: author, year, country, study design, sample, age; ethnicity; instruments used and identified protective factor.

Risk of bias analysis

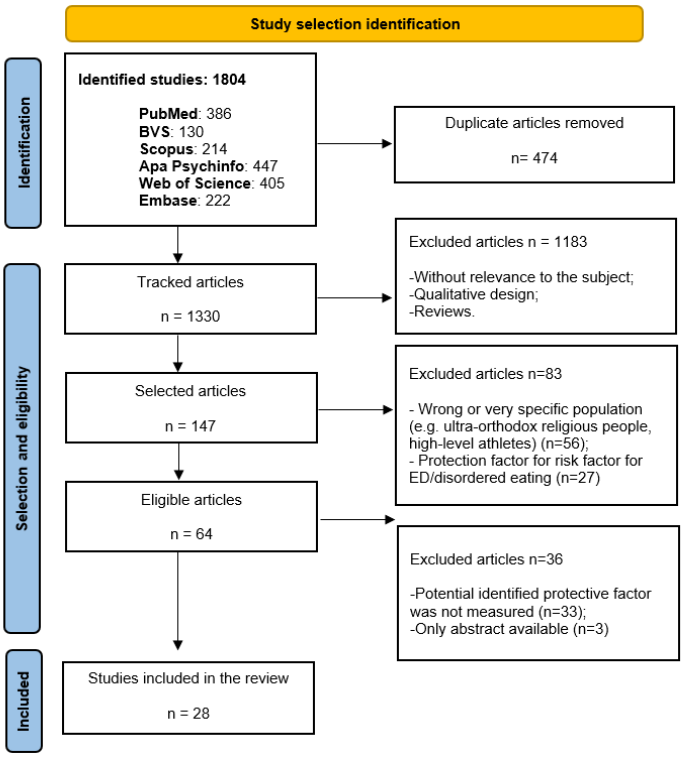
The included articles were evaluated by two authors (M.C.F.D. and H.S.A.) independently using the NewCastle - Ottawa Quality Assessment Scale (Lo et al., 2014). Articles were classified as having low risk of bias if they scored between 7 and 9 stars, with high risk of bias, from 4 to 6 stars, and with very high risk of bias, from 0 to 3 stars. Higher scores represent studies with more robust methodologies. Unresolved issues were discussed with the third author (K.L.L.D).

Results

Study selection

The systematic search resulted in 1804 studies. After removing 474 duplicate studies, 1330 were retrieved, of which 1183 were excluded for not meeting the exclusion criteria. Of the 147 eligible articles, a total of 119 studies were excluded for the following reasons: wrong population (n=56), measuring protection factor for risk factor for ED and DE (n=27), for not measuring protective factors for ED and DE (n=33), and article not available (n=3). 28 articles, described in tables 1, 2 and 3, met all inclusion criteria. The flowchart of the study selection process can be found in Figure 1.

Figure 1: Study selection flowchart



Study characteristics

According to tables 1, 2 and 3, most studies (n=17; 60.7%) were conducted in North American countries (United States and Canada), followed by European (n=8; 28.6 %), Oceanian (n=2; 7.1%), and Asian (n=1; 3.6%) countries.

Most studies (n=19; 67.8%) have a cross-sectional design, followed by cohort (n=7; 25%), case-control (n=1; 3.6%), and mixed design (n =1; 3.6%). To measure protective factors, the articles reported their values in Odds Ratio (OR) and regression coefficient (β), with OR<1 and β<0, suggesting a protective variable.

Sample sizes ranged from 59 to 99,426, totaling 378,266 participants. The age of the individuals ranged from 10 to 55 years, and the majority (n=19; 67.8%) investigated the school and/or adolescent population. Regarding ethnicity, there was a predominance of mostly white/Caucasian samples (n=14; 50%).

Several measures and instruments were used to assess ED symptoms and disordered eating. Most articles (n=15; 53.6%) used validated instruments, namely, Eating Disorder Examination Questionnaire - EDE-Q - (Dunne et al., 2019; Linardon, 2021; Linardon et al., 2020; Rakhkovskaya and Warren, 2014; Romano et al., 2021), Eating Attitude Test -EAT-/Children's Eating Attitudes Test - ChEAT - (Argyrides et al., 2020; Ferreiro et al., 2011; Hill et al., 2013; McVey et al., 2002), The Eating Disorders Inventory - EDI - (Ferreiro et al., 2011; Izydorczyk et al., 2021; Lampis et al., 2013; Solis et al., 2019), Binge Eating Scale - BES - (Thurston et al., 2018), Sick Control One

Fat Food - SCOFF - (Robert et al., 2022), and The Three Factor Eating Questionnaire - TFEQ - (Mazur et al., 2011).

The rest of the articles (n=13; 46.4%) used non-validated measures to assess DE through questions about frequency and/or presence of food restriction (Liou et al., 2011), binge eating (French et al., 2001; Fulkerson et al., 2006; Haines et al., 2010; Hazzard et al., 2021; Micali et al., 2015; Sonneville et al., 2012) and unhealthy weight control behaviors (Berge et al., 2014; Croll et al., 2002; Fonseca et al., 2002; Neumark-Sztainer et al., 2009, 2007; Vander Wal, 2011).

Regarding quality and risk of bias, it is observed that 17 studies (60.7%) were classified as having a low risk of bias (French et al., 2001; Croll et al., 2002; Fulkerson et al., 2006; Neumark-Sztainer et al., 2007; Mazur et al., 2011; Hill et al., 2013; Berge et al., 2014; Rakhkovskaya and Warren, 2014; Micali et al., 2015; Thurston et al., 2018; Dunne et al., 2019; Hazzard et al., 2019; Solis et al., 2019; Linardon et al., 2020; Argyrides et al., 2020; Izydorzyk et al., 2021; Romano et al., 2021). No articles scored at high risk of bias.

Table 1: Characteristics of the cross-sectional studies included

Author, year, country	Age, N	Ethnicity	Instruments/measures used	Identified protective factor	Risk of bias
French et al., 2001; USA	11 to 18 95,395 (50% female)	86% White	Non-validated measures to assess the frequency of binge eating, purging and presence of excessive weight loss	Feeling that life has a purpose (OR 0.45/0.53); positive self-esteem OR 0.55/0.76; positive peer influence (OR 0.55/OR 0.80); positive values (OR 0.56/0.83); personal empowerment (OR 0.75/0.56)	Low
Croll et al., 2002; USA	14 and 18 81,267 (50.4% female)	87% White	Unvalidated measures to assess the presence of unhealthy weight control and binge eating behaviors	Positive self-esteem (OR 0.24/0.38); emtional well-being (OR 0.15/0.32); family connection (OR 0.60/0.75); good grades at school (OR 0.64/0.64); having both parents at home (OR 0.8/0.9); connection with the school (OR 0.69 - only boys)	Low
McVey et al., 2002; Canada	M = 12.9 (SD=0.6) 363 girls	78% White	ChEAT	Giving less importance to physical appearance (β= - 0.16); paternal support (β= - 0.12)	High
Fulkerson et. al, 2006; USA	11 to 18 99,426 (50% female)	86% White	Non-validated measures to assess the frequency of binge eating, purging and presence of excessive weight loss	Family meal (OR 0.58)	Low
Liou et. al, 2011; Taiwan	10 to 18 15,806 (55,4%	No description	Unvalidated measures to assess vomiting and food restriction frequency	Having breakfast daily (OR 0.43); sleeping more than 8 hours/day (OR 0.86)	High

	female)				
Wal, 2011; USA	14 to 16 4,529 (53.2% female)	51.6% White	Unvalidated measures to assess the presence of unhealthy weight control and binge eating behaviors	Eutrophic weight associated with low negative affect (OR 0.44) or body satisfaction (OR 0.27/0.44)	High
Mazur et. al, 2011; Poland	13 605 (50.4% female)	No description	TFEQ-13	Feeling socially accepted (β -0.11); social support (β -0.24), satisfaction with school (β -0.27)	Low
Sonneville et. al, 2012; USA	M=11.8 (SD=1.6) 1,559 girls	93% White	Unvalidated measures to assess the frequency of binge eating and the presence of compensatory behaviors	Body satisfaction (OR 0.15)	High
Hill et. al, 2013; USA	M = 28.6 (SD=9) 258 women	60% White	EAT – 26	Flexibility regarding body image (β - 0.27)	Low
Lampis et. al, 2013; Italy	M = 15.9 (SD = 1.4) 1083 (55% female)	No description	EDI-2	Maternal care (β -0.5); paternal care (β -0.06) and family cohesion (β -0.08)	High

Berge et. al, 2014; USA	M = 14.4 (SD = 2) 2,793 (53.9% female)	29% Black, 19.9% Asian, 18.9% White, 16.9% Hispanic, 3.7% Native American, 11.6% Mixed/Other	Unvalidated measures to assess dieting frequency, presence of unhealthy and extreme behaviors for weight control and binge eating	Good family functioning (OR 0.78 - only girls); parents' knowledge about their daughter (OR 0.76 - girls only)	Low
Rakhkovskaya et. al, 2014; USA	M = 21 (SD = 5.5) 816 women	47% White, 22.5% Asian, 19.3% Hispanic, 11% Black	EDE – Q	Ethnic identity (β -0.12)	Low
Thurston et. al, 2018; USA	M = 19.2 (SD = 1.5) 279 women	48.5% White, 26.9% Black, 10.1% Hispanic, 7.7% Mixed, 5.1% Asian, 1% Hawaiian, 0.3% Native American, 0.3% no answer	BES	Resilience (β -0.20)	Low
Dunne et. al, 2019; USA	M = 25.7 (SD = 8.7) 59 women	73% White	EDE – Q	Mindfulness (β -0.61)	Low
Solis et. al, 2019; Spain	M = 14.6 916 (54.6% female)	No description	EDI – 3	Family meal (β -0.7)	Low
Linardon et. al, 2020; Australia	M = 27.5 (SD = 8.6) 992 (62.4%	81.7% White	EDE – Q	Self-compassion (β -0.3)	Low

	female)				
Argyrides et. al, 2020; Cyprus	M = 15.2 (SD = 1.2) 2605 (59.2% female)	No description	EAT – 26	Body satisfaction (β -0.66)	Low
Izydorzyk et. al, 2021; Poland	M = 14.9 (SD = 1.3) 134 girls	No description	EDI-3	Body satisfaction (β -0.26)	Low
Romano et.al, 2021; USA	M=30 (SD= 10.7) 108 women	90.7% White	EDE-Q	Self-acceptance (β -0.28)	Low

M = mean; SD = standard deviation; OR = Odds Ratio; β = beta coefficient; ChEAT = Children's Eating Attitudes Test; TFEQ-13 = The Three-Factor Eating Questionnaire; EAT-26 = Eating Attitudes Test; EDI = Eating Disorder Inventory; EDE-Q = Eating Disorder Examination Questionnaire; BES = Binge Eating Scale. When two values are presented, the first corresponds to female and the second to male

Table 2: Characteristics of the longitudinal studies included.

Author (year), country	Age, N	Ethnicity	Instruments/measures used	Identified protective factor	Risk of bias

Neumark–Sztainer et. al, 2007; USA	12 to 17 2,380 (55% female)	48.5% White, 19.2% Asian, 19% Black, 5.8% Hispanic, 3.9% Mixed/Other, 3.5% Native American	Non-validated measures to assess the presence of unhealthy weight control, dieting and binge eating behaviors	Family meal (OR 0.9)	Low
Neumark–Sztainer et. al, 2009; USA (45)	12 to 17 412 (56% female)	45% White, 24% Black, 16% Hispanic, 6% Asian, 5% Native American, 4% Mixed/Other	Non-validated measures to assess the presence of unhealthy weight control and binge eating behaviors	Family connection (OR 0.90/0.86); eating regularly (OR 0.84/0.75); body satisfaction (OR 0.94 - girls only); positive atmosphere at family meals (OR 0.61 - girls only); positive self-esteem (OR 0.91 - only girls); healthy weight control behaviors (OR 0.33 - boys only)	High
Haines et. al, 2010; USA	11 to 17 10,540 (57% female)	Approximately 93% White	Unvalidated measures to assess frequency of binge eating, dieting, and compensatory behaviors	Family meal (OR 0.90 - girls only)	High
Ferreiro et. al, 2011; Spain	T1 M=10.8 (SD=0.7) T2 M=12.8 (SD = 0.7) 942 (51% male)	98.5% White	ChEAT and EDI-2	Social support (β = - 0.19 - only boys)	High
Micali et. al, 2015; England	14 6.140 (mixed)	No description	Non-validated measures to assess the presence of binge eating, purging and dieting	Positive self-esteem (OR 0.81 – only boys)	Low

Hazzard et. al, 2019; USA	T1 and T2: 11 to 17 T3: 18 to 26 13,532 (52.4% female)	68.1% White		Non-validated measures to assess the presence of binge eating, compensatory behaviors and food restriction	Connection with parents (OR 0.82 - girls only)	Low
Linardon, 2021; Australia	M = 33.1 (SD=8.4) 1,270 women	78.8% White		EDE-Q	Intuitive eating (OR 0.40) and body satisfaction (OR 0.56)	High

M = mean; SD = standard deviation; OR = Odds Ratio; β = beta coefficient; ChEAT = Children's Eating Attitudes Test; EDI -2 = Eating Disorder Inventory; EDE-Q = Eating Disorder Examination Questionnaire. When two values are presented, the first corresponds to females and the second to males.

Table 3: Characteristics of the included case-control and mixed-design studies

Author (year), country	Design	N	Ethnicity	Instruments/measures used	Identified protective factor	Risk of bias
Fonseca et al., 2002; USA	Case-control	12 to 18 9,042 (51.1% female)	No description	Unvalidated measures for the presence of unhealthy weight control and diet behaviors	Family connection (OR 0.24 - only girls); family communication (OR 0.26 - only girls); perception of parental care (OR 0.21 - only boys); maternal presence (OR 0.57/0.41)	High

Robert et.al, 2022; France	Mixed	M = 55 (SD = 13.5) 25,000 (74.3% female)	No description	SCOFF	Resilience (cross-sectional analysis OR 0.53 and longitudinal analysis OR 0.67)	High

M = mean; SD = standard deviation; OR = Odds Ratio; SCOFF = Sick Control One Fat Food. When two values are presented, the first corresponds to females and the second to males.

The protective factors identified in the studies are grouped into family, body image, social, personal/individual, and school related.

The family protective factors described in the studies were: family meal (OR 0,58–0,9/ β -0,7) (Fulkerson et al., 2006; Neumark-Sztainer et al., 2007; Haines et al., 2010; Solis et al., 2019), family/parent connection (OR O,24 – 0,90) (Croll et al., 2002; Fonseca et al., 2002; Neumark-Sztainer et al., 2009; Hazzard et al., 2019), positive atmosphere at meals (OR 0,61) (Neumark-Sztainer et al., 2009), maternal (β -0,5), paternal care (β -0,06) and family cohesion (β -0,08) (Lampis et al., 2013), family communication (OR 0,26), (Fonseca et al., 2002), maternal presence (OR 0,41 - 0,57) and children's perception of parental care (OR 0,21) (Fonseca et al., 2002), better family functioning (OR 0,78) (Berge et al., 2014), parents' knowledge about their children (OR 0,76) (Berge et al., 2014), having two parents at home (OR 0,8-0,9) (Croll et al., 2002), paternal support (β= - 0,12) (McVey et al., 2002). Regarding protective factors related to body image, studies describe aspects of positive body image (OR 0,15-0,94/ β -0,16 a -0,66) such as body satisfaction (Neumark-Sztainer et al., 2009; Sonneville et al., 2012), body image flexibility (Hill et al., 2013), body appreciation (Argyrides, 2020; Linardon, 2021), body areas satisfaction (Izydorzyk et al., 2021;) and also giving less importance to physical appearance (β= - 0,16) (McVey et al., 2002), being at normal weight and associated with low negative affect or body satisfaction (OR 0,27 – 0,44) (Wal et al., 2011),

Three social protective factors were described in the articles: social support (β -0,19 a -0,24) (Ferreiro et al., 2011; Mazur et al., 2011), positive peer influence (OR 0,55-0,80) (French et al., 2001) and feeling socially accepted (OR β -0,11) (Mazur et al., 2011).

Individual or personal factors identified in the studies were: positive self-esteem (OR 0,24-0,91) (French et al., 2001; Croll et al., 2002; Neumark-Sztainer et al., 2007; Neumark-Sztainer et al., 2009; Micali et al., 2015), frequent meals (OR 0,43-0,84) (Neumark-Sztainer et al., 2009; Liou et al., 2011), resilience (OR 0,56-0,67/β -0,20) (Thurston et al., 2018; Robert et al., 2022), feeling that life has a purpose (OR 0,45-0,53) (French et al., 2001), positive values (OR 0,56-0,83) (French et al., 2001), personal power (OR 0,56-0,75) (French et al., 2011), emotional well-being (OR 0,15-0,32) (Croll et al., 2002), healthy weight control behavior (OR 0,33) (Neumark-Sztainer et al., 2009), sleeping more than 8h/day (OR 0,8) (Liou et al., 2011), ethnic identity (β -0,12) (Rakhkovskaya and Warren, 2014), "*mindfulness"* (β -0,61) (Dunne et al., 2019), intuitive eating (OR 0,4) (Linardon, 2021), self-acceptance (β -0,28) (Romano et al., 2021), and self-compassion (β -0,3 a -0,5) (Linardon et al., 2020).

Finally, factors related specifically to school, such as having good grades (OR 0,64) (Croll et al., 2002), being connected to the school (OR 0,69) (Croll et al., 2002) and satisfied with it (β -0,27) (Mazur et al., 2011) were identified in the studies.

Such factors were inversely associated with inappropriate behaviors for weight control, compensatory behaviors and binge eating.

Discussion

This study aimed to identify protective factors associated with ED and DE. The literature search identified 28 published studies, and the factors found were related to family, body image, social, individual, and school aspects.

The most cited family aspects were family meals and family connection, which had an inverse association with the development of risk behaviors such as binge eating and the use of unhealthy weight control methods.

Family aspects have historically been included in ED treatment interventions, especially for anorexia and bulimia nervosa. The James Lock model, "Family Based Treatment - FBT," well used in clinical practice and considered a reference in treatment around the world, proposes the accountability of parents in the feedback of patients with ED and the performance of therapeutic activities as an incentive to family meals (Hilbert et al., 2017; Lock and Le Grange, 2005).

Langdon-Daly and Serpell, (2017), in their review of protective factors for DE within family systems, identified family meals and positive family functioning as the most cited. The authors, however, reinforce that the family meal factor was only, in fact, protective if there were no conversations about weight and/or body at those times. Other meta-analyses associate quality, such as duration and positive atmosphere during family meals, with the improvement of children's diets (Dallacker et al., 2019) and lower risk of engaging in harmful behaviors, such as alcohol, tobacco, and drug consumption (Robson et al., 2020; Skeer and Ballard, 2013).

In prevention interventions, family aspects are not always included, and the literature presents conflicting findings when the subject concerns the involvement of parents and family members. In the review by Hart et al., (2015), the authors found that even with the need to involve and hold parents accountable, few studies proved effective in preventing body dissatisfaction and ED when parents were included. Although some interventions improve the eating behavior and body satisfaction of children and adolescents, it is not clear whether this outcome is due to the intervention itself or the involvement of parents in it (Hart et al., 2015). Depending on the program and the level of prevention, parents are more or less involved and may be directly responsible for the behaviors worked with participants in the intervention as in the "*Parents Act Now*" (Jacobi et al., 2018) program or only instructed to reinforce the messages as in the *"New Moves"* (Neumark-Sztainer et al., 2010) program.

Concerning body image, this review identified some aspects of positive body image, such as body satisfaction (Neumark-Sztainer et al., 2009; Sonneville et al., 2012), body appreciation (Argyrides et al., 2020; Linardon, 2021), satisfaction with specific areas of the body (Izydorzyk et al., 2020), and flexible body image (Hill et al., 2013) as protective factors for ED and DE.

Body image is a complex and multifaceted construct, and it concerns the perception, beliefs, thoughts, feelings, behaviors, and attitudes of an individual about his body (O'Dea, 2012) and also represents the mental image that a person has of his/her body and its parts (Slade, 1988). Didactically, body image is divided into two dimensions: the attitudinal and the perceptual. The attitudinal dimension refers to beliefs, feelings, and behaviors related to the body and appearance, and the perceptual dimension corresponds to the understanding of body size and shape (Muth and Cash, 1997).

According to the review by Ciao et al., (2014), most successful interventions in preventing ED focus on at least one risk factor for ED (body dissatisfaction, food restriction, and/or internalization of the lean beauty ideal). Even so, there is not always a clear description if it happens through the strengthening of protective factors, such as the increase of some aspect of positive body image. Programs are outlined based on theories, such as Social Cognitive, Cognitive-Behavioral or Behavioral Theory, and Cognitive Dissonance. Positive body image, specifically body appreciation, has been described in systematic reviews as an important protective factor for the development of body dissatisfaction and ED symptoms (Guest et al., 2019; He et al., 2020). The "Body Project" program, which is based on the theory of cognitive dissonance, has been evaluated worldwide and is considered an effective prevention program model for both ED and obesity. The program, which focuses on promoting criticism concerning media messages, and generating discussions about the social pressure of thinness, obtained positive results in increasing body appreciation/acceptance, reducing body dissatisfaction and symptoms of ED (Amaral et al., 2019; Resende et al., 2022; Stice et al., 2015, 2008).

Regarding social protection factors, the social support mentioned in the cross-sectional (Mazur et al., 2011) and longitudinal articles (Ferreiro et al., 2011) of this review stands out. The concept of social support concerns how much one perceives the support of family, friends, and loved ones. It is a broad definition and encompasses both emotional characteristics such as having someone to talk to, close relationships, and the feeling of being loved and cared for and day-to-day practices, such as having someone to rely on to deal with the demands of daily life, commitments, and financial issues (Baiden et al., 2017; Sarason et al., 1987).

Social support is discussed in reviews that investigate its relationship with mental and physical health from its importance in the prevention and recovery from psychiatric diseases and maintenance of a healthy life (Bjørlykhaug et al., 2022; Leigh-Hunt et al., 2017; Wang et al., 2018). Specifically in etiology, ED development and maintenance, it is known that there is a relationship between social support and pathology, but it is not clear how exactly this interaction occurs. It is argued that individuals with low social support realize that they would be more socially accepted if they were thinner, which increases the chance of seeking unhealthy behaviors for weight control. Another discussion points out that, commonly, people with ED have greater social isolation and, therefore, less support (Kim et al., 2023; Limbert, 2010).

Although there is evidence of social support as a protective factor, only one prevention program (Neumark-Sztainer et al., 2010) highlights the stimulation of social support from friends, teachers, and family. The "New Moves" program, when evaluating the impact of support from parents, friends, and teachers during the program, observed a positive relationship between this support with healthy weight control behaviors, such as a reduction in the availability of sugary drinks, consumption of fruits and vegetables, family meal frequency, and the practice of physical activity, reinforcing the importance of including/evaluating programs with social support components (Neumark-Sztainer et al., 2010).

On individual protective factors, positive self-esteem, identified in some cross-sectional (French et al., 2001; Croll et al., 2002) and longitudinal (Neumark-Sztainer et al., 2009; Micali et al., 2015) studies of this review can be highlighted. This concept, defined as the subjective individual evaluation of one's own value as a person (Donnellan et al., 2013), is discussed in other studies that investigate its relationship with health outcomes. In the review by Orth and Robins, (2022), in which the authors investigated the consequences of self-esteem on interpersonal relationships, school, work, physical and mental health, and antisocial behaviors, positive self-esteem appears as a factor that benefited all domains studied and its power, in terms of effect size, was shown to be greater than some drug interventions.

In ED, as in obesity, it is common for patients to have low self-esteem, with consequent impairment in psychosocial functioning and quality of life, in addition to being associated with maintenance of eating conditions and greater difficulty in treatment (Linardon et al., 2019; Stewart et al., 2001). For this reason, since the beginning of prevention program designs, self-esteem is part of the elements of the intervention, being considered an impact outcome in the reduction of ED risk factors (Stice et al., 2021). Approaches focused on self-esteem seem to contribute directly to a positive body image and greater resilience towards unrealistic expectations about the body portrayed by the media (O'Dea, 2012). According to Ciao et al. (2014), some programs that included content related to self-esteem obtained positive results in the prevention of ED symptoms (Neumark-Sztainer et al., 1995; Stewart et al., 2001; Yager and O'Dea, 2010). Considering only data from Latin American countries, Dunker et al. (2023) identified seven programs that evaluated self-esteem, four of which observed significant changes. The meta-analytical review by Stice et al., (2021) points out the positive effect of only one intervention aimed at young elite athletes in Norway, based on the Social Cognitive Theory, which reduced by 100% the chance of girls developing ED in the future (Stice et al., 2021; Tanofsky-Kraff et al., 2014).

Regarding school-related protective factors, good grades, connection, and satisfaction with school were identified in this review. Since the beginning of the studies on ED prevention, the school environment has been the scene of numerous interventions due to its importance and influence on the lives of children and adolescents. Studies show that, according to students, parents, and teachers, the main form of harassment experienced by young people in schools are weight teasing and

bullying (Bucchianeri et al., 2013; Puhl et al., 2015). In addition to its potential impact on the development of ED, weight- and body-directed bullying is associated with numerous negative outcomes such as depression, social isolation, worsening self-esteem, body image and school performance, and suicidal ideation (Bucchianeri et al., 2014; Eisenberg et al., 2006; Greenleaf et al., 2014).

Even though works extensively discuss anti-bullying policies and programs, and teachers and educators proving to be supportive, the implementation of such interventions within schools is still rare (Puhl et al., 2015). According to the World Health Organization (WHO) guidelines, Health Promoting Schools Framework, a school curriculum that provides for anti-bullying policies and a welcoming school environment, with teachers aligned with such policies, directly impact school children's self-esteem, promoting more tolerance and diversity of bodies (O 'Dea, 2012). Some ED prevention programs, through the training and inclusion of teachers and educators in interventions, such as "*The Weight to Eat," "Planet Health,"* and *"Healthy School-Healthy Kids,"* work more effectively with the entire school community (Austin et al., 2012; McVey et al., 2007; Neumark-Sztainer et al., 1995).

The guidelines on the integrated prevention of ED and obesity of the American Academy of Pediatrics and the Academy of Eating Disorders indicate care in the messages given to children and adolescents and propose appropriate approaches for different subjects (family, body image, health professionals, school environment, among others). Regarding the family, the guidelines say that parents should encourage family meals in environments without distractions and avoid talking about weight; there should be models of healthy behaviors at home, both in relation to food and physical activity. Regarding body image, a positive body image is promoted, without focusing on body dissatisfaction as a motivation for food restriction. Regarding health professionals, the guidelines suggest that they broaden their assessment of their patients' diet and physical activity, including self-esteem, social functioning, bias against weight, and risk factors for ED. Finally, in the school environment, there is the indication of a healthy place, including healthy meals, offering opportunities for fun physical activities, adopting a policy to prevent teasing, and providing students and employees with educational classes on body image, media, and prejudice against weight (Golden et al., 2016).

It is noticed that some prevention programs considered effective include certain protective factors identified in this review in order, mainly, to reduce risk factors for ED and DE, especially self-esteem and positive body image. Family, social, and school-related factors are not always explored in ED and DE prevention programs, even though many interventions take place in the school environment.

Limitations and Strengths of the Review

Regarding the limitations, as most of the studies included in this review have a cross-sectional design, it is not possible to infer causality between exposure and outcome, only association. Another important point is the diversity of measurement instruments used, which makes it difficult to compare the results and the lack of representativeness of the samples, the vast majority of which are white (also called Caucasian, European, or American) and female. Finally, most studies used self-administered questionnaires that increase the risk of bias in responses.

In addition to the methodological limitations of the included studies, the limitations of the present review should also be considered. Despite the efforts made to capture all literature on the subject, gray literature, and dissertation/thesis data were not included, since they are usually not peer reviewed, and their internal validity can be difficult to assess due to incomplete reporting of the results. In addition, the decision not to perform a meta-analysis stands out, also due to the methodological and statistical variability of the included studies.

Regarding strengths, most studies showed a low risk of bias (more robust methodology), with care taken to control for confounding factors and adequate statistical analysis.

Conclusion

This review aimed to identify studies that evaluated and measured protective factors for ED and disordered eating. As a didactic form, the factors were categorized into family, body image, social, personal/individual, and school factors. Each group was discussed, emphasizing the most cited factor and making a parallel with ED prevention interventions. It was found that some of the factors identified are explored directly or indirectly in universal or selective prevention programs, especially positive self-esteem and aspects of body image.

Such findings offer an important opportunity for the design of ED prevention projects at the individual, family, school, and community levels and strengthen the relevance of protective factors so that prevention programs that are already based on these factors continue and that new programs can be thought of including such aspects.

Highlights

Eating disorders are serious psychiatric illnesses, characterized by their chronicity and high mortality rates so prevention programs are crucial to interrupt the onset of the disease.

Strengthening protective factors is an important form of prevention once they are able to prevent the process directly reducing the negative outcome, preventing the appearance of a risk factor or interacting with a risk factor and interrupting its deleterious effects.

Family meal, family connection, positive body image, and positive self-esteem were the most cited protective factors in the articles.

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