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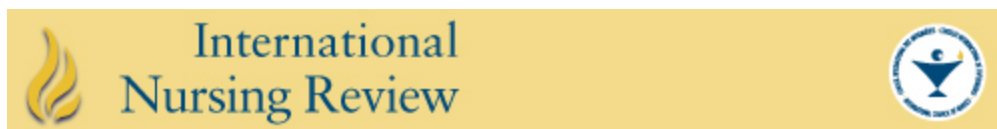
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Evidence-Based Policy: Nursing Now and the importance of research synthesis

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Evidence-Based Policy: Nursing Now and the importance of research synthesis.

Abstract

AIM: This study explores how scholarship relating to meta-analytical studies and systematic and integrative reviews can inform nursing's contribution to universal health coverage.

INTRODUCTION: As nursing globally embraces the 200th anniversary of the birth of Florence Nightingale, the Nursing Now social movement has called for the profession to improve universal health coverage through increasing nursing's policy voice.

METHODS: In determining how the *Nursing Now* social movement could pursue the aim of this study, researchers undertook a comparative bibliometric analysis of scholarship relating to the systematic curation of evidence. This study uses a mixed-method analysis of the bibliometric data available through extracting and synthesizing information from one of the commercially produced indexing and citation databases.

RESULTS: Generally, medicine has contributed far more synthesized contributions than nursing, except in the case of integrative reviews. Co-occurrence analysis of nursing literature through examination of key terms yielded a complex visualization of 11 specific clusters of scholarship (Care of the Older Person, Nurse Education, Emergency and Critical Care, Occupational Health and Safety, Rural Services, Anxiety and Depression, Measurement, Newborn and Postnatal Health, Cardiovascular Disease, Preventative Health and Cancer Care).

DISCUSSION AND CONCLUSIONS: Bibliometric analysis of curated evidence demonstrates there is ample nursing-relevant material to inform evidence-based policy change directed toward the attainment of universal health coverage and several of the Sustainable Development Goals.

IMPLICATIONS FOR POLICY: Nursing literature is available to support policy change directed towards the pursuit of universal health coverage and sustainable development goals. Leveraging existing networks of research collaboration to increase research capacity through communities of scholarship or by twinning experienced and neophyte contributors is possible. Further work is needed to equip nurses with the competencies to navigate the policy environment and develop and deliver impactful policy messaging.

Evidence-Based Policy: Nursing Now and the importance of research synthesis.

Benton et al. (2019a), as part of an analysis of how the *Nursing Now* social movement could contribute to strengthening nursing's policy voice, undertook a bibliometric analysis of scholarship relating to the pursuit and attainment of universal health coverage (UHC). They identified that while nursing scholarship lagged considerably behind that generated by medicine – both in terms of quantity and breadth of coverage – two major opportunities to accelerate progress could be pursued: using broadly curated evidence; and repurposing evidence associated with the development and use of nurse-led services. This paper focuses on the first of these suggestions. Specifically, it examines how curated evidence, in the form of meta-analytical studies and systematic and integrative reviews, can be used by the nursing profession to inform policy change directed towards the attainment of UHC and other targets related to the Sustainable Development Goals (SDGs). The SDGs are a set of 17 goals developed by United Nation's (UN) agencies and approved by the UN General Assembly (United Nations, 2015). The SDGs commenced in 2015 and will run until 2030 and evolved from the work on the millennium development goals (Benton and Ferguson, 2016b).

Benton et al. (2019a) highlighted the potential to draw upon curated evidence, generated using meta-analytical studies and systematic and integrative reviews, as a mechanism to support the rapid expansion of scholarship towards UHC and SDGs. They postulated that the findings from such studies could be used to generate nursing-focused policy briefs that would then be applied by the profession to advocate, lobby and inform change. This paper pursues this concept. It examines how nursing-related results of meta-analytical studies and systematic and integrative reviews can identify valuable resources to inform nursing-orientated health and social policy change.

Nursing Now Campaign

Launched in early 2018, the Nursing Now campaign – supported by an initial grant from the Burdett Trust for Nursing – seeks to leverage the bicentennial of Florence Nightingale’s birth as a means of improving health globally by raising the profile of the profession and strengthening its voice in policy debate (Crisp et al., 2018). Furthermore, Aravind and Chung (2009) and Benton et al. (2019a) observed that Nightingale was an expert in the use of evidence as a means of influencing change and that her approach has synergy with today’s policy climate.

Evidence, Not Opinion

Evidence-based debate has not always been the norm in health policy change. Indeed, Oxman et al. (2007) triggered a cascade of important policy process revisions regarding the development, documentation and communication of global guidance as the result of a critical review of how the World Health Organization (WHO) and other inter-governmental bodies developed their guidance. To achieve these changes, the then Director General of the WHO, Dr Margaret Chan, convened a group to audit existing processes, identify best practice and document new procedures and quality assurance steps to be followed. Additionally, to enhance transparency, the group called for all guidance to be based on graded evidence to indicate the confidence decision-makers could place on recommendations (WHO, 2014). This work signaled a shift away from opinion toward more consistent, evidence-based policymaking processes (Kaare et al., 2007; Pew Charitable Trusts, 2014; USAID, 2016). Accordingly, for nursing to fulfil its desire to bring value to the policy table robust evidence-based contributions are needed.

Meta-Analytical Studies and Systematic and Integrative Reviews

As the volume of research evidence has increased, mechanisms to try and draw general conclusions from often conflicting findings – generated through individual studies – have been developed. Indeed, Grant and Booth. (2009), Whitemore et al. (2014) and Paré et al. (2015) have sought to identify a typology of approaches, as well as offer a synthesis of the methodological aspects of the various categories of literature synthesis. Three such techniques: meta-analytical studies; systematic reviews; and integrative reviews are commonly used. They offer a means of identifying not only an overview of the state of the science on a specific topic but also, particularly in the case of meta-analytical studies and systematic reviews, generalizable findings, as well as a clear indication of the need for further research. However, to obtain an overall perspective a macro-level view of all such data is required. With the advent of increased use of bibliometric analysis, the ability to conduct macro-analysis and synthesis now exists. Accordingly, it is possible to not only look at the quantity of scholarship on a particular tightly-defined topic but also to easily and rapidly assess the entire body of work relating to a discipline or the extent of use of a specific research approach (Benton et al., 2019b).

AIM

The study aimed to quantify, describe and compare nursing scholarship relating to meta-analytical studies and systematic and integrative reviews as a means of exploring how such results can generate evidence and inform the contribution of nursing to the attainment of UHC.

METHOD

This study used a mixed-method analysis of the bibliometric data available through extracting information from one of the commercially produced indexing and citation databases. Scholars from the

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2
3 professions of nursing and medicine commonly use literature synthesis to assess the state of knowledge
4 relating to a particular topic (integrative reviews), seek to reach conclusions on the relative effectiveness
5 of various treatments (systematic reviews), and through the statistical aggregation of results derive
6 more definitive conclusions (meta-analytical studies). Up until now, no comparison of the entire corpus
7 of literature using these techniques has been conducted. In this study, we used a range of measures
8 that provide insights into the evolution of these approaches, as well as their foci. Accordingly, both
9 descriptive and multi-variant analytical techniques were used. Basic quantitative comparisons between
10 the contribution of nursing and medicine to the synthesized scholarship are made, as well as a detailed
11 analysis of the domains of contribution of nursing scholars using a range of bibliometric measures.
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26 **Data Source**

27 There are several databases that are available to provide bibliographic data suitable for analysis. The
28 database that contains the largest number of records and has the widest coverage of nursing literature
29 is Scopus (Elsevier). The Scopus database and Web of Science (Clarivate Analytics) not only contain
30 information relative to each specific article but also provide detailed information on any citations that
31 the article has received. However, because Scopus offers greater coverage, it was selected as the data
32 source for this study.
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45 **Data Search**

46 Keywords, logical operators and variable delimiters were used to search and retrieve the data. In the
47 case of the frequency of publications, this was based on all records contained within the database, up to
48 and including the most recent complete year (2018). While there is an increasingly diverse range of
49 research synthesis techniques as demonstrated by the work of Grant and Booth (2009), this study limits
50 the analysis to those approaches most commonly used (meta-analysis, systematic and integrative
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3 reviews). Hence, when comparing the output of both medicine and nursing, subject area categorization
4 was used to focus on papers specific to the domain of interest. For example, in the case of systematic
5 reviews relating to nursing, the search string included TITLE-ABS-KEY ("Systematic Review") AND (LIMIT-
6 TO (DOCTYPE, "re")) AND (LIMIT-TO (SUBJAREA, "NURS")) AND (LIMIT-TO (EXACTKEYWORD, "Systematic
7 Review")). Appropriate strings were used for each of the two disciplines (nursing and medicine) and the
8 three approaches (meta-analysis, systematic and integrative reviews).
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20 **Data Visualization**

21 While the use of bibliometrics by nurse researchers is relatively new, it is on the increase (Smith and
22 Hazelton, 2011). For brevity, as there is a wide range of bibliometric analytical techniques, only those
23 measures used in this study are described. For further information on other bibliometric analytical
24 techniques, specialist methodological texts are available. These include the book by Cronin and
25 Sugimoto (2014), which focuses on a wide range of multidimensional indicators of scholarly impact. In
26 this study, standard tabular; graph and Venn diagram techniques; and specialized bibliographic
27 visualization approaches to display the results are used.
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41 For this study, two multidimensional scaling techniques are used to examine and visualize the
42 relationship between the keywords that describe the papers and the country of authorship of those
43 involved in writing them. The first technique, co-occurrence of the key author words, seeks to identify
44 general domains of scholarship. The second technique uses co-authorship analysis to map collaboration
45 between authors based on their countries of affiliation, which helps identify communities of scholarship.
46 Both techniques parse data to look for clusters of terms that regularly appear near to one another
47 (Gingras, 2016). VOSviewer, a software package developed at the University of Leiden, creates a
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3 visualization of the various clusters of terms identified through multidimensional scaling (van Eck and
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5 Waltman, 2010).
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13 RESULTS

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15 Initial search results yielded a significant number of articles using all three literature review approaches
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17 (Table 1). Generally, the analysis found the profession of medicine has contributed far more synthesized
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19 papers than the profession of nursing, except in the case of integrative reviews where nursing's output
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21 exceeds that of medicine.
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28 Table 1 Near Here

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33 By mapping the frequency of papers by year in the nursing domain, the study found that systematic
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35 reviews started to be indexed in Scopus in 1969 followed by meta-analytical studies in 1982 and
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37 integrative reviews in 1987 (Figure 1). As illustrated in Figure 1, there has been a marked increase in
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39 literature synthesis since the early 2000s. This data supports the assertion by Mackey and Bassendowski
40
41 (2016) that nursing has taken an increased interest in evidence-based practice since the late 1990s.
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45 Figure 1 Near Here

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47 Frequently, as part of the determination of the appropriate methodological approach, papers contain
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49 references to the differing methods of literature synthesis used to distill the evidence. It is possible
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51 through the use of a Venn diagram to separate how the content of the papers overlaps and interacts
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53 within the literature (additional downloadable content 1). While some papers, such as those already
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3 cited in the introduction, compare and contrast the usage of the various approaches (those at the centre
4 of the Venn diagram), other authors debate the relative merits of two types of analysis or suggest
5 having completed one type that an alternative approach is warranted.
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13 Examination of the body of literature through co-occurrence analysis of key terms yielded a complex
14 visualization of clusters. These clusters of keywords, 11 in total, ranged from 9 to 45 individual terms
15 and encompass: Care of the Older Person; Nurse Education; Emergency and Critical Care; Occupational
16 Health and Safety; Rural Services; Anxiety and Depression; Measurement; Newborn and Postnatal
17 Health; Cardio-Vascular Disease; Preventative Health; and Cancer Care. Details can be found in the
18 additional downloadable content including a schematic representation of the thematic clusters
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27 (additional downloadable content 2).
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33 Co-authorship by country (Figure 2) reveals that in addition to several prolific country contributors,
34 there is a wide range of authors originating from a diverse range of nations. Collaborating authors tend
35 to originate from countries in close geographical proximity or with linguistic or historical links.
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43 **Figure 2 Near Here**
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49 **DISCUSSION**

50 The marked increase since the year 2000 of synthesized evidence was an expected finding (see Figure 1).
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52 The advent of clinical audits in the late 1980s, clinical governance in the late 1990s and the drive toward
53 increased use of evidence in the formulation of health policy in the mid-2000s have all contributed to
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3 demand for such materials (Department of Health [DH], 1989; Royal College of Nursing [RCN], 2003;
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5 World Health Organization [WHO]; 2014).
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10 11 **Quantitative Output** 12

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14 In terms of quantity of material relative to output by medicine, and despite nurses outnumbering
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16 doctors by a considerable margin, medicine produces more than 92% of both meta-analytical studies
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18 and systematic reviews. However, in the case of integrative reviews, nurses are producing substantially
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20 more studies. While this is a promising finding, it may also be an indicator of the production of many
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22 small-scale studies using a variety of methods (Suza et al., 2010). Closer examination of the literature
23
24 using the integrative review method is likely to identify areas that require replication or more
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26 quantitative study.
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33 **Increased Capacity** 34

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36 As countries have increased the proportion of nurses pursuing undergraduate degrees and subsequent
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38 higher qualifications, the capacity to undertake research has increased. Accordingly, further analysis of
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40 these integrative reviews is likely to provide useful insights into topics that can be pursued as part of
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42 postgraduate investigations and programs of research.
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48 **Supporting SDG Attainment** 49

50 In their examination of how nurses can contribute to SDGs, Benton and Shaffer (2016) highlighted that
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52 nurses could take action and advocate for or align with other actors. The results of this study elaborate
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54 on the work of Benton and Shaffer (2016) by mapping how the findings of this analysis support the
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3 attainment of the SDGs and UHC targets and indicators. WHO (2017) identified that the SDG target 3.8,
4 *“all people and communities receive the quality health services they need, without financial hardship”* is
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6 placed within the context of pursuing SDGs 1, 3-5, 8 and 16 (no poverty; equitable health outcomes and
7
8 well-being; quality education; gender equality; inclusive economic growth and decent jobs; and inclusive
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10 societies). Additionally, Crisp (2019) identified that five practical areas provide an opportunity to make a
11
12 compelling argument for nurses to be empowered to support UHC. These five areas relate to:
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15 addressing non-communicable and long-term diseases; expanding access to services through advanced
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17 practice and specialist nurses; the provision of primary care-based services; midwifery; and health
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19 promotion and prevention in public health. Accordingly, the remainder of this paper compares how the
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21 bibliometric analysis findings support the attainment of the SDGs and associated opportunities.
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29 Initial inspections of the clusters of scholarship generated from the analysis do not provide a simple
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31 linear one-to-one mapping of the findings to either the UHC/SDGs or the dimensions identified by Crisp
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33 (2019). However, careful consideration of the findings presents extensive opportunities to address both
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35 UHC/SDGs and Crisp’s dimensions.
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42 Various reports have identified the increasing need for health workers. Indeed, both the WHO (2016)
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44 and Buchan et al. (2017) have stated there will be significant shortages of nurses by the year 2030.
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46 These shortfalls are acknowledged by a diverse range of governmental and non-governmental actors as
47
48 noted in the collated responses to the WHO (2019) call to action to address health worker shortages.
49
50 Also, nursing remains a female-dominated profession in most parts of the world. By considering these
51
52 points, and through the use of modern approaches to nursing education as well as addressing the
53
54 challenges of rural services delivery, several SDGs goals can be pursued. These solutions help lift women
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3 out of poverty (SDG 1) and simultaneously address gender equity (SDG 5), facilitate the attainment of
4 inclusive economic growth (SDG 8) by providing opportunities for decent employment, and help reduce
5 inequalities within and among countries (SDG 10) (Buchan, et al, 2017).
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13 Laddered educational programs, where an individual can undertake initial education and advance to
14 higher levels of expertise, provide a pathway out of poverty while increasing health systems capacity to
15 deliver UHC (SDG 3). Indeed, there is no reason why, using tiered educational progression with
16 accreditation for prior learning and competence-based curricula, that a continuum of practice from
17 support worker to advanced practice nurse cannot be created (International Council of Nurses [ICN],
18 2008).
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30 **Quality Cost and Access**

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33 A quarter of a century ago, when examining how nurses could contribute to health care commissioning
34 of services, Benton (1994) noted that striking a balance between quality cost and access was complex
35 and required those planning health services to look for the most effective and efficient ways of
36 delivering care. Hence, using the findings of meta-analytical studies and systematic and integrative
37 reviews provides opportunities to maximize outcomes, increase access, optimize quality and reduce
38 costs. These gains can then go toward pursuing UHC. Accordingly, opportunities through distilling the
39 findings of such studies into policy briefings can be used to inform decision-makers and simultaneously
40 provide evidence-based talking points for nurses to raise their profiles through informed participation at
41 policy tables.
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53 **Taking Action**

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3 Turning to inclusive societies (SDG 16) and strengthening global partnerships (SDG 17), Figure 2 provides
4 a useful starting point to see how progress can be measured. By using this mapping and by either
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6 creating communities of scholarship or through twinning aimed at developing capacity in countries that
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8 are either minimally or not yet contributing to scholarship in the field, more inclusive global partnerships
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10 are possible (Benton and Ferguson, 2016a). Indeed, Benton and Ferguson (2016a) identified that the
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12 creation and sustainability of global networks are not only relatively easy but can be maintained with
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14 minimal e-based communication.
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22 In the case of the dimensions identified by Crisp (2019), there is a more direct mapping. Non-
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24 communicable and long-term conditions are well represented in terms of *cardio-vascular disease, care*
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26 *of the older person, anxiety and depression, and cancer*. Evidence relating to health promotion and
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28 prevention in public health is to be found in the *preventative health* cluster. And, while not a precise
29
30 mapping, there is an overlap between midwifery and *newborn and post-natal health*. Both the non-
31
32 communicable diseases and maternal and newborn health issues provide countries with significant
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34 challenges, but the need and ability to resolve these through nursing and midwifery interventions are
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36 well documented (Browne, 2012; Federal Trade Commission, 2014; Buchan et al., 2017). In short, there
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38 are multiple opportunities to draw upon existing curated work to give evidence-informed voice to the
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40 nursing profession.
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48 Leveraging the opportunities that the Nursing Now campaign brings, strategic use of the many events
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50 planned to celebrate the 200th anniversary of Nightingale's birth and presenting succinct and cogent
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52 evidence all offer a tangible opportunity for the profession to leave a lasting impact on the pursuit and
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54 attainment of UHC. Unfortunately, most legislators do not have the time, and in some cases, the skills
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3 to synthesize the scientific literature. However, as noted by Benton et al. (2017), further work is needed
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5 to equip nurses with the necessary competencies to influence policy agendas at all levels. If nursing is to
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7 have its voice heard at the policy table, then it is critical to build upon these findings through the
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9 production of impactful policy briefs which often need to be produced at speed and presented in ways
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11 that resonate with the thinking of policymakers.
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18 **LIMITATIONS**

19 This study used a single database, Scopus, as the source of data for analysis. Although Scopus is the
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21 largest database in terms of nursing content, the findings are likely to under-represent scholarship in
22
23 this domain. Additionally, as the visualization software is only able to analyze material published in
24
25 English, this too is likely to contribute to under-representation of the total content available. Despite
26
27 this, the study has demonstrated the potential utility of looking to meta-analytical studies, systematic
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29 and integrative reviews as a means of informing how nurses can curate evidence that can be used to
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31 develop messaging to effect changes in deliver of UHC and wider SDGs.
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39 **CONCLUSIONS and POLICY IMPLICATIONS**

40 Bibliometric analysis of curated evidence based on meta-analytical studies and systematic and
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42 integrative reviews has demonstrated that there is ample nursing-relevant material to inform evidence-
43
44 based policy change directed toward the attainment of UHC and several of the SDGs. In addition, closer
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46 examination of the literature relating to integrative reviews is likely to offer direction for those nurses
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48 seeking to develop new programs of work designed to address gaps in UHC research. This new work,
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50 along with the already identified existing synthesized papers, is well aligned to the five practical areas
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52 identified by Crisp (2019) as being essential to the formulation of compelling arguments to empower
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3 nursing role in UHC. This material should be accessed and extensively utilized by all nurses who wish to
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5 use the celebration of Nightingale's birth as a springboard into the future of the profession.
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11 Additionally, this study has identified opportunities to increase research capacity, for example, through
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13 utilization and extending the existing network of research collaboration opportunities as well as by
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15 building more diverse connected communities of scholarship or twinning experienced and neophyte
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17 contributors. Both approaches have the potential to broaden global reach and increase access to larger
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19 samples thereby strengthening the profession's ability to pursue the attainment of UHC.
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26 Our findings have identified that while there is a wealth of material available to address UHC, other
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28 aspects of the SDGs can be addressed by the profession and accordingly nurses should seek to use the
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30 available evidence in multiple policy arenas. This can include, but should not be limited to, SDGs
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32 focused on increasing access to education or lifting women out of poverty.
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39 As identified earlier, there are opportunities at multiple levels and sectors of practice both in terms of
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41 formulating and implementing policy to influence change and deliver UHC. Accordingly, further work is
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43 needed to take the available scientific evidence derived from meta-analytical, systematic and integrative
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45 reviews and translate this into actionable policy or advocacy briefs. This concrete step will provide
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47 additional content for the creation and mobilization of evidence-based policy and offer nurses the
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49 knowledge needed to increase their confidence and optimize their impact in policy discourse,
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51 implementation and delivery.
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For Review Only

		Raw Document	Nursing as a Percentage of
Search	Discipline	Count	Medicine
Meta-Analytical Studies	Medicine	190,863	5.2%
	Nursing	9,883	
Systematic Reviews	Medicine	195,936	7.3%
	Nursing	14,273	
Integrative Reviews	Medicine	1,262	139%
	Nursing	1,757	

Table 1: Summary of Frequency of Literature Types by Medicine and Nursing Disciplines

Review Only

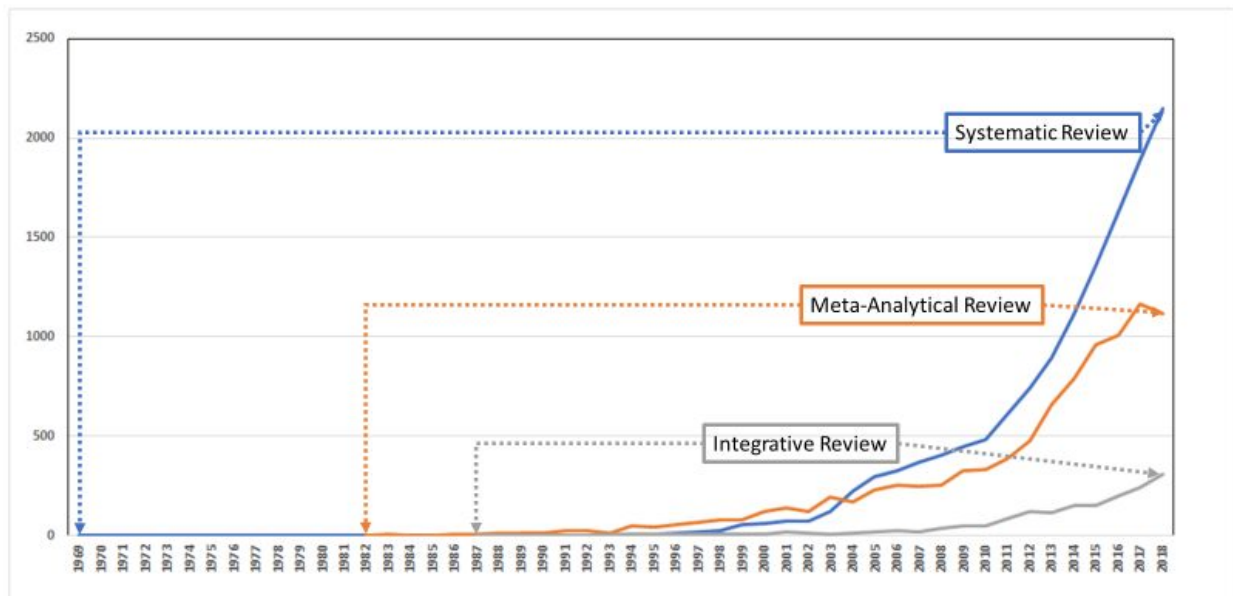


Figure 1: Analysis of Three Types of Literature Synthesis Relating to Nursing by Year

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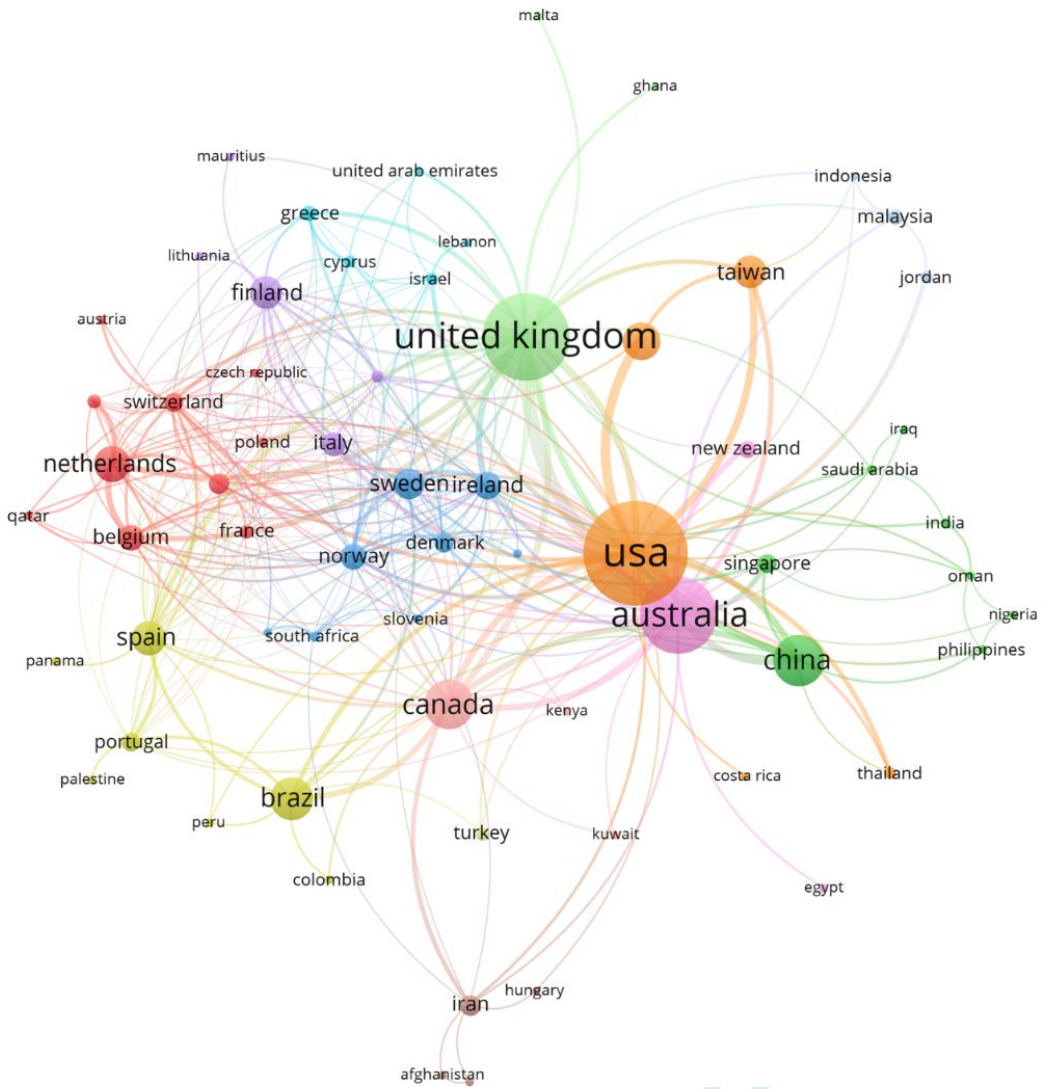
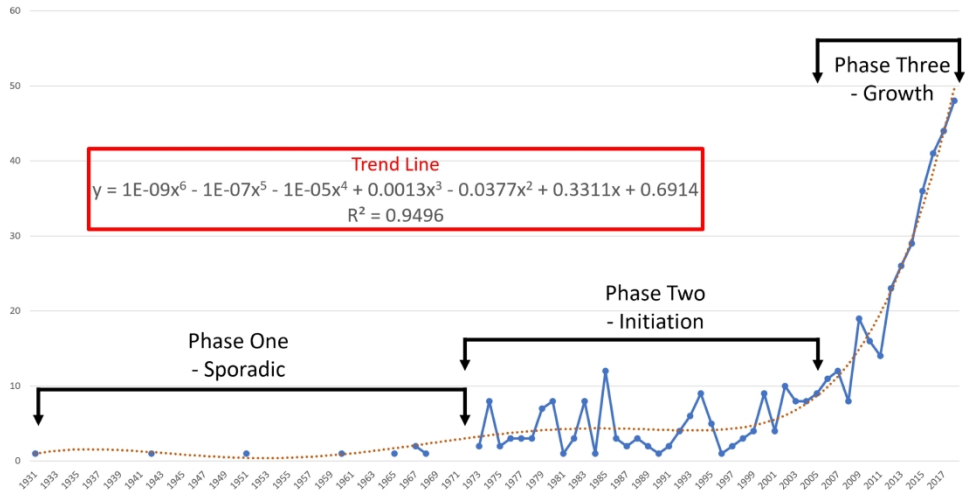


Figure 2: Co-Authorship Connects by Country of Origin

		Raw Document	Nursing as a Percentage of
Search	Discipline	Count	Medicine
Meta-Analytical Studies	Medicine	190,863	5.2%
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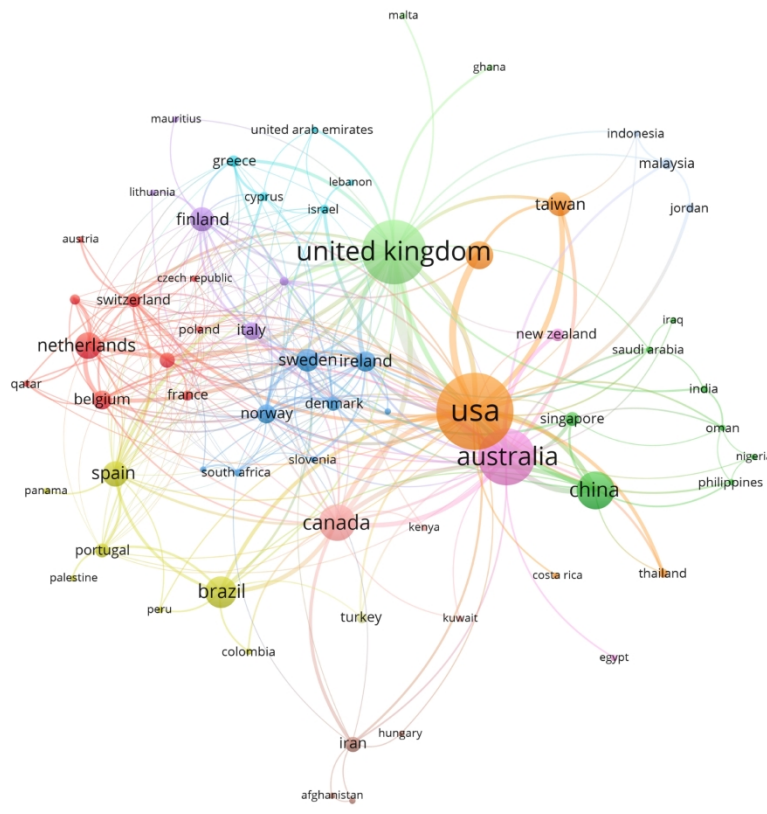
Table 1: Summary of Frequency of Literature Types by Medicine and Nursing Disciplines

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Analysis of Three Types of Literature Synthesis Relating to Nursing by Year

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Co-authorship connections by Country of Affiliation
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