Publication Productivity in Nuclear Medicine

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Publications form the knowledge base of any profession. Patterns in professional publications provide insight into the profession's maturity and global status. To our knowledge, publication productivity in nuclear medicine technology has not been reported. A recent study on publication productivity in radiography and radiation therapy provided interesting insight; however, a sampling bias resulted in study flaws. **Methods:** The most productive medical radiation technologists were determined by collecting data from 7 key, international peer-reviewed journals for the medical radiation sciences over a 5-y period. A full list of the technologists' publications, for the 5-y period, was obtained using a PubMed and ResearchGate search, and the authors were analyzed. **Results:** In total, 165 medical radiation technologists were identified who had published 3 or more articles between 2009 and 2013. Of these authors, 55.2% (91/165) were radiographers, 35.2% (58/165) were radiation therapists, and 9.6% (16/165) were nuclear medicine technologists. Overall, the majority of the most prolific authors were academics (104/165; 63.0%). After we applied a correction factor (the productivity per member of the registered workforce), radiography had the fewest authors publishing, compared with the relative workflow sizes. **Conclusion:** Nuclear medicine technologists demonstrated a high degree of productivity both absolutely and relatively. Consequently, nuclear medicine technologists have a productive research culture and command a large footprint within and outside the key medical radiation science journals.

Key Words: publication; productivity; patterns, nuclear medicine; medical radiation science

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Nuclear medicine technology is a relatively young profession with an expanding knowledge economy. Indeed, the profession and professionalism have only recently been defined, and this development has rapidly evolved to the current position of advanced practice. Nonetheless, the professional status of nuclear medicine technology is not universal, with developing and undeveloped economies not demonstrating the same scope of practice as developed economies (such as the United States, the United Kingdom, Canada, Australia, and much of Europe).

A large volume of peer-reviewed articles is published across a multitude of different disciplines every year (*1*). These articles form the foundation of a profession's knowledge, and the bibliometric distribution reflects publication patterns of authors in that profession (*1,2*). An author's productivity and research impact are often used for promotion and recruitment, both academically and clinically, or for grant decisions (*2–9*). Productivity is taken as a measure of the number of articles published by an author (*3,5,6,9–12*) but should be limited to appropriately peer-reviewed journals. An article's impact or quality is more difficult to measure (*3,5,12*). Various methods of citation analysis allow for the quantification of an author's or a publication's quality and impact (*11*). Nonetheless, they have limitations and inherent dangers if used incorrectly. As a result, the validity and reliability of such metrics are being increasingly questioned (*3,11,13*), including citation numbers, the h-index, and the RG score on ResearchGate.

Although there have been studies on the publication productivity and patterns of radiographers and radiation therapists (RTs), to our knowledge there have been no studies on nuclear medicine technologists (NMTs) or medical radiation science (MRS) as a whole (*2,14*). A recent study examining productivity in radiography and radiation therapy provided useful insights into publications; however, the study was flawed because of sampling biases, including no deliberate sampling of NMTs, incidental inclusion of NMT authors, and omission of any sampling from the United States (*2,14*). Furthermore, key MRS journals were omitted (e.g., *JNMT*), and no sampling was undertaken outside MRS journals.

MATERIALS AND METHODS

This study focused on author productivity and publication patterns in MRS to provide insight into the global status of MRS and, in particular, nuclear medicine technology. The aim was to evaluate the contribution of NMTs to the wider MRS knowledge base and to highlight advanced practice approaches and development opportunities. This study was an analysis of bibliometric data.

Bibliometric data were accumulated from the *Journal of Medical Imaging and Radiation Sciences* (*JMIRS*), *The Radiographer* (rebranded as the *Journal of Medical Radiation Sciences* [*JMRS*]), *Radiography, The South African Radiographer, Radiologic Technology, Radiation Therapist,* and *Journal of Nuclear Medicine Technology.* These journals were chosen because of use of the first 4 in the previous study, their global representation (Canada, Australia,

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the United Kingdom, South Africa, and the United States), and their representation of the MRS disciplines (*2,14*). The data were collected over a 5-y period (2009–2013), and editorials, correspondence, and educational reviews were excluded. The medical radiation technologist authors with the highest productivity were further examined using PubMed and ResearchGate to produce a list of their articles published between 2009 and 2013. A cutoff of 3 per year was used to be more broadly inclusive than the 1-per-year cutoff used in the previous study.

The most productive authors were from the United States, United Kingdom, Canada, and Australia, where a similar relative workforce relationship exists (if not in absolute or per capita terms). A subanalysis was undertaken using data from the Australian Health Practitioner Regulation Agency (*15*). National registration in Australia is compulsory for employment in any capacity, and thus, the data of the Australian Health Practitioner Regulation Agency reliably capture 100% of the MRS workforce. A correction factor based on the relative workforce sizes was used to compare productivity per member of the registered workforce. Although reliable data could not be sourced for the United Kingdom, the United States, or Canada, these factors were thought to be similar across those countries. Using radiographers as the baseline (correction factor of ×1.0), RTs were corrected with ×4.91 and NMTs with ×11.01 (calculated as the number of radiographers divided by the number of RTs or NMTs).

RESULTS

During the sampling period, 969 articles were published in the 7 identified key peer-reviewed journals, and these articles were written by 2,923 authors (2,083 unique authors). In total, 165 medical radiation technologists were identified who had published 3 or more articles between 2009 and 2013 (range of 3–58, with a total of 1,316 articles). Of these authors, 55.2% (91/165) were radiographers, 35.2% (58/165) were RTs, and 9.6% (16/165) were NMTs. Overall, the majority of the most prolific authors were academics (104/165; 63.0%) (Table 1). Broken into specializations, the majority of the most prolific NMTs were academics (11/16; 68.8%), with only 18.7% (3/16) and 12.5% (2/16) of these authors being from clinical affiliations or clinical with academic affiliations, respectively. Of the radiographers, 80.2% (73/91) had academic affiliations, 8.8% (8/91) had clinical affiliations, and 11.0% (10/91) had clinical with academic affiliations. In contrast, most RTs had clinical positions with academic affiliations (22/58; 37.9%). Of the remaining RTs, 34.5% (20/58) had academic affiliations and 27.6% (16/58) had clinical affiliations.

Overall, the majority of the most prolific authors were from the United Kingdom (45/165; 27.3%) (Table 2), and this finding reflected the predominance of radiography publications, the U.K. dominance of the radiography publication metrics, and the relative size of that specialization in MRS. The majority of the most prolific radiographer authors were from the United Kingdom (38/91; 41.8%), whereas the most prolific NMT authors were from the United States (10/16; 62.5%) and the most prolific RT authors were from Canada (28/58; 48.3%). The data corrected for workforce size (in parentheses in Table 2) highlight this specialization/country-of-origin relationship. The distribution of articles written by the most prolific authors among the 7 key MRS journals demonstrated a bias in NMTs toward *JNMT,* RTs toward *JMIRS,* and radiographers toward *Radiography* (Table 3), and this finding is consistent with the dominance of those professions in the country of origin of the journals. It should be noted that these figures reflect the authors' professional background rather than the article content, with many articles written that are specialization-neutral (e.g., education- or research-based, or indeed cross disciplinary).

There were 16 NMTs who featured among the most prolific 165 authors. As discussed previously, most of the NMT authors were from the United States (Table 2); however, the NMT authors originating from Australia contributed to more articles. The NMT authors originating from the United States published most of their articles in *JNMT,* the journal from the United States, whereas the Australian NMT authors published more widely. The absence of Canadian NMTs from the most prolific authors suggests publication inactivity.

As previously discussed, there were 58 RTs who featured among the 165 most prolific authors, and the majority was from Canada (Table 2). Within the 7 journals, the Canadian authors published articles primarily in *JMIRS,* the key international journal based in Canada. Australian RTs were also productive, with a large number of articles being published over a variety of journals. In comparison, RT authors from the United Kingdom and the United States were relatively inactive.

The majority of the most prolific radiographer authors were from the United Kingdom (Table 2). Radiographer authors from the United Kingdom published their articles primarily in *Radiography* (a U.K. journal). The radiographer authors from the United States also published primarily in their own journal, *Radiologic Technology.* This patriotism is consistent with the NMTs and RTs from the United States. As with the Australian NMT and RT authors, Australian radiographer authors published more widely,

TABLE 1
Number of Most Prolific Authors vs. Affiliation

Affiliation	Number of most prolific authors			
	NMTs	RTs	Radiographers	Total
Academic	11 (68.8%)	20 (34.5%)	73 (80.2%)	104 (63.0%)
Clinical with academic	2 (12.5%)	22 (37.9%)	10 (11.0%)	34 (20.6%)
Clinical	3 (18.7%)	16 (27.6%)	8 (8.8%)	27 (16.4%)

TABLE 2
Number of Most Prolific Authors vs. Country

Country	Number of most prolific authors			
	NMTs	RTs	Radiographers	Total
United Kingdom	1 (11)	6 (29)	38	45
Australia	4 (44)	17 (83)	17	38
Canada	0 (0)	28 (137)	2	30
United States	10 (110)	4 (20)	15	29
Nigeria	0	0	9	9
South Africa	0	2	2	4
New Zealand	0	1	2	3
Sweden	0	0	2	2
Ireland	1	0	1	2
Malaysia	0	0	1	1
Uganda	0	0	1	1
Malta	0	0	1	1

Relative workforce corrections are in parentheses using Australian data.

which could suggest a lack of international visibility of the Australian journal, the *Journal of Medical Radiation Science*. As with the Canadian NMTs, Canadian radiographer authors were relatively inactive.

After applying a correction factor (productivity per member of the registered workforce), we could compare the relative productivity of the 3 specializations of MRS. Overall, for the most prolific 165 authors the relative workforce corrections were 91 for radiographer authors (91 × 1), 285 for RT authors (58 × 4.91), and 176 for NMT authors (16 × 11.01). This finding demonstrates that, overall, radiography has the fewest authors publishing, compared with the relative workflow sizes, likely because of issues relating to research culture and opportunity.

The most prolific 16 NMT authors were from 4 different countries (Table 4). Although most of the NMT authors were from the United States, the top 5 NMT authors were from Australia, Ireland, and the United Kingdom. The United States had a large number of authors publishing a handful of articles, whereas Australia, Ireland, and the United Kingdom had 1 or 2 highly productive authors. The majority of NMT authors were academics, suggesting that the academic institutions in these countries are highly productive whereas the nuclear medicine clinical institutions are less productive. The RT authors who featured among the most prolific 165 were from 6 different countries (Table 5); however, only authors from Australia or Canada featured among the most prolific 16 RT authors (Table 6). This finding suggests that Australian and Canadian RTs are highly productive whereas RTs from other countries are relatively inactive. The 14 most prolific radiographer authors were from 4 different countries—Australia, the United Kingdom, Ireland, and Nigeria (Table 7)—of the 12 countries in total (Table 2). As with the NMT authors, the most prolific 5 radiographer authors were from Australia, the United Kingdom, and Ireland, again suggesting that although Australia may not have the most authors, the Australian authors were very productive. Like the most prolific NMT authors, the most prolific radiographer authors were mostly academics.

DISCUSSION

The most prolific authors were for the most part academics (83.6%), verifying that academic institutions are highly influential to research in MRS. The radiographer and NMT authors were consistent with this trend, with most having academic affiliations (81.3% and 91.2%, respectively). The RT authors, however, were more evenly spread across the different affiliations. Although 72.4% had an academic affiliation, 65.5% also had a clinical affiliation, suggesting that RT research is more strongly clinically driven than radiographer and NMT research. This finding is likely to reflect advanced practice across both clinical and academic positions in the RT specialization and the tendency to appoint an RT research coordinator in some larger clinical departments. This observation also creates an opportunity to refine approaches and develop strategies to enhance research output among radiographers and NMTs. Indeed, academic institutions might be encouraged to formalize clinical affiliations to enhance publication productivity. The professions and journals would also benefit from encouraging and supporting this type of strategy.

TABLE 3
Distribution of Articles Written by Each Type of Author

Journal	Number of articles		
	NMT authors	RT authors	Radiographer authors
JNMT	45	0	3
JMRS	9	54	42
Radiography	8	35	197
JMIRS	7	108	31
The South African Radiographer	0	4	26
Radiologic Technology	0	5	54
Radiation Therapist	0	8	3
ResearchGate	28	108	198
PubMed	48	165	130
Total	145	487	684
Workforce correction	1,596	2,391	684

TABLE 4
The 16 Most Prolific NMT Authors

Author	Number of articles	Overall rank	Country	Affiliation
Currie	31	5	Australia	Academic
Wheat	23	9	Australia	Academic
Rainford	21	12	Ireland	Academic
Knapp	13	22	United Kingdom	Academic
Munn	12	27	Australia	Academic
Folks	11	30	United States	Academic
Bolus	4	92	United States	Academic
Gilmore	4	92	United States	Academic
Grantham	4	92	United States	Clinical with academic
Mosman	4	92	United States	Clinical
Farrell	3	122	United States	Clinical
Hubble	3	122	United States	Academic
James	3	122	Australia	Academic
Jones	3	122	United States	Clinical
Macci-Bires	3	122	United States	Academic
Martin	3	122	United States	Clinical with academic

The most prolific authors were predominantly from the United Kingdom (27.3%), as primarily reflects the high level of engagement of U.K. radiographers in publication. Indeed, the United Kingdom represented 41.8% of the most prolific radiographer authors, and radiographers represented 55.2% of the most prolific authors. However, a large volume of radiography publications presented generic material on topics such as education, patient care, or radiation safety—topics that are equally apt for RTs and NMTs. Consequently, many of these articles would be equally valid across all MRS journals, indicating an opportunity for journals such as *JNMT* to expand international scope, increase the number of publications, and widen the author pool. As reflected in Table 2, the United Kingdom did not have a strong performance among NMTs and RTs. Canada had 48.3% of the most prolific RT authors, but Canadian NMTs and radiographers were essentially inactive. The United States represented 62.5% of the most prolific NMT authors, but RTs were largely inactive and radiographers only moderately active. Australia tended to perform moderately across all specializations.

The publication patterns of the most prolific authors provide an interesting insight. Although there were only 16 NMT authors in the most prolific author list, collectively they produced 145 articles (9.1 articles per author for the 5-y window). As illustrated in Table 3, there was a bias in NMTs toward *JNMT,* although 52.4% of nuclear medicine technology articles were published outside the 7 key MRS journals. RTs comprised 35.2% of the most prolific authors, with an average of 8.4 articles per top author over the sampling period. RTs demonstrated a bias toward *JMIRS,* reflecting in part the predominance of Canada in the radiation therapy publication market. Similar to nuclear medicine technology articles, 56.1% of radiation therapy articles were published outside the 7 key MRS journals. These figures for nuclear medicine technology and radiation therapy are likely to represent the advanced status of research in those specializations compared with radiography and the broader collaboration of transferrable research across discipline lines. For example, NMTs and RTs publishing in medical and basic science journals reflect content and collaboration beyond a technical readership alone. This also represents an important opportunity to refine strategy for key journals such as *JNMT* and *JMIRS*. If 56% of NMT authors are publishing outside the key MRS journals, there is a large pool of high-quality work that could be attracted back to *JNMT* or *JMIRS*. Indeed, the evolution of *JNMT* to a broader nuclear

TABLE 5
Distribution of Articles Written by RTs vs. Country

Journal	Number of articles				
	Australia	Canada	United Kingdom	United States	Other
JMRS	49	0	1	1	3
Radiography	19	3	13	0	0
JMIRS	13	95	0	0	0
The South African Radiographer	0	0	0	0	4
Radiologic Technology	1	0	0	4	0
Radiation Therapist	0	2	0	6	0
ResearchGate	55	38	10	1	4
PubMed	37	118	1	8	1
Total	174	256	25	20	12

TABLE 6
The 16 Most Prolific RT Authors

Author	Number of articles	Overall rank	Country	Affiliation
Holden	42	2	Canada	Clinical with academic
Halkett	37	3	Australia	Clinical with academic
Cox	26	7	Australia	Academic
Rosewall	24	8	Canada	Clinical
Mitera	21	12	Canada	Clinical with academic
Dempsey	16	14	Australia	Academic
Jon	15	15	Canada	Clinical with academic
Middleton	15	15	Australia	Clinical
Li	13	22	Canada	Clinical with academic
Wong	13	22	Canada	Clinical with academic
Owen	12	27	Australia	Clinical
Frantzis	11	30	Australia	Clinical
Bolderston	10	33	Canada	Clinical with academic
Di Prospero	10	33	Canada	Clinical with academic
Findlay	10	33	Australia	Academic
Higgins	10	33	Canada	Clinical with academic

medicine focus rather than being solely technology-based may have driven NMT authors to other publications.

In contrast to NMTs and RTs, radiographers demonstrated a trend toward *Radiography,* reflecting in part the local support of their journal in the United Kingdom and the lack of translatable reach to nondiscipline journals (7.5 articles per author over the sampling frame). Both radiation therapy and nuclear medicine technology are relatively small specializations compared with radiography. A disproportionately high number of the most prolific authors were among NMTs and RTs, compared with radiographers. Corrected for workforce size, RTs demonstrated the highest degree of productivity among the most prolific authors (2,391), followed by NMTs (1,596) and radiographers (684). Again, these relationships reflect the advanced practice–driven research culture within the RT and NMT specializations, the evolving nature of technology in the same, and actual accessibility to research opportunities for technical staff.

A closer examination of the articles associated with the most prolific authors in specific specializations revealed several interesting insights. Although the majority of the most prolific NMT authors were in the United States, Australian NMTs published more articles during the study period. U.S. NMTs predominantly supported *JNMT,* whereas Australian NMTs published more broadly across the 7 MRS journals and outside those journals (Table 8). Ireland had 21 articles, but all were from the same author. Australia had a few very productive authors (17.3 articles per author), whereas the U.S. NMTs had a larger number of less productive authors (4.2 articles per author). Canada was the most productive for publications by RTs, who predominantly supported the *JMIRS,* whereas Australian RTs, like NMTs, published more broadly (Table 5). Although Australian RTs published widely across a variety of journals, within the 7 journals the majority of articles were published in *JMRS*. Australian RTs (10.2 articles per author) and Canadian RTs (9.1 articles per author) were the most productive, whereas RTs in the United States (5.0 articles per author) and United Kingdom (4.2 articles per author) were somewhat less productive. The most prolific radiographer authors were from a more diverse array of countries, although most originated in the United Kingdom (Table 9). The U.K. radiographers published mostly

TABLE 7
The 14 Most Prolific Radiographer Authors

Author	Number of articles	Overall rank	Country	Affiliation
Brennan	58	1	Australia	Academic
McEntee	32	4	Australia	Academic
Hogg	31	5	United Kingdom	Academic
McNulty	23	9	Ireland	Academic
Reed	22	11	Australia	Academic
Smith	15	15	Australia	Academic
Snaith	15	15	United Kingdom	Clinical
Egbe	14	19	Nigeria	Academic
French	14	19	Canada	Clinical
Poulos	14	19	Australia	Academic
Jonker	13	22	United Kingdom	Academic
Ugwu	13	22	Nigeria	Clinical with academic
Thoirs	12	27	Australia	Academic
England	11	30	United Kingdom	Academic

TABLE 8
Distribution of Articles Written by NMTs vs. Country

Journal	Number of articles			
	Australia	Ireland	United Kingdom	United States
JNMT	14	0	0	31
JMRS	9	0	0	0
Radiography	2	4	2	0
JMIRS	5	2	0	0
ResearchGate	12	8	5	3
PubMed	27	7	6	8
Total	69	21	13	42

in the United Kingdom–based *Radiography,* and the U.S. radiographers published the greater part of their articles in the United States–based *Radiologic Technology.* Many of these articles are generic and afford an opportunity for *JNMT* to attract authors from a new market. Like Australian RTs, Australian radiographers published more widely over a variety of journals but within the 7 key MRS journals. The top publishing radiographer from Ireland was the most productive, with 23 articles; however, as with NMTs, this was only a single author. Australian radiographers were highly productive (13.4 articles per author), suggesting a smaller number of authors who are highly productive compared with the United Kingdom (6.2 articles per author) and the United States (4.6 articles per author), which had a larger number of authors with a lower publication rate per author. Indeed, the relatively small population of Australia (and associated MRS workforce size) would demand that a small absolute number of authors be highly productive for Australia to command a footprint on the international stage.

Australia and the United States dominated the NMT author list; Canada and Australia, the RT author list; and Australia and the United Kingdom, the radiographer author list. More than 50% of the articles from the most prolific 165 authors originated outside the 7 key MRS journals, highlighting the importance of appropriate sampling but also the diverse publication patterns of medical radiation technologists. An author with an academic appointment is more likely to publish outside the 7 key MRS journals than are clinical authors. This trend likely reflects the importance placed on impact factors by academic institutions in decisions on performance and promotion. Authors from Australia and Canada are also more likely to publish outside the 7 key MRS journals, as may reflect the level of professionalism, advanced practice, and cross-disciplinary research in these countries.

Study Limitations

The workforce corrections were based on the national registration data of the Australian Health Practitioner Regulation Agency, which reliably captures 100% of the Australian MRS workforce. Because reliable data could not be sourced for the United Kingdom, the United States, or Canada, the Australian data were used for extrapolation. Although the workforce sizes vary substantially among these countries, similarities in education, health care systems, cultural factors, and social factors were thought to lead to consistent relative relationships between the professions. It is probable, however, that there may be variations in the correction factors for each country. Unsubstantiated figures suggest that the radiography workforce in the United Kingdom is relatively larger than the numbers used in this study; if so, the corrections are likely to underestimate the real impact of the smaller specializations (NMT and RT) in the publication domain. Nonetheless, for the purposes of this study and associated metrics, the margin of error was considered negligible.

Recommendations

Specific recommendations depend on the perspective of the reader. From a clinical perspective, these results support a broader engagement in research across MRS. There is scope to enhance productivity by active engagement in clinical research; in Canada, particularly, the radiation therapy model is a sound one on which to build clinical productivity among NMTs, radiographers, and RTs outside Canada.

From an academic or higher-education perspective, increased visibility and productivity could be achieved by greater collaboration among colleagues and within the clinical domain. Furthermore, there is enormous potential within radiography for increased productivity, which may evolve as collaboration with nuclear medicine technology expands

TABLE 9
Distribution of Articles Written by Radiographers vs. Country

Journal	Number of articles					
	Australia	Canada	Ireland	United Kingdom	United States	Other
JNMT	0	0	0	3	0	0
JMRS	34	1	0	4	0	3
Radiography	39	1	2	131	1	23
JMIRS	13	4	0	4	5	5
The South African Radiographer	0	0	0	2	0	24
Radiologic Technology	5	0	0	3	42	4
Radiation Therapist	0	0	0	0	3	0
ResearchGate	66	9	21	58	4	40
PubMed	71	3	0	29	14	13
Total	228	18	23	234	69	112

through developments in hybrid technology. Indeed, the research culture within nuclear medicine technology may positively drive the research culture within radiography. The nuclear medicine technology and radiation therapy model applied to radiography would substantially increase overall MRS visibility and productivity. Thus, opportunities for engagement in research within radiography need to be explored and the underlying research culture enhanced. Furthermore, formal collaborations between academics and clinical departments represent a key strategy in enhancing productivity, particularly in nuclear medicine technology and radiography.

From an international perspective, larger economies such as the United States and the United Kingdom should adopt the Australian model to engage more productively and across all specializations. In particular, specific strategies need to be developed in Canada for nuclear medicine technology and radiography research, in the United Kingdom for nuclear medicine technology and radiation therapy research, and in the United States for increasing relative productivity across all specializations. Many of these opportunities can be exploited by developing advanced practice models and instilling a research culture within industry, perhaps starting during undergraduate study. This possibility is reflected, in part, in a recent white paper published in *JNMT (16)*.

From a journal perspective, there are several opportunities to develop strategic plans to capture a larger market share. The key MRS-based journals need to recognize that more than 50% of publications are outside their scope. Consequently, there is an immediate opportunity to increase output by increasing the profile and visibility of the journal. That is, if any given MRS journal is PubMed-listed with a Journal Citation Reports impact factor of significant value, MRS authors may be less inclined to publish outside MRS. There is also scope for journals to support less productive areas to increase publication rates. In the United States, publication rates are relatively low, and journals such as *JNMT* typically survive on authors from outside the United States or non-MRS authors. In particular, *JNMT* needs to reclaim its status as the key outlet for technologists who wish to publish. Organic growth in publication rates across all MRS specializations in the United States is strongly recommended.

From a discipline perspective, MRS is highly visible and productive. Nonetheless, with more than 50% of MRS publications being outside the MRS-specific journals, the overall impact and footprint of MRS is likely to be underrated. Individual professionals do not always have the time or capacity to read broadly enough to source and read all related articles. The real impact of MRS research may be lost if the broader target audience is not directly engaged. Nonetheless, publication outside MRS journals may reflect transdisciplinary research that targets a broader audience. Although the strategies above suggest that journals should draw those publications back into MRS journals, several barriers prohibit immediate or widespread success (e.g., transdisciplinary collaboration and impact factors). Therefore, to ensure that members of the profession are exposed to and appreciate the strength of MRS productivity, it is recommended that each edition of at least one major MRS journal include a section that summarizes publications in non-MRS journals. This goal could be achieved by tracking the publications of key authors identified in this article.

CONCLUSION

Through active research, medical radiation technologists contribute significantly to the knowledge base of both the MRS professions and the wider health care community. NMTs demonstrate a high degree of productivity both absolutely and relatively, particularly in Australia and the United States. *JNMT* is the key nuclear medicine journal with international visibility, although more than half of nuclear medicine technology publications occur in non–medical radiation technology journals. NMTs have a productive research culture and command a large footprint within and outside the key MRS journals, contributing significantly to the research and knowledge quanta of the health and medical sciences.

DISCLOSURE

No potential conflict of interest relevant to this article was reported.

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