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RESEARCH ARTICLE

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Subsequent full publication of qualitative studies presented at United Kingdom Royal College of Nursing Research Conference 2015 and 2016: A follow-up study

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Abstract

A considerable proportion of quantitative research remains unpublished once completed. Little research has documented non-dissemination and dissemination bias in qualitative research. This study aimed to generate evidence on the extent of non-dissemination in qualitative research. We followed a cohort of qualitative studies presented as conference abstracts to ascertain their subsequent publication status. We searched for subsequent full publication in MEDLINE, in the Cumulative Index to Nursing & Allied Health Literature and in Google Scholar. We matched abstracts to subsequent publications according to authors, method of data collection and phenomenon of interest. Fisher's exact test was calculated to examine associations between study characteristics and publication. Factors potentially associated with time to publication were evaluated with Cox regression analysis. For 91 of 270 included abstracts (33.70%; 95% CI 28.09%–39.68%), no full publication was identified. Factors that were found to be associated with subsequent full publication were oral presentation (OR 4.62; 95% CI 2.43–8.94) and university affiliation (OR 1.96; 95% CI 1.05–3.66). Compared to oral presentations, studies presented as posters took longer time to reach full publication (hazard ratio 0.35, 95% CI 0.21–0.58). This study shows that it was not possible to retrieve a full publication for over one-third of abstracts. Our findings suggest that where this non-dissemination is systematic, it may lead to distortions of the qualitative evidence-base for decision-making through dissemination bias. Our findings are congruent with those of other studies. Further research might investigate non-dissemination of qualitative studies in other disciplines to consolidate our findings.

KEYWORDS

cohort study, confidence in the evidence, dissemination bias, GRADE-CERQual, qualitative research

Highlights

- Empirical evidence has demonstrated that a considerable proportion of quantitative research on the effectiveness of interventions or programmes remains unpublished once completed. When disseminated and non-disseminated studies and findings differ systematically, that is, where non-dissemination is systematic rather than random, this can cause dissemination bias. For quantitative research that assesses clinical effectiveness, there is evidence that the benefits of clinical interventions are overestimated as a consequence of dissemination bias. However we have little evidence on corresponding findings for qualitative research.
- This study found that more than one-third ($n = 91$ of 270; 33.70%; 95% CI 28.09%–39.68%) of qualitative studies presented at an international nursing research conference did not result in a full publication more than 5 years after presentation at the conference in 2015 and 2016, respectively. Studies presented as oral presentations subsequent full publication, when compared to poster presentations. Additionally, studies presented by first authors with a university affiliation subsequent full publication, compared to studies presented by researchers with no university affiliation.
- This finding is potentially concerning to the research community and to decision makers in health care regarding the non-retrievability of qualitative studies as well as regarding possible dissemination bias in qualitative research. The results of this study confirm both that non-dissemination is considerable in qualitative research and that it is plausible that dissemination bias affects the findings of qualitative evidence syntheses. As a consequence, a distortion of the evidence-base for decision-making by dissemination bias is likely. We therefore believe that dissemination bias should remain a candidate domain for the GRADE-CERQual approach for assessing how much confidence to place in findings from syntheses of qualitative evidence.

1 | BACKGROUND

Systematic reviews synthesise evidence from individual studies and provide a summary of all available scientific evidence for a specific question following a systematic and transparent scientific methodology (see Box 1). One barrier to identifying all primary research relevant to a systematic review or evidence synthesis is where previously conducted primary research has not been published or made accessible in other ways, such as via a website. The accessibility of primary research varies from 'easily accessible' to 'completely inaccessible'.[1] When disseminated and non-disseminated studies and findings differ systematically, that is, where non-dissemination is systematic rather than random, this can cause dissemination bias. The term 'dissemination bias' is increasingly used because it captures mechanisms and factors that lie beyond the mere publication of studies as determined by the direction or strength of their findings. In contrast to the concept of 'publication bias', dissemination bias also considers when, where and in what format research is published[2,3] and covers underlying mechanisms or biases that impact on the accessibility of a study. There are various forms in which a study can be considered disseminated, ranging from publication in a scientific journal with or without open access options, to publication as grey literature report or thesis, and to posts in (social) media.

1.1 | Dissemination bias in quantitative research

The effects of interventions or programmes are best evaluated by studies that use comparative methods and measurements based on numerical data and analysis. Empirical studies have demonstrated that a sizable proportion of quantitative research on the effectiveness of interventions or programmes remains unpublished once completed.[4–8] There is now considerable evidence that the benefits of clinical interventions are overestimated as a consequence of dissemination bias.[1,7,9] Such bias

BOX 1 What are qualitative evidence syntheses?

Qualitative evidence syntheses are a way of systematically synthesising findings from primary qualitative studies, as well as qualitative data from other types of studies such as mixed-method studies.[21] In qualitative evidence synthesis, evidence from individual qualitative research studies addressing a similar research question or phenomenon of interest is synthesised using an appropriate method.[13] Qualitative evidence syntheses can provide an overview of descriptions and explanations of people's views, perspectives, and experiences of a particular phenomenon and consequently create a new, more nuanced and in-depth understanding of this phenomenon or topic. These syntheses help to generate theoretical and conceptual models, identify research gaps, and provide evidence for the development, implementation and evaluation of interventions.[13] Qualitative evidence syntheses can be used to develop fields of research by contributing to empirical generalisations and building theory through providing an overview of what is going on in the field.[22] This type of synthesis is increasingly conducted and published (see Figure 1).

resulting from non-dissemination impacts on the evidence base for clinical, and regulatory, decision-making.[1]

1.2 | Dissemination bias in qualitative research

In contrast to the quantitative research domain,[8,10] little research has been done on the extent of dissemination bias in qualitative research.[11–14] As in quantitative research, non-dissemination of qualitative studies or individual findings from these studies, and consequently dissemination bias in qualitative research, might plausibly occur when any actor or stakeholder involved in the publication process (including authors, sponsors, funders, peer-reviewers or journal editors) systematically refrains from publishing studies or findings based on the nature of the findings. Dissemination bias in qualitative research has been defined as 'A systematic distortion of the phenomenon of interest due to selective dissemination of qualitative studies or the findings of qualitative studies'.[14] The lack of attention to dissemination bias in qualitative research creates considerable gaps in our understanding of, firstly, the factors leading to dissemination bias; secondly, how dissemination bias might practically impact on the findings of qualitative evidence syntheses; and, lastly, how to assess the confidence in the findings from qualitative evidence syntheses in light of dissemination bias.[14]

1.3 | The impacts of dissemination bias on assessing confidence in evidence

The GRADE approach for assessing the certainty of evidence on the effectiveness of interventions recognises dissemination bias in the form of 'publication bias'.[15] For qualitative evidence, the GRADE-CERQual approach guides review authors and users in the assessment of the level of confidence they may have in a finding from a qualitative evidence synthesis. A GRADE-CERQual assessment of confidence in the evidence is based on the following four components: (1) methodological limitations of the studies contributing to the review finding,[16] (2) coherence of the review finding,[17] (3) adequacy of data supporting the review finding[18] and (4) relevance of the included studies to the review question.[19] In the GRADE-CERQual approach, all individual review findings start as 'high confidence'[20] and may be graded down if there are concerns regarding any of the CERQual components. This assessment is then modified to 'moderate', 'low' or 'very low confidence' depending on the extent of these concerns. This way of grading evidence indicates that each review finding should be seen as a reasonable representation of the phenomenon or topic of interest unless there are any concerns that weaken this assumption and impact on confidence in the review finding.

The extent to which dissemination bias is comparably relevant for the GRADE-CERQual approach as it is for GRADE for effectiveness evidence is currently poorly understood.[14] Therefore, the aim of this study is to generate evidence on the extent of non-dissemination in qualitative research by following a cohort of qualitative studies presented as conference abstracts to ascertain their subsequent publication status.

2 | METHODS

Our study design is based on previously published cohort studies that followed conference abstracts to ascertain subsequent full publication.[8] We adapted this approach to our specific research focus.

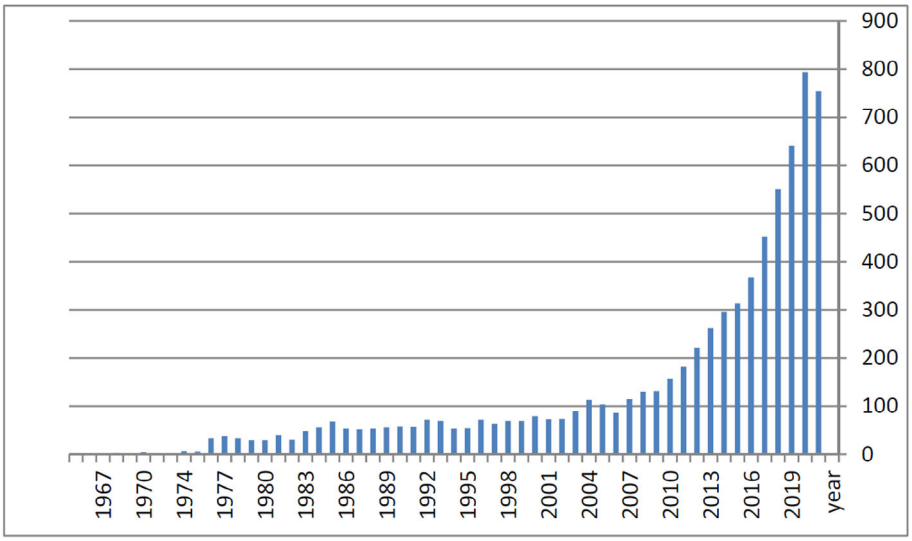

FIGURE 1 Number of 'qualitative evidence synthesis' indexed references in MEDLINE between the years 1958 and 2021 (via PubMed, date: 24 November 2020) [Colour figure can be viewed at wileyonlinelibrary.com]

2.1 | Study sample

We created the study sample from the online conference proceedings of the annual United Kingdom Royal College of Nursing Research Conference 2015 and 2016.[23,24] We chose this conference as the source for the sample because of the high relevance of nursing for health and health care as well as the acknowledged relevance of qualitative research for nursing science. We considered it likely that larger numbers of qualitative studies would be presented at a nursing conference compared with, for example, a clinical research conference. We used a follow-up period from the date of the conferences (April 2015 and 2016, respectively) to February 2021 as this allowed ample time for researchers to complete the studies presented at the conference, as well as to publish the study findings as full articles in scientific journals. For our study, we defined a full publication as a publication that specified and described the methods and results of a study in detail in a scientifically objective way, based on the definition proposed by Blumle et al.[5]

The sample drawn from conference abstracts offers feasibility and easy accessibility. Furthermore, the barriers for study authors to publish their findings as conference abstract are considerably lower as for, for example, journal publications. Thus, chances for a first/preliminary publication of a qualitative study as conference abstract are relatively high. In addition, studies reported as conference abstracts are more likely to represent an early stage of the research process and may not necessarily be finalised. Lastly, using conference abstracts as our sample allowed us to easily identify a substantial number of qualitative studies that were most likely not published at the time of conference presentation, thereby providing a sufficient sample size for our study.

2.2 | Eligibility criteria

To identify eligible studies for our study, we scrutinised all abstracts from the research conference that were accepted as an oral presentations or posters. We excluded abstracts of plenary presentations because we concluded that, for this conference, plenary presentations typically focus on educating the audience rather than informing them about study findings. This judgement was based on the content of plenary presentations and the fact that each plenary session abstract included a section 'intended learning outcomes'. The prospects for full publication of such educative contents were deemed to be substantively lower compared to those describing studies or programmes using qualitative or mixed methods and, therefore, not representative for qualitative research.

To be included in this cohort study, abstracts needed to meet one of the following criteria: (i) described a qualitative study, (ii) described a mixed-methods study or a programme description with at least one qualitative element or (iii) described an evidence synthesis of qualitative research findings. We excluded abstracts that reported on quantitative studies; broad methodological or theoretical discussions within the scope of nursing; or methodological studies utilising a quantitative approach, for example, studies evaluating the validity of research tools. Studies were not excluded based on a lack of detail about the qualitative study methods or findings.

2.3 | Search for full publications and matching

We searched for subsequent full publications of the included abstracts in the following databases: MEDLINE

via OVID, the Cumulative Index to Nursing & Allied Health Literature (CINAHL) and Google Scholar. We selected these databases based on the extensive coverage of indexed journals (MEDLINE), their relevance for nursing (CINAHL) and in order to attempt to retrieve publications beyond those indexed in MEDLINE and CINAHL, such as grey literature reports and theses (Google Scholar). When searching for full publications, we used a stepwise approach: we initially searched in MEDLINE and, if no matching publication was retrieved, then searched in CINAHL. If no matching results were found in CINAHL, we searched Google Scholar.

We constructed a purpose-specific search strategy for each abstract consisting of author names, keywords from the title and abstract describing the phenomenon of interest, and the method of inquiry. Variants of search terms (i.e., synonyms) were used as well as Medical Subject Headings (MeSH) where appropriate. We combined terms using the Boolean operators 'AND' and 'OR'. We adapted the search strategies to the specific search syntax of each literature database. We searched for the full publications between 18 January and 26 February 2021. We retrieved and stored full texts of potentially eligible full publications in an EndNote file. We did not attempt to contact the authors of abstracts to verify the publication status or to retrieve full publications. Contact details were not included in the conference books and because of the gap of 5 years that had elapsed between the conferences and data retrieval for this study, it would have been challenging to locate contact details for all of the abstract authors.

We then matched abstracts to subsequent full publications. We considered a full publication a match if the following three criteria were fulfilled: (a) the abstract and full publication was authored by at least one of the authors of the original abstract, (b) the abstract and full publication reported on a similar method of data collection, for example, interviews, focus group discussions, and so forth and (c) the phenomenon of interest (study objective) was the same in both sources, that is, in the abstract and full matching publication. Matching of abstracts and full publications was undertaken by one reviewer and unclear cases were discussed with a second reviewer. Finally, we classified the conference abstracts as either 'available as full publication' or 'not available as full publication'.

2.4 | Data processing

We automatically extracted information from the conference abstract book for each conference into a Microsoft Excel file by using a script that extracted standardised data from text files (see Supporting information). Eligibility was independently assessed by two reviewers. Discrepancies were resolved by checking the information in the abstract in depth and through mutual agreement.

The following information was available from the conference abstract books: whether the abstract was accepted as a poster or oral presentation, authors, title and abstract. Geographical information was also available for the authors but it remained unclear if the information described the country of residence or their main institutional affiliation. For the purpose of this research, geographic information was simply coded as 'country of first author'. If more than one country was provided as geographic information, only the first country of the first author was extracted and considered for analysis. One researcher extracted and categorised additional information from abstracts where necessary. This information included: sex of first author (male vs. female), university affiliation, geographic information (United Kingdom, Europe and 'rest of the world'), sample size, source of funding (reported or not reported/unclear), number of methods used for data inquiry and number of population groups targeted. Together with presentation format, these were the main factors included in the statistical analysis. From full publications, we extracted month and year of publication. A second researcher cross-checked and verified all data.

We followed a pragmatic approach in selecting these factors for statistical analysis, focusing on information that was freely accessible in the abstracts or the abstracts' meta data. In addition, we attempted to include factors that were congruent with the methods of an earlier systematic review with a similar research question.[8] This review used sample size, presentation format, author characteristics, geographical location and funding to test associations with full publication.

2.5 | Data analysis

First, data were summarised with univariate descriptive statistics. The proportion of conference abstracts with at least one subsequent full publication was calculated together with its 95% confidence interval (CI). We analysed frequencies and proportions of study characteristics.

Fisher's exact test was calculated to examine associations between study characteristics (categorical variables, i.e., presentation format, university affiliation, geographic location, type of funding) and proportions of abstracts with a full publication. This test was preferred over Pearson's X^2 test due to the relatively small number of conference abstracts. Logistic regression was used to evaluate an association between numerical study characteristics (i.e., number of methods used for inquiry, number of population groups that were studied, sample size) and subsequent full publication. Results were reported as odds ratios (OR) together with their 95% CIs. p Values

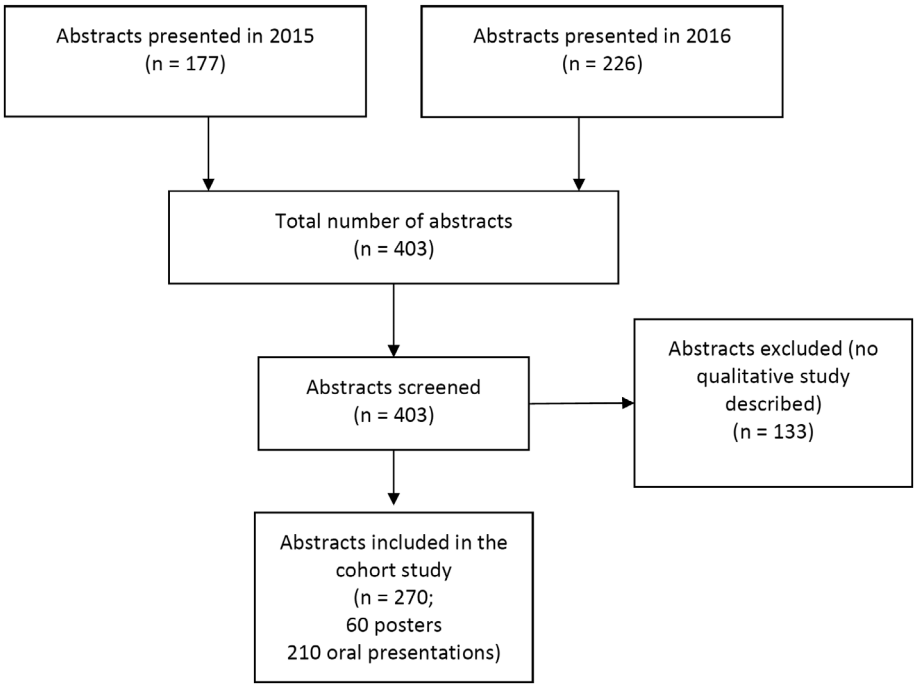

FIGURE 2 Flow of included and excluded abstracts

were two-sided and considered statistically significant for $p < 0.05$. Analyses were conducted separately in the years 2015 and 2016 as well as in the pooled sample.

Time to publication was visualised with a Kaplan–Meier curve. Factors potentially associated with time to publication were evaluated with Cox regression analysis.

2.5.1 | Secondary analysis

We undertook a secondary analysis including only abstracts for which full publications in scientific journals were identified. Grey literature publications including theses were categorised as 'not published' within this secondary analysis, given their slightly more limited retrievability in literature searches for systematic reviews and qualitative evidence syntheses.

All analyses were conducted with RStudio.[25]

3 | RESULTS

3.1 | Description of the included abstracts

The Royal College of Nursing International Nursing Research Conference Books of 2015 and 2016 contained a total of 403 conference abstracts accepted as oral or poster presentations. Based on our inclusion criteria, we included a total of 270 conference abstracts. The flow of included and excluded abstracts is depicted in Figure 2.

For the years 2015 and 2016 combined, 210 abstracts of qualitative studies were presented as oral presentations and 60 were poster presentations. The majority of qualitative study abstracts were submitted by a female first author ($n = 236$), authors with a university affiliation ($n = 209$) and authors from the United Kingdom ($n = 223$). In most included abstracts, the authors describe one method of data collection ($n = 193$). This means that the researchers used interviews only or focus group discussions only to generate data for their study. A smaller number of abstracts reported the use of two ($n = 69$) or three methods ($n = 8$) of data collection. The type of funding was rarely reported in the abstracts with only eight containing information on this issue. With regard to the number of included population groups, most abstracts reported on a single population group ($n = 228$). That means that they either focussed on one group such as doctors, nurses, patients or relatives of patients. Only 38 abstracts described that they collected data from two or more population groups. Characteristics of included abstracts are presented in Table 1.

3.2 | Full publication of conference abstracts

We identified a matching full publication, that is, any grey literature, including theses, or scientific journals for 179 of the 270 (66.30%; 95% CI 60.32–71.91) qualitative study abstracts. For 153 of 270 (56.67%; 95% CI 50.52–

TABLE 1 Basic characteristics of the study sample

Study characteristics	2015 ($n = 111$) *n* (%)	2016 ($n = 159$) *n* (%)	Total ($n = 270$) *n* (%)
Format of conference abstract			
Oral presentation	96 (86.49)	114 (71.70)	210 (77.78)
Poster	15 (13.51)	45 (28.30)	60 (22.22)
Gender of first author			
Male	16 (14.41)	18 (11.32)	34 (12.60)
Female	95 (85.59)	141 (88.68)	236 (87.40)
First author affiliated to a university			
Yes	84 (75.68)	125 (78.62)	209 (77.41)
No	27 (24.32)	34 (21.38)	61 (22.59)
Location of first author			
United Kingdom	90 (81.08)	133 (83.65)	223 (82.59)
Europe	6 (5.41)	9 (5.66)	15 (5.56)
Rest of the world	15 (13.51)	17 (10.69)	32 (11.85)
Number of methods used for data collection			
1	81 (72.97)	112 (70.44)	193 (71.48)
2	26 (23.42)	43 (27.04)	69 (25.56)
3	4 (36.04)	4 (2.52)	8 (2.96)
Funding source			
Reported	4 (3.60)	4 (2.50)	8 (2.95)
Not reported	107 (96.40)	156 (97.50)	262 (97.05)
Number of population groups focussed on			
1	97 (87.39)	131 (82.39)	228 (84.44)
2	8 (7.21)	18 (11.32)	26 (9.63)
3	4 (3.60)	8 (5.03)	12 (4.44)
Not applicable[a]	2 (1.80)	1 (0.06)	3 (1.11)
Not reported		1 (0.06)	1 (0.37)
Publication status			
Scientific journal	67 (60.36)	86 (54.09)	153 (56.67)
Grey literature only	9 (8.10)	17 (10.69)	26 (9.63)
No publication	35 (31.53)	56 (35.22)	91 (33.70)

[a]For qualitative evidence syntheses that investigate a construct or theory.

62.66) of all qualitative abstracts, we identified a matching full publication in a scientific journal. Of all abstracts reporting on a qualitative study, a full publication in grey literature (i.e., theses, books or commentaries) could only be retrieved for 26 of 270 abstracts (9.63%; 95% CI 6.39–13.79).

This means that for 91 of the 270 included abstracts (33.70%; 95% CI 28.09%–39.68%), no full publication was identified. In addition, for 118 of the 270 (43.70%; 95% CI 37.70%–49.85%) included abstracts, no subsequent publication in a scientific journal could be identified.

3.3 | Factors publication

The only factors that were found to be associated with subsequent full journal or grey literature publication of a conference abstract were if it was an oral presentation (OR 4.62; 95% CI 2.43–8.94) and if the first author was affiliated to a university (OR 1.96; 95% CI 1.05–3.66). No other factors were significantly associated with full publication of a conference abstract (see Table 2).

In a secondary analysis where only publications in scientific journals were considered, presentation format

TABLE 2 Factors publication of qualitative conference abstracts

Factor	2015 Odds ratio (95% CI)	2016 Odds ratio (95% CI)	Total Odds ratio (95% CI)
Presentation format[a] (oral vs. poster)	12.34 (2.99–74.03)	3.32 (1.53–7.31)	4.62 (2.43–8.94)
Gender of first author[a] (male vs. female)	0.73 (0.22–2.70)	2.04 (0.60–8.95)	1.25 (0.55–3.09)
University affiliation of first author[a] (yes vs. no)	1.38 (0.49–3.74)	2.56 (1.10–6.01)	1.96 (1.05–3.66)
Geographic location[a]			
Europe vs. rest of the world	3.33 (0.39–72.58)	1.91 (0.32–15.63)	2.40 (0.61–12.11)
United Kingdom vs. rest of the world	1.48 (0.46–4.50)	0.97 (0.32–2.71)	1.16 (0.53–2.47)
Funding[a] (not reported vs. reported)	6.90 (0.53–373.05)	5.11 (0.27–96.66)	1.19 (0.18–6.25)
Number of data collection methods utilised[b]	0.72 (0.35–1.53)	1.11 (0.59–2.13)	0.92 (0.58–1.50)
Number of population groups focussed on[b]	1.00 (0.42–2.77)	1.20 (0.64–2.45)	1.12 (0.67–1.97)
Sample size[b]	1.00 (0.99–1.01)	1.00 (0.99–1.01)	1.00 (0.99–1.01)

Abbreviation: CI, confidence interval.
[a]Confidence interval based on Fisher's exact test.
[b]Confidence interval based on logistic regression.

TABLE 3 Factors association with publication of qualitative conference abstracts in scientific journals

Factor	2015 Odds ratio (95% CI)	2016 Odds ratio (95% CI)	Total Odds ratio (95% CI)
Presentation format (oral vs. poster)	13.31 (2.76–128.84)	3.76 (1.72–8.59)	5.13 (2.62–10.45)
Gender of first author (male vs. female)	0.82 (0.25–2.84)	0.83 (0.27–2.52)	0.84 (0.38–1.86)
University affiliation of first author (yes vs. no)	1.58 (0.60–4.16)	1.93 (0.84–4.55)	1.75 (0.95–3.25)
Geographic location			
Europe vs. rest of the world	3.33 (0.39–72.58)	1.40 (0.27–8.47)	1.88 (0.51–7.98)
United Kingdom vs. rest of the world	0.95 (0.30–2.88)	0.78 (0.27–2.15)	0.84 (0.39–1.77)
Funding (not reported vs. reported)	4.76 (0.37–256.89)	1.18 (0.08–16.68)	2.23 (0.42–14.63)
Number of data collection methods utilised	0.72 (0.35–1.47)	1.14 (0.63–2.12)	0.94 (0.59–1.49)
Number of population groups focussed on	1.06 (0.45–2.75)	0.94 (0.51–1.74)	0.96 (0.59–1.59)
Sample size	1.00 (0.99–1.01)	1.00 (0.99–1.01)	1.00 (0.99–1.01)

Abbreviation: CI, confidence interval.
[a]95% CI could not be calculated due to 0 events in one groups.

TABLE 4 Median time to full publication of qualitative studies in months

Conference year	2015	2016	Both conferences
Time to any full publication (95% CI)	16 (12–20)	9 (5–11)	11 (9–14)
Time to full publication in scientific journal (95% CI)	16 (12–21)	11 (6–14)	13 (10–16)

Abbreviation: CI, confidence interval.

was also found to impact significantly on the odds of subsequent full journal publication (OR 5.13; 95% CI 2.62–10.45). Other factors were not found to be associated with subsequent publication in a scientific journal (see Table 3).

3.4 | Time to publication

The median time to any full publication for all studies was 11 months (95% CI 9–14 months) following the conferences in April 2015 and April 2016, respectively. This

means that 11 months after the respective conference, 50% of the reported studies were published in full. For the conference in 2015, the latest publication was published 61 months (i.e., >5 years) after the conference. For 2016, the latest publication was 56 months after the conference.

For all studies where a full publication in a scientific journal was retrieved, the median time to publication was 13 months (95% CI 10–16 months). Of note, for the conference in 2015, 23 studies were published before the conference, with a publication date of December 1996 for one study. Four studies were published in 2013, six were published in 2014 and 12 were published between January and November 2015. Of the studies published before the conference in 2016, one was published in 2012, 5 were published in 2014, 19 studies were published in 2015 and 4 were published in January and February 2016. Details for both conference years are reported in Table 4.

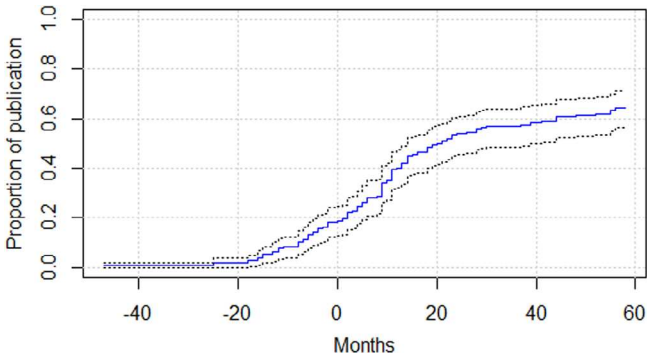

FIGURE 3 Kaplan–Meier curve of the proportions of studies moving to full publication over time [Colour figure can be viewed at wileyonlinelibrary.com]

Figure 3 illustrates the proportions of studies moving to full publication over time. The blue line shows the increasing proportion of studies with full publications and the dotted lines indicate the 95% CI.

3.5 | Factors associated with time to publication

Presentation format (oral or poster) was the only factor associated with time to publication. Compared to oral presentations, studies presented as posters had a longer time to publication after the conference (hazard ratio [HR] 0.35, 95% CI 0.21–0.58). HRs for other factors that we considered, are listed in Table 5.

4 | DISCUSSION

4.1 | Summary of results

This study found that more than one-third (n = 91 of 270; 33.70%; 95% CI 28.09%–39.68%) of qualitative studies presented at an international nursing research conference did not result in a full publication more than 5 years after presentation at the conference in 2015 and 2016. Studies presented as oral presentations had a higher likelihood of subsequent full publication, when compared to poster presentations. Additionally, studies presented by first authors with a university affiliation had a higher likelihood of subsequent full publication, compared to studies presented by researchers with no university affiliation. We found no clear association with publication status of other factors that we examined. For 50% of the studies a full publication was published 11 months (95%

TABLE 5 Hazard ratios of factors impacting on the time to publication

Factor	2015 HR (95% CI)	2016 HR (95% CI)	Both conferences HR (95% CI)
Presentation format (poster vs. oral)	0.09 (0.02–0.43)	0.44 (0.24–0.80)	0.35 (0.21–0.58)
Gender of first author (female vs. male)	1.30 (0.59–2.86)	0.68 (0.36–1.28)	0.91 (0.56–1.47)
University affiliation of first author (no vs. yes)	0.09 (0.45–1.77)	0.63 (0.33–1.19)	0.69 (0.44–1.08)
Geographic location			
Rest of the world vs. Europe	1.51 (0.42–5.41)	1.84 (0.61–5.58)	1.57 (0.71–3.47)
Rest of the world vs. United Kingdom	0.83 (0.36–1.91)	0.94 (0.48–1.85)	0.88 (0.53–1.48)
Funding (not reported vs. reported)	0.26 (0.04–1.91)	0.98 (0.06–16.81)	0.58 (0.18–1.88)
Number of data collection methods utilised	0.70 (0.40–1.21)	0.91 (0.59–1.42)	0.83 (0.60–1.15)
Number of population groups investigated	1.66 (0.89–3.10)	1.11 (0.71–1.72)	1.16 (0.82–1.63)
Sample size	1.00 (0.99–1.001)	1.00 (0.99–1.002)	1.00 (0.99–1.001)

Abbreviations: CI, confidence interval; HR, hazard ratio.

CI 9–14 months) after the respective conference. Only presentation format had an impact on the time to publication, with studies presented as posters resulting in a slower conversion to full publication than studies presented orally (HR 0.35 95% CI 0.21–0.58).

4.2 | Interpretation of results

Our inability to retrieve a sizeable proportion of qualitative studies from the examined conference is potentially concerning for the research community, decision makers in health care as well as research funders. This finding raises important questions regarding the retrievability of qualitative studies as well as possible dissemination bias in qualitative research. Our study confirms both that non-dissemination is considerable in qualitative research and that it is plausible that dissemination bias might affect the findings of qualitative evidence syntheses, leading to a distortion of the evidence-base for decision-making. We therefore believe that dissemination bias should remain a candidate domain for the GRADE-CERQual approach for assessing how much confidence to place in findings from qualitative evidence syntheses.[26] However, more research is needed on potential variations in the types of findings that are systematically not disseminated and may therefore lead to dissemination bias in synthesis findings.

We would argue that a nuanced view on (non-)dissemination of qualitative research is warranted. A recent survey on non-dissemination of qualitative research among researchers, peer reviewers and editors showed that qualitative researchers commonly disseminated their research in other outlets than scientific journals, for example, books, theses, social media and reports.[12] Additionally, survey participants reported that the word limits set by scientific journals sometimes precluded detailed reporting on findings from their qualitative research. Restrictive word counts often prohibited researchers from presenting their relevant findings in full and to sufficiently build and describe the narrative of their results. In addition to word limits, qualitative researchers may be confronted with challenging peer review comments that apply quantitative standards to qualitative research—for example, in terms of sample size and the generalizability of findings.[27] All of these factors suggest potential differences in dissemination behaviours between the qualitative and quantitative research domains.

Several other plausible explanations can be advanced for the non-dissemination of qualitative research. One of these is that some qualitative studies may be exploratory work conducted as a basis for subsequent quantitative research. For example, focus groups studies may be used to delineate topics for subsequent cross-sectional studies such as surveys, or to prioritise outcomes for a clinical study or systematic review investigating the effectiveness of an intervention. Another explanation is the relatively low proportion of qualitative research published by general medical journals, when compared to quantitative research. An analysis of these journals over a 10-year period found that 1.2% and 4.1% of their output was qualitative in 1998 and 2007 respectively.[28] This has been discussed critically within the qualitative research field.[29] It is also possible that researchers may find it challenging to publish studies that cover topics that are already addressed extensively in the research literature—this may be a particular difficulty for students or junior researchers undertaking small qualitative studies.

It is also possible that the targeted conference serves as a platform for nursing students to present research conducted towards a thesis or while undertaking postgraduate training. Nursing is a research field with disproportionately many female researchers as compared to other professions in health care as well as many individuals conducting research for academic graduation, often part-time. The requirements of this process may result in research being published in full as theses rather than as shorter scientific journal articles. The distinction that we made in our analysis between full publication in a scientific journal and full publication in grey literature might therefore be less applicable within research fields such as nursing where full publication as theses are common. Indeed, qualitative evidence syntheses may benefit from the richness and detail of data reported in theses, compared to scientific journal articles.

Given both the waste of resources due to non-dissemination,[30] and the ethical concerns that arise when research findings are not made available publicly, alternative ways of disseminating research findings might be worth considering.[31] These include modern routes of dissemination such as social media and open access publication platforms may facilitate targeted communication of research findings. These include sites such as the Open Science Framework, a project management platform that also allows for publication of research, and pre-publication platforms.

Our study found that for around 10% of the studies published as conference abstracts, we were only able to retrieve a publication in the grey literature. So, when conducting an evidence synthesis, review authors may need to consider other formats of publication and alternative forms of dissemination when searching for evidence. Study registries where methods and/or findings of qualitative studies are stored should also be considered by researchers.[32] When conducted a qualitative evidence synthesis, review authors should consider assessing how

dissemination bias might impact on the synthesis findings. This may be helpful in conceptualising systematically the likely impacts on the synthesis of dissemination bias in qualitative research.[10]

4.3 | Strength and Limitations

The strengths of this study are (i) a relatively long duration of follow up, (ii) a comprehensive search for full publications, and (iii) thorough matching of abstracts and full publications to mitigate the risk of bias criteria for studies like ours, as outlined by Scherer et al.[8] To elaborate, the abstracts we sampled were presented initially at research conferences in April 2015 and 2016. Data for this study were collected in January and February 2021. This period is likely to have allowed sufficient time for completion of ongoing qualitative studies and for their full publication in scientific journals or as theses. Furthermore, full publications were sought in three electronic databases, that is, MEDLINE via OVID, CINAHL and Google Scholar. The focus of the databases covered medicine and health in general, medicine and health with a focus on nursing and science in general. This approach increased the likelihood of retrieving any existing full publications. Lastly, abstracts and full publications were matched against three criteria: authors, phenomenon of interest and method of inquiry. This increased the likelihood of matching the abstract and full publication.

Our study findings are limited by a focus on a single conference with a relatively small sample of abstracts. Nevertheless, nursing is well suited for investigation of the topic of non-dissemination and dissemination bias in qualitative research because of the large proportion of qualitative studies being conducted and published in this field. Moreover, our choice of methods for statistical analysis accounted for the small sample size. Data extraction, as well as matching of abstracts and full publications were conducted by a single researcher with a second researcher checking the extracted data and the accuracy of matching.

Searches of additional databases, with a focus on thesis databases, might have yielded a higher proportion of retrieved full publications and might also have provided a more realistic equivalent to the efforts of qualitative evidence synthesis authors to retrieve all available evidence.[33–35] The sequence in which we searched the selected databases in our studies might have been improved by searching Google Scholar first as it has the broadest and most multidisciplinary coverage, and also includes PubMed records.

For any replication studies, we would recommend searching for theses and considering them as full publications. Replication studies might take into consideration the particularities of the research field they are addressing and adapt the duration of follow-up and the selection of literature sources accordingly. In our case, a longer duration of follow-up and a designated search in theses databases might have yielded slightly different results. Contacting study authors might also yield a higher proportion of full publications retrieved and should be considered in future replication studies. Author contact might also provide insights into the publication history of included studies. For instance, study authors might have informed us about publication attempts, changes in their qualitative manuscripts as a consequence of the peer review process, reasons for non-dissemination of their research and other relevant information about the non-dissemination of qualitative research.

We selected factors to test for associations with subsequent full publication that followed methods initially applied to studies of dissemination bias in *quantitative* research.[8] Although the selected factors apply to both research paradigms, additional factors more pertinent to qualitative research, as well as factors relevant to the disciplinary field (in this case, nursing research), might have yielded different results and should be considered in future studies of dissemination bias in qualitative research.

4.4 | Agreement and disagreement with other studies

Little research exists currently on non-dissemination in qualitative research. A systematic review of studies following conference abstracts to full publication found that across all disciplines 62.7% of all studies remained unpublished. The systematic review included two studies that investigated full publication of nursing studies across any methodology and found that 12.5%[36] and 43.08%[37] of all included studies were not published in full. Another study that followed conference abstracts of qualitative studies found that 44.2% were not published in full 3.5–4.5 years after presentation at a conference.[11] One survey found that more than two thirds of the respondents who identified themselves as researchers had at least one study that did not result in full publication.[12] The non-dissemination proportions in other studies are somewhat higher than the ones reported here (33.70%; 95% CI 28.09%–39.68%). This might be due to the longer period of follow-up of abstracts and the objective form of assessment of dissemination proportions in this study.

Our finding that oral presentations and studies presented by authors with a university affiliation are

associated with subsequent full publication corresponds with findings of Scherer et al. who found that oral presentations were positively associated with full publication (risk ratio 1.46, 95% CI 1.40–1.52).[8] Conversely, neither our study nor the earlier systematic review found an association of gender of the first author with full publication.[8] Another study that followed up qualitative conference abstracts found that factors associated with full publication included quality of reporting methods and whether findings were reported in the abstract.[11] A further study looked at mean time to publication of all studies presented at a nursing conference and reported this 11.5 months (range 1–30 months).[37] Other work on clinical trials has suggested that those with positive findings are published earlier than other trials.[7] However, since it is challenging to classify qualitative research findings as positive or negative or as significant or not significant, we were not able to apply this approach in our study.[38]

The proportions of qualitative research that are presented and subsequently published and retrievable in other disciplines within health and medicine remain to be investigated. Such studies would also allow for a comparison of overall differences and commonalities in publication proportions among the disciplines, and help ascertain whether non-dissemination and/or dissemination via grey literature is rather dependent on discipline than on research methodology. We therefore suggest that future studies in this area use larger samples across different disciplines in order to better understand the broad patterns of dissemination bias in qualitative research.

5 | CONCLUSIONS

Our study confirms and extends from other studies on the non-dissemination of research findings, with a substantial proportion of studies initially presented as conference abstracts not moving to subsequent full publication. Further research might investigate non-dissemination of qualitative studies in other disciplines across health and medicine, and in other disciplines, so as to further consolidate the findings on non-dissemination of qualitative research.

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AUTHOR CONTRIBUTION

IT - conception and design, acquisition of data, analysis and interpretation of data, manuscript writing - first draft and revisions, final approval of the version to be published, JLZN - acquisition of data, final approval of the version to be published JS - acquisition of data, final approval of the version to be published, GS - analysis and interpretation of data, manuscript writing - revision, final approval of the version to be published, JN - conception and design, interpretation of data, manuscript writing - revision, final approval of the version to be published, AB - interpretation of data, manuscript writing - revision, final approval of the version to be published, SL - interpretation of data, manuscript writing - revision, final approval of the version to be published, JJM - conception and design, manuscript writing - revision, final approval of the version to be published.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The authors confirm that the data supporting the findings of this study are available within the article and its supplementary materials.

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