

This is a repository copy of *Experiences of women who self-report Breast Implant Illness* (*BII*): a qualitative evidence synthesis.

White Rose Research Online URL for this paper: <u>https://eprints.whiterose.ac.uk/id/eprint/227195/</u>

Version: Published Version

Article:

Kent, C.A., Holch, P., Gough, B. et al. (2 more authors) (2025) Experiences of women who self-report Breast Implant Illness (BII): a qualitative evidence synthesis. Health Psychology Review. ISSN 1743-7199

https://doi.org/10.1080/17437199.2025.2503743

Reuse

This article is distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND) licence. This licence only allows you to download this work and share it with others as long as you credit the authors, but you can't change the article in any way or use it commercially. More information and the full terms of the licence here: https://creativecommons.org/licenses/

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk https://eprints.whiterose.ac.uk/



Health Psychology Review

ISSN: 1743-7199 (Print) 1743-7202 (Online) Journal homepage: www.tandfonline.com/journals/rhpr20

Experiences of women who self-report Breast Implant Illness (BII): a qualitative evidence synthesis

Christina April Kent, Patricia Holch, Brendan Gough, Lynda Wyld & Georgina L. Jones

To cite this article: Christina April Kent, Patricia Holch, Brendan Gough, Lynda Wyld & Georgina L. Jones (19 May 2025): Experiences of women who self-report Breast Implant Illness (BII): a qualitative evidence synthesis, Health Psychology Review, DOI: 10.1080/17437199.2025.2503743

To link to this article: https://doi.org/10.1080/17437199.2025.2503743

© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



View supplementary material 🖸

£		۵	
H	Ŧ	Ŧ	1
Ľ	1	1	J

Published online: 19 May 2025.



Submit your article to this journal 🕝

Article views: 88



View related articles 🗹

View Crossmark data 🗹

REVIEW ARTICLE

OPEN ACCESS Check for updates

Routledge

Taylor & Francis Group

Experiences of women who self-report Breast Implant Illness (BII): a qualitative evidence synthesis

Christina April Kent^a, Patricia Holch^a, Brendan Gough^a, Lynda Wyld^b and Georgina L. Jones^a

^aSchool of Humanities and Social Sciences, Leeds Beckett University, Leeds, UK; ^bDepartment of Clinical Medicine, University of Sheffield, Sheffield, UK

ABSTRACT

It has been postulated, but not empirically validated, that breast implants may cause a range of systemic symptoms, recently aggregated into a syndrome termed Breast Implant Illness (BII). Research literature has focused on exploring these symptoms and possible aetiologies, however, it has not been formally recognised as a medical condition. The psychosocial experience of women who self-report BII is not well understood. This review aimed to synthesise findings from qualitative literature relating to BII. A systematic review and evidence synthesis of gualitative research was conducted and analysed using thematic synthesis. Searches were conducted in MEDLINE, CINHAL, Scopus, PsycINFO and secondary sources. Findings from nine studies were included, representing the experiences of women who had breast implants for reconstructive and cosmetic reasons. Four themes were identified: the decline in women's psychosocial wellbeing, the search for answers to their ill health, a lack of solicitude from healthcare professionals and industry, and surgery viewed as both the problem and solution. Women reported an array of distressing challenges that affected their overall quality of life. Findings highlight the need for psychosocial support and enhancing the integration of patiententered perspectives. Further research is warranted to understand how these women can be better supported.

ARTICLE HISTORY

Received 21 May 2024 Accepted 5 May 2025

KEYWORDS

Breast implant illness; breast implants; thematic synthesis; qualitative evidence synthesis; quality of life; systematic review

1. Introduction

Breast implants are prosthetic devices used to surgically enhance or reconstruct the breast (Hyland et al., 2022). In 2023, nearly two million breast augmentation procedures were carried out worldwide; whilst this was a 13% decrease since 2022, it remains the most popular aesthetic and reconstructive surgical procedure (International Society of Aesthetic Plastic Surgery, 2024). Women elect for breast implants for cosmetic, reconstruction (e.g., post-mastectomy) or preventative (e.g., BRCA1 gene carriers) reasons, each possess overlapping, yet distinct motivational factors. For instance, reconstructive tive patients often express a desire to 'look normal' and 'feel normal', while for cosmetic patients, their motivations centre around femininity, self-esteem and emotional wellbeing (Guest et al., 2021; Solvi et al., 2010). Silicone-gel breast implants (SBIs) were first introduced in the early 1960s

CONTACT Christina April Kent 🖂 christinaaprilkent@gmail.com

B Supplemental data for this article can be accessed online at https://doi.org/10.1080/17437199.2025.2503743.

This article has been corrected with minor changes. These changes do not impact the academic content of the article.

© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (http:// creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

2 👄 C. A. KENT ET AL.

and remained unregulated until 1976, when the U.S. Food and Drug Administration (FDA) classified these devices under the Medical Device Amendments act (Bondurant et al., 2000). During this period, reports of local complications (e.g., swelling, pain, infections) were prevalent, as well as reports suggesting a link between systemic illness and breast implants (Cohen Tervaert et al., 2022; Deva et al., 2019; Keane et al., 2021; Yang et al., 2022). However, it was not until the 1980s that the safety of SBIs came into question, as women began suing implant manufacturers for experiencing nonspecific complaints, autoimmune diseases and an increased risk of developing cancer (Coroneos et al., 2019; di Pompeo et al., 2022; Schleiter, 2010). This led the U.S. Food and Drug Administration (FDA) and independent European regulators, including UK Medicines and Healthcare Product Regulatory Agency (MHRA), to impose stricter regulations on all medical devices (Coombs et al., 2019; Deva et al., 2019). However, these endeavours were unsuccessful in reducing the incidence of health complaints potentially linked to breast implants (Serena et al., 2023). There has been a large increase in reports since the introduction of social media, as women have taken to these platforms to share their adverse experiences with their breast implants, exchange information and offer support to other women (Atiyeh & Emsieh, 2022; S. Y. Q. Tang et al., 2017).

Breast Implant Illness (BII) is a term that has been used by women sharing their experiences of systemic symptoms attributed to their breast implants (Kaplan & Rohrich, 2021). Recently, there has been a move to call this phenomenon Systemic Symptoms associated with Breast Implants (SSBI), however this review will be referring to BII given the widespread use of this term (P. McGuire et al., 2023). BII refers to a range of systemic symptoms, possibly caused by the presence of breast implants, but for which there is no current clinical explanation or unifying hypothesis (Glicksman et al., 2022). The most frequently reported symptoms women have attributed to their breast implants include, but are not limited to, fatigue, joint pain, brain fog, anxiety, stiffness, cognitive impairment, and neurological symptoms (Spit et al., 2022; U.S. Food and Drug Administration, 2022). However, women do not always present with the same symptoms or with the same degree of symptom severity and the occurrence of BII has not yet been linked to any particular implant characteristics (Metzinger et al., 2022).

The absence of scientific evidence has been at the forefront of the debate around whether breast implants are truly responsible for women's ill health (Suri & Billick, 2023; Tervaert et al., 2024). Thus, it has been argued that BII could be a psychosomatic condition (Ahern et al., 2002; Bresnick, 2023b; Dush, 2001; Suri & Billick, 2023), and that the psychological profile of this group of women could be predictive in the development of complaints (Berben et al., 2023; Miseré & van der Hulst, 2022). For instance, Newby et al. (2021) found women with BII were more likely to have higher depression and anxiety, which is consistent with a recent study that found a correlation between these mental health conditions and self-reported BII symptoms (Bresnick et al., 2024). Notably, many women found their experiences of anxiety and depression had subsided, along with the physical symptoms, following removal of the breast implants, referred to as explantation (Bird & Niessen, 2022; Brawer, 2017; Glicksman et al., 2023; Kappel & Pruijn, 2020; Serena et al., 2023). There is heterogeneity in the reported rate of symptom resolution after explantation which may depend on various factors such as the duration the implants were in situ, the severity of the symptoms and preoperative augmentation health (Brawer, 2000; Kappel & Pruijn, 2020; Miseré & van der Hulst, 2022). A longitudinal prospective cohort study demonstrated that most women with self-reported BII experienced partial or complete resolution of their symptoms, including anxiety and depression, following explantation compared to women with breast implants and no self-reported symptoms, and women who had never received breast implants (Glicksman et al., 2022, 2023; P. Glicksman et al., 2022; McGuire et al., 2023b). The reduction in BII symptoms subsequently improved the patients' overall quality of life and this was sustained one year postoperatively; however, this does not rule out the possibility that BII could be psychosomatic, since the bacterial biospecimen samples from the capsules of each cohort of women in this research revealed no consistent differences between those who did or did not self-report BII (Glicksman et al., 2023). The experience of BII symptom resolution following explantation may be attributable to the alleviation of the 'nocebo effect', whereby the removal of the

implants – believed to be responsible for the systemic symptoms – reduces the negative expectations and thus systemic symptoms (Bresnick, 2023b; Glicksman et al., 2023).

The topic of explantation is widely discussed on BII social media groups, with women adopting the belief that an 'en bloc capsulectomy' technique is essential when explanting, whereby the implant, and the complete implant capsule are removed (Glicksman et al., 2022; Keane et al., 2021). However, there is a lack of clinical evidence to support whether this technique is necessary to resolve symptoms of BII. In addition, this type of capsulectomy carries significant surgical risks compared to simple explantation including increased pain, bleeding and the possibility of lung collapse (Calobrace & Mays, 2021). The above-mentioned cohort study by Glicksman et al. (2022) found a degree of symptom resolution in 94% of BII patients irrespective of the type of capsulectomy performed. The spread of this misinformation online has contributed to health professionals believing Bll could be a 'social media phenomenon' that has induced or exacerbated fear, panic and anxiety in women with breast implants (Newby et al., 2021). This therefore encourages scepticism amongst health professionals relating to their patients' concerns, particularly in the absence of a clear association (Bresnick, 2023b). Dismissive beliefs held by professionals places women in a position that compels them to become their own advocates, encouraging them to seek their own sources of information and peer support on social media, risking the propagation of misinformation (Adidharma et al., 2020; Keane et al., 2021). Thus, women could allocate any symptom experience to their breast implants, due to the complex nature of the self-reported symptoms, when other health problems may be present. Furthermore, there are various challenges within healthcare systems worldwide that can influence the type of care and treatment women receive. Key factors such as financial constraints and accessibility vary across countries, which could affect the belief and trust women with self-reported BII have in their healthcare system (Dawkins et al., 2021).

Existing studies have focused on identifying an association between breast implants and selfreported symptoms and little attention has focused on measuring the impact of BII on psychosocial wellbeing (Bresnick, 2023a; Lieffering et al., 2022; Magno-Padron et al., 2021; Newby et al., 2021; Serena et al., 2023; Wee et al., 2020). Psychosocial wellbeing has been described as 'a superordinate construct that includes emotional or psychological well-being, as well as social and collective wellbeing' (Eiroa-Orosa, 2020, para. 1) and plays a fundamental role in an individual's health-related quality of life (HRQoL) (Salani et al., 2014). However, a couple of studies have utilised patientreported outcome measures to assess HRQoL in this group of women, revealing those with breast implants in situ and health complaints scored poorly (Miseré et al., 2021). There are also varying results indicating an improvement in HRQoL following explantation (Bird & Niessen, 2022; Newby et al., 2021). Irrespective of the lack of substantial clinical evidence demonstrating a causal link between breast implants and systemic symptoms, the experience is no less genuine for this group of women. To date, two systematic reviews on BII have been published (Kabir et al., 2024; Rohrich et al., 2022). These reviews synthesised the outcomes of current BII studies to provide contemporary evaluation of the literature, and identify management strategies and factors that may be associated with BII; however, the gualitative literature was omitted from these reviews. Qualitative research can provide insight into the nuanced challenges patients experience, which is pivotal for informing the development and implementation of successful management strategies (Hanssen et al., 2021). Other review typologies have been used to assess the BII literature, aiming to obtain a comprehensive understanding of this complex entity (Atiyeh & Emsieh, 2022; Cohen Tervaert et al., 2022; Hemal et al., 2024; Kaplan & Rohrich, 2021; Suh et al., 2022). However, these reviews have been limited to understanding the symptoms, impact of explantation and possible aetiologies of BII, without considering the broader psychological and social experience that women with this heterogeneous, and possibly idiopathic, condition are contending with (S. Tang et al., 2022).

The aim of this review is to identify and synthesise the findings from existing qualitative literature relating to 'breast implant illness' using a qualitative evidence synthesis (QES). This type of systematic review brings together the results from qualitative studies to generate rich and insightful interpretations that can provide greater understanding of the experiences, views and beliefs pertaining to a

4 🕳 C. A. KENT ET AL.

condition (Flemming et al., 2019; Flemming & Noyes, 2021). This qualitative synthesis aimed to provide a comprehensive review of women's self-reported experiences of 'breast implant illness' (BII) and explore the perceptions, impact and experiences of women who have had unexplained adverse health outcomes they have ascribed to their breast implants.

2. Methods

2.1. Primary searches

The primary search strategy employed a series of keywords which were formulated from pilot searches, previous reviews, input from the supervision team and a Psychology subject librarian. The initial search strategy was determined by identifying and grouping the keywords under the SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, Research Type) framework which is designed for searching qualitative and mixed methods literature (Cooke et al., 2012). A pilot search using this framework retrieved limited results. Therefore, with the guidance of the subject librarian, the search was broadened by combining the 'Phenomenon of Interest' and 'Evaluation', and 'Design' and 'Research type'. The final search strategy employed is detailed in Table 1. Four electronic databases were searched: MEDLINE, Scopus, CINAHL and PsycINFO. A combination of Medical Subject Headings (MeSH) and keywords were used. The search dates ranged from the date of each database inception to 28th June 2023. An exhaustive list of the search strategies used can be found in Appendix A. The protocol is registered on Prospero (registration number: CRD42023444744) and this review was reported in accordance with the Enhancing Transparency in Reporting the synthesis of Qualitative research (ENTREQ) guidelines (Tong et al., 2012).

2.2. Eligibility criteria

Inclusion:

- Qualitative research methods used to explore the experience of physical and/or psychological symptoms women have attributed to their breast implants.
- Women born biologically female and who had undergone breast implant-based surgery.
- Mixed methods studies where the qualitative component was reported separately and could be easily extracted.
- Studies published in the English language.

Exclusion:

- Research that was exclusively quantitative or secondary (e.g., review articles)
- Included adolescents (under 18 years old), transgender women or women who have not undergone breast implant surgery.
- Research which solely reported the experiences of women who have experienced breast implant-associated cancers (e.g., BIA-ALCL) or the symptoms reported are not believed to be related to their breast implants.

Table 1. Search strategy.	
SPIDER	Keywords
Sample	'Breast Implant*' OR 'breast augmentation' OR mammaplasty OR mammoplasty OR 'breast enlargement' OR 'breast reconstruct*' OR 'silicone implant*' OR 'risk-reducing breast*'
Phenomenon of Interest & Evaluation	'Breast implant illness' OR BII or Autoimmune* OR foreign* OR ASIA OR 'silicone implant incompatibility syndrome' OR somatic OR psychosomatic OR 'connective tissue*' OR siliconosis OR problem* OR experience* OR explant* OR 'systemic symptom*' OR symptom* OR 'brain fog' OR fatigue* OR 'memory loss' OR rash* OR anxi* OR 'joint pain*' OR 'quality of life' OR perception* OR complain* OR psycho* OR physical* OR impact* OR emoti* OR wellbeing OR 'patient satisfaction' self-report* OR self-identif* OR patient-report* OR opinion OR 'social media' OR 'informed decision' OR consent* OR view*
Design & Research Type	Interview* OR 'focus group*' OR experience* reflexiv* OR stor* OR inquir* OR online OR narrative* OR framework OR discourse* OR survey* OR account* OR perspective* OR phenomenolog* OR thematic OR 'grounded theory' OR 'social media' OR Qualitative

2.3. Screening for primary searches

The screening process was informed by the PRISMA guidance for systematic reviews (Page et al., 2021). The results from the searches were exported and input into the referencing software, Zotero to undergo manual deduplication. The outstanding papers were imported into the online tool for managing systematic reviews, Rayyan (Ouzzani et al., 2016), and additional duplicates identified by the automated deduplication function. Each title and abstract were screened for inclusion by the main author (CAK) and the full texts were retrieved if the article met the inclusion criteria or eligibility could not be determined from the title or abstract.

2.4. Secondary searches

Following screening from the primary searches, three secondary searches were performed to determine if any eligible articles had been missed due to poor indexing, different use of terminology or uninformative abstracts or titles (Flemming & Noyes, 2021). Firstly, the reference list of the eligible articles from the database searches were hand-searched and subsequently searched in Google Scholar and the 'cited by' function was visually inspected. Lastly, the multi-disciplinary search engine for academic web resources, BASE (Bielefeld Academic Search Engine) was searched on 3rd July 2023 using a simplified strategy of the keywords used in the primary searches outlined in Table 2 (Blakeman, 2013). Each title and article were screened, and the full text was retrieved for any articles which met the inclusion criteria or could not be determined from the title or abstract. The results from the primary and secondary searches are outlined by the PRISMA flow diagram in Figure 1.

Table 2. Search strategy used to search Bielefeld Academic Search Engine (BASE).

Search type	Search strategy
Basic search (max. 60 words)	('breast implant*' OR 'breast augmentation') AND ('breast implant illness' OR systemic OR symptom* OR impact* OR explant* OR experience* OR autoimmune*) AND (qualitative OR thematic OR interview OR survey)
Filters	Document type: 'article contribution' Language: 'English'



Figure 1. PRISMA flow diagram.

2.5. Data extraction

The key characteristics from each study were extracted including author, DOI, year of publication, country, setting, aims, methodology, methods, theory, themes, results and sample characteristics. Any information about of the breast implants from the samples were extracted (e.g., type of implant, length of implantation, reason for surgery). Data labelled 'findings' or 'results' containing the author's interpretations and participant quotes were extracted and imported into NVivo 12 Pro.

2.6. Quality appraisal

All eligible studies were subject to quality appraisal using the Critical Skills Appraisal Programme (CASP; 2018). The CASP is the most commonly used appraisal tool for qualitative evidence synthesis, particularly in health research, consisting of a checklist of 10 questions (see Table 5) which include two screening questions and eight appraisal questions (Long et al., 2020; Majid & Vanstone, 2018). Nine questions were answered in line with the guidance as either yes, no or can't tell. The final question regarding the value of the research did not have predefined categories. Thus, a comparable approach to the previous questions was used, and answered using the following criteria: valuable, somewhat valuable, and not valuable; similarly to previous health-related qualitative reviews (Woof et al., 2022). No studies were excluded based on the outcome of the appraisal, considering the small number of included studies and the limitations of the CASP tool which has been argued to promote quantity over quality, and the quality of qualitative studies may surpass the constraints of the quantity of 'yes' responses (Long et al., 2020).

2.7. Eligible studies declarations

Given BII is a controversial topic that has caused conflict and distrust between patients and practitioners (P. A. McGuire et al., 2019), it is important that this review acknowledges declarations or conflicts of interest declared by the authors of eligible articles. This will ensure the potential for conscious or unconscious biases, which may influence the trust that professionals, patients and the public have in health research is open to view (Romain, 2015). Table 3 outlines any disclosures or conflicts of interest declared by the authors.

2.8. Preparing the data

Prior to analysis, a portion of the data from three studies was discarded. First, the sample recruited by Jayasinghe et al. (2022) were not exclusively women with BII-related symptoms and therefore it is only

Study	Author conflicts/declarations	Funding
Coleman et al. (1995)	Two authors were research fellows at the beginning of the study.	Funded by the National Institute of Health.
Coon et al. (2002)	None provided.	Additional funding from the Oncology Nursing Foundation.
Dey et al. (2021)	None provided.	None provided.
Jayasinghe et al. (2022)	Declared no author conflicts.	Funded by the Australian Breast Device Registry.
Logothetis (1995)	None provided.	None provided.
Merkatz et al. (1993)	None provided.	None provided.
Roberts et al. (1999)	None provided.	None provided.
Steve et al. (2021)	Two authors were plastic surgeons, and one author was a fourth-year plastic surgery resident.	Declared no financial conflicts.
S.Tang et al. (2022)	One author was an FDA investigator for the breast implant manufacturer, Motiva.	Funded by the Aesthetic Surgery Education and Research Foundation (ASERF) but the authors declared ASERF was not involved in the manuscript.

Table 3. Declarations of author conflicts, funding, or associated studies

the data that explicitly pertains to BII which can be extracted for this review; thus, the data under the subheading 'other comments' was included for this review. Further, Dey et al. (2021) used topic modelling to analyse the qualitative data presented in the study and given that this is a qualitative review, only the extracts from the social media posts were retained. Lastly, Steve et al. (2021) collected data on patients' experiences or concerns of both BIA-ALCL and BII, and because this review is focussed on the experiences, perceptions and views of BII, the data pertaining to BIA-ALCL was discarded.

2.9. Thematic synthesis

A Qualitative Evidence Synthesis (QES) can help to inform healthcare policies and improve patient care by enabling the issues and complexities to be addressed in a meaningful and accessible way (Thorne, 2009). Several methods of analysis can be used to synthesise qualitative research, such as meta-ethnography, thematic synthesis, and framework analysis. These methods have been widely used to address a range of research questions, specifically the beliefs, views, experiences and attitudes to healthcare, illness and disease (Flemming & Noves, 2021). For this review, thematic analysis was selected for the accessibility and suitability of analysing a small number of studies, following the approach outlined by Thomas and Harden (2008). This method of synthesis has the ability to translate concepts from one study and identify these concepts across other studies, enabling conclusions to be drawn from shared elements (Lucas et al., 2007; Thomas & Harden, 2008). Identifying the common experiences and impacts of BII across the literature can help to provide an awareness and understanding of how this idiopathic illness is experienced including the psychosocial implications. Moreover, this method of synthesis can make it accessible to readers from a multitude of practitioner disciplines, many of whom have contact with women who experience BII in their medical practice (de Vries et al., 2022; Lucas et al., 2007; Mortada et al., 2022). This could help inform practitioners of the deeper experience of BII – an understanding that has been called for by patients and scholars (Barnett-Page & Thomas, 2009; Di Via loschpe et al., 2023; Steve et al., 2021). While Thomas and Harden (2008) do not directly state an epistemological position, it has been argued that critical realism underpins thematic synthesis, denoting the knowledge of reality derives from perceptions and beliefs, and ultimately creates a shared reality, situating the data in the reality of the women's experiences of BII (Barnett-Page & Thomas, 2009).

The findings from each study were imported into individual Microsoft Word documents. Articles where text could not be selected (Coleman et al., 1995; Coon et al., 2002) were copied verbatim. These documents were imported into NVivo Pro 12 for analysis (Appendix B). Coding was carried out by one reviewer (CAK) following the steps outlined by Thomas and Harden (2008). First, the text was line-by-line coded and at least one code was given to each line creating a 'bank of codes' whereby codes could be interpreted across the text and, when necessary, new codes were generated. Once the data had been coded, the bank of codes were cross-examined to identify codes which represented the same concept. These codes were subsequently grouped together based on the similarities and developed into descriptive themes. For the final stage of analysis, all the data were downloaded from NVivo and imported into Microsoft Excel to visualise the raw data, codes, and descriptive themes (Appendix C). The research question was implemented into the translation of the descriptive themes into analytical themes.

3. Findings

3.1. Characteristics of included studies

Nine papers were eligible for inclusion, with data collected from over 32,000 women. The key characteristics of the included articles are detailed in Table 4. The studies were published between 1993 and 2022, with the majority being published in the USA (6), two in Australia and one in Canada. Studies in the 1990s were conducted shortly after the FDA's moratorium on silicone breast implants

Author	Country	Associated studies	Aim	Sample Size	Age Range	Reason for Implants	Sample Recruitment	Method of Data Collection	Method of Analysis	Themes/Findings
Coleman et al. (1995)	USA	Qualitative data obtained from the original study by Coleman et al. (1994)	Obtain specific information on the impact of BI surgery and subsequent problems on women who had reconstructive surgery.	n=120	40–60 years	R (n=120)	Women who had reported to the FDA Problem Reporting Program were mailed a packet from the FDA Post Market Product Management.	Telephone interviews with open-ended questions.	Categorical and thematic.	 Satisfaction and problems with implants Concerns and feelings Breast implant information and sources Response from healthcare professionals Problems in daily life Advice to other women
Coon et al. (2002)	USA	Qualitative data obtained from the original study by Coleman et al. (1994). Same data published by Coleman et al. (1995).	Compare the patterns of responses and comments from the women receiving implants for cosmetic augmentation with the women having reconstructive	n=820	20–84 years	A (n=437) R (n=383)	Women who had reported to the FDA Problem Reporting Program were mailed a packet from the FDA Post Market Product Management.	Telephone interviews with open-ended questions.	Qualitative method of analytic induction.	 Anger/tension Regret Worry/fear Financial concerns
Dey et al. (2021)	USA	Not associated with other studies.	To identify and summarise the key attributes of a new illness.	Total number of posts analysed: n= 31,094 Qualitative examples: (n=19)	Not reported	Not reported	Social media groups dedicated to BII discussions and information.	Social media posts from three websites.	Natural Language Processing (Loper & Bird, 2002) and Latent Dirichlet Allocation (Campbell et al., 2015).	 BII web 1. Common signs and symptoms 2. Diseases and disorders 3. Toxicity 4. Pain and stress-related disorders Healing BII 1. Surgeries and procedures 2. Pain and other signs 3. Cancer and other disorders 4. Toxicity 5. Mental health

Table 4. Key characteristics of the eligible studies (k = 9).

(Continued)

Table 4. Contin	nued.									
Author	Country	Associated studies	Aim	Sample Size	Age Range	Reason for Implants	Sample Recruitment	Method of Data Collection	Method of Analysis	Themes/Findings
Jayasinghe et al. (2022)	Australia	Merenda et al. (2021); Ng et al. (2022)	Understand the perspectives of patients experiences with breast devices and identify emerging issues relating to breast device surgery and breast devices in cosmetic breast augmentation	n=261	18-51+ years	A (n=268)	Australian Breast Device Registry used disseminate the BREAST-Q via text message. Alternative methods of contact include email, post and telephone.	BREAST-Q IS, consisting of Patient Reported Outcome Measures with one open- ended question.	Qualitative Content analysis (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005)	 IG*-BII Physical health Cancer and medical procedures Mental health Toxicity Common disorders Unified: Physical health Cancer and medical procedures Mental health Cancer and medical procedures Mental health Common signs, symptoms and toxicity Common disorders Satisfaction with breast augmentation Dissatisfaction with breast augmentation Complications and breast symptoms following breast augmentation Other comments on aspects that are not directly related
Logothetis (1995)	USA	Not associated with other studies.	surgery. To explore women's problems with breast implants.	n=55	26–72 years	A (n=39) R (n=16)	A packet of materials was provided to women who signed up at the International Command Trust group for women with breast implant	Survey in the packet of materials with 10 open-ended questions.	Descriptive analysis using a phenomenological framework (Boyd, 1993).	 to outcome of breast augmentation. 1. The initial implantation 2. Implant Problems 3. Symptoms 4. Response by physicians 5. Informed consent issues 6. The decision to remove implants

9

(Continued)

Author	Country	Associated studies	Aim	Sample Size	Age Range	Reason for Implants	Sample Recruitment	Method of Data Collection	Method of Analysis	Themes/Findings
	<u> </u>						problems conference.		· · ·	7. Emotional responses
Merkatz et al. (1993)	USA	(McCarthy et al., 1993)	Convey the experiences of women's problems with their silicone-gel breast implants.	n=112 letters	Not reported.	A (n=66) R (n=46)	Letters sent to the FDA from women who reported adverse experiences with their silicone-gel breast implants.	Psychosocial content coded from the letters.	Descriptive analysis with the application of phenomenological and grounded theory techniques (Morse, 1991).	 Never told about potential problem Persistence of pair and a variety of symptoms that were not taken seriously by physicians and no considered to be related to silicone- gel implants. Loss of ability to work or to carry on normal activities Concerns and questions about additional problems that might be encountered and inability to receive information
Roberts et al. (1999)	USA	Qualitative data obtained from the original study by Wells et al. (1995).	Analysis of women's responses to understand their experiences with breast implants.	n=55	26–64 years	A (n=40) R (n=15)	Women who presented to academic plastic surgeons at the University of South Florida requesting explantation.	A series of questionnaires, including eight open-ended questions.	Qualitative content analysis.	 Reasons for having breast implants Role of influence by partner Influence of friend or others What did they expect would change? Did hoped for change occur? Reasons for wanting implants removed. Anticipated changes after removal Life changes attributed to implants

Table 4. Continued.

Author	Country	Associated studies	Aim	Sample Size	Age Range	Reason for Implants	Sample Recruitment	Method of Data Collection	Method of Analysis	Themes/Findings
Steve et al. (2021)	Canada	Not associated with other studies.	Understand the perspective of dissatisfied patients with breast implants and evaluate their perceptions of the challenges, barriers, and worries that they are experiencing that plastic surgeons may not understand.	n=64	Not reported.	Not reported.	Closed Canadian BIA-ALCL advocacy Facebook group. One author liaised with group admin who agreed to post.	One open-ended question 'elaborate on the three most important issues (challenges, barriers, or worries) that women with breast implants experience but feel plastic surgeons do not understand'. Posted by the group admin.	Thematic analysis and grounded theory approach.	Initial: 1. Informing 2. Listening 3. Acknowledging 4. Clarifying 5. Moving forward Theoretically examined: 1. Fidelity 2. Competence 3. Honesty 4. Confidentiality 5. Global trust
S.Tang et al. (2022)	Australia	Not associated with other studies.	Explore the experiences of women who self- report experiencing BII, including their experience of symptoms, their beliefs about the causes of BII, the health care system, social media, and explant surgery.	n=29	29–73 years	A (n=10) R (n=14) Not stated (n=5)	Advertised the study on Instagram and Facebook, in BII social media support groups and directly recruited from US-based plastic surgery clinics.	Semi-structured interviews via telephone or online video conferencing platform.	Inductive thematic analysis (Braun & Clarke, 2006) underpinned by a critical realist approach.	 Symptoms without explanation Invalidation and invisibility Making the BII connection Implant toxicity Explant surgery: solution to suffering? Concealed information

A = augmentation R = reconstructive *IG = Instagram

					Study				
CASP Questions	Coleman et al. (1995)	Coon et al. (2002)	Dey et al. (2021)	Jayasinghe et al. (2022)	Logothetis (1995)	Merkatz et al. (1993)	Roberts et al. (1999)	Steve et al. (2021)	S.Tang et al. (2022)
1. Was there a clear statement of the aims of the research?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
2. Is the qualitative methodology appropriate?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Was the research design appropriate to address the aims of the research?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4. Was the recruitment strategy appropriate to the aims of the research?	Can't tell	Can't tell	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes
5. Was the data collected in a way that addressed the research issue?	Yes	No	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes
between researcher and participants been adequately considered?	No	No	No	No	No	No	No	Can't tell	No
7. Have ethical issues been taken into consideration?	Yes	No	No	Yes	No	No	No	Yes	Yes
8. Was the data analysis sufficiently rigorous?	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
9. Is there a clear statement of findings?	Yes	Yes	Yes	Can't tell	Yes	Yes	No	Yes	Yes
10. How valuable is the research?	Valuable	Somewhat valuable	Valuable	Somewhat valuable	Valuable	Somewhat valuable	Not valuable	Somewhat valuable	Valuable

Table 5. Quality appraisal of included studies using the Critical Appraisal Skills Programme (CASP) qualitative research checklist.

in 1992 and were a consequence of quantitative research (Coleman et al., 1995; Merkatz et al., 1993; Roberts et al., 1999). Notably, the data for the studies by Coleman et al. (1995) and Coon et al. (2002) derived from the quantitative survey pioneered by Coleman and colleague (Coleman et al., 1994). Coleman et al. (1995) analysed qualitative survey responses from 120 breast cancer patients. Coon et al. (2002)later used what appeared to be identical extracts from this dataset in their qualitative component. However, it is unclear whether these extracts were intended to represent the entire sample or only a subset. Moreover, there was an absence of qualitative research on this topic until 2021 as a consequence of the rise in social media attention towards breast implants when Dey et al. (2021) and Steve et al. (2021) used these platforms to explore the phenomenon that had been termed BII. In the study by Dey et al. (2021), a quantitative methodology was used to analyse 31,094 social media posts. However, examples of these posts were provided, serving as the qualitative component for this review. Additionally, only one study (Tang et al., 2022) used semi-structured interviews. The most common design was the use of open-ended questions mailed to the participants or via a telephone interview or included from questionnaires or surveys (Coleman et al., 1995; Coon et al., 2002; Logothetis, 1995; Roberts et al., 1999; Steve et al., 2021).

3.2. Characteristics of the breast implants present in study participants

The majority of studies did not report or collect information on the implant status of the women (Coon et al., 2002; Dey et al., 2021; Jayasinghe et al., 2022; Merkatz et al., 1993; Steve et al., 2021). In the study by Roberts et al. (1999), women who were seeking explantation were recruited, therefore it is implicit that the participants had their breast implants in situ. Three studies explicitly described the implant status of the participants (Coleman et al., 1995; Logothetis, 1995; Tang et al., 2022), indicating 52% of the women in these studies had undergone explantation. Only three studies explicitly stated the participants recruited had received silicone and saline breast implants (Coleman et al., 1995; Coon et al., 2002; Tang et al., 2022). In contrast the participants in the Merkatz et al. (1993) study were only eligible if they had received silicone implants. Due to the design of the research, no data on the type of implants could be collected for the studies by Dey et al. (2021) and Steve et al. (2021). Lastly, it was unclear if these data were collected or simply had not been reported in the studies by Jayasinghe et al. (2022), Roberts et al. (1999) and Logothetis (1995).

3.3. Results from the quality appraisal

The outcome of the CASP quality appraisal tool (Table 5) determined four studies to be valuable (Coleman et al., 1995; Dey et al., 2021; Logothetis, 1995; Tang et al., 2022) and four studies were somewhat valuable (Coon et al., 2002; Jayasinghe et al., 2022; Merkatz et al., 1993; Steve et al., 2021). One study was deemed not valuable (Roberts et al., 1999) because it did not satisfy a significant portion of the CASP questions, particularly as a clear statement of the aims was omitted. Moreover, the majority of the studies had clear aims and objectives which were suitable for qualitative designs. The strategies used for data collection were generally sufficient, however, the rationale for recruitment in three studies was not explicit (Coleman et al., 1995; Coon et al., 2002; Steve et al., 2021). Reflexivity was not acknowledged or considered in most studies. However, investigator triangulation was used in the process of analysis in three studies (Merkatz et al., 1993; Steve et al., 2021; Tang et al., 2022). Interestingly, Steve et al. (2021) also provided a description of the investigators but failed to consider reflexivity during interactions with the Facebook group or analysis of the data. Ethical considerations were absent from five studies (Coon et al., 2002; Dey et al., 2021; Logothetis, 1995; Merkatz et al., 1993; Roberts et al., 1999). Most studies had a clear statement of findings and the data had been analysed rigorously (Table 6).

14 👄 C. A. KENT ET AL.

Table 6. Stages	of synthesising	the data from	codes to	analytical themes.
-----------------	-----------------	---------------	----------	--------------------

Codes (Stage 1)	Descriptive themes (Stage 2)	Analytical themes (Stage 3)
Emotional impact Feeling exploited Regret around implants Mental difficulties Loss of self Financial impact Struggles with intimate relationships Strain on familial relations Social withdrawal and support Poor work performance or job loss Silicone is a health risk	Mental and emotional wellbeing Impact on intimate and familial relationships Health worries and concerns Functioning in society	Theme 1: Decline in psychosocial wellbeing Subthemes: Impaired social functioning; strained interpersonal relationships; psychological implications; fear for health
Concerns around health Unable to explain symptoms Connecting symptoms to breast implants Never linked symptoms to breast implants Comparing symptoms to autoimmune disorders Listing multiple symptoms Describing specific symptom experiences Physical limitations	Unknown symptoms Symptom description	Theme 2: Searching for answers Subthemes: desperate for symptom relief, unclear association
Professionals have a hidden agenda Frustration towards the industry Attitudes towards surgery Belief of the appropriate care Dismissal of symptoms Disbelief implants are the cause Attributing symptoms to hysteria Not being listened to Lack of information	Perceptions of the industry Experience with healthcare professionals	Theme 3: Lack of solicitude Subthemes: Perceptions of the system; dismissal from practitioners
Achieved desired outcome Complications and problems Dissatisfied with implants Reason for surgery Lack of fully informed consent Felt misinformed or misled Psychosocial improvement Symptom reduction or resolution Continuation of symptoms Last resort Concerns and apprehension Experience with explant surgeons	Removing the implants Experience of breast implant surgery	Theme 4: Surgery: the problem and solution Subthemes: Initial implant surgery; explant surgery

3.4. Results from the thematic synthesis

The first stage of synthesis involved line-by-line coding for each study, by producing a descriptive 'bank' of codes independent to the authors' interpretations, where a code was generated for each line of text or allocated to a code which had previously been created. Once each study had been coded, all text was examined to check for consistency which resulted in combining codes that described the same concept and generating new codes where necessary (Thomas & Harden, 2008). A total of 40 initial codes were developed. Similarities and differences across the initial

codes were identified and grouped into nine descriptive themes. The three stages and corresponding codes and themes are illustrated in Table 6. These themes were further synthesised to produce four analytical themes: (1) decline in psychosocial wellbeing; (2) searching for answers; (3) lack of solicitude; (4) surgery: the cause and solution. These are described below and illustrated with quotes from the included studies.

3.4.1. Theme 1: decline in psychosocial wellbeing

The deterioration of psychosocial dimensions of life was the dominant theme across the women's accounts of their experiences. From these, four subthemes were derived signifying the areas of women's lives that were affected by the experience: women described the hindrance on their ability to work and financial struggles, impact on their interpersonal relationships, the psychological implications of the illness experience, and fear for their health (Table 7).

3.4.1.1. *Impaired social functioning.* The symptom experience had a profound impact on most women's ability to function in society and lead a 'normal' life, linked to potential job loss, financial stress and social withdrawal (Coleman et al., 1995; Coon et al., 2002; Merkatz et al., 1993; Roberts et al., 1999; Steve et al., 2021; Tang et al., 2022). The unexplained decline in health affected their performance at work which led to women losing their jobs or resigning (Coleman et al., 1995; Coon et al., 2002; Merkatz et al., 2022).

Since the date of my first implant, my health started deteriorating and continued to do so to the point that I lost my job. I have been unable to work and to conduct any kind of normal life. (Merkatz et al., 1993, p. 107)

Unemployment had subsequent consequences on financial stability. Most participants were from the USA, where health insurance policies are required to access healthcare. Thus, with limited income, access to healthcare was hindered and having their implants removed due to BII-related symptoms was difficult due to BII not being a recognised condition (Coleman et al., 1995; Coon et al., 2002; Roberts et al., 1999; Steve et al., 2021).

When you have no income, it is impossible to get help. (Coleman et al., 1995, p. 1498)

3.4.1.2. Strained interpersonal relationships. Several women described how their health had affected their interpersonal relationships with partners, family and friends (Logothetis, 1995; Roberts et al., 1999; Tang et al., 2022). Reduced participation in social activities occurred 'due to extreme fatigue' and 'an unpredictable energy level' (Roberts et al., 1999). Others felt that their peers had been supportive when they first began experiencing symptoms but 'just kind of disappear' as the illness continues. One woman described BII as 'an invisible disease' as they can appear healthy externally and this has been proposed as a barrier to support from others.

And it's like an invisible disease. You know, it's not something that's on my skin, or you could look at me and tell. I look healthy, I'm in shape, you know, so it's not like you could look at somebody and see it, so it's kind of like,

Study	Impaired social functioning	Strained interpersonal relationships	Psychological implications	Fear for health
Coleman et al. (1995)	1		✓	1
Coon et al. (2002)	1		✓	1
Dey et al. (2021)				1
Jayasinghe et al. (2022)				
Logothetis (1995)		\checkmark	✓	1
Merkatz et al.	1			1
Roberts et al. (1999)	1	\checkmark	✓	1
Steve et al. (2021)	1			
Tang et al. (2022)	1		✓	

Table 7. Frequency of the subthemes across the included papers for Theme 1.

16 👄 C. A. KENT ET AL.

it's invisible and people don't really get you or understand you, and that's really frustrating. (Tang et al., 2022, pp. 386–387).

For some women, a decline or absence of sex with their partners were reported, due to the experience of pain, suggesting that their sex life was an important aspect of their relationships.

I am often in too much pain to feel sexual. This used to be a very rich part of our relationship. (Logothetis, 1995, p. 614)

A sense of frustration and despair was evident from women with children who felt that they were unable to fulfil their role as a mother in providing support, comfort, and attention due to their physical constraints and pain.

My daughter needs attention I can't give her. (Roberts et al., 1999, p. 250)

My 7-year-old son can't hug or lean on mommy's left side. (Logothetis, 1995, p. 614)

3.4.1.3. *Psychological implications.* The experience had a notable impact on psychological wellbeing. Women reported a loss of their sense of self and identity after the onset and development of the symptoms prohibited their ability to continue with their normal life (Coleman et al., 1995; Logothetis, 1995; Roberts et al., 1999; Tang et al., 2022). For some women, their 'whole life has changed' as their decline in health impacted various psychosocial dimensions (Roberts et al., 1999). This had severe consequences for their psychological wellbeing, as one woman described how she became so unwell she felt that she could not continue living.

So it's now come to the point where I don't volunteer for life, I volunteer for rest ... There were many days in the last couple of years where I said I wanted to die. I felt so ill, and so unable to move, or do anything. (Tang et al., 2022, p. 386)

The emotional distress of the experience was apparent in a lot of the women's accounts. Irrespective of the reason for undergoing breast implant surgery, some expressed regret around their decision (Coleman et al., 1995; Coon et al., 2002; Logothetis, 1995; Roberts et al., 1999). One woman who had breast implants after a preventative mastectomy explained that she 'would have rather had the cancer' than the health implications she experienced (Logothetis, 1995). Others exhibited internalised frustration, almost situating the blame on their themselves for deciding to get breast implants.

Another felt ashamed that she had 'so little self-esteem that I cut open a perfectly healthy body to put a foreign material in that has now harmed me!' (Logothetis, 1995, p. 614)

3.4.1.4. Fear for health. Women expressed fear and concern for their current and future health (Coleman et al., 1995; Coon et al., 2002; Dey et al., 2021; Merkatz et al., 1993; Roberts et al., 1999; Steve et al., 2021; Tang et al., 2022). After hearing about the association between breast implants and adverse health outcomes, women were 'worried about what's going to happen' to their health (Coleman et al., 1995; Coon et al., 2002). Subsequently, this exacerbated anxiety and panic, and women 'wanted the implants removed to safeguard their future health' (Roberts et al., 1999).

I am very concerned about what is happening to me. [...] Although I don't particularly like the idea of having to have them removed, I would not hesitate doing so if I thought this would alleviate all my symptoms and would set my mind at ease about the possibility of even worse things happening to me. (Merkatz et al., 1993, p. 107).

Women were adamant that the reason for their deteriorating health was the result of silicone leakage (Dey et al., 2021; Logothetis, 1995; Merkatz et al., 1993; Roberts et al., 1999; Tang et al., 2022). They believed the presence of silicone in the body would have a damaging effect on their health.

Some were convinced that their health problems were caused by silicone: 'Silicone is leaking and seeping in my body, and it was slowly killing me.' (Roberts et al., 1999, p. 249).

Several women conducted their own research. They found information on the composition of breast implants, which helped them to make sense of the potential physiological effects; often attributing the incident of BII to the presence of heavy metals in the outer shell of the implants (Dey et al., 2021; Tang et al., 2022).

I think that you know it was an immune, immunological response to having like a device in my body that it basically rejected and then over the years, I believe because I had very thin capsules when I explanted. I noticed that if I would exercise and I got very hot, my symptoms would get worse. And I feel like, from what I've read, I feel like the shell which was made from like 40 different chemicals, was probably absorbing into my body, and my body was unable to handle these chemicals and these toxins. (Tang et al., 2022, p. 386)

3.4.2. Theme 2: searching for answers

Many women described detailed accounts of their symptom experience and a dominant theme was identified as women expressed frustration and confusion around onset and progression of their symptoms. This generated two subthemes: the desperation for relief of their symptoms and how the association between their breast implants and symptoms was unclear (Table 8).

3.4.2.1. Desperate for symptom relief. In an attempt to try to understand the origins of their illness and its progression, women accessed various medical professionals and underwent numerous tests. For many women the results from various clinical tests would repeatedly come back clear, with no indication of a cause for concern.

For three years, doctors have been unable to diagnose or explain upper body weakness, hand pain, and general inflammation. I have suffered from periods of high inflammation, debilitating fatigue, migraines, inability to lose weight, insomnia, low libido, body and joint pain, hair loss, dry skin, dry eyes, brain fog, etc. (Dey et al., 2021, Table 5).

Nevertheless, women were desperate to be relieved of their symptoms. Many described trying a range of treatments on the advice of medical professionals. One woman 'had a hysterectomy on the advice of my gynecologist' (Roberts et al., 1999), after reassuring her that she would be relieved of the symptoms; yet they persisted postoperatively. For one woman, the search for symptom alleviation appeared to have dominated her life.

I was going to doctors and they would tell me try this and try that, so there were supplements, there was medications. I went to this – he called himself a functional neurologist and he had different equipment, I went to the chiropractor, I went to acupuncture, I went to physical therapy, I did biofeedback. I was basically at doctors' appointments or therapy, three times per week trying to feel better. (Tang et al., 2022, p. 386).

3.4.2.2. Unclear association. When the symptoms began, most women did not attribute them to their breast implants as most were unaware of an association. The symptoms often overlapped with common explanations, such as ageing and menopause, and were not confined to one area of their body - making it difficult to distinguish or determine if the symptoms were related to their breast implants.

Unclear association
1
1
1
1

Table 8. Frequency of the subthemes across the included papers for Theme 2.

18 👄 C. A. KENT ET AL.

I wasn't relating it to the implants right away, because the illnesses were all over the place, like they were in different parts of my body, different parts of ... like different organs, and eventually, like, I was like, okay, that have to be related, like there's no way I'm just getting sick all the time, and they aren't related, you know? (Tang et al., 2022, p. 386).

However, other women had questioned if the implants could be impacting their overall health. This was generally prompted from the knowledge of other women's experiences, the inexplicable symptoms or the concurrent onset of symptoms occurring shortly after receiving breast implants (Jayasinghe et al., 2022; Merkatz et al., 1993; Tang et al., 2022).

All along I have questioned the relationship of the implants to the way that I've been feeling. (Merkatz et al., 1993, p. 107)

I have been experiencing extreme fatigue and joint pain and I wonder if it's related to my breast implants? I read about breast implant illness. (Jayasinghe et al., 2022, p. 5).

3.4.3. Theme 3: lack of solicitude

This theme consisted of two subthemes derived from the experience with the healthcare system: the perceptions of the process and systems involved in conducting breast implant-based surgery, and the perceived view that professionals lack the belief in the authenticity of BII and have very little care or concern for women who present with symptoms (Table 9).

3.4.3.1. *Perceptions of the system.* BII experiences that linked some health aspects to breast implants informed women's opinions and perceptions of how plastic surgeons, implant manufacturers and health regulators operate (Coleman et al., 1995; Coon et al., 2002; Logothetis, 1995; Steve et al., 2021; Tang et al., 2022). Often inferring a lack of care and concern for the health and wellbeing of women who opt for breast implants, which in turn has caused them to develop a mistrust in practitioners. A number of women reported feeling as if they had been exploited (Coleman et al., 1995; Coon et al., 2002; Logothetis, 1995; Roberts et al., 1999). Some compared their experience to being a test subject, stating they 'feel like I was a guinea pig' ascertaining they felt the implants were unsafe (Coleman et al., 1995; Coon et al., 2002). Most women had believed breast implants were safe and were disheartened when they did not live up to their expectations.

I went into the surgery for implants with confidence and faith in the product. I feel very violated. (Roberts et al., 1999, p. 248)

Many women felt that more should have been done to ensure patients and professionals were correctly educated on the possible health side effects of breast implants, not only prior to the surgery, but felt that patients should be contacted and 'sent information directly to them' (Coleman et al., 1995; Coon et al., 2002; Logothetis, 1995; Steve et al., 2021; Tang et al., 2022). Others were mindful of the difficulties practitioners' encounter when women present with systemic symptoms and no clinical findings to indicate any ailment but retain the belief their breast implants are making them unwell.

Study	Perceptions of the system	Dismissal from practitioners
Coleman et al. (1995)	1	✓
Coon et al. (2002)	1	✓
Dey et al. (2021)		✓
Jayasinghe et al. (2022)		
Logothetis (1995)	1	✓
Merkatz et al. (1993)		✓
Roberts et al. (1999)		
Steve et al. (2021)	1	✓
Tang et al. (2022)	1	✓

Table 9. Frequency of the subthemes across the included papers for Theme 3.

I honestly, I don't fault the doctors because they're going off of what medical science has published or what the FDA has said, and so their job is to look at everything from a scientific and medical standpoint, and if they're told the opposite of what's happening, then how do they even know to even treat us for BII, or that that could be the cause? (Tang et al., 2022, p. 389)

The attitudes towards surgery changed as a result of their experience, with many women unable to contemplate the idea of undergoing any further surgery (Coleman et al., 1995; Coon et al., 2002; Logothetis, 1995; Steve et al., 2021; Tang et al., 2022). Specifically, those who had received breast implants following a mastectomy 'have not considered any reconstruction' with the view to prioritise their overall health than endure any further surgery (Logothetis, 1995). One woman emphasised that breast implants need to be an option for women who have had breast cancer to save lives.

Breast reconstruction has to be made available to women who face mastectomy. If this is ever taken away, they won't have surgery and will wind up with breast cancer spreading and will die. (Coleman et al., 1995, p. 1498; Coon et al., 2002, p. 2048)

Having access to a wealth of information online has meant that women have taken it upon themselves to conduct their own research. This led them to form their own opinion about the type of explant technique they deem necessary to treat BII; however, some women strongly believe few surgeons possess the skills to conduct this procedure (Steve et al., 2021; Tang et al., 2022).

Surgeons lack the skills and knowledge to [perform] adequate explantation (en bloc with total capsulectomy). In my opinion, all surgeons should be trained to do this type of surgery! They are able to dissect the pectoral muscle off the [rib] cage to [put in] an implant, they should have the knowledge and skills to remove them properly without causing damage! (Steve et al., 2021, p. 20e)

3.4.3.2 Dismissal from practitioners. Many women described negative interactions with healthcare professionals (Coleman et al., 1995; Dey et al., 2021; Logothetis, 1995; Merkatz et al., 1993; Steve et al., 2021; Tang et al., 2022). Given the lack of pathophysiological evidence in this area, practitioners found it difficult to believe patients' thought their breast implants were making them ill. They often attributed the symptoms to mental health 'you must be depressed' or external factors such as 'it must be a change of life' (Logothetis, 1995), and regardless of how persistent or confident women were, practitioners maintained that the symptoms were a result of mental health issues.

The number one thing I get told is 'do you have anxiety? Oh, it's anxiety. Your heart rate's going like that because of anxiety. Anxiety. Anxiety. 'That's the number one thing. It's like, no I have an actual illness that causes my heart to go like this. It has nothing to do with anxiety cause that's the number one thing I have to argue with them about. It's like the worst thing to get told, because they discredit you because of that, and that's the worst thing. (Tang et al., 2022, p. 385)

Women reported that some practitioners implied they had fabricated the idea their implants were responsible for their symptoms (Coleman et al., 1995; Logothetis, 1995; Steve et al., 2021; Tang et al., 2022), and one woman had been 'told that it was my imagination and not related to my implants' (Coleman et al., 1995). There was an overall sense of betrayal and disappointment in women's views of practitioners surrounding the lack of care and consideration of their wellbeing, in addition to the reluctance to support and aid them to regain their health.

Several respondents felt that plastic surgeons could provide better acknowledgement of their specific concerns, advocate for standards of care, and help navigate access and financial barriers. *The sound of silence can be really loud when you are sick.*' (Steve et al., 2021, p. 20e)

A few women recalled the opposite experience with practitioners, and described how their surgeons had believed their symptoms were related to their breast implants and infers they provided a safe space without any judgement.

When I met her [explant surgeon], I just knew that she was the right one, because she believed—and she wasn't pushy or trying to push me further—she had great information and she's been doing it for a very long time. (Tang et al., 2022, p. 385)

3.4.4. Theme 4: surgery: the problem and solution

Women's accounts of their initial breast augmentation and explant surgery differed greatly. This theme was divided into two subthemes: the initial surgery and explant surgery - encompassing the motivation and outcome behind these decisions (Table 10).

3.4.4.1. Initial implant surgery. The decision to have breast implants largely revolved around the desire to 'look and feel 'normal" for women who chose the surgery for cosmetic and reconstructive reasons (Logothetis, 1995; Roberts et al., 1999). Descriptions of the initial implant surgery were predominately negative. The surgery did not always have the desired result, as one woman hoped the implants 'would look like normal breasts, but they never did' (Roberts et al., 1999). However, for other women, the surgery had achieved their desired outcome whereby their self-esteem and body imagine improved; one woman described that she 'felt better about myself and the way I looked' (Roberts et al., 1999). Several women described experiencing complications with their implants post-operatively (Dey et al., 2021; Logothetis, 1995; Merkatz et al., 1993; Roberts et al., 1999). A large portion of complaints were around the aesthetic look and feel of the breast implants, many of which could have been a result of capsular contracture.

For the first few years I was satisfied, but became dissatisfied as they began to harden and feel uncomfortable. (Roberts et al., 1999, p. 248)

Most women felt they were not adequately informed preoperatively during consultations (Coleman et al., 1995; Coon et al., 2002; Logothetis, 1995; Merkatz et al., 1993; Tang et al., 2022). Some described incidents comparable to deception, where women had believed breast implants were associated with minimal risks and complications.

I wasn't told anything. I was not told that they had a 10 year shelf life. I wasn't told there was any danger because these were saline and not silicone. I wasn't told that I may end up with a loss of sensation. I was given no information. (Tang et al., 2022, p. 386)

Therefore, women alleged that they were not provided with the all the information to determine if breast implants were the correct procedure for them.

I wish that at the time I had them put in, I had been informed of risks other than scar tissue. I could not make a decision weighing benefits against risks. (Coleman et al., 1995, p. 1498; Coon et al., 2002, p. 2048)

However, informed consent could connote different meanings to individual women as a consent form must be signed prior to surgery which details the range of potential complications. In some cases, these forms may not have been read by these women and the complications may not necessarily have been verbalised to them, which could determine their interpretation of informed consent and indicate an element of recall bias.

Study	Initial implant surgery	Explant surgery
Coleman et al. (1995)	1	
Coon et al. (2002)		
Dey et al. (2021)	1	1
Jayasinghe et al. (2022)		
Logothetis (1995)	1	1
Merkatz et al. (1993)	1	✓
Roberts et al. (1999)	✓	1
Steve et al. (2021)		1
Tang et al. (2022)		1

Table 10. Frequency of the subthemes across the included papers for Theme 4.

3.4.4.2. Explant surgery. Explanting was regarded as the last resort or only solution to regain their health (Coleman et al., 1995; Dey et al., 2021; Logothetis, 1995; Merkatz et al., 1993; Roberts et al., 1999; Steve et al., 2021; Tang et al., 2022). After years of endeavouring to find an explanation for their symptoms, most women felt that implant removal was the only option (Merkatz et al., 1993; Roberts et al., 1999; Tang et al., 2022). Despite worries about becoming 'self-conscious' about their appearance (Dey et al., 2021; Roberts et al., 1999), they were willing to take the risk if it meant alleviating their symptoms.

My health has deteriorated and even if there is a remote chance of this being related I need to have them removed. (Roberts et al., 1999, p. 249)

A part of me thinks nothing else is working, so despite the risks of surgery, if nothing else is going to help, then you have to do it - you have to try that one thing that might help. I'm feeling sort of vaguely hopeful really but also there's a big question mark. (Tang et al., 2022, p. 386)

The journey to explantation was a process of self-discovery for some women, who experienced significant psychological improvement, which led to acceptance of their natural body (Dey et al., 2021; Logothetis, 1995; Tang et al., 2022).

I was scared of looking incomplete. After much deep, inner work on myself, I realized that my worth wasn't dependent on what I looked like or how big my chest was. I realized that true happiness would come from 100% acceptance of what and who I was. (Dey et al., 2021, Table 5)

Several women described partial or complete resolution of their unexplained systemic symptoms following explantation.

I would say I am about 85% better. I don't get migraines anymore. I don't get chronic – I don't get sinus infections anymore. I am not having any breathing difficulty. My hair is the thickest and longest it's been in over 25 years. Let's see, what else? I don't have sensitivity to light or sound anymore. (Tang et al., 2022, p. 386)

However, not all women were relieved of their symptoms after explantation and continued to have 'all the symptoms of breast implant illness—even after their removal' (Dey et al., 2021, p. 386). Women placed a significant amount of hope on the removal of their breast implants being the answer to their ill health after reading positive stories where some women experienced instant relief postoperatively. When this expectation was not met, women described a sense of defeat and loss, not only for the sustained symptoms but also the reduction in their breasts.

So I got them out last week and it's been a bit of a rollercoaster cause none of my symptoms have dissipated ... but it's only been, well it was only Thursday that I got them removed. But none of my symptoms have dissipated since then, and now I have no boobs, I still have all my symptoms. (Tang et al., 2022, p. 388).

4 Discussion

This qualitative synthesis aimed to provide a comprehensive review of women's self-reported experiences of 'breast implant illness' (BII). This review provides unique insight into the experience of breast implant illness from the perspectives of the women. Nine qualitative studies analysed data from surveys, interviews and online posts that were collected between the 1992 and 2019 predominately across the USA, but also included studies from Canada and Australia. Thematic synthesis allowed for rigorous analysis from a range of studies using different methodologies, which captured the shared experiences, views, and perceptions of women who self-report BII. It is understood that this is the first review of the qualitative literature on the topic of BII, as most studies in this area have focused on outcome-based data to identify management strategies (Atiyeh & Emsieh, 2022; Miranda, 2023; Rohrich et al., 2022). Predominately, the synthesis highlighted the decline in women's psychosocial wellbeing, which had affected their ability to work and caused financial difficulties; alongside, women found themselves withdrawing socially and experienced a profound strain on their interpersonal relationships. Initially, most women were unaware of the possible association between their breast implants and ill health due to the ambiguous nature and variance of the symptoms; however, when seeking professional advice from practitioners' women frequently reported being dismissed or disbelieved. Consequently, women formed negative opinions, beliefs and perceptions of the health-care providers and the plastic surgery industry which were either reinforced or altered by their sub-sequent experiences with practitioners. The experience of Bll impacted women's mental health and many became fearful for their current and future health after becoming aware of the effect the implants could be having on their body. Experiencing Bll altered women's perception of surgery, initially viewing breast implant surgery as the solution to achieve their desired outcome. However, once they became aware that their breast implants may have been the cause of their health issues, explant surgery became the new solution. It is important to acknowledge the limited information about the women's implant status in these studies, as this could have influenced the perceived and described their experiences.

The studies included in this review demonstrate how various dimensions of women's lives were affected by their experience of BII, which is consistent with the recent quantitative literature measuring HRQoL in women with breast implants and health complaints (Berben et al., 2023; Bird & Niessen, 2022; Miseré et al., 2021). For instance, there was an evident decline in social functioning as women reported losing their jobs or having to leave work due to their ill health, which resulted in financial stress (Logothetis, 1995; Roberts et al., 1999). While employment has not been widely researched in women with breast implants, financial stress has been identified as a risk factor for suicide in this population (Manoloudakis et al., 2015); alongside relationship problems and psychological factors which were apparent in most of the included studies (Coleman et al., 1995; Coon et al., 2002; Dey et al., 2021; Logothetis, 1995; Roberts et al., 1999; Tang et al., 2022). Previous research has argued that women who seek breast implant surgery for cosmetic reasons are more likely to have pre-existing psychological symptoms of depressive disorders and possess a certain psychosocial profile (Atiyeh & Emsieh, 2022; Lipworth et al., 2009; Manoloudakis et al., 2015; Mousavi et al., 2023; von Soest et al., 2020). However, it could not be determined whether external factors or influences may have contributed to this decline, or if the interplay of the decline in one psychosocial dimension had a subsequent adverse impact in other areas (Eiroa-Orosa, 2020). Many women described having 'hard' or 'uncomfortable' breasts, suggesting the presence of capsular contracture, which has been predictive of poor psychosocial satisfaction (Bascone et al., 2023; Coleman et al., 1995; Logothetis, 1995; Merkatz et al., 1993; Roberts et al., 1999). Thus, local complications, external factors and individual differences could be indicative of impacting the psychosocial wellbeing of women who self-report BII.

Synonymous with the wider literature, women reported experiencing an array of varying systemic symptoms with no obvious cause (Balk et al., 2016; Berben et al., 2023; Glicksman et al., 2022; Jensen et al., 2002; Magno-Padron et al., 2021; Miseré & van der Hulst, 2022). Most women reported experiencing more than one systemic complaint (Miseré & van der Hulst, 2022). A cohort of women undergoing explantation reported an average of 13.4 symptoms, with the most common being fatigue, joint pain, brain fog and muscle pain, which is consistent with findings from the FDA's medical device report database covering 9,458 reports (Glicksman et al., 2022; U.S. Food and Drug Administration, 2022). Yet the number and type of symptoms are not consistent across every woman who self-reports BII; this has been evidenced in the case series by Habib et al. (2022) and was reflected by the diverse descriptions of the symptoms in this review. Therefore, many women did not immediately make the connection between their progressive symptoms and their breast implants (Tang et al., 2022). However, the common symptoms associated with BII overlap with various other conditions, such as depression, menopause, fibromyalgia and chronic fatigue syndrome, which makes it challenging to determine the aetiology of their symptoms considering most clinical tests conducted on this group of women present no abnormalities (Vahdani et al., 2024).

The media attention around breast implants led many women to become aware of the possible link between breast implants and autoimmune conditions, which in turn created anger, fear and anxiety (Atiyeh & Emsieh, 2022; Kaoutzanis et al., 2019). Anger was directed at breast implant manufacturers, practitioners and health regulators, as women felt it was the responsibility of those

involved in the plastic surgery industry to inform breast implant recipients of any new potential health risks (Coleman et al., 1995; Coon et al., 2002; Merkatz et al., 1993). Nowadays, the internet has become the main source of information for women to retrieve a wealth of information about breast implants, from social media to open-access research papers (Danciu et al., 2019; Herzog et al., 2024; Keane et al., 2021; S. Y. Q. Tang et al., 2018). Ultimately, this shift in society has altered the views and perceptions in this group of women with some empathising with practitioners around the challenges of BII (Tang et al., 2022), whereas others feel they have the knowledge to determine that surgeons do not possess the skills to correctly perform explantation (Steve et al., 2021; S. Y. Q. Tang et al., 2017). Moreover, a good relationship between practitioners and patients is important in health-care and it is especially crucial when dealing with medically unexplained symptoms (Hanssen et al., 2021). Practitioners' attitudes and approach to BII, whether positive or negative, can affect women's wellbeing and perspectives of the healthcare system (El Eter et al., 2022), but by believing or hearing that their experience is real can make a huge difference which reinstates their confidence in the healthcare system and faith in the professionals (Haugli et al., 2004). Click or tap here to enter text.

The studies in this review included a range of women who viewed the initial breast implant surgery as a solution, whether this be to reconstruct their breast or improve their self-esteem (Dey et al., 2021; Logothetis, 1995; Roberts et al., 1999). Yet very few recalled feeling satisfied post-operatively and described experiences of local complications or general dissatisfaction (Dey et al., 2021; Logothetis, 1995; Merkatz et al., 1993; Roberts et al., 1999)(Dey et al., 2021; Logothetis, 1995; Merkatz et al., 1993; Roberts et al., 1999). Moreover, women did not feel that they were fully informed of the risks of breast implants and surgery preoperatively and frequently mentioned that practitioners had misinformed them; for instance, many recalled being told the implants would last a lifetime (Logothetis, 1995; Steve et al., 2021; Tang et al., 2022). Inadequate informed consent has been an issue frequently reported by patients who have undergone breast augmentation surgery, leading to calls for substantial changes in the consent process (Cooter et al., 2023). However, it could be argued that patients do not fully understand the risks at the time of the consultation (D'Souza et al., 2019), and the complex interplay of the patient characteristics and reason for implantation can influence how risk is perceived (Mahoney et al., 2020; Whyte et al., 2023).

Previously, women reported complete or partial resolution of their symptoms following explantation, which was sustained over time including up to a year postoperatively (Bird & Niessen, 2022; Brawer, 2017; Glicksman et al., 2023; Kappel & Pruijn, 2020; Metzinger et al., 2022; Spit et al., 2022); however, not all women experienced a degree of symptom resolution. These findings are reflected in this review, which generated a sense of hopelessness and defeat, indicating that women may attribute a strong emphasis on explantation being the resolution to their ill health (Tang et al., 2022). With no pathological explanation, explantation is not guaranteed to be the solution and whilst various factors such as implant duration (Spit et al., 2022), presence of autoimmune diseases (Peters et al., 1997), capsular contracture (Wee et al., 2020), and the nocebo effect (Bresnick, 2023b) can contribute to the success of symptom resolution, there is currently no consensus that can be drawn from the literature (Rohrich et al., 2022).

4.1. Strengths and limitations of the included studies

A notable strength of this review is that it represents the first synthesis of the findings from the qualitative studies in this area. Moreover, the samples in the included studies were somewhat diverse. For instance, seven out of the nine studies stated the reason women had received breast implants, indicating the majority (853) were for augmentation (Coon et al., 2002; Jayasinghe et al., 2022; Logothetis, 1995; Merkatz et al., 1993; Roberts et al., 1999; Tang et al., 2022), and the remainder (474) were for reconstruction (Coleman et al., 1995; Coon et al., 2002; Logothetis, 1995; Merkatz et al., 1993; Roberts et al., 1999; Tang et al., 2022). These data were not collected in the studies which analysed social media posts (Dey et al., 2021; Steve et al., 2021). Nonetheless, Dey et al. (2021) obtained data from 31,094 posts across three social media sites specific to BII and identified the key attributes of

24 🕳 C. A. KENT ET AL.

BII, covering a wide range of the common issues experienced by women who self-report BII. However, it was not possible to determine the number of women in these studies who had breast implants in situ or had undergone explantation, which may have influenced their responses, especially given the themes suggest a level of decisional regret.

Furthermore, the age of all the participants in the included studies is unclear due to discrepancies in reporting or study design however, the reported ages ranged from 18 years to 84 years old. The recruitment of the sample populations in the included studies varied as the strategies used targeted either woman who self-identified as experiencing symptoms relating to BII (Dey et al., 2021; Logothetis, 1995; Steve et al., 2021; Tang et al., 2022) or women who were dissatisfied with their implants or were experiencing problems (Coleman et al., 1995; Coon et al., 2002; Merkatz et al., 1993; Roberts et al., 1999). For example, Logothetis (1995) recruited women from a conference on breast implant-related problems, three studies analysed data retrieved from the FDA's Problem Reporting Programme (Coleman et al., 1995; Coon et al., 2002; Merkatz et al., 1993) and more recently, studies used social media sites exclusive to women who self-report BII (Dey et al., 2021; Steve et al., 2021; Tang et al., 2022). Distinctive from the other studies, Jayasinghe et al. (2022) explored general breast implant satisfaction and experience in the open-ended survey responses of the BREAST-Q IS, which indicated only a small number of women reported BII. Furthermore, the materials used in five of the studies were constrained to covering specific topics, with five out of the eight questions in the study by Roberts et al. (1999) focusing on the motivation, expectations, and results of the initial surgery and therefore retrieved limited information around the health issues, problems, or complications this group of women experienced. Notwithstanding of the heterogeneity of the studies, this review was able to identify and synthesise common themes in the experiences of women who self-report BII.

There were several limitations in this review. Firstly, it was beyond the scope of this review to include papers that were not published in the English language and therefore these results cannot be generalised across languages other than English. Notably, there was a small number of qualitative studies with major discrepancies in reporting, including inconsistencies with the level of detail included. This was most apparent in the studies published in the 1990s as qualitative reporting guidelines have considerably evolved over the years, enhancing the transparency and rigour required for this type of research (Wertz, 2014). Whilst this is a common issue found when undertaking a qualitative evidence synthesis (Tong et al., 2012), it presented noteable challenges when determining the quality and usefulness of the studies. Additionally, the included studies were predominately based in the USA where access to healthcare is mediated by health insurance which can exacerbate the financial burden (Freyer et al., 2017). Thus, it is essential to consider the variation in national healthcare systems, as these can influence the findings of this review and may present unique challenges or accessibility issues not encountered in other healthcare settings (Levesque et al., 2013). Although Dey et al. (2021) obtained data from sites that be accessed worldwide, the majority of the posts were retrieved from Instagram. Thus, it cannot be determined where the posters were located, and it has numerous limitations and influencing factors that determine the type of content that is posted which may vary across different cultures (Pelletier et al., 2020; Ravn et al., 2020). Nevertheless, as this poorly understood entity has regained increased attention in recent years and is subject to the spread of misinformation as women take to social media platforms to discuss their experience and disseminate information, it is imperative to ensure women are being correctly supported and have access to credible information (Adidharma et al., 2020; Herzog et al., 2024; S. Y. Q. Tang et al., 2017). Consequently, the results of this review can help inform practitioners of the deeper experience of BII by offering a broader perspective on the challenges faced by women who self-report BII.

5. Conclusion

This qualitative review explored the experiences, views, and perceptions of women who self-report symptoms of breast implant illness (BII). Four themes were identified: a decline in women's

psychosocial wellbeing in various dimensions, searching for answers to understand their symptoms, absence of solicitude from healthcare practitioners and surgeons: the cause and solution to their problems. A novel insight was gained into the psychosocial impact of BII, offering an understanding as to why women scored poorly on measures of HRQoL in previous studies. BII impacted women's ability to maintain employment causing financial implications, which has been previously overlooked in the literature. Further qualitative research is required to understand how these psychosocial aspects can be managed and where women would benefit from support. The experience women had with healthcare practitioners were largely negative. Given the lack of pathological evidence to explain BII, practitioners should acknowledge that the experience of symptoms is very real and affects patients' physical and psychological wellbeing. Further research is required to understand how BII affects women across different cultures and identify ways to improve the patient-practitioner relationship.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by Leeds Beckett University.

Data availability statement

The data that support the findings of this study are openly available in Figshare at https://doi.org/10.6084/m9.figshare. 25847368.v1.

References

- Adidharma, W., Latack, K. R., Colohan, S. M., Morrison, S. D., & Cederna, P. S. (2020). Breast Implant Illness: Are social media and the internet worrying patients sick? In *Plastic and Reconstructive Surgery* (Vol. 145, Issue 1, pp. 225E-227E). Lippincott Williams and Wilkins. https://doi.org/10.1097/PRS.00000000006361
- Ahern, M., Smith, M., Chua, H., & Youssef, P. (2002). Breast implants and illness: A model of psychological illness. Annals of the Rheumatic Diseases, 61(7), 659. https://doi.org/10.1136/ard.61.7.659
- Atiyeh, B., & Emsieh, S. (2022). Breast implant illness (BII): Real syndrome or a social media phenomenon? A narrative review of the literature. *Aesthetic Plastic Surgery*, 46(1), 43–57. https://doi.org/10.1007/s00266-021-02428-8
- Balk, E. M., Earley, A., Avendano, E. A., & Raman, G. (2016). Long-term health outcomes in women with silicone gel breast implants. *Annals of Internal Medicine*, 164(3), 164–175. https://doi.org/10.7326/M15-1169
- Barnett-Page, E., & Thomas, J. (2009). Methods for the synthesis of qualitative research: A critical review. BMC Medical Research Methodology, 9(59), 1–11. https://doi.org/10.1186/1471-2288-9-59
- Bascone, C. M., McGraw, J. R., Couto, J. A., Sulkar, R. S., Broach, R. B., Butler, P. D., & Kovach, S. J. (2023). Exploring factors associated with implant removal satisfaction in breast implant illness patients: A PRO BREAST-Q study. *Plastic and Reconstructive Surgery - Global Open*, 11(9), E5273. https://doi.org/10.1097/GOX.00000000005273
- Berben, J. A., Miseré, R. M. L., Schop, S. J., & Van Der Hulst, R. R. W. J. (2023). The influence of personality on health complaints and quality of life in women with breast implants. *Aesthetic Surgery Journal*, 43(2), 245–252. https://doi.org/10. 1093/asj/sjac247
- Bird, G. R., & Niessen, F. B. (2022). The effect of explantation on systemic disease symptoms and quality of life in patients with breast implant illness: A prospective cohort study. *Scientific Reports*, 12(1), 21073. https://doi.org/10.1038/ s41598-022-25300-4
- Blakeman, K. (2013). Finding research information on the Web: How to make the most of google and other free search tools. *Science Progress*, *96*(1), 61–84. https://doi.org/10.3184/003685013X13617253047438
- Bondurant, Stuart., Ernster, V. L., Herdman, Roger., & Institute of Medicine (U.S.). Committee on the Safety of Silicone Breast Implants. (2000). Safety of silicone breast implants. Institute of Medicine.
- Boyd, C. O. (1993). Qualitative approaches in nursing research. Phenomenology: The method. *NLN Publications*, 19–2535, 99–132.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa
- Brawer, A. E. (2000). Amelioration of systemic disease after removal of silicone Gel-Iled breast implants. *Journal of Nutritional & Environmental Medicine*, 10(2), 125–132. https://doi.org/10.1080/13590840050043549

26 🕳 C. A. KENT ET AL.

- Brawer, A. E. (2017). Destiny rides again: The reappearance of silicone gel-filled breast implant toxicity. *Lupus*, 26(10), 1060–1063. https://doi.org/10.1177/0961203317690241
- Bresnick, S. (2023a). Self-Reported breast implant illness: The contribution of systemic illnesses and other factors to patient symptoms. In *Aesthetic surgery journal open forum* (Vol. 5). Oxford University Press (OUP). https://doi.org/ 10.1093/asjof/ojad030
- Bresnick, S. (2023b). Understanding breast implant illness: The important role of nocebo and placebo-like effects. *Aesthetic Surgery Journal*, *43*(5), NP399–NP400. https://doi.org/10.1093/asj/sjad015
- Bresnick, S., Lagman, C., Morris, S., Bresnick, S., & Robbins, M. (2024). Correlation between medically diagnosed anxiety and depression disorder and self-reported breast implant illness. *Aesthetic Surgery Journal*, 44(10), 1118–11126. https://doi.org/10.1093/asj/sjae089
- Calobrace, M. B., & Mays, C. (2021). An algorithm for the management of explantation surgery. *Clinics in Plastic Surgery*, 48(1), 1–16. https://doi.org/10.1016/j.cps.2020.09.005
- Campbell, J. C., Hindle, A., & Stroulia, E. (2015). Latent dirichlet allocation. In Christian Bird, Tim Menzies, & Thomas Zimmerman (Eds.), *The art and science of analyzing software data* (pp. 139–159). Elsevier. https://doi.org/10.1016/ B978-0-12-411519-4.00006-9
- Cohen Tervaert, J. W., Mohazab, N., Redmond, D., van Eeden, C., & Osman, M. (2022). Breast implant illness: Scientific evidence of its existence. *Expert Review of Clinical Immunology*, 18(1), 15–29. https://doi.org/10.1080/1744666X. 2022.2010546
- Coleman, E. A., Coon, S. K., Thompson, P. J., Lemon, S. J., & Depuy, R. S. (1995). Impact of silicone implants on the lives of women with breast cancer. *Oncology Nursing Forum*, 22(10), 1493–1500. http://www.ncbi.nlm.nih.gov/pubmed/ 8577618.
- Coleman, E. A., Lemon, S. J., Rudick, J., Depuy, R. S., Feuer, E. J., & Edwards, B. K. (1994). Rheumatic disease Among 1167 women reporting local implant and systemic problems after breast implant surgery. *Journal of Women's Health*, 3(3), 165–177. https://doi.org/10.1089/jwh.1994.3.165
- Cooke, A., Smith, D., & Booth, A. (2012). Beyond PICO. Qualitative Health Research, 22(10), 1435–1443. https://doi.org/10. 1177/1049732312452938
- Coombs, D. M., Grover, R., Prassinos, A., & Gurunluoglu, R. (2019). Breast augmentation surgery: Clinical considerations. *Cleveland Clinic Journal of Medicine*, 86(2), 111–122. https://doi.org/10.3949/ccjm.86a.18017
- Coon, S. K., Burris, R., Coleman, E. A., & Lemon, S. J. (2002). An analysis of telephone interview data collected in 1992 from 820 women Who reported problems with their breast implants to the food and drug administration. *Plastic and Reconstructive Surgery*, *109*(6), 2043–2051. https://doi.org/10.1097/00006534-200205000-00040
- Cooter, R. D., Brightman, L. A., Deva, A., Murphy, R. X., Larsen, M., & Khashaba, A. (2023). Developing an international framework for informed consent in plastic surgery: A focus on cosmetic breast augmentation. *Plastic and Reconstructive Surgery - Global Open*, 11(11), E5371. https://doi.org/10.1097/GOX.00000000005371
- Coroneos, C. J., Selber, J. C., Offodile, A. C., Butler, C. E., & Clemens, M. W. (2019). US FDA breast implant postapproval studies: Long-term outcomes in 99,993 patients. *Annals of Surgery*, *269*(1), 30–36. https://doi.org/10.1097/SLA. 000000000002990
- Critical Skills Appraisal Programme. (2018). CASP Checklist: 10 questions to help you make sense of a qualitative research.
- Danciu, R., Marina, C., Ardeleanu, V., Marin, R., Scăunaşu, R., & Răducu, L. (2019). Breast implant illness: A step forward in understanding this complex entity and the impact of social media. *Journal of Mind and Medical Sciences*, 6(2), 351–355. https://doi.org/10.22543/7674.62.p351355
- Dawkins, B., Renwick, C., Ensor, T., Shinkins, B., Jayne, D., & Meads, D. (2021). What factors affect patients' ability to access healthcare? An overview of systematic reviews. *Tropical Medicine & International Health*, 26(10), 1177–1188. https:// doi.org/10.1111/tmi.13651
- Deva, A. K., Cuss, A., Magnusson, M., & Cooter, R. (2019). The "game of implants": A perspective on the crisis-prone history of breast implants. Aesthetic Surgery Journal, 39(Supplement_1), S55–S65. https://doi.org/10.1093/asj/sjy310
- de Vries, C. E. E., Kaur, M. N., Klassen, A. F., Sommers, K., Hume, K. M., & Pusic, A. L. (2022). Understanding breast implant– associated illness: A Delphi survey defining most frequently associated symptoms. *Plastic & Reconstructive Surgery*, 149(6), 1056e–1061e. https://doi.org/10.1097/PRS.000000000009088
- Dey, V., Krasniak, P., Nguyen, M., Lee, C., & Ning, X. (2021). A pipeline to understand emerging illness via social media data analysis: Case study on breast implant illness. *JMIR Medical Informatics*, 9(11). https://doi.org/10.2196/29768
- di Pompeo, F. S., Paolini, G., Firmani, G., & Sorotos, M. (2022). History of breast implants: Back to the future. JPRAS Open, 32, 166–177. https://doi.org/10.1016/j.jpra.2022.02.004
- Di Via loschpe, A., Oleru, O. O., Brozynski, M., Seyidova, N., & Henderson, P. W. (2023). Contextualizing the impact of pop culture on breast implant illness and its medical relevance. *Aesthetic Plastic Surgery*, 48(5), 1056–1065. https://doi.org/ 10.1007/s00266-023-03422-y
- D'Souza, R. S., Johnson, R. L., Bettini, L., Schulte, P. J., & Burkle, C. (2019). Room for improvement: A systematic review and meta-analysis on the informed consent process for emergency surgery. *Mayo Clinic Proceedings*, 94(9), 1786–1798. https://doi.org/10.1016/j.mayocp.2019.02.026
- Dush, D. M. (2001). Breast implants and illness: A model of psychological factors. Annals of the Rheumatic Diseases, 60(7), 653–657. https://doi.org/10.1136/ard.60.7.653

- Eiroa-Orosa, F. J. (2020). Understanding psychosocial wellbeing in the context of complex and multidimensional problems. International Journal of Environmental Research and Public Health, 17(16), 1–8. https://doi.org/10.3390/ ijerph17165937
- El Eter, L., Hui Ling Khoo, K., Wesson, T., Rezwan, S., Abeles, E., Karius, A., He, W., Magrath, W., Andre Akhavan, A., Antar, A., Groetsch, C., Mahmoud, A., Oles, N., Guliyeva, G., Cooney, C. M., & Manahan, M. (2022). Breast implant illness: Identifying patients concerns from public comments on regulation.gov. *Plastic and Reconstructive Surgery - Global Open*, *10*(105), 129–130. https://doi.org/10.1097/01.gox.0000899000.10669.69
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x
- Flemming, K., Booth, A., Garside, R., Tunçalp, Ö, & Noyes, J. (2019). Qualitative evidence synthesis for complex interventions and guideline development: Clarification of the purpose, designs and relevant methods. *BMJ Global Health*, 4(Suppl 1), e000882. https://doi.org/10.1136/bmjgh-2018-000882
- Flemming, K., & Noyes, J. (2021). Qualitative evidence synthesis: Where Are We at? International Journal of Qualitative Methods, 20, 1–13. https://doi.org/10.1177/1609406921993276
- Freyer, D. R., Smith, A. W., Wolfson, J. A., & Barr, R. D. (2017). Making ends meet: Financial Issues from the Perspectives of Patients and Their Health-Care Team (pp. 667–685). https://doi.org/10.1007/978-3-319-33679-4_27
- Glicksman, C., McGuire, P., Kadin, M., Barnes, K., Wixtrom, R., Lawrence, M., Haws, M., Ferenz, S., Sung, C. J., Hamilton, R. G., & Faasse, K. (2023). Longevity of post-explantation systemic symptom improvement and potential etiologies: Findings from the ASERF systemic symptoms in women-biospecimen analysis study: Part 4. Aesthetic Surgery Journal, 43(10), 1194–1204. https://doi.org/10.1093/asj/sjad098
- Glicksman, C., McGuire, P., Kadin, M., Lawrence, M., Haws, M., Newby, J., Ferenz, S., Sung, J., & Wixtrom, R. (2022). Impact of capsulectomy type on post-explantation systemic symptom improvement: Findings from the ASERF systemic symptoms in women-biospecimen analysis study: Part 1. *Aesthetic Surgery Journal*, 42(7), 809–819. https://doi.org/ 10.1093/asj/sjab417
- Guest, E., Paraskeva, N., Griffiths, C., Hansen, E., Clarke, A., Baker, E., & Harcourt, D. (2021). The nature and importance of women's goals for immediate and delayed breast reconstruction. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, 74(9), 2169–2175. https://doi.org/10.1016/j.bjps.2020.12.085
- Habib, P. M., Serena, T., & Derosa, A. (2022). Breast Implant Illness: A case series. Cureus. https://doi.org/10.7759/cureus.23680
- Hanssen, D. J. C., Bos, L. R., Finch, T. L., & Rosmalen, J. G. M. (2021). Barriers and facilitators to implementing interventions for medically unexplained symptoms in primary and secondary care: A systematic review. *General Hospital Psychiatry*, 73, 101–113. https://doi.org/10.1016/j.genhosppsych.2021.10.004
- Haugli, L., Strand, E., & Finset, A. (2004). How do patients with rheumatic disease experience their relationship with their doctors? *Patient Education and Counseling*, *52*(2), 169–174. https://doi.org/10.1016/S0738-3991(03)00023-5
- Hemal, K., Kabir, R., Stanton, E., Sorenson, T., Boyd, C., Karp, N., & Choi, M. (2024). Breast implant illness (BII) As a clinical entity: A systematic review of the literature. *Aesthetic Surgery Journal Open Forum*, 6(Supplement_1), ojae007.073. https://doi.org/10.1093/asjof/ojae007.073
- Herzog, I., Pandher, M., Mansukhani, P. A., Kapadia, K., & Lee, E. S. (2024). Is YouTube propagating concerns about breast implant illness? *Annals of Plastic Surgery*, 92(2), 144–147. https://doi.org/10.1097/SAP.00000000003743
- Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288. https://doi.org/10.1177/1049732305276687
- Hyland, C. J., Gadiraju, G., Parikh, N., Dey, T., & Broyles, J. M. (2022). Public perceptions of breast implant complications and the FDA boxed warning on implants. *Plastic and Reconstructive Surgery - Global Open*, 10(11), E4439. https://doi. org/10.1097/GOX.000000000004439
- International Society of Aesthetic Plastic Surgery. (2024). ISAPS INTERNATIONAL SURVEY ON AESTHETIC/COSMETIC PROCEDURES performed in 2023. www.isaps.org.
- Jayasinghe, R. T., Ruseckaite, R., Gartoulla, P., Elder, E., & Hopper, I. (2022). Patient reported outcome measures after breast augmentation – using the BREAST-Q IS. *Patient Related Outcome Measures*, 13, 1–8. https://doi.org/10.2147/ prom.s330163
- Jensen, B., Jensen, B., Hechmann Wittrup, I., Friis, S., Kjøller, K., McLaughlin, J. K., Bliddal, H., Danneskiold-Samsøe, B., & Olsen, J. H. (2002). Self-Reported symptoms among danish women following cosmetic breast implant surgery. *Clinical Rheumatology*, 21(1), 35–42. https://doi.org/10.1007/s100670200009
- Kabir, R., Stanton, E., Sorenson, T. J., Hemal, K., Boyd, C. J., Karp, N. S., & Choi, M. (2024). Breast implant illness as a clinical entity: A systematic review of the literature. *Aesthetic Surgery Journal*, 44(9), NP629–NP636. https://doi.org/10.1093/ ASJ/SJAE095
- Kaoutzanis, C., Winocour, J., Unger, J., Gabriel, A., & Maxwell, G. P. (2019). The evolution of breast implants. Seminars in Plastic Surgery, 33(4), 217–223. https://doi.org/10.1055/s-0039-1696985
- Kaplan, J., & Rohrich, R. (2021). Breast implant illness: A topic in review. *Gland Surgery*, 10(1), 430–443. https://doi.org/10. 21037/gs-20-231
- Kappel, R. M., & Pruijn, G. J. (2020). Explantation of silicone breast implants ameliorates Gel bleed related health complaints in women with breast implant illness. *Clinical Medical Reviews and Case Reports*, 7(3), 1–7. https://doi.org/10. 23937/2378-3656/1410301

- Keane, G., Chi, D., Ha, A. Y., & Myckatyn, T. M. (2021). En bloc capsulectomy for breast implant illness: A social media phenomenon? *Aesthetic Surgery Journal*, 41(4), 448–459. https://doi.org/10.1093/asj/sjaa203
- Levesque, J. F., Harris, M. F., & Russell, G. (2013). Patient-centred access to health care: Conceptualising access at the interface of health systems and populations. *International Journal for Equity in Health*, *12*(1). https://doi.org/10. 1186/1475-9276-12-18
- Lieffering, A. S., Hommes, J. E., Ramerman, L., Rakhorst, H. A., Mureau, M. A. M., Verheij, R. A., & Van Der Hulst, R. R. W. J. (2022). Prevalence of local postoperative complications and breast implant illness in women with breast implants. JAMA Network Open, 5(10), E2236519. https://doi.org/10.1001/jamanetworkopen.2022.36519
- Lipworth, L., Kjøller, K., Hölmich, L. R., Friis, S., Olsen, J. H., & McLaughlin, J. K. (2009). Psychological characteristics of danish women With cosmetic breast implants. *Annals of Plastic Surgery*, 63(1), 11–14. https://doi.org/10.1097/SAP. 0b013e3181857318
- Logothetis, M. Lou. (1995). Women's reports of breast implant problems and silicone-related illness. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 24(7), 609–616. https://doi.org/10.1111/j.1552-6909.1995.tb02543.x
- Long, H. A., French, D. P., & Brooks, J. M. (2020). Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Sciences*, 1(1), 31–42. https://doi.org/10.1177/2632084320947559
- Loper, E., & Bird, S. (2002). NLTK: The natural language toolkit. Proceedings of the ACL-02 Workshop on Effective Tools and Methodologies for Teaching Natural Language Processing and Computational Linguistics, 1, 63–70. https://doi.org/10. 3115/1118108.1118117
- Lucas, P. J., Baird, J., Arai, L., Law, C., & Roberts, H. M. (2007). Worked examples of alternative methods for the synthesis of qualitative and quantitative research in systematic reviews. *BMC Medical Research Methodology*, 7(1). https://doi.org/ 10.1186/1471-2288-7-4
- Magno-Padron, D. A., Luo, J., Jessop, T. C., Garlick, J. W., Manum, J. S., Carter, G. C., Agarwal, J. P., & Kwok, A. C. (2021). A population-based study of breast implant illness. *Archives of Plastic Surgery*, 48(4), 353–360. https://doi.org/10.5999/ aps.2020.02117
- Mahoney, B., Walklet, E., Bradley, E., Thrush, S., Skillman, J., Whisker, L., Barnes, N., Holcombe, C., & Potter, S. (2020). Experiences of implant loss after immediate implant-based breast reconstruction: Qualitative study. *BJS Open*, 4(3), 380–390. https://doi.org/10.1002/bjs5.50275
- Majid, U., & Vanstone, M. (2018). Appraising qualitative research for evidence syntheses: A compendium of quality appraisal tools. *Qualitative Health Research*, 28(13), 2115–2131. https://doi.org/10.1177/1049732318785358
- Manoloudakis, N., Labiris, G., Karakitsou, N., Kim, J. B., Sheena, Y., & Niakas, D. (2015). Characteristics of women who have had cosmetic breast implants that could be associated with increased suicide risk: A systematic review, proposing a suicide prevention model. Archives of Plastic Surgery, 42(2), 131–142. https://doi.org/10.5999/aps.2015.42.2.131
- McCarthy, E. J., Merkatz, R. B., & Bagley, G. P. (1993). A descriptive analysis of physical complaints from women With silicone breast implants. *Journal of Women's Health*, 2(2), 111–115. https://doi.org/10.1089/jwh.1993.2.111
- McGuire, P., Glicksman, C., Magnusson, M. R., & Deva, A. K. (2023a). Systemic symptoms associated With breast implants (SSBI): current evidence shows benefit of implant removal With or without capsulectomy great discoveries and improvements invariably involve the cooperation of many minds. *Aesthetic Surgery Journal*, 43(9), 1057–1060. https://doi.org/10.1093/asj/sjad165
- McGuire, P., Glicksman, C., Wixtrom, R., Sung, C. J., & Hamilton, R. (2023b). Microbes, histology, blood analysis, enterotoxins, and cytokines: Microbes, histology, blood analysis, enterotoxins, and cytokines: Findings from the ASERF systemic symptoms in women-findings from the ASERF systemic symptoms in women-biospecimen analysis study: Part 3 biospecimen analysis study: Part 3. Surgery Journal, 43(2), 230–244. https://doi.org/10.1093/asj/sjac225/6671500
- McGuire, P. A., Haws, M. J., & Nahai, F. (2019). Breast implant illness: How Can We help? *Aesthetic Surgery Journal*, 39(11), 1260–1263. https://doi.org/10.1093/asj/sjz227
- Merenda, M., Vishwanath, S., Ng, S., Parker, E., Earnest, A., Klassen, A., Pusic, A., & Hopper, I. (2021). Test-Retest reliability of the BREAST-Q IS in the Australian breast device registry. *Aesthetic Surgery Journal*, *41*(4), NP177–NP184. https://doi. org/10.1093/asj/sjaa342
- Merkatz, R. B., Bagley, G. P., & McCarthy, E. J. (1993). A qualitative analysis of self-reported experiences Among women encountering difficulties With silicone breast implants. *Journal of Women's Health*, 2(2), 105–109. https://doi.org/10. 1089/jwh.1993.2.105
- Metzinger, S. E., Homsy, C., Chun, M. J., & Metzinger, R. C. (2022). Breast implant illness: Treatment using total capsulectomy and implant removal. *Eplasty*, 22, e5. http://www.ncbi.nlm.nih.gov/pubmed/35602522
- Miranda, R. E. de. (2023). What is the impact of capsulectomy on systemic symptoms attributed to silicone breast implants? Systematic literature review. Revista Brasileira de Cirurgia Plástica (RBCP) – Brazilian Journal of Plastic Sugery, 38(4). https://doi.org/10.5935/2177-1235.2023RBCP0816-PT
- Miseré, R. M. L., Colaris, M. J. L., Tervaert, J. W. C., & Van Der Hulst, R. R. W. J. (2021). The prevalence of self-reported health complaints and health-related quality of life in women with breast implants. *Aesthetic Surgery Journal*, 41(6), 661–668. https://doi.org/10.1093/asj/sjaa207
- Miseré, R. M. L., & van der Hulst, R. R. W. J. (2022). Self-Reported health complaints in women undergoing explantation of breast implants. Aesthetic Surgery Journal, 42(2), 171–180. https://doi.org/10.1093/asj/sjaa337

- Morse, J. (1991). Qualitative nursing research: A contemporary dialogue. SAGE Publications, Inc. https://doi.org/10.4135/ 9781483349015
- Mortada, H., Ibrahim, N., Almousa, H., Aldihan, R., & Arab, K. (2022). Perceptions and attitudes toward unusual complications following breast implant surgeries among Saudi female patients: How knowledgeable are our patients? *Journal of Family Medicine and Primary Care*, 11(4), 1327–1334. https://doi.org/10.4103/jfmpc.jfmpc_1385_21.
- Mousavi, Z., Abolhasanpour, N., Naseri, A., Maghsoudi, F., Farshbaf-Khalili, A., Shahsavarinia, K., Mousavi, A., Beheshti, R., Mostafaei, A., & Salehi-Pourmehr, H. (2023). Cosmetic breast implants and the risk of suicide: A systematic review and meta-analysis. https://jbi.global/critical-appraisal-tools.
- Newby, J. M., Tang, S., Faasse, K., Sharrock, M. J., & Adams, W. P. (2021). Understanding breast implant illness. Aesthetic Surgery Journal, 41(12), 1367–1379. https://doi.org/10.1093/asj/sjaa329
- Ng, S., Parker, E., Pusic, A., Farrell, G., Moore, C., Elder, E., Cooter, R. D., McNeil, J., & Hopper, I. (2022). Lessons learned in implementing patient-reported outcome measures (PROMs) in the Australian breast device registry (ABDR). Aesthetic Surgery Journal, 42(1), 31–37. https://doi.org/10.1093/asj/sjaa376
- Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan-a web and mobile app for systematic reviews. *Systematic Reviews*, *5*(1), https://doi.org/10.1186/s13643-016-0384-4
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71. https://doi.org/10.1136/bmj.n71
- Pelletier, M. J., Krallman, A., Adams, F. G., & Hancock, T. (2020). One size doesn't fit all: A uses and gratifications analysis of social media platforms. *Journal of Research in Interactive Marketing*, 14(2), 269–284. https://doi.org/10.1108/JRIM-10-2019-0159
- Peters, W., Smith, D., Fornasier, V., Lugowski, S., & Ibanez, D. (1997). An outcome analysis of 100 women after explantation of silicone Gel breast implants. *Annals of Plastic Surgery*, 39(1), 9–19. https://doi.org/10.1097/00000637-199707000-00002
- Ravn, S., Barnwell, A., & Barbosa Neves, B. (2020). What Is "publicly available data"? exploring blurred public-private boundaries and ethical practices through a case study on Instagram. *Journal of Empirical Research on Human Research Ethics*, 15(1–2), 40–45. https://doi.org/10.1177/1556264619850736
- Roberts, C. S., Wells, K. E., & Walden, K. (1999). Toward understanding women who request removal of silicone breast implants. *Breast Journal*, *5*(4), 246–251. https://doi.org/10.1046/j.1524-4741.1999.98115.x
- Rohrich, R. J., Bellamy, J. L., & Alleyne, B. (2022). Assessing long-term outcomes in breast implant illness: The missing link? A systematic review. *Plastic and Reconstructive Surgery* (Vol. 149 (4), pp. 638E–645E). https://doi.org/10.1097/ PRS.0000000000009067
- Romain, P. L. (2015). Conflicts of interest in research: Looking out for number one means keeping the primary interest front and center. *Current Reviews in Musculoskeletal Medicine*, 8(2), 122–127. https://doi.org/10.1007/s12178-015-9270-2
- Salani, R., Waddell, V., & Schaffir, J. (2014). Addressing psychosocial issues that impact women's health: Proceedings of the 2014 Meeting of the North American Society for Psychosocial Obstetrics & Gynecology. Women's Health, 10(4), 349–351. https://doi.org/10.2217/whe.14.36
- Schleiter, K. E. (2010). HEALTH LAW silicone breast implant litigation. *American Medical Association Journal of Ethics*, 12(5), 389–394. www.virtualmentor.org
- Serena, T. J., Habib, P., & Derosa, A. (2023). Breast Implant Illness: A Cohort Study. Cureus. https://doi.org/10.7759/cureus. 38056
- Solvi, A. S., Foss, K., von Soest, T., Roald, H. E., Skolleborg, K. C., & Holte, A. (2010). Motivational factors and psychological processes in cosmetic breast augmentation surgery. *Journal of Plastic, Reconstructive and Aesthetic Surgery*, 63(4), 673–680. https://doi.org/10.1016/j.bjps.2009.01.024
- Spit, K. A., Scharff, M., De Blok, C. J. M., Niessen, F. B., Bachour, Y., & Nanayakkara, P. W. (2022). Patient-reported systemic symptoms in women with silicone breast implants: A descriptive cohort study. *BMJ Open*, 12(6), e057159. https://doi. org/10.1136/bmjopen-2021-057159
- Steve, A. K., Temple-Oberle, C., Yeung, J. K., Lafreniere, A. S., & Harrop, A. R. (2021). You helped create this, help Me Now": A qualitative analysis of patients' concerns about breast implants and a proposed strategy for moving forward. *Plastic and Reconstructive Surgery*, 147(1), 16E–24E. https://doi.org/10.1097/PRS.00000000007422
- Suh, L. J., Khan, I., Kelley-Patteson, C., Mohan, G., Hassanein, A. H., & Sinha, M. (2022). Breast implant-associated immunological disorders. *Journal of Immunology Research*, 2022, 8536149 https://doi.org/10.1155/2022/8536149.
- Suri, K., & Billick, S. (2023). Breast implant illness through a psychiatric lens. *Aesthetic Plastic Surgery*, 48(4), 559–567. https://doi.org/10.1007/s00266-023-03692-6.
- Tang, S., Anderson, N. E., Faasse, K., Adams, W. P., & Newby, J. M. (2022). A qualitative study on the experiences of women with breast implant illness. Aesthetic Surgery Journal, 42(4), 381–393. https://doi.org/10.1093/asj/sjab204
- Tang, S. Y. Q., Israel, J. S., & Afifi, A. M. (2017). Breast implant illness: Symptoms, patient concerns, and the power of social media. *Plastic and Reconstructive Surgery*, 140(5), 765e–766e. https://doi.org/10.1097/PRS.00000000003785

30 🔄 C. A. KENT ET AL.

- Tang, S. Y. Q., Israel, J. S., Poore, S. O., & Afifi, A. M. (2018). Facebook facts: Breast reconstruction patient-reported outcomes using social media. *Plastic and Reconstructive Surgery*, 141(5), 1106–1113. https://doi.org/10.1097/PRS. 000000000004275
- Tervaert, J. W. C., Shoenfeld, Y., Cruciani, C., Scarpa, C., & Bassetto, F. (2024). Breast implant illness: Is it causally related to breast implants? In Autoimmunity Reviews. Elsevier B.V, 23(1), 103448. https://doi.org/10.1016/j.autrev.2023.103448
- Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. BMC Medical Research Methodology, 8(1), 45. https://doi.org/10.1186/1471-2288-8-45
- Thorne, S. (2009). The role of qualitative research within an evidence-based context: Can metasynthesis be the answer? International Journal of Nursing Studies, 46(4), 569–575. https://doi.org/10.1016/j.ijnurstu.2008.05.001
- Tong, A., Flemming, K., McInnes, E., Oliver, S., & Craig, J. (2012). Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. BMC Medical Research Methodology, 12(1). https://doi.org/10.1186/1471-2288-12-181
- U.S. Food and Drug Administration. (2022). *Medical device reports for systemic symptoms in women with breast implants*. https://www.fda.gov/medical-devices/breast-implants/medical-device-reports-systemic-symptoms-women-breast-implants.
- Vahdani, F. G., Ghaemi, M., & Haddadi, M. (2024). Breast implant illness as a challenging disorder in clinics. Aesthetic Plastic Surgery, 48(23), 5215–5216. https://doi.org/10.1007/s00266-023-03674-8
- von Soest, T., Torgersen, L., & Kvalem, I. L. (2020). Mental health and psychosocial characteristics of breast augmentation patients. *Journal of Health Psychology*, 25(9), 1270–1284. https://doi.org/10.1177/1359105318754645
- Wee, C. E., Younis, J., Isbester, K., Smith, A., Wangler, B., Sarode, A. L., Patil, N., Grunzweig, K., Boas, S., Harvey, D. J., Kumar, A. R., & Feng, L. J. (2020). Understanding breast implant illness, before and after explantation: A patient-reported outcomes study. *Annals of Plastic Surgery*, 85(S1), S82–S86. https://doi.org/10.1097/SAP.00000000002446
- Wells, K. E., Roberts, C., Daniels, S. M., Kearney, R. E., & Cox, C. E. (1995). Psychological and rheumatic symptoms of women requesting silicone breast implant removal. *Annals of Plastic Surgery*, 34(6), 572–577. https://doi.org/10. 1097/0000637-199506000-00002
- Wertz, F. J. (2014). Qualitative inquiry in the history of psychology. *Qualitative Psychology*, 1(1), 4–16. https://doi.org/10. 1037/qup0000007
- Whyte, S., Bray, L., Brumpton, M., Chan, H. F., Peltz, T. S., Tamar, M., Dulleck, U., & Hutmacher, D. W. (2023). Factors impacting informed consent in cosmetic breast augmentation. *The Breast*, *68*, 225–232. https://doi.org/10.1016/j. breast.2023.02.007
- Woof, V. G., Howell, A., McWilliams, L., Gareth Evans, D., & French, D. P. (2022). How do women who are informed that they are at increased risk of breast cancer appraise their risk? A systematic review of qualitative research. *British Journal of Cancer*, 127(11), 1916–1924. https://doi.org/10.1038/s41416-022-01944-x
- Yang, S., Klietz, M. L., Harren, A. K., Wei, Q., Hirsch, T., & Aitzetmüller, M. M. (2022). Understanding breast implant illness: Etiology is the Key. Aesthetic Surgery Journal, 42(4), 370–377. https://doi.org/10.1093/asj/sjab197