

Dissertations and Theses in Top Nursing Publications: A Bibliometric Study

Stephen Woods, Kathleen Phillips and Andrew Dudash

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Article abstract

Objective - To investigate the overall prevalence of citations to theses and dissertations, as well as their prevalence in feature articles, editorials, and review articles in top research nursing journals. To evaluate differences between journals and to determine whether there was a change in use over time.

Methods - Journals were selected from the Medical Library Association's Nursing and Allied Health Resource Section's 2012 Selected List of Nursing Journals. An evaluation was conducted of citations from 3,711 articles published in 2011 and 2018 in 7 top nursing journals. Thesis and dissertation citations were identified and categorized by type of scholarly communication: feature articles, reviews, and editorials. Analysis was conducted for the prevalence of citations for theses and dissertations based on percentage of overall citations and the percentage of articles with a thesis and dissertation citation.

Results - Thesis and dissertation citations accounted for 0.41% of all citations. However, 9.43% of the articles contained at least one thesis and dissertation citation. Feature articles contained more thesis and dissertation citations than review articles and editorials. The Journal of Advanced Nursing, Journal of Clinical Nursing, and the Scandinavian Journal of Caring Sciences published a higher percentage of articles with at least one thesis and dissertation citation.

Conclusion - The overall use of theses and dissertations in nursing scholarship is comparatively low compared to other forms of scholarly communication. However, this unique form of scholarship viewed from its impact on the percentage of scholarly articles in nursing demonstrates that theses and dissertations have made more of a contribution than previously reported. Our research provides libraries and the nursing academy with empirical evidence for the value of theses and dissertations. It provides librarians and the nursing academy justification for continuing efforts to preserve, enhance access through digital repositories, and to continue to explore strategies to promote the use of theses and dissertations in research.



Research Article

Dissertations and Theses in Top Nursing Publications: A Bibliometric Study

Stephen Woods

Social Science Librarian, Social Science Data and Government Information

The Pennsylvania State University Libraries

University Park, Pennsylvania, United States of America

Email: swoods@psu.edu

ORCID ID: 0000-0003-2102-1890

Kathleen Phillips

Nursing and Allied Health Librarian

The Pennsylvania State University Libraries

University Park, Pennsylvania, United States of America

Email: kec5013@psu.edu

ORCID ID: 0000-0002-0098-6354

Andrew Dudash

Librarian for Political Science, Policy Studies, and Government Information

The Pennsylvania State University Libraries

University Park, Pennsylvania, United States of America

Email: amd846@psu.edu

ORCID ID: 0000-0002-9546-3440

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Abstract

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journals. To evaluate differences between journals and to determine whether there was a change in use over time.

Methods - Journals were selected from the Medical Library Association's Nursing and Allied Health Resource Section's 2012 Selected List of Nursing Journals. An evaluation was conducted of citations from 3,711 articles published in 2011 and 2018 in 7 top nursing journals. Thesis and dissertation citations were identified and categorized by type of scholarly communication: feature articles, reviews, and editorials. Analysis was conducted for the prevalence of citations for theses and dissertations based on percentage of overall citations and the percentage of articles with a thesis and dissertation citation.

Results - Thesis and dissertation citations accounted for 0.41% of all citations. However, 9.43% of the articles contained at least one thesis and dissertation citation. Feature articles contained more thesis and dissertation citations than review articles and editorials. The *Journal of Advanced Nursing*, *Journal of Clinical Nursing*, and the *Scandinavian Journal of Caring Sciences* published a higher percentage of articles with at least one thesis and dissertation citation.

Conclusion - The overall use of theses and dissertations in nursing scholarship is comparatively low compared to other forms of scholarly communication. However, this unique form of scholarship viewed from its impact on the percentage of scholarly articles in nursing demonstrates that theses and dissertations have made more of a contribution than previously reported. Our research provides libraries and the nursing academy with empirical evidence for the value of theses and dissertations. It provides librarians and the nursing academy justification for continuing efforts to preserve, enhance access through digital repositories, and to continue to explore strategies to promote the use of theses and dissertations in research.

Introduction

Theses and dissertations have a long-established history in nursing scholarship (Yam, 2005). The emergence of the professional doctorate in nursing in the 1990s, with its policy-driven emphasis on the practical application of research, expanded the scope and output of theses and dissertations as a form of scholarly communication in nursing (Yam, 2005; Smith, 2013). Furthermore, the development of electronic theses and dissertations (ETD) and the growth of repositories and archives in 2005 generated considerable discussion around the use and access of theses and dissertations to further scholarly research.

Macduff (2009) provides a case study concluding that web-based repositories have the potential to impact the nature, use, and access of

theses and dissertations. Goodfellow (2009) explores the impact of ETD repositories by reviewing the Networked Digital Library of Theses and Dissertations, Australasian Digital Theses Program, and the commercial publisher ProQuest's Dissertations and Theses. Goodfellow and co-authors (2012) conducted a survey to understand the knowledge and use of ETD by faculty, students, and alumni from nursing schools in Australia, New Zealand, United Kingdom, and the US. Only 44% of the 209 participants understood how to access ETDs at their institutions and only 27% cited an ETD in a publication. Mcduff and co-authors (2016) conducted a qualitative study of 14 nursing scholars in order to understand how nursing scholars engage with ETDs. They identified six themes from the interviews: importance of initial exposure, process of searching for ETDs, access issues from multiple disciplines, handling

and reading ETDs, application of ETDs, cultural and institutional changes in ETDs.

Literature Review

Bibliometric studies offer a unique lens for exploring the use of theses and dissertations in nursing research. Traynor (2011) argues that bibliometrics offers insight into the state and status of research in nursing, the value of disciplinary activity, and patterns of publishing within the profession. This bibliometric study focuses on the use of theses and dissertations in nursing scholarship and patterns of use in nursing journals.

Bibliometric studies of grey literature from various disciplines have been conducted to measure the prevalence of thesis and dissertation citations in research (Anderson & Thiery, 2005). Scholars define grey literature as material published by governments, academics, businesses, and industries not controlled by commercial publishers (Farace, 1997). While the categorization of grey literature is not an exact science, there is a consensus in grey literature studies identifying theses and dissertations as one of the grey literature categories measured (see examples in Table 1).

Two larger bibliometric studies unrelated to grey literature research also examined the scientific impact of theses and dissertations using bibliometrics. Larivière, Zuccala, and Archambault (2008) measured the instances of dissertations and theses cited in 266 journals from 1945 to 2004 within Web of Science (Thompson Scientific). It was determined that dissertations and theses comprised less than 1% of the references in journals from both the Social Science and Humanities and the Natural Sciences. Furthermore, the authors identified a leveling off in the 1980s regarding the number of theses and dissertations cited in the scholarly material evaluated. The study also demonstrated a decline in the percentage of thesis and dissertation references compared to the total number of references. The authors examined the percentage of thesis and dissertation references in smaller specific subject domains within the Natural Sciences and the Social Sciences and Humanities. Clinical medicine and biomedical research had the lowest percentage at around 0.2%. Approximately 25% of the dissertation and thesis citations in the Natural Sciences were self-citations, while 15% in the Social Science and Humanities were self-citations.

Table 1
Theses and Dissertations in Grey Literature Studies

Grey Literature Studies	# Thesis & Dissertation (TD) Citations	# Articles	# Citations	Journal Type/Year
(Alberani, Pietrangeli, & Mazza, 1990)	390	1,398	22,072	Science/1990
(Pelzer & Wiese, 2000)	259	2,159	55,823	Veterinary/2000
(Woods, Phillips, & Dudash, 2020)	277	1,467	52,116	Nursing/2011

Rasuli, Schopf, and Prost (2018) conducted a similar study using Scopus (Elsevier) data from 1970 to 2017, concluding that 1.5% of publications contained a citation for a thesis or dissertation. The data demonstrated an increase in the percentage of publications citing theses and dissertations in all fields of study, led by publications in the Arts and Humanities. The authors also examined the contributions of ETDs, by evaluating a representative sample of theses and dissertations to determine whether they were available in an institutional repository through searches in Google Scholar and Bielefeld Academic Search Engine. They found that 83% were available in some type of electronic repository.

Aims

To establish the prevalence of thesis and dissertation citations in core scholarly and research nursing journals, the following are examined: percentage of thesis and dissertation citations found in the total number of citations, types of articles citing theses and dissertations, and number of articles citing theses and dissertations. Differing from previous studies, the prevalence of thesis and dissertation citations based on the percentage of articles that included a thesis and dissertation citation are also examined. The authors argue that this approach provides a more meaningful way to measure prevalence for unique types of scholarly communication like theses and dissertations. This research explores the following questions:

1. What is a more accurate bibliometric method to determine the use of theses and dissertations in the scholarship of nursing?
2. Does the use of thesis and dissertation citations change over time?
3. What types of articles cite theses and dissertations?
4. Are articles that cite theses and dissertations evenly distributed among the journals?

Methods

The authors used citation analysis to determine the incidence of thesis and dissertation citations appearing in the bibliographies of articles published in 2011 and 2018 from 7 top nursing research journals.

Journal Selection

Journals selected for analysis are based on evaluation of the research impact of journals from the 2012 "Selected List of Nursing Journals" published by the Nursing and Allied Health Resource Section (NAHRS) of the Medical Library Association (Sherwill-Navarro & Allen, 2012). Criteria for the selection of journals is based on the combined rank, from a rank based on the number of research articles and a rank based on the percentage of research (Table 2).

The top six journals with the highest combined ranks were selected for this study. The *Journal of Women's Health* was also included as the highest-ranked independent publisher, providing seven total journals. The authors' decision to include a title from an independent publisher recognizes the scholarly contributions of journals outside standard academic publishers. Citation data were collected from articles published in 2011, because the 2012 NAHRS list (Sherwill-Navarro & Allen, 2012) is based on 2007-2011 data. Articles from 2018 were selected because they offer the most current complete data to evaluate change in the use of TD citations over time. The analysis is therefore focused on the following journals:

1. *Journal of Clinical Nursing* (JCN)
2. *Patient Education and Counseling* (PEC)
3. *Infection Control & Hospital Epidemiology* (ICHE)
4. *Journal of Advanced Nursing* (JAN)
5. *Scandinavian Journal of Caring Sciences* (SJCS)
6. *Maternal and Child Health Journal* (MCHJ)
7. *Journal of Women's Health* (JWH)

Table 2
Journal Selection Rank

NAHRS Journals 2012	# Research Article Rank	Research % Rank	Combine Rank	Publisher
<i>Journal of Clinical Nursing</i>	1	1	2	Wiley
<i>Patient Education and Counseling</i>	4	5	9	Elsevier
<i>Infection Control & Hospital Epidemiology</i>	5	4	9	Cambridge Press
<i>Journal of Advanced Nursing</i>	3	13	16	Blackwell
<i>Maternal and Child Health Journal</i>	11	6	17	Springer
<i>Scandinavian Journal of Caring Sciences</i>	14	3	17	Wiley
<i>International Journal of Nursing Studies</i>	7	14	21	Elsevier
<i>Qualitative Health Research</i>	9	17	26	Sage
<i>Cancer Nursing</i>	20	9	29	Kluwer
<i>Journal of Women's Health</i>	6	26	32	Mary Ann Liebert
<i>Midwifery</i>	17	19	36	Elsevier
<i>Journal of Nursing Management</i>	13	27	40	Wiley
<i>Nursing Research</i>	28	12	40	LWW
<i>International Journal of Nursing Practice</i>	23	18	41	Wiley
<i>Journal of School Health</i>	18	24	42	Wiley
<i>Health Care for Women International</i>	27	16	43	Taylor & Francis
<i>Nurse Education Today</i>	12	36	48	Elsevier
<i>Journal of Pain and Symptom Management</i>	10	40	50	Elsevier
<i>American Journal of Public Health</i>	2	49	51	APHA

Data Selection

Meta-data from articles published in 2011 and 2018 from these seven journals were extracted from Web of Science to create a Parent Article Data set. A comparison of articles listed on the journals' official websites identified missing articles along with appropriate meta-data, which were added to this study. The authors analyzed article types occurring in all of the journals selected, in order to make comparisons between journals. These article types included feature articles, editorials, and reviews. This study evaluated 3,113 articles (Table 3); 297 articles identified as correspondence, letters, retractions, proceedings, and biographies were not included in the study.

A separate Citation Data set for citations was created using the articles' Digital Object Identifier (DOI) which functioned as the key to map each citation to the Parent Article Data (PAD) set. The PAD included the DOIs, authors, authors' institutions, titles of articles, article types, volume numbers, page numbers, and years published. Citations for articles found in Web of Science were pulled from the database. The citation count for each article was confirmed through the journals' websites. Missing citations were added as needed. Citations for articles missing from Web of Science were added through the journals' websites.

The authors analyzed 76,566 citations from 2018 and 61,072 citations from 2011 (Table 4). The data were organized to identify the authors,

Table 3
Number of Articles Analyzed by Type of Article

	Feature Article	Editorial	Review	Total
ICHE 2011	165	20	6	191
ICHE 2018	194	36	19	249
JAN 2011	214	16	28	258
JAN 2018	198	40	47	285
JCN 2011	306	60	40	406
JCN 2018	489	21	63	573
JWH 2011	213	9	4	226
JWH 18	223	24	13	260
MCHJ 2011	171	3	0	174
MCHJ 2018	209	2	5	216
PEC 2011	290	24	23	337
PEC 2018	210	27	42	279
SJCS 2011	95	4	2	101
SJCS 2018	136	6	14	156
Total 2011	1,454	136	281	1,693
Total 2018	1,659	156	203	2,018
Total	3,113	292	306	3,711

Table 4
Number of Citations Analyzed by Type of Article

	Feature Article	Editorial	Review	Total
ICHE 2011	3,537	520	450	4,507
ICHE 2018	3,869	615	902	5,386
JAN 2011	8,930	166	1,674	10,770
JAN 2018	9,412	618	2,640	12,670
JCN 2011	11,607	573	2,134	14,314
JCN 2018	20,807	277	3,158	24,242
JWH 2011	8,622	153	181	8,956
JWH 2018	8,390	362	739	9,491
MCHJ 2011	6,153	26	232	6,411
MCHJ 2018	6,244	8	234	6,486
PEC 2011	10,739	254	1260	12,253
PEC 2018	7,749	722	3,219	11,690
SJCS 2011	3,757	20	84	3,861
SJCS 2018	5,811	15	775	6,601
Total 2011	53,345	1,712	6,015	61,072
Total 2018	62,282	2,617	11,667	76,566
Total	115,627	4,329	17,682	137,638

year, sources, and corresponding DOIs with the PAD set. However, most citation records also included other useful information such as: volume, page number, uniform resource locator, institutions, publisher, or book chapter titles.

An initial review of the citations identified common serial titles and publications by news sources, conference proceedings, government, and corporate authors. These were coded as “not TDs” with no further evaluation. Citations from Web of Science imported with the code “THESIS” were initially coded as “TD”, but were reviewed later using WorldCat or the library catalogues of the issuing institutions. Often, Web of Science did not import crucial citation information or formats that would assist with determining the thesis and dissertation status. In such cases, the original article was consulted to determine if there were further clues. If the title remained undetermined, then a

search was conducted in WorldCat or Google Scholar for the citation in question. Only titles that were confirmed as theses and dissertations were included in this study.

The Citation Data set included 564 citations identified as theses and dissertations. This study is an aggregation of all thesis and dissertation types within the nursing profession, allowing the avoidance of international nuances between theses and dissertations. For example, the data set includes licentiate theses, medical specialty theses, postgraduate theses, Doctor of Philosophy dissertations, Doctor of Professional Studies dissertations, and one undergraduate senior honors thesis. Coding for each thesis or dissertation citation included: DOI corresponding to the article in the PAD set, TD author name, issuing year, title of the TD, title of the TD in the original language if available, type of TD, and name of the issuing institution.

Table 5a
Total Prevalence of Thesis and Dissertation Citations

	TD Citations	Articles with TD	% Articles with TD	% TD Citations
ICHE 2011	2	2	1.05%	0.04%
ICHE 2018	1	1	0.40%	0.03%
JAN 2011	77	52	20.16%	0.71%
JAN 2018	72	39	13.68%	0.57%
JCN 2011	102	69	17.00%	0.71%
JCN 2018	127	77	13.44%	0.52%
JWH 2011	3	3	1.33%	0.03%
JWH 2018	2	1	0.38%	0.02%
MCHJ 2011	11	9	5.17%	0.17%
MCHJ 2018	5	5	2.31%	0.08%
PEC 2011	26	21	6.23%	0.21%
PEC 2018	16	13	4.66%	0.14%
SJCS 2011	50	26	25.74%	1.30%
SJCS 2018	70	32	20.51%	1.06%
Total 2011	271	182	10.75%	0.44%
Total 2018	293	168	8.33%	0.38%
Total	564	350	9.43%	0.41%

Table 5b

Prevalence of Thesis and Dissertation Citations without ICHE and JWH

	TD Citations	Articles with TD	% Articles with TD	% Citations with TD
Total 2011	266	177	13.87%	0.56%
Total 2018	290	166	11.00%	0.47%
Total	556	343	12.32%	0.51%

Results

Analysis by Articles

Percentage of Citations

Seven journals were selected for analysis from 2011 and 2018, comprising six top-ranked research journals in nursing and the top-ranked journal from an independent publisher. A total of 3,711 articles generated 137,638 citations, of which 564 citations were identified as theses and dissertations. Combining both years, theses and dissertations represent 0.41% of the citations from the articles evaluated in these journals. The data shows a decrease from 0.44% in 2011 to 0.38% in 2018 (Table 5a).

Percentage of Articles

This study shows that 9.43% of the combined articles from 2011 and 2018 contain at least one thesis and dissertation citation (Table 5a). This approach also shows a decrease in the percentage of articles citing one or more thesis or dissertation from 2011 (10.75%) to 2018 (8.33%). The number of thesis and dissertation citations increased from 2011 to 2018, but there was also an increase in total articles (Table 3) and subsequently the total numbers of citations (Table 4).

Journal Comparison

The *Scandinavian Journal of Caring Science* (SJCS) had the highest percentage of thesis and dissertation citations (1%). SJCS had the highest percentage of articles with at least one thesis and dissertation citation in SJCS for both of the years

evaluated 2011 (25.74%) and 2018 (20.51%). The *Journal of Advanced Nursing* (JAN) and the *Journal of Clinical Nursing* (JCN) had similar percentages (0.71%) for the number of thesis and dissertation citations to overall citations in 2011. JAN (20.16%) and JCN (17%) had a higher percentage of articles with thesis and dissertation citations in 2011 in comparison to the other journals. The percentage of articles with a thesis and dissertation citation in JAN and JCN decreased in 2018. *Patient Education and Counseling* (PEC) (0.21%) and *Maternal Child Health Journal* (MCHJ) (0.17%), in comparison to other journals, had a smaller percentage of thesis and dissertation citations. Both demonstrated a percentage decrease in thesis and dissertation citations from 2011 to 2018. The percentage of articles with a thesis and dissertation citation in PEC and MCHJ fell below the average (10.58%) for all 6 journals. *Journal of Women's Health* (JWH) and *Infection Control & Hospital Epidemiology* (ICHE) had the smallest percentage of thesis and dissertation citations and the lowest percentage of articles with a thesis and dissertation citation.

Through looking at the prevalence of articles with a thesis and dissertation citation, based on the overall number of articles with a thesis and dissertation citation, it was found that JCN (146), JAN (91), and SCJS (58) published 85% (295) of the articles identified in this study. PEC (34), MCHJ (14), and JWH (4) follow in rank. SJCS (26, 31) and JCN (69, 77) increased the number of articles with a thesis and dissertation citation from 2011 to 2018. The other journals demonstrate a decrease in this same time frame. Removing the journals JWH and ICHE as potential outliers increases the overall

prevalence of thesis and dissertation citations in the remaining journals (Table 5b). Overall, 12.32% of articles not including JWH and ICHE contain a thesis and dissertation citation, compared to 9.43% for all the journals in the study. The percentage of thesis and dissertation citations increased from 0.41% to 0.51% when JWH and ICHE were removed from the analysis.

Analysis by Article Type

The prevalence of thesis and dissertation citations by the types of articles found in these selected publications was also explored. As stated in the methods, this analysis was limited to feature articles, editorials, and review articles.

Feature Articles

The identification of 475 thesis and dissertation citations occurred, which represents 0.41% of the total citations for feature articles (Table 6). SJCS had the highest percentage of thesis and dissertation citations to overall citations in feature articles, but this percentage decreased between 2011 (1.3%) and 2018 (1.06%). JAN had the next highest percentage of thesis and dissertation citations to overall citations with 0.85% in 2011 and 0.47% in 2018. JCN was comparable with the journals selected at 0.73% in 2011 and at 0.55% in 2018. The percentage of thesis and dissertation citations to overall citations in PEC and MCHJ were noticeably smaller, while JWH and ICHE had the smallest percentage of thesis and dissertation citations in feature articles.

Table 6
Feature Articles: Prevalence of Theses and Dissertations

Journal	TD Citations	Articles with TD	% Articles with TD	% TD Citations
ICHE 2011	0	0	0.00%	0.00%
ICHE 2018	1	1	0.52%	0.03%
JAN 2011	76	51	23.83%	0.85%
JAN 2018	44	25	12.63%	0.47%
JCN 2011	85	56	18.30%	0.73%
JCN 2018	114	70	14.31%	0.55%
JWH 2011	3	3	1.41%	0.03%
JWH 2018	2	1	0.45%	0.02%
MCHJ 2011	11	9	5.26%	0.18%
MCHJ 2018	4	4	1.91%	0.06%
PEC 2011	24	19	6.55%	0.22%
PEC 2018	12	10	4.76%	0.15%
SJCS 2011	49	25	26.32%	1.30%
SJCS 2018	50	29	21.32%	0.86%
Total 2011	248	163	11.21%	0.46%
Total 2018	227	140	8.44%	0.36%
Total	475	303	9.73%	0.41%

Table 7
Review Articles: Prevalence of Theses and Dissertations

Journals	TD Citations	Review with TD	% Articles with TD	% TD Citations
ICHE 2011	2	2	33.33%	0.44%
ICHE 2018	0	0	0.00%	0.00%
JAN 2011	1	1	3.57%	0.06%
JAN 2018	25	11	23.40%	0.95%
JCN 2011	13	9	22.50%	0.61%
JCN 2018	13	7	11.11%	0.41%
JWH 2011	0	0	0.00%	0.00%
JWH 2018	0	0	0.00%	0.00%
MCHJ 2011	0	0	0.00%	0.00%
MCHJ 2018	1	1	20.00%	0.43%
PEC 2011	2	2	8.70%	0.16%
PEC 2018	4	3	7.14%	0.12%
SJCS 2011	1	1	50.00%	1.19%
SJCS 2018	20	3	21.43%	2.58%
Total 2011	19	15	14.56%	0.32%
Total 2018	63	25	12.32%	0.54%
Total	82	40	13.07%	0.46%

Regarding feature articles, 303 were identified with TD citations (9.73%) from the 3,113 feature articles evaluated in this study. For feature articles, SJCS, JCN, and JAN had the highest percentages of articles with a thesis and dissertation citation. JCN had the highest overall total number of articles with a TD citation (n=126). The percentage of articles with a thesis and dissertation citation in SJCS, JCN, and JAN decreased from 2011 to 2018. However, the number of articles with a thesis and dissertation citation for JCN increased from 56 in 2011 to 70 in 2018. While the percentage of feature articles with a thesis and dissertation citation in PEC was lower than SJCS, JCN, and JAN, the number of articles in PEC (n=19) was higher than MCHJ (n=13), JWH (n=4), and ICHE (n=1). MCHJ, JWH, and ICHE had the lowest percentage of feature articles with a thesis and dissertation citation.

Review Articles

The review articles evaluated provided the next highest percentages of thesis and dissertation

citations by citation counts. There were 82 thesis and dissertation citations representing (0.46%) of citations found in review articles (Table 7). Overall, the percentage of thesis and dissertation citations in review articles increased from 0.32% in 2011 to 0.54% in 2018. The percentage of thesis and dissertation citations in SJCS increased in from 1.19% in 2011 to 2.58% in 2018. JAN increased from 0.06% to 0.95% in that same timeframe. PEC, MCHJ, and ICHE had the fewest number of review articles with thesis and dissertation citations, and JWH had none.

Of the 306 review articles, 40 contained a thesis and dissertation citation (13.07%). From the journals selected, JCN had the highest number of review articles (n=16) with a thesis and dissertation citation followed by JAN (n=12). JCN experienced a decrease in the percentage of articles with a thesis and dissertation citation from 22.5% in 2011 to 11.11% in 2018, while JAN had an increase from 3.57% in 2011 to 23.4% in 2018. The percentage of review articles with a thesis and dissertation citation from PEC was

Table 8
Editorial Articles: Prevalence of Theses and Dissertations

	TD Citations	Editorial with TD	% Articles with TD	% TD Citations
JAN 2018	3	3	7.50%	0.49%
JCN 2011	4	4	6.67%	0.70%
Total 2011	4	4	2.94%	0.23%
Total 2018	3	3	1.92%	0.11%
Total	7	7	2.40%	0.16%

consistent from 2011 (8.7%) to 2018 (7.14%). JWH had no review articles with a thesis and dissertation citation. The low number of review articles published in ICHE 2011 (6), SJCS 2011 (2), MCHJ 2011(0), MCHJ 2018 (5), JHW 2011 (4), minimize the effectiveness of evaluating the percentages of review articles with a TD and the percentage of TD citations in those particular journals (Table 7).

Editorials

Only seven out of 292 editorials contained thesis and dissertation citations, representing (0.16%) of the citations found for this article type. Only 2 journals had thesis and dissertation citations for editorials: JAN 2018 (0.49%) and JCN 2011 (0.7%). Editorial articles with thesis and dissertation citations were only found in JAN 2018 and JCN 2011, representing 7.5% and 6.67% of the editorials found in these journals respectively.

Discussion

This study confirms the low percentage of thesis and dissertation citations compared to overall citation counts found in earlier studies (Larivière, Zuccala, & Archambault, 2008; Rasuli, Schöpfel, & Prost, 2018). However, the approach to evaluate prevalence based on percentage of articles with a thesis and dissertation citation indicates that around 1 out of every 10 articles published in a top scholarly nursing journal cites a thesis and dissertation.

This study supports the argument that the percentage of articles with a thesis and dissertation is a better representation of the usage of theses and dissertations in scholarly communication. Traditional weight given to scholarly journal articles in scholarship skews the overall percentage of citations, thus minimizing the contributions of unique scholarly materials such as theses and dissertations.

It is clear from this study that the use of theses and dissertations in the nursing journals evaluated decreased from 2011 to 2018. Although this finding is consistent with earlier research (Larivière, Zuccala, & Archambault, 2008; Rasuli, Schöpfel, & Prost, 2018), it would be inappropriate to assert that this decrease represents an ongoing trend. Further study would need to be conducted for the intervening years.

The contributions of theses and dissertations to scholarly communication in nursing is further supported in this study by the overwhelming percentage of theses and dissertations found in feature articles, rather than other types of articles. Previous research by Larivière, Zuccala, & Archambault (2008) and Rasuli, Schöpfel, & Prost (2018) argues that thesis and dissertation citations were most likely to be found in review articles, but this study contradicts these findings. The overall percentage of citations in feature articles is 0.41% and 0.46% for review articles. The percentage of articles containing a thesis and dissertation citation in feature articles

is 9.73% and 13.07% for review articles. In sum, the use of theses and dissertations in nursing feature articles is comparable to use in review articles.

Finally, the comparison of journals that publish articles with theses and dissertations provides new insights for researchers looking for publishing venues, as well as opportunities for further research. Based on this study, research articles citing theses and dissertations are more likely to be published in JCN, JAN, and SJCS.

Limitations

Journal Selection

The journals selected had an English language bias. The authors did not have access to articles from the journal site for ICHE 2018, so were not able to verify the accuracy of all the article citation data obtained from Web of Science. Only two thesis and dissertation citations were confirmed from ICHE citations for 2011 from Web of Science and the journals website. The data extracted from Web of Science for 2018 not confirmed from the journals site contained one thesis and dissertation citation. Extrapolating from the low use of theses and dissertations citations in ICHE in 2011 and the low occurrence of thesis and dissertation citations in the 2018 data from Web of Science data, there is a high probability that the percentage of thesis and dissertation citations from ICHE in 2018 remained consistent.

Analytics

The authors recognize that theses and dissertations published in some nursing programs were compilations of three to four articles published in scholarly journals. Such scholarly articles were not identified as theses and dissertations for analysis. The prevalence of theses and dissertations by the percentage of review articles for SJCS, JWH, and MCHJ was problematic due to the small n in the total number of review articles published by these

journals. Consequently, the percentage of review articles for these journals was skewed.

Generalizability

This study focused on the prevalence and impact of thesis and dissertation citations by type of article from a limited core of nursing journals. Consequently, it does not address why a thesis or dissertation was cited or why a journal published an article with a thesis or dissertation. To explore causality, a deeper analysis of the theses and dissertations would need to be conducted, including the article citing the thesis and dissertation and the nature of the journal. This would include such elements as the subject matter of the thesis and dissertation, thesis and dissertation age, number of unique theses and dissertations, thesis and dissertation institutions, thesis and dissertation committee members, number of times the thesis and dissertation was cited overall, the type of thesis and dissertation, and whether or not there is electronic access. A deeper analysis of the citing article would also be needed, such as authors of the article (to determine whether or not a thesis and dissertation is self-cited), institutions of the article's authors, and subject matter of the article.

Conclusion

The percentage of articles citing a thesis or dissertation provides clear empirical evidence of the impact of theses and dissertations on nursing scholarship. This study shows that 1 out of 10 articles contained a thesis and dissertation citation; in the case of JCN, JAN, and SJCS this number is closer to 1 out of 5 articles. The implications of these findings for librarianship and nursing scholarship is worth consideration.

Collection Building

The findings suggest that theses and dissertations are an important format for building collections for nursing. Collection development strategies should include the

selection of theses and dissertations, along with other traditional materials such as journals and monographs. Academic libraries have traditionally played a key role in the preservation of their institutions' theses and dissertations in hardcopy as well as digital formats. The scholarly use of theses and dissertations in nursing research provides justification for continued financial support for the preservation of theses and dissertations. Furthermore, this study supports library initiatives to enhance access and discoverability of theses and dissertations through ETD repositories and distributed networked bibliographic databases, as discussed in the introduction.

Bibliographic Instruction and Reference

This study reinforces the importance of including discussions of theses and dissertations in bibliographic instruction and reference consultations. The prevalence of theses and dissertations in both review articles and feature articles in nursing scholarship necessitates a closer look at pedagogical approaches for instruction, as well as developing strategies for research consultations. Although bibliometric research methodology is helpful for identifying key usage trends, it is not necessarily useful for identifying pedagogical approaches for communicating these concepts to users. In sum, this study reinforces the need for future research to assist librarians in communicating the benefits and use of theses and dissertations as unique contributions in advancing research.

Nursing Scholars and Nursing Academy

Nursing scholars and the nursing academy should seriously consider the potential contribution of theses and dissertations to their scholarship. A number of nursing scholars and a core set of journals already cite theses and dissertations in nursing research, demonstrating that at least some nursing scholars recognize that there is empirically sound research being conducted by graduate students in the nursing

academy. The affirmation of scholarship between established and future nursing researchers will only strengthen the community of nursing scholars.

Furthermore, the nursing academy needs to consider the promotional value of its theses and dissertations. As a published work, the student, academic institution, and program all contribute to the scholarship of every thesis and dissertation. The nursing academy needs to work in partnership with the academic libraries to promote and provide access to theses and dissertations, in order to advance nursing scholarship, enhance the reputation of the nursing academy, and attract future students.

Future Research

Further investigation of academic nursing programs producing theses and dissertations cited in core nursing journals would assist librarians in the development of focused collection strategies. It would also be useful to look at the lifespan of cited theses and dissertations to determine whether digitization of older hardcopy materials would benefit from access in ETD repositories. A closer evaluation of theses and dissertation citations could help determine the impact and use of ETD repositories. The authors argue that it is disingenuous to determine the impact of ETD by simply looking at the increase or decrease of theses and dissertations.

Closer evaluation of thesis and dissertation citations provides further insight for librarians providing instruction and reference. Further research needs to be done focusing on how researchers use theses and dissertations, to help librarians develop instructional and consultative approaches. For example, are theses and dissertations simply used to enhance the introduction, support the literature review, or used to develop research methodology? Clinical and medical librarians need to publish systematic learning strategies for finding and accessing theses and dissertations.

This aggregation of theses and dissertations did not explore the idiosyncrasies of the various types of theses and dissertations. A further examination could provide librarians a better understanding of the use of Masters' theses, doctoral dissertations, professional dissertations, and international equivalents. Looking at the academic programs of the cited theses and dissertations could offer librarians a better understanding of the interdisciplinary contributions of theses and dissertations.

An exploration of the international representation of theses and dissertations also offers some intriguing research opportunities. Which countries or regions are producing more theses and dissertations cited in nursing scholarship? Which nursing programs within these countries are better represented and why? Are there regional networked bibliographic databases that contain bibliographic information about these cited theses and dissertations? Do they offer multiple language searching? Is a digital version available from the academic institution? Is there a difference in how countries offer digital versions or discoverability?

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