



Mapping the global research on feeding and eating disorders and autism spectrum disorder (2014–2023): A bibliometric and network analysis[☆]

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ARTICLE INFO

Keywords:

Feeding and eating disorders
Autism spectrum disorder
Scientific publications
PRISMA
Bibliometrics
Network analysis

ABSTRACT

Objective: This study maps the global research landscape on feeding and eating disorders (FEDs) and autism spectrum disorder (ASD).

Method: We used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), bibliometrics, and network analyses to assess 199 peer-reviewed articles from the Web of Science Core Collection, published between 2014 and 2023.

Results: The results show an annual publication increase, especially in the last three years. The Journal of Autism and Developmental Disorders and the European Eating Disorders Review were the main publishers. Anorexia Nervosa, Avoidant Restrictive Food Intake Disorder, food selectivity, mealtime behaviors, parents, children, and females are among the most cited keywords. The main Research Areas were Psychology and Psychiatry, and Pediatrics and Psychology were the most central nodes of the network. The United Kingdom and the United States of America lead in publications and are the most central nodes in the network. King's College London (KCL) and South London & Maudsley NHS Foundation Trust lead the ranking of organizations, with KCL as the most central node in the network.

Conclusions: Our study indicates a growing interest in research related to FEDs and ASD. The global landscape of research produced over the last ten years offers insights for future studies and interinstitutional collaborations.

1. Introduction

Feeding and eating disorders (FEDs) are mental health disorders marked by disruptive eating behaviors that impair physical health or psychosocial functioning. Well-known examples of these disorders are anorexia nervosa (AN), bulimia nervosa (BN), and avoidant restrictive food intake disorder (ARFID). AN is a severe psychiatric disorder marked by a fear of gaining weight, restrictive eating behavior, and body image disturbances. BN refers to recurrent episodes of binge eating that are followed by inappropriate compensatory behaviors to prevent weight gain. For its part, ARFID is marked by disinterest in food or avoidance of certain foods due to, e.g., sensory issues or fear of negative consequences from eating (American Psychiatric Association, 2013).

[☆] Clinical trial registration: Not applicable.

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Despite variations in estimations, the global prevalence of FEDs is considered to be on the rise (Galmiche et al., 2019; Hay et al., 2023). It may have increased from 3.5 % to 7.8 % (for the periods 2000–2006 and 2013–2018) (Galmiche et al., 2019), with lifetime prevalence ranging from 0.74 % to 2.2 % in males and 2.58–8.4 % in females (Hay et al., 2023).

FEDs are often linked with autism spectrum disorder (ASD) (Parsons, 2023), especially in children (Mayes & Zickgraf, 2019; Zickgraf & Mayes, 2019). ASD is a lifelong condition that manifests from childhood and persists throughout the individual's life. It involves deficits in social communication and social interaction, limited areas of interest, and repetitive behavior, and may lead to significant impairments in the individual's daily functioning (American Psychiatric Association, 2013). The global prevalence of ASD also varies, with recent studies reporting it is 0.6 % (Salari et al., 2022) and 0.72 % (Talantseva et al., 2023) of the global population.

Individuals with ASD are at an increased risk of developing FEDs compared to the general population (Adams, 2022). The high prevalence of atypical eating behaviors in ASD individuals is well-documented and usually manifests early in life (Zickgraf & Mayes, 2019). These behaviors are more often observed in ASD children than in other children, and the most common atypical behaviors are limited food preferences and hypersensitivity to food textures (Mayes & Zickgraf, 2019). ASD individuals experience food-related challenges manifested in ways such as ritualistic eating behaviors (Enten-Vissoker, 2021), difficulty with mealtime routines (Margari et al., 2020), and communication deficiencies (Bandini et al., 2017). The interplay between factors like these can contribute to the development or exacerbation of FEDs in ASD populations, impacting their nutritional intake (Esteban-Figuerola et al., 2019), physical and mental health (Enten-Vissoker, 2021), and overall quality of life (Burrell et al., 2023).

This study maps the global research landscape on FEDs and ASD. To do so, we performed a bibliometric and network analysis using peer-reviewed articles records collected in the Web of Science Core Collection (WoS), published between 2014 and 2023. Bibliometrics provides a systematic approach to the examination of academic literature, facilitating, e.g., the identification of research trends, influential studies, and key themes within the extensive body of work on a specific research area (Donthu et al., 2021). In turn, network analysis is a methodology that examines social structures through the use of networks and graph theory, identifying how individuals, groups, or entities are interconnected in a specific research area (Hevey, 2018).

These two approaches complement other types of documentary research, such as systematic reviews and meta-analyses, by offering a more comprehensive understanding of the scientific landscape. For example, while systematic reviews often document relevant research on a specific and narrowly defined topic or question, bibliometrics is an analytical tool commonly used in broader contexts to assess various aspects of research output (Ellegaard, 2018). Some examples of systematic reviews and meta-analyses related to FEDs and ASD are research on associations between ASD and long-term anorexia nervosa (Saure et al., 2020), shape-shifting profiles of anorexia nervosa and ASD using the Wisconsin Card Sorting Test (Westwood, Stahl, et al., 2016), relations between sensory processing difficulties and feeding disorders in young people with ASD (Descrettes-Demey et al., 2023), and feeding disorders and nutrient intake in children with ASD (Sharp et al., 2013).

Recent studies have used bibliometrics and/or network analysis to assess overall or specific aspects related to FEDs (He et al., 2022; Monteleone et al., 2023; Nelson et al., 2022) or ASD (Vasa et al., 2023; Wu et al., 2023; Xiao et al., 2023). However, as far as we know, only two studies used such methods to assess FEDs linked to ASD, but with a focus on symptoms in adults with AN (Kerr-Gaffney et al., 2020), and on disorder-specific symptoms and executive functioning as a possible combined factor in individuals with ASD and other mental health disorders (Dingemans et al., 2022). Therefore, our study is the first to use bibliometrics and network analysis to comprehensively map the global publications related to FEDs linked to ASD. It offers an overview of research in this area over the past decade, providing valuable insights for researchers and practitioners invested in the interplay between these disorders. By identifying key contributors and their research networks, as well as the main topics and relationships within the field, our findings can guide future research and promote collaboration among research organizations.

2. Methods

We used bibliometrics and network analysis to analyze the metadata of research articles on feeding and eating disorders related to

Table 1
Search strategies performed in WoS.

Set	Query	Result
#1	TI=(“Eating Disorder*” OR “Feeding Disorder*” OR “Appetite Disorder*” OR “Eating problem*” OR “Feeding problem*” OR “Anorexia” OR “Avoidant Restrictive Food Intake Disorder” OR “ARFID” OR “Food Neophobia*” OR “Binge-Eating Disorder*” OR “Bulimia Nervosa” OR “Diabulimia” OR “Food Addiction*” OR “Compulsive Eating” OR “Night Eating Syndrome*” OR “Orthorexia” OR “Obsessive Healthy Eating” OR “Pica” OR “Allotriophagy” OR “Geophagia” OR “Rumination Syndrome*” OR “Merycism” OR “Rumination Disorder”) and Article (Document Types)	10,631
#2	AK=(“Eating Disorder*” OR “Feeding Disorder*” OR “Appetite Disorder*” OR “Eating problem*” OR “Feeding problem*” OR “Anorexia” OR “Avoidant Restrictive Food Intake Disorder” OR “ARFID” OR “Food Neophobia*” OR “Binge-Eating Disorder*” OR “Bulimia Nervosa” OR “Diabulimia” OR “Food Addiction*” OR “Compulsive Eating” OR “Night Eating Syndrome*” OR “Orthorexia” OR “Obsessive Healthy Eating” OR “Pica” OR “Allotriophagy” OR “Geophagia” OR “Rumination Syndrome*” OR “Merycism” OR “Rumination Disorder”) and Article (Document Types)	11,655
#3	TI=(“Autism” OR “Autistic*” OR “Kanner* Syndrome” OR “Asperger*” OR “ASD”) and Article (Document Types)	29,963
#4	AK=(“Autism” OR “Autistic*” OR “Kanner* Syndrome” OR “Asperger*” OR “ASD”) and Article (Document Types)	29,205
#5	#1 OR #2	13,755
#6	#3 OR #4	35,176
#7	#5 AND #6	235

autism indexed in WoS. The articles' records were identified using search strategies (or queries) applied in the WoS advanced search mode (Table 1). The timespan covers the last 10 years (2014–01–01 to 2023–12–31), and the searches were performed on February 11, 2024. The queries use the TI and AK field tags, which search for the descriptors in the titles and author keywords, respectively. Queries 1 and 2 include descriptors related to feeding and eating disorders, while 3 and 4 include descriptors of autism. These descriptors were collected in the Medical Subject Headings (MeSH: ncbi.nlm.nih.gov/mesh/68001068 and ncbi.nlm.nih.gov/mesh/2009775). MeSH is a controlled vocabulary thesaurus that indexes PubMed articles. Due to their frequency in WoS, we also used the free text words “ASD”, “eating problem*”, and “feeding problem*”. Using the Boolean operator “OR”, we combine 1 and 2, resulting in query 5, and combine 3 and 4, resulting in query 6. Using the Boolean operator “AND”, we combine 5 and 6 to retrieve only records related to feeding and eating disorders and autism. As a result, 235 articles' records were collected.

We imported the 235 records to the data/text mining software VantagePoint 11.0 for treatment and analysis. We verified the articles' titles, ISI Unique Article Identifiers, and Digital Object Identifiers (DOIs), and removed one duplicated record. Then, we conducted a manual screening of all 234 records for eligibility. The inclusion criteria include articles on feeding and eating disorders related to ASD, encompassing people with diagnosed ASD, people with autistic traits or broad autism phenotype (BAP), and family, relatives, caregivers, clinicians, therapists, etc., of people with ASD or BAP. BAP refers to individuals with milder or subclinical autistic traits but without a formal ASD diagnosis (Bang et al., 2022; Oliveros et al., 2023). The exclusion criteria include articles not related to feeding and eating disorders related to ASD. By reading the titles and/or abstracts of the articles, one author (FM) manually screened all records for eligibility and excluded 37 (15.81 %) that were considered unrelated to the study's subject. A second author (AJ) reviewed an aleatory sample of 20 % of the selected records and all 37 excluded records. The disagreements were resolved in a consensus meeting, where the two authors agreed to reinclude in the analysis two records previously excluded. As a result of the screening process, the final dataset contains 199 articles' records. Fig. 1 summarizes the identification, screening, and inclusion process of articles that followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (Page et al., 2021).

From the records collected in WoS, we used publication years, journals, author keywords, research areas (RAs: a subject categorization scheme of WoS assigned to the indexed articles), author affiliations, countries, Open Researcher and Contributor ID (ORCID), times cited in WoS, and cited references (only references with Digital Object Identifier (DOI)). We cleaned and standardized data on authors' affiliations (from now on, organizations) and authors' keywords (from here on, keywords) using VantagePoint's list cleanup tool, along with general matching rules and manual cleaning. Also, we generated co-occurrence matrices of keywords, RAs, countries, and organizations. These matrices were imported into the network analysis software Gephi 0.10, which was used to build the networks and calculate the metrics of degree centrality (DC), weighted degree centrality (WDC), closeness centrality (CC), betweenness

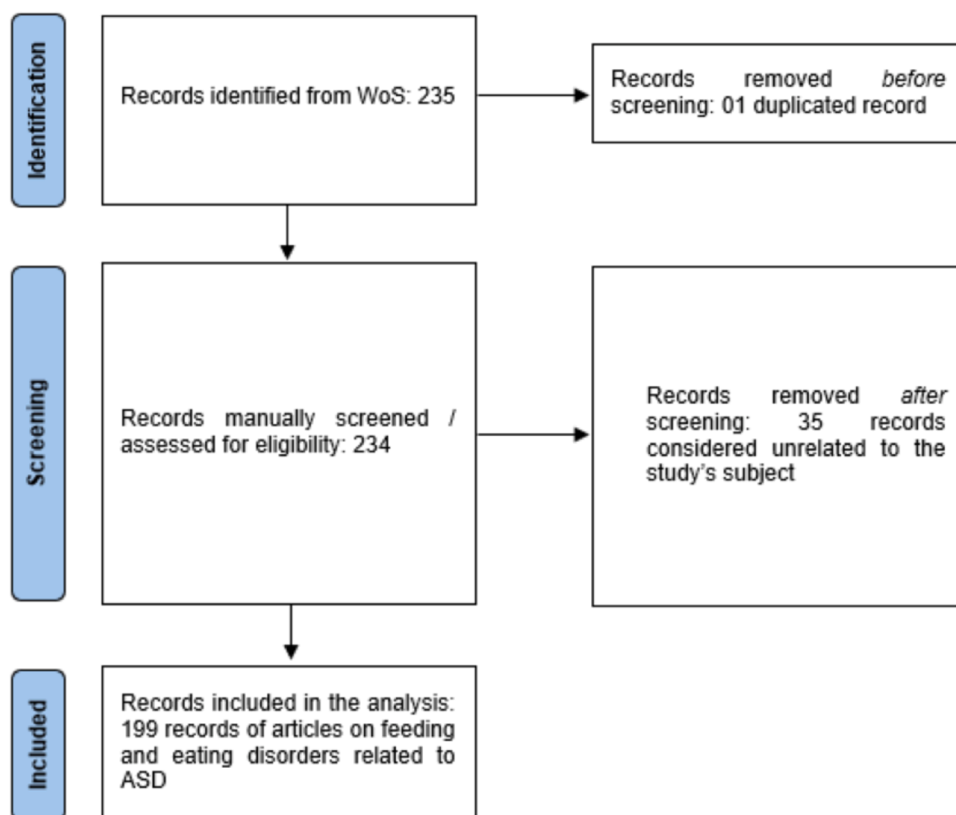


Fig. 1. Identification and selection of articles.

centrality (BC), and eigenvector centrality (EC). DC quantifies the number of direct connections a node possesses within a network, indicating the centrality of nodes based on direct connections. WDC is analogous to DC but incorporates the weight of connections between nodes, reflecting the importance of a node based on link strength. CC assesses how efficiently a node can reach all others in the network, with higher CC values indicating greater centrality in terms of proximity to other nodes. BC gauges the frequency with which a node lies on the shortest paths between other nodes, suggesting influence over information flow. EC evaluates a node's connectivity with central nodes, with higher EC values signifying greater connectivity(Borgatti et al., 2024). The values of all centrality metrics are provided in the [supplementary material](#). The Fruchterman-Reingold algorithm generated the network layouts (Gephi: [github.com/-gephi/gephi/wiki/Fruchterman-Reingold](https://github.com/gephi/gephi/wiki/Fruchterman-Reingold)). GraphPad Prism 8 was used to create the frequency graphs and combine them with the networks produced in Gephi. The 2022 Impact Factor (IF) was collected in Clarivate's Journal Citation Reports 2023 (<http://jcr.clarivate.com/>).

2.1. Limitations of the study

As known, there will always be a trade-off between precision and coverage when setting a search strategy. In this study, analyzing only records containing descriptors of feeding and eating disorders and autism in the titles or author keywords of the articles was a methodological choice to increase precision. This is because, as the descriptors occur in the titles or author keywords of the articles, one can assume that all articles are likely about feeding and eating disorders and autism. That way, we can provide more reliable results than using a more comprehensive search strategy, which, e.g., would look for descriptors in the abstracts of the articles. Also, the use of a sole database may be perceived as a limitation. However, it is observed in many bibliometric and network analysis studies (Birkle et al., 2020). In part, this is due to the challenges involved in merging metadata of different databases, including the number of analysis fields and variations in data presentation and coverage (Moral-Muñoz et al., 2020). Nevertheless, the WoS database is well

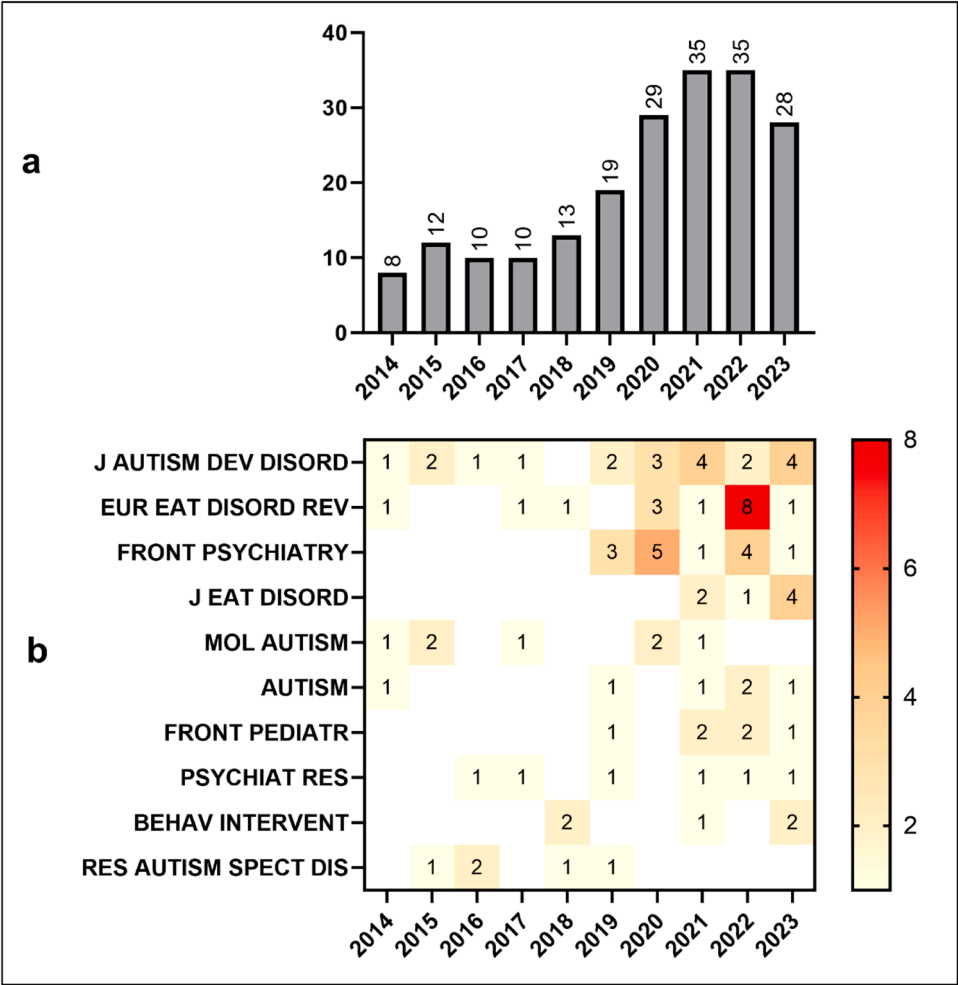


Fig. 2. Publication over time and top ten journals. a, Evolution of annual publications. b, Annual evolution of papers published by the top ten journals (journals with five or more articles).

acknowledged for its wide coverage in all areas of knowledge, the indexing of journals assigned with Impact Factor, the quality and coverage of the metadata, the variety of analysis fields, and for covering many decades of scientific publishing. Specific situations, however, may require the merging of different databases. This is the case, e.g., of studies aiming at investigating a period that is not fully covered in a given database (Mota et al., 2022).

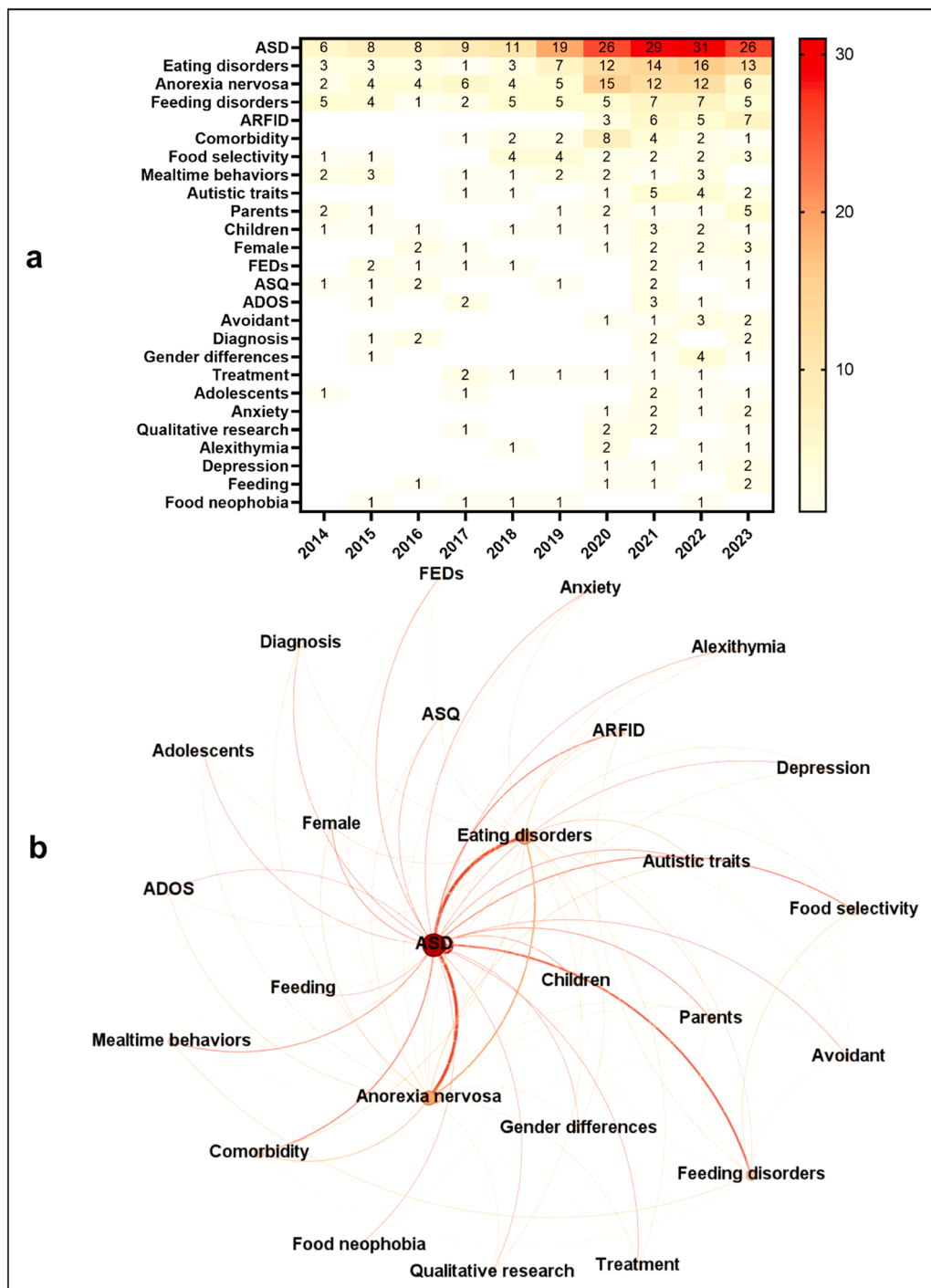


Fig. 3. Authors' keywords. a, Frequency of author's keywords over time. b, Network of authors' keywords. Undirected network comprising 26 nodes and 167 edges. Nodes refer to keywords, and edges refer to the co-occurrence between keywords. The network layout is given by the Fruchterman-Reingold algorithm. Node sizes and colors are given by the WDC, and edges' thickness by the co-occurrence between nodes. a and b, Keywords with a frequency greater than or equal to five.

3. Results

From 2017–2021, the number of articles related to FEDs and ASD increased by 250.00 %. The last year of the period, in turn, shows a 20.00 % decrease in annual publications compared to 2021, the year of the peak. Despite this decrease, the last three years of the series encompass 49.25 % of total publications (Fig. 2a). The Journal of Autism and Developmental Disorders (J AUTISM DEV DISORD), from Springer, amounts to 10.05 % of total articles in the period, 50 % of them published in the last three years. Ranking second in published articles, the European Eating Disorders Review (EUR EAT DISORD REV), from Wiley, totals 8.04 % of the published articles, 50 % of them published in 2022 (Fig. 2b). From 2014–2023, 93 journals published research results on FEDs and ASD, with the top ten encompassing 46.23 % of all papers. The Impact Factor of the top ten journals ranges from 1.0 (Behavioral Interventions:

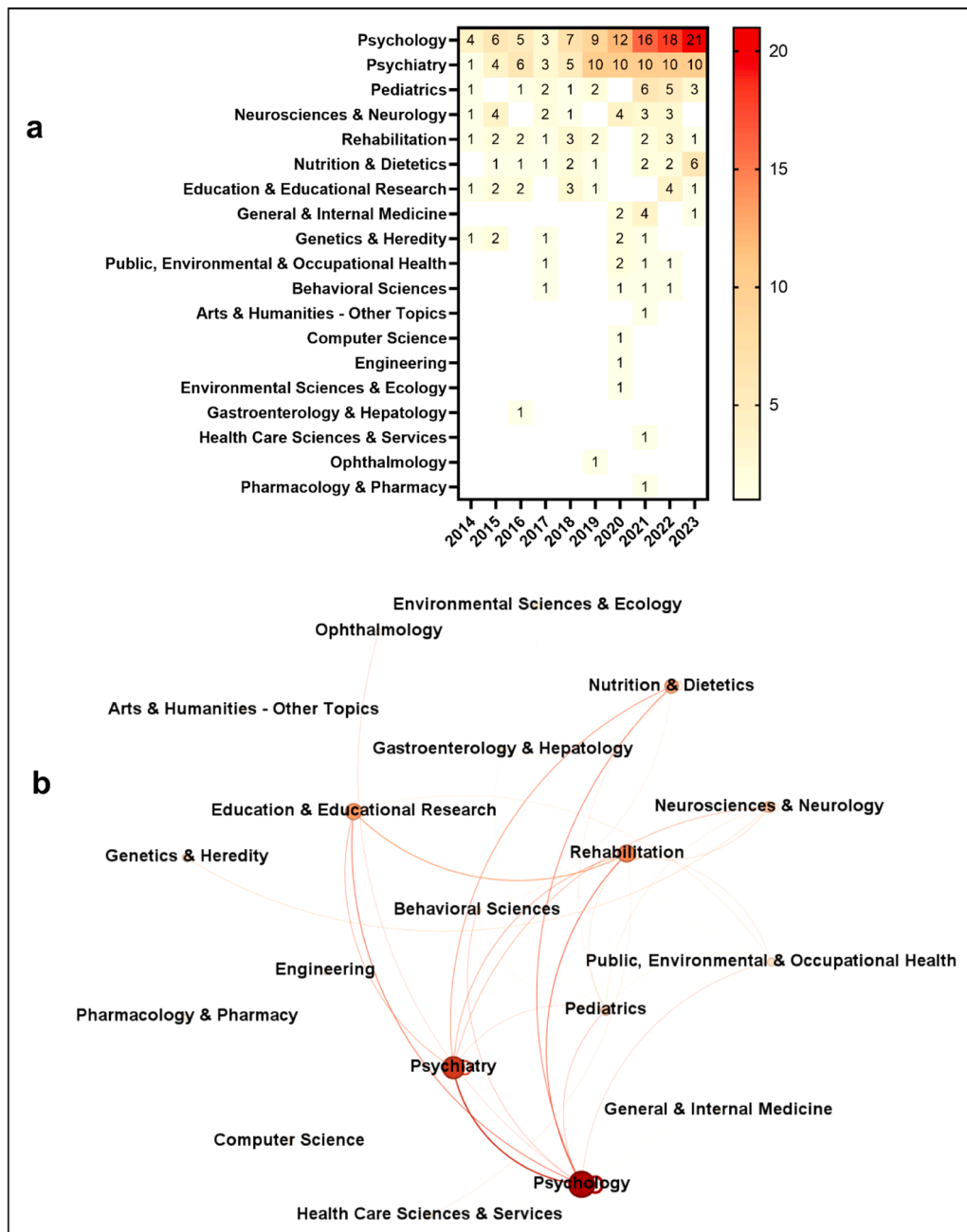


Fig. 4. Research Areas. a, Frequency of RAs over time (all RAs: 19). b, Network of RAs (all RAs). Undirected ego network comprising 19 nodes and 49 edges. Nodes refer to RAs and edges to the co-occurrence between RAs. The network layout is given by the Fruchterman-Reingold algorithm. Node sizes and colors are given by the WDC, and edges' thickness by the co-occurrence between nodes.

BEHAV INTERVENT) to 11.3 (Psychiatry Research: PSYCHIAT RES), with a median of 4.68.

Besides the five most frequent keywords – which are related to the descriptors of the search strategy (Table 1) –, the occurrence over time of comorbidity (20 occurrences), food selectivity (19), mealtime behaviors (15), parents (13), children (12), and female (11)

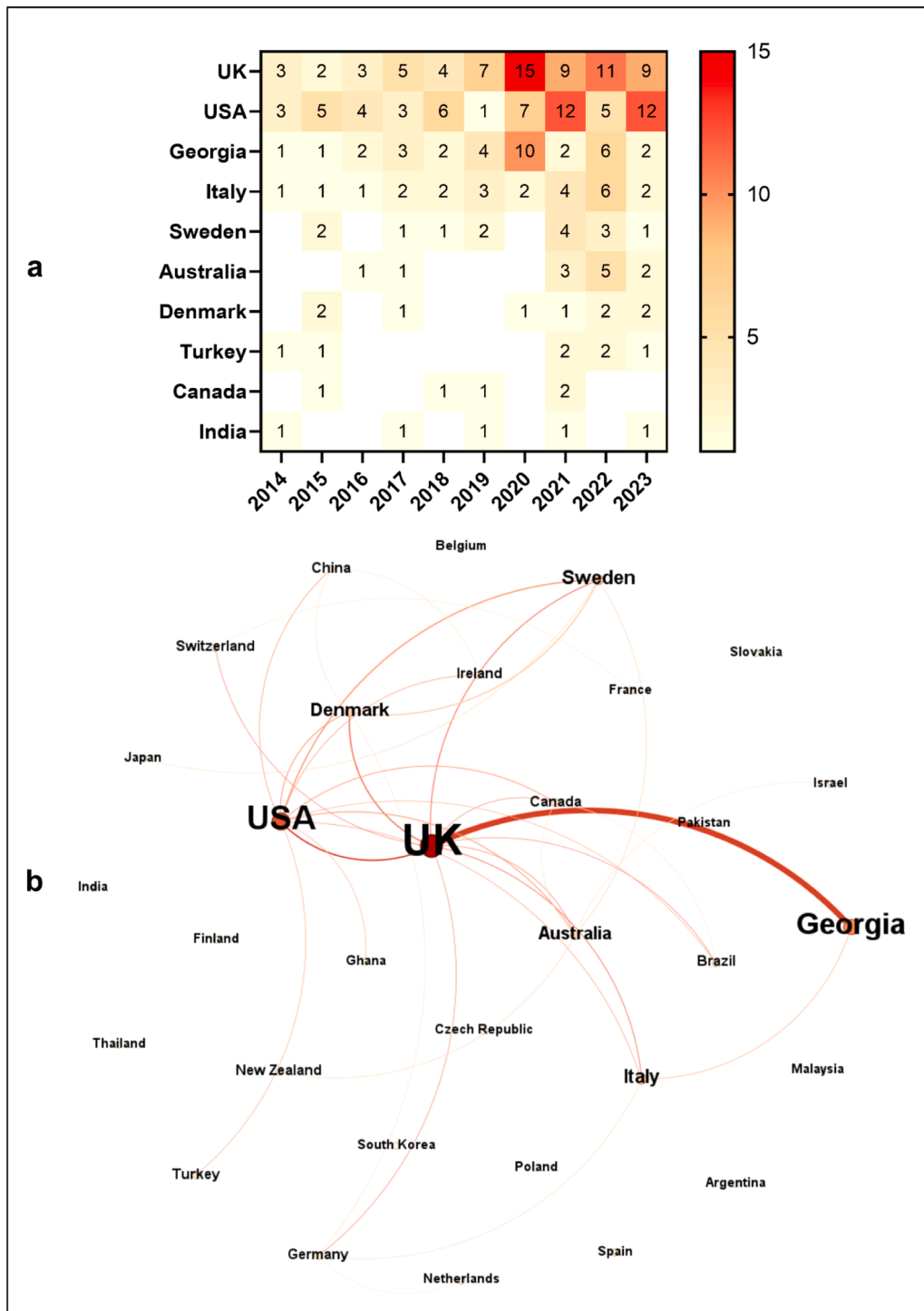


Fig. 5. Countries. a, Frequency of countries' publications over time (countries with a frequency greater than or equal to five). b, Network of countries (all countries: 32) comprising 32 nodes and 34 edges. Nodes refer to countries and edges to the co-occurrence between countries. The network layout is given by the Fruchterman-Reingold algorithm. Node sizes and colors are given by the WDC, and edges' thickness by co-occurrence between nodes.

stands out. Third in the ranking, anorexia nervosa was most cited from 2020 to 2022 (55.71 % of occurrence). Despite occurring only from 2020, ARFID ranks fifth among the most cited keywords with 21 records, encompassing 10.55 % of all papers (Fig. 3a). In the network of keywords (Fig. 3b), all centrality metrics indicate that the three most relevant nodes are, respectively, ASD (DC: 25.0; WDC: 721.0; EC: 1.0; CC: 1.0; and BC: 0.176759), eating disorders (DC: 25.0; WDC: 346.0; EC: 1.0; CC: 1.0; and BC: 0.176759), and anorexia nervosa (DC: 19.0; WDC: 344.0; EC: 0.808687; CC: 0.806452; and BC: 0.073775). Overall, ASD is strongly linked to eating disorders (co-cited 68 times), anorexia nervosa (66), feeding disorders (41), and ARFID (19).

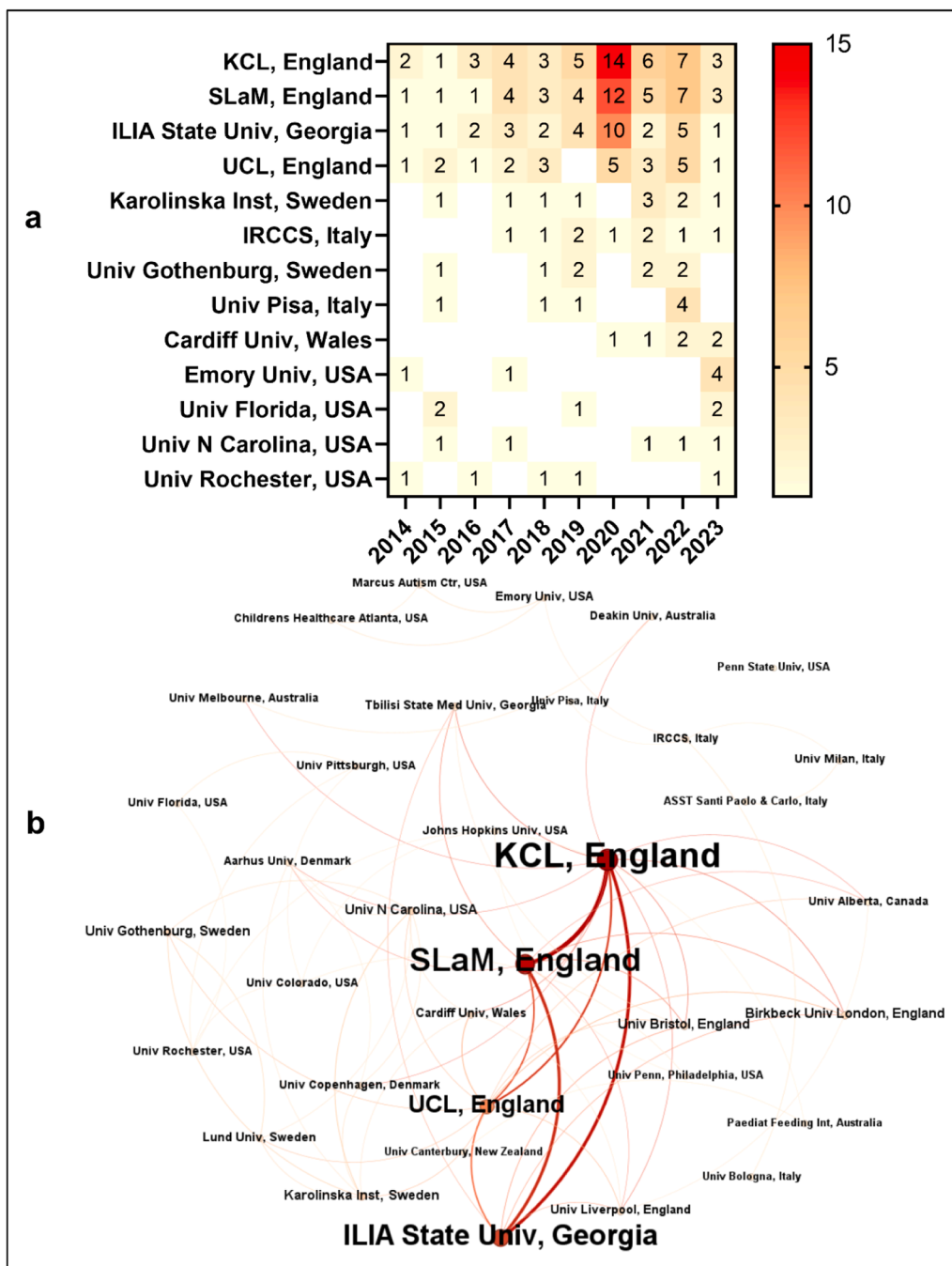


Fig. 6. Organizations. a, Frequency of organizations' publications over time (organizations with a frequency greater than or equal to five). b, Network of organizations (organizations with a frequency greater than or equal to three) comprising 35 nodes and 71 edges. Nodes refer to organizations and edges to the co-occurrence between organizations. The network layout is given by the Fruchterman-Reingold algorithm. Node sizes and colors are given by the WDC, and edges' thickness by co-occurrence between nodes.

Psychology is the most frequent RA to which WoS assigned the articles. In the analyzed period, this RA totaled 101 records – being present in 50.75 % of the papers – and its frequency increased annually from 2018 onwards. Ranking second, Psychiatry has 69 (34.67 %) records, and its occurrence is steady from 2019 onwards, with 10 records per year (Fig. 4a). In turn, Pediatrics is the most central node of the network of RAs according to its DC (8.0), EC (1.0), and BC (0.127887), ranking second in CC (0.722222). Psychology is the most relevant RA considering its DC (8.0) and WDC (122.0), and the second according to its EC (0.997971) and BC (0.121895). Psychiatry is among the most relevant RAs only due to WDC (96.0), the second highest in the network. Computer Science and Engineering, despite having only one record each, were the most important RAs in CC (1.0). Rehabilitation was second in DC (7.0), and third in WDC (68.0) and EC (0.920759). The two most frequent co-occurrences were between Psychology and Psychiatry (assigned together 22 times), and Psychology and Rehabilitation (11) (Fig. 4b).

Researchers based in organizations from the United Kingdom (UK) were the most frequent authors publishing research results on FEDs and ASD. Comprising 34.17 % (68 records) of all publications, the UK ranks first among the top countries. Its annual publication peaked in 2020 (15), publishing 40.00 % less in 2023. With 58 articles (29.15 % of all publications), the United States of America (USA) ranks second. Fifty percent of its articles were published between 2021 and 2023. Third in the rank, Georgia's publications (33; 16.58 %) also reached its highest number in 2020 with 10 articles. It ended 2023 with two articles, a decrease of 80 % compared with

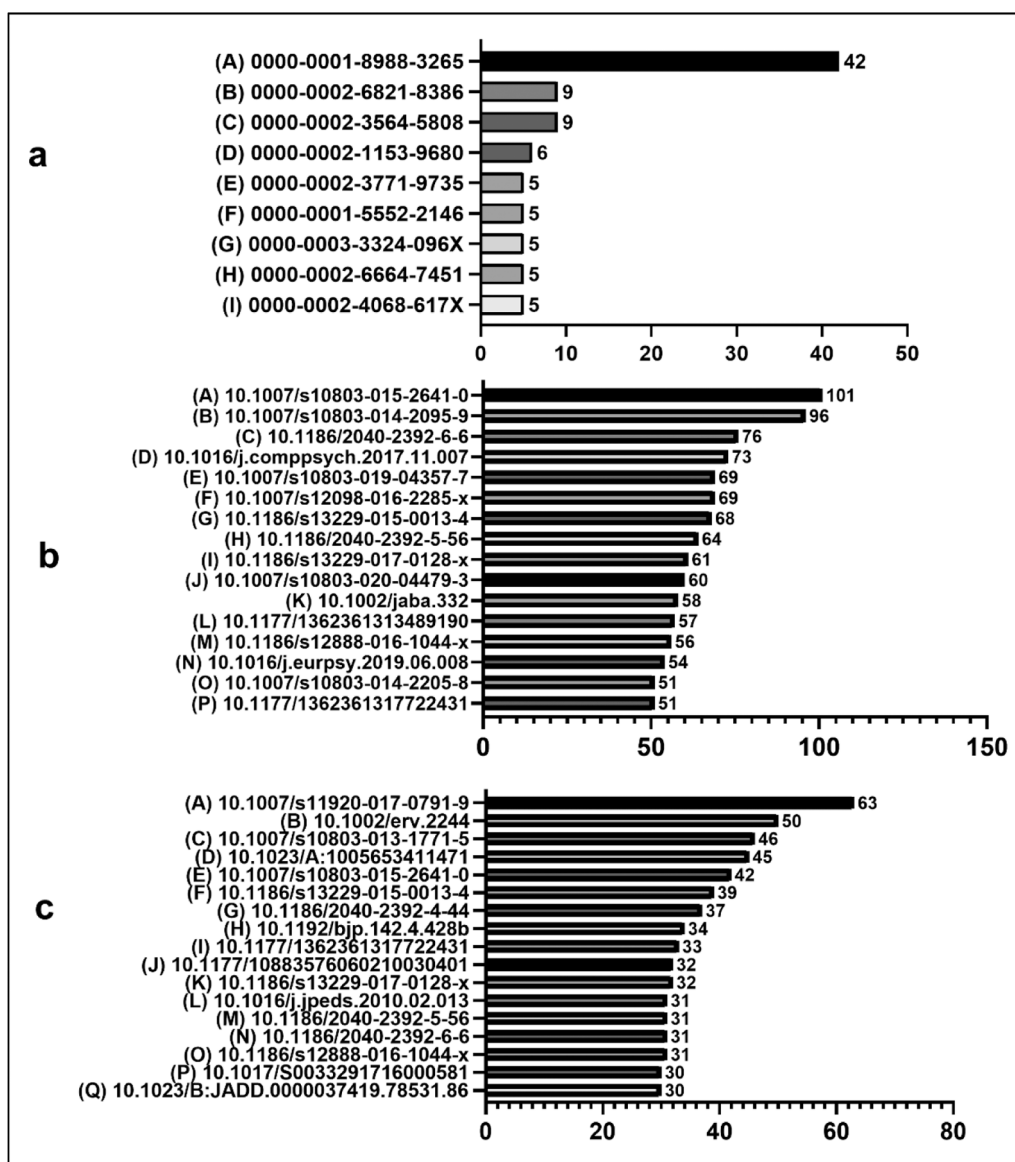


Fig. 7. Authors, articles cited in WoS, and cited references. a, Top authors (with five or more published articles) identified by their ORCIDs. b, Articles cited in WoS (with 50 or more citations) identified by their DOIs. c, References cited by the authors (references with DOI comprising 30 or more citations) identified by their DOIs.

the peak year (Fig. 5a). The USA is the most central country in the network of countries according to its DC (13.0), and EC (1.0), ranking second in WDC (172.0), CC (0.655171), and BC (0.143369). In turn, the UK leads in WDC (244.0), CC (0.678571), and BC (0.147670), and is placed second in DC (12.0), EC (0.984616). Australia is third in DC (8.0), EC (0.636065), CC (0.558824), and BC (0.076703). For its part, Georgia has a high centrality value only in WDC (134.0), the network's third highest. The two most frequent collaborations were between researchers based in the UK and Georgia (33 articles published together), and the UK and the USA (6) (Fig. 5b).

Thirteen organizations have published five or more papers between 2014 and 2023. Of those, 23.08 % are English, and 30.77 % are North American. With 48 papers (corresponding to 24.12 % of all publications), King's College London (KCL) leads the ranking, followed by South London & Maudsley NHS Foundation Trust (SLaM) (41; 20.60 %). Both organizations are English and peaked in number of articles in 2020 (14 and 12 records, respectively), having decreased their production to three papers each in the last year of the period. ILIA State University, from Georgia, ranks third with 31 (15.58 %) papers (Fig. 6a). The network analysis shows KCL as the most central node in the network of organizations according to all centrality metrics (DC: 13.0; WDC: 214.0; CC: 0.809524; BC: 0.086156) but EC (0.981150), where it holds the second highest value. University College London (UCL), England, ranks first in EC (1.0), and second in DC (12.0), CC (0.772727), and BC (0.065657). For its part, SLaM is second in WDC (190.0), and third in DC (9.0) and EC (0.825220). ILIA State University is among the organizations holding the three highest centrality values only in WDC (158.0), ranking third. The most frequent collaborations are between KCL and SLaM (41 co-authored articles), KCL and ILIA State University (31), and SLaM and ILIA State University (29) (Fig. 6b).

Among the most publishing researchers of the last ten years, author A (ORCID: 0000-0001-8988-3265) from KCL stands out with 21.11 % of all articles (Fig. 7a). Up to the date of data collection, 14 articles comprising our dataset had received 50 or more citations in WoS. The three most cited papers were A (DOI: 10.1007/s10803-015-2641-0) (101 citations), B (10.1007/s10803-014-2095-9) (96), and C (10.1186/2040-2392-6-6) (76) (Fig. 7b). The articles A and C were published by author A. Of the 4283 references with a DOI cited by the articles comprising our dataset, 17 were cited 30 times or more. The three most cited references were A (10.1007/s11920-017-0791-9) (63 citations), B (10.1002/erv.2244) (50), and C (10.1007/s10803-013-1771-5) (46) (Fig. 7c). The most cited reference was also authored by author A.

4. Discussion

The increasing scholarly focus on the nexus between FEDs and ASD, evidenced by a significant rise in publications over the examined decade, highlights a growing awareness of the complex interplay between these conditions. This uptrend in research output, particularly concentrated within key journals like the *J AUTISM DEV DISORD* and the *EUR EAT DISORD REV*, underscores the interdisciplinary interest in exploring the overlaps between psychiatric, psychological, and pediatric domains concerning FEDs and ASD.

Although it ranks second, the annual number of papers published by *EUR EAT DISORD REV* over the last ten years was relatively low (ranging from one to three papers) (Fig. 2a). However, its eight articles in 2022 represent the largest number published by a journal in a single year and are due to a special issue on FED and ASD (Wiley: onlinelibrary.wiley.com/toc/10990968/2022/30/5). Also, it is worth noting that this special issue was edited by author A, who published about 21 % of the 199 articles assessed in this study.

When compared to 2019, the high number of annual publications between 2020 and 2023 makes us wonder if this increase may correspond to the coronavirus disease 2019 (COVID-19) pandemic, prompting new studies exploring possible relationships between this disease, FEDs, and ASD. However, when searching for the descriptor COVID-19 (and its variants) in the metadata of the publications analyzed in this study (by merging the lists of title, abstract, and author keywords), we found only three articles. One of them deals with a case of COVID-19 phobia in a child with undiagnosed ASD (Sakamoto et al., 2021). Another article explores a case of hypokalemia-induced rhabdomyolysis in an ASD Child whose routine was affected by the COVID-19 Pandemic, leading him to develop ARFID (Cao et al., 2022). The third study explores support for caregivers of people with FEDs and ASD, considering the impact of the coronavirus lockdown in the UK (Kinnaird et al., 2021).

The keywords AN and ARFID stand out in the number of citations over time. Individuals with AN often show high levels of autistic traits or are diagnosed with ASD (Leppanen et al., 2022a). The same is true for individuals with ARFID (Koomar et al., 2021; Yule et al., 2021), since sensory sensitivities, a core feature of ASD, play a crucial role in the manifestation of ARFID-like symptoms in this population (Bourne et al., 2022). Also, the results depicted the relevance of keywords that were not part of the query's descriptors. This suggests that, during the last ten years, researchers were paying attention to aspects of FEDs and ASD concerning, e.g., food selectivity, mealtime behaviors, parents, children, and females.

Food selectivity-related keywords comprise 9.55 % of the total papers. This disorder is often associated with ASD, reflecting challenges in dietary variety due to sensory sensitivities and rigid behaviors (Bourne et al., 2022). Recent examples of articles assessed in this study involving food selectivity and ASD include an analysis of treatment response in parent training for ASD children with moderate food selectivity (Burrell et al., 2023), and an assessment of contingency modeling to boost nutritious food intake in ASD children with food selectivity (Flanagan et al., 2021). In turn, mealtime behaviors refer to the complex interactions and routines surrounding eating, including difficulties with food acceptance, disruptive behavior, and adherence to specific eating environments (Sharp et al., 2013). About 7 % of all articles include keywords related to mealtime behaviors. Some examples of recent studies comprising our dataset that relate this topic and ASD include an assessment of applied behavior analysis on mealtime behaviors in ASD individuals (Sarcia, 2020), and a case report on redistribution procedures for regular texture bites in clinical pediatric feeding cases in home settings in Australia (Taylor, 2022).

Articles with keywords related to parents of people with ASD, ASD children, and ASD female corresponds to, respectively, 6.53 %, 6.03 %, and 5.53 % of total papers. The role of the parents of ASD people in their treatment and care is usually considered of great importance (Burrell et al., 2023). Also, it is expected that children with ASD are more likely to develop FEDs than typical children (Mayes & Zickgraf, 2019), and that ASD diagnostics in females are less often and later in life than in males (Parsons, 2023). Examples in our dataset involving parents of ASD individuals involve an evaluation of sleep and eating issues in ASD children and their link to parent depression and anxiety risk (Guller & Yaylaci, 2022), and an analysis of social and sensory differences in ASD and non-ASD individuals with anorexia nervosa and their parents using interpretative phenomenological analysis (Nimbley et al., 2023). On ASD children and ASD females, recent examples are, respectively, a national cross-sectional study on the prevalence of food neophobia in Brazilian children with ASD (de Almeida et al., 2022), and an estimation of ASD females who develop anorexia nervosa (McCrossin, 2023).

In the network of RAs, the relevance of Pediatrics was expected once ASD children often suffer from FEDs (Mayes & Zickgraf, 2019). Psychiatry was the second most frequent RA. However, its presence among the most central RAs only due to WDC was a surprise. This is because a high WDC suggests significant connections to other nodes in a network (Opsahl et al., 2010).

The UK and the USA lead in the number of publications related to FEDs and ASD. They were also the most central nodes of the network of countries. The former ranked first in WDC, CC, and BC. Thus, it is the most influential in terms of the strength of its connections to other countries (WDC), its proximity to other countries (CC), and its intermediacy in connecting other countries (BC) in the network. For its part, the USA leads in DC and EC, meaning that it is the most connected to other countries (DC), and its influence in the network extends to other well-connected countries (EC). Recent collaborative research published together by researchers from these two countries includes, e.g., a study on Intuitive Eating using ASD as a case example and suggesting ways to extend research and practice to this population (Longhurst & Burnette, 2023), an investigation of pica behaviors in childhood using data from the Avon Longitudinal Study of Parents and Children (ALSPAC) (Papini et al., 2024), and an examination of autistic traits and social attention reductions in ASD adults with AN (Kerr-Gaffney et al., 2021).

KCL and SLaM lead the ranking of the most productive organizations working on research subjects related to FEDs and ASD. KCL was also the most central node of the network of organizations, leading in DC, WDC, CC, and BC. Thus, it has the highest number (DC) and the strongest (WDC) connections, the shortest average distance to reach other organizations (CC), and can be viewed as a bridge between other organizations (BC) in the network. SLaM was second in WDC and third in DC and EC. Considering it plays a relevant role in producing knowledge on FEDs and ASD, we expected SLaM to be more collaborative with other organizations, exerting a more central role in the network. UCL, also from England, ranks first in EC, meaning that it is highly connected to other influential organizations, which amplifies its overall importance within the network.

Most collaborations were established between KCL and SLaM, KCL and ILIA State University, and SLaM and ILIA State University. All articles of SLaM (41) and ILIA State University (31) were published in collaboration with KCL, corresponding to 85.42 % and 64.58 % of KCL's papers, respectively. Thus, the data suggest that they form a strong cluster of interinstitutional research collaboration. However, a more detailed analysis of the data shows that author A is often affiliated at the same time with KCL, SLaM, and ILIA State University. Of the 41 articles assigned to SLaM, only five (Carter Leno et al., 2022; Huke et al., 2014; Nazar et al., 2018; Stewart et al., 2017; Watts et al., 2023) were not authored by author A. Also, all 33 articles assigned to Georgia were authored by author A, comprising the 31 articles of ILIA State University and the three articles (Leppanen et al., 2022b; Li et al., 2022, 2023) of Tbilisi State Medical University, the only other organization from Georgia. In one of Georgia's articles, author A reports institutional affiliation with both ILIA State University and Tbilisi State Medical University, besides KCL and SLaM (Leppanen et al., 2022b). Therefore, the results presented in this study regarding inter-institutional collaboration between KCL and ILIA State University, as well as inter-country collaboration between the UK and Georgia, are misleading. This is due to the weight of Author A in the total number of publications (about 21 %) and her multiple institutional affiliations (KCL, SLaM, ILIA State University, Tbilisi State Medical University), including two different countries (UK, Georgia). Despite her weight in KCL's and SLaM's publications, her papers are often co-authored with many other researchers from these organizations. Thus, the results regarding KCL and SLaM are a good proxy of inter-institutional collaboration between these two organizations.

According to her ORCID biography, author A is currently a clinical psychologist consultant for the Eating Disorder National Clinical Service (SLaM), a Professor of Psychology of eating disorders (KCL), and a visiting Professor of Clinical Psychology in ILIA State University and Tbilisi State Medical University. She has published about 300 articles. Overall, her works focus on research related to cognitive processing and emotion in eating disorders and female ASD (ORCID: orcid.org/0000-0001-8988-3265). As seen, this author published the first and the third most cited papers in WoS related to FEDs and ASD. The most cited is a systematic review and meta-analysis about the use of Autism-Spectrum Quotient (AQ or AQ-10 in its abbreviated version) to measure autistic traits in AN (Westwood, Eisler, et al., 2016), and the third most cited uses Autism Diagnostic Observation Schedule (ADOS) to assess women with eating disorders and suspected ASD due to social and flexibility difficulties (Mandy & Tchanturia, 2015). Author A also published the most cited reference among all references (with a DOI) cited by the authors of the papers comprising our dataset. This paper is a literature review on the relationships between ASD and AN (Westwood & Tchanturia, 2017). Due to their relevance, suggested by their citation numbers, these highly cited papers – both in WoS and in the authors' cited references – are perhaps some of the most influencing academic references on FED and ASD worldwide.

KCL and SLaM are renowned for their research contributions in various fields, including FEDs and ASD. KCL is one of the most prestigious universities in the UK and a world-leading research organization (KCL: <https://www.kcl.ac.uk/about>), and SLaM is the largest mental health trust in the UK, offering a variety of mental health services to the UK's populations (SLaM: <https://slam.nhs.uk/who-we-are>). Many research centers, departments, and services of both KCL and SLaM may be involved with research related to FEDs and/or ASD. Examples are the KCL's Institute of Psychiatry, Psychology & Neuroscience (IoPPN), and the SLaM's Maudsley Centre for

Child and Adolescent Eating Disorders (MCCAED). The IoPPN is a leading center for mental health and neuroscience research dedicated to understanding, preventing, and treating mental health and neurological disorders (<https://www.kcl.ac.uk/ioppn>). For its part, the MCCAED specializes in providing comprehensive assessment, treatment, and support for children and adolescents dealing with eating disorders, integrating research and clinical practice to advance the field (<https://mccaed.slam.nhs.uk/>).

5. Conclusion

Globally, the rising prevalence of FEDs related to ASD underscores the importance of enhancing scientific comprehension and public awareness of these intricate conditions, which contribute to the global burden of mental health disorders. Through bibliometrics and network analysis, our study assessed 199 records of peer-reviewed articles on FEDs and ASD published between 2014 and 2023, providing a comprehensive overview of global research conducted in the past decade.

Our findings shed light on main research themes, prominent researchers and organizations, and collaborative dynamics among organizations invested in this subject. It also underscores the critical role of interdisciplinary collaboration and the contributions of specialized centers such as KCL and SLaM in advancing our understanding of FEDs and ASD. The centrality of these institutions within the research network not only emphasizes their substantial contributions but also the value of integrating clinical practice with academic research. Such synergies are essential for developing nuanced, effective treatments that consider the complex interplay of sensory sensitivities and dietary preferences characteristic of individuals at the intersection of these conditions.

Furthermore, the study highlights the necessity for ongoing research into the nuanced aspects of FEDs and ASD, including the exploration of gender differences, the impact of sensory sensitivities, and the critical role of caregivers. Addressing these areas requires a comprehensive approach that transcends traditional disciplinary boundaries, aiming to develop interventions that are as multifaceted as the conditions themselves. By continuing to explore these areas, future research can provide a more holistic understanding of FEDs and ASD, ultimately contributing to improved support and outcomes for individuals affected by these conditions. We hope our findings may contribute to fostering future research initiatives and promote collaborative endeavors among research organizations.

Ethics approval statement

Not applicable. The study uses metadata from scientific articles collected in the Web of Science Core Collection database.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CRediT authorship contribution statement

Fabio Batista Mota: Writing – review & editing, Writing – original draft, Supervision, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Anatália Leal Jatobá Neta:** Writing – review & editing, Investigation, Conceptualization. **Bernardo Pereira Cabral:** Writing – review & editing, Writing – original draft, Investigation.

Declaration of Competing Interest

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

Acknowledgements

Not applicable.

Patient consent statement

Not applicable.

Permission to reproduce material from other sources

Not applicable.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.rasd.2024.102497](https://doi.org/10.1016/j.rasd.2024.102497).

Data Availability

Data will be made available on request.

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