ABSTRACT: The purposes of this study were to: (a) analyze trends in poster session presentations at national music therapy conferences; (b) identify factors related to the number of posters presented; and (c) explore the rate at which results from poster presentations are published both in and outside of AMTA journals. Results indicated that most research posters at the AMTA national conference were presented by authors in the Southeastern, Great Lakes, and Midwestern regions. Furthermore, the number of graduate schools in the region was the largest predictor of number of posters presented, accounting for approximately 14% of the unique variance. Finally, a systematic literature search indicated that the majority of posters were not published. In conclusion, the authors provide recommendations concerning utilizing research poster sessions as a means to support the association’s research initiative, encourage collaboration between clinicians and researchers, and increase the profession’s body of evidenced-based practices.

Conferences can be a forum for professions to support, educate, and provide opportunities for collegiality among their members. Although factor and content analyses of conferences would be interesting from a historical viewpoint, researchers have not extensively studied conferences. In fact, Jacobs and McFarlane (2005) noted that research concerning conferences is under-developed and suggested, “developing a theoretically informed understanding of conference practice” (p. 317). Specific to the study of music conferences, researchers examined papers presented at the International Society for Music Education Research. The investigators found that presenters primarily cited sources within their own geographic region and that the Journal of Research in Music Education was the most frequently referenced journal (Price, Madsen, Cormacchio, & Webb, 2010). While researchers have performed factor analyses of music education conferences (Orman & Price, 2007; Price & Orman, 1999, 2001), these studies do not exist in the music therapy literature. These types of studies would be valuable to identify trends, strengths, and areas for improvement in clinical practice, research, and areas of membership interest.

Research poster sessions at professional conferences may also constitute a forum for research dissemination. While professional publications are often considered the paramount method for sharing results, research does not necessarily have to be presented in journal or manuscript form. Research poster presentations at conferences can be an informal and effective mode of disseminating research findings. Particularly, this forum can serve as a venue for clinicians and researchers to interact concerning contemporary clinical practice and collaboration on future projects. Poster sessions have become an integral part of regional, national, and international conferences (Moore, Augspurger, King, & Proffitt, 2001). Perhaps due to the more informal structure and ability to expediently share a plethora of qualitative and quantitative research (Duchin & Sherwood, 1990), poster sessions at professional conferences have become increasingly popular (Moore et al., 2001). Additionally, scholars have noted that research poster sessions may allow interaction with researchers, attract a participant base interested in a specific topic, and facilitate networking and collaboration (McCann, Sramac, & Rudy, 1994; Sherbinski & Stroup, 1992). Given that research – and its connection to reimbursement – is a stated priority by the American Music Therapy Association (AMTA), it would seem important to investigate poster presentation trends and the extent to which these findings are published in the profession’s journals.

With regard to music therapy, Silverman (2008) analyzed research posters presented at national music therapy conferences by the principal investigator’s institutional affiliation and clinical population studied. Results indicated that independent clinicians and scholars presented more posters than any single academic institution. This finding highlighted the relevance of clinicians in contemporary music therapy research poster sessions. However, while Silverman noted that posters may be presented at conferences, posters were not necessarily published and that this could be a potential area for future investigation. In fact, as Standley (1984) found that music therapy clinicians did not publish articles as frequently as academicians did, it seems that this discrepancy deserves present day attention. Hence, what happens to unpublished research findings? These data can be difficult to locate, making it challenging to inform and enhance clinical practice or future research.

As noted, professional publications are often considered the paramount method for disseminating research results. By systematically examining publication trends, researchers can better understand how a profession and its research base have evolved over time. Researchers from related helping professions have examined publication trends in special education (Lee et al., 2007), psychiatry (Mendelowicz, Braga, Cabizuca, Land, & Figueira, 2006), social psychiatry (Plehan & Richardson, 1979), school psychology (O’Callaghan & Stroup, 1992), and counseling psychology (Tinsley & Tinsley, 1979). Music therapy researchers have also contributed to this body of research (Brooks, 2003; Codding, 1987; Gfeller, 1987; Gilbert, 1979; Jellison, 1973; Wheeler, 1988). However,
previously conducted music therapy inquiries into publication trends have been limited to content analysis (Coddington, 1987) or descriptive examinations (Brooks, 2003; Gieller, 1987; Gilbert, 1979; Jellison, 1973; Wheeler, 1988). Additionally, researchers conducting previous studies did not focus exclusively on journals published since the inception of American Music Therapy Association (AMTA) in 1998 nor did they utilize inferential statistics to investigate publication trends.

Waldon (2007), utilizing a statistical model, studied AMTA publication trends in the Journal of Music Therapy and Music Therapy Perspectives using three predictor variables: regional membership size, number of undergraduate programs in the region, and number of graduate programs in the region. Results indicated that these three predictors accounted for approximately 41% of the total variance in published articles. The number of graduate schools per region was the strongest predictor and researchers from the Southeastern and Midwestern regions of the American Music Therapy Association (AMTA) evidenced the largest number of publications. However, there was no significant relationship between a region’s membership size and the quantity of university programs with number of publications. This study was particularly valuable as Waldon analyzed publication trends since 1998, when the National Association for Music Therapy (NAMT) and American Association for Music Therapy (AAMT) merged to form AMTA. Previously, researchers had not examined this time period.

With an increased focus on evidence-based practice in music therapy (Abrams, 2010; Edwards, 2005; Kern, 2010), research is becoming progressively more vital to the profession. Additionally, a frequently overlooked aspect of research is dissemination of the results (Sherbinski & Stroup, 1992). As the music therapy profession grows in size, sophistication, and diversity, systematic analysis concerning trends of both research posters and publications is warranted. To better examine evolving trends in music therapy, it would seem appropriate to combine Silverman’s (2008) descriptive analysis of poster presenter affiliation with Waldon’s (2007) use of inferential statistics and publications to better identify trends in music therapy research. Therefore, the general purpose of this study was to utilize a combination of inferential and descriptive techniques to examine poster session presentation at AMTA national conferences and frequency of publication resulting from those presentations. Based on findings from existing studies, the researchers formulated the following research questions:

1. Does the number of research poster presentations differ significantly by region?
2. To what extent does a region’s membership size, the number of undergraduate programs within a region, and the number of graduate programs within a region as a set (and individually) predict the number of research posters presented?
3. What proportion of research posters are published in AMTA and non-AMTA scholarly journals?

**Method**

**Research Posters**

The authors examined 11 conference programs from the AMTA National Conferences (1998 – 2008) and recorded the following information based on the 510 research posters listed: research study title, first author’s last name, and first author’s affiliation (e.g., university). No attempt was made to verify the accuracy of the affiliation cited in the program. In studies that were conducted by multiple authors, the researchers only utilized the author listed first due to the intellectual responsibility of this person’s contribution to the paper (Grashel, 2007; LeBlanc & McCrary, 1990). If a first author was not affiliated with a university, the poster was categorized into the independent scholar/clinician group. All posters presented by researchers from international universities were categorized into the international universities category. If an undergraduate or graduate student presented the research poster as the first author, it was categorized according to that student’s affiliated university. Regional affiliation was determined based on the geographical location of the primary author’s institution and was carried out using the regional categorization methodology discussed below.

**Regions**

The authors collected membership information from the 1998 through 2008 editions of the AMTA Membership Sourcebook (AMTA, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008). First, the authors collected the yearly reported AMTA membership per state. These state membership totals were compiled into yearly regional membership totals using the seven existing regions of the AMTA (i.e., Great Lakes, Mid-Atlantic, Midwestern, New England, Southeastern, Southwestern, and Western Regions). As the South Central Region of the AMTA merged into the Southeastern Region in January 2005, the region of membership for primary authors in Arkansas, Louisiana, and Mississippi since 1998 was categorized into the Southeastern Region for the purposes of this analysis. Membership outside the United States was compiled into a separate category entitled international.

The authors utilized the yearly AMTA Membership Sourcebooks (AMTA, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008) to accumulate information concerning universities and colleges within the various regions. The authors counted the number of colleges and universities offering undergraduate programs in music therapy. This involved searching the pages of the Membership Sourcebook, compiling the number of undergraduate programs per state (per year), and calculating the number of undergraduate programs per region using that information. Using a similar procedure, the authors recorded the number of graduate programs (per year) in each region.

**Published Posters**

To determine which posters had been published in AMTA and non-AMTA scholarly publications, the authors performed a systematic search in Web of Science, Google Scholar, and PsychInfo utilizing keywords and primary authors’ last names. As published researchers’ affiliations and/or locations may have changed, the authors did not search by researcher affiliation.

**Data Analyses**

The ensuing database, constructed using the Statistical Package for the Social Sciences (SPSS), included cases arranged by region and year cross referenced with: (a) the total membership for the region for the given year; (b) the total number of
posters presented (based on the primary author’s region of membership) for the given year; (c) the total number of undergraduate programs in the region in the given year; (d) the total number of graduate programs in the region in the given year; (e) the total number of posters published in AMTA journals in each given year (based on the primary author’s region of membership); and (f) the total number of posters published in non-AMTA journals each given year (based on the primary author’s region of membership).

Design and Procedure

The dependent variables in the present study consisted of the number of research posters presented at national AMTA conferences since 1998, the number of poster presentation-based studies published in AMTA journals since 1998 (i.e., in either the Journal of Music Therapy or Music Therapy Perspectives), and the number of journal articles based on poster presentations published in non-AMTA journals since 1998. This information was cross-tabulated by AMTA region and year. An additional variable, total journal articles, was calculated for each region by year (i.e., 1998 – 2008). The four, substantive predictor variables included: (a) region and year; (b) regional membership size in a given year; (c) the number of undergraduate programs in a region during a given year; and (d) the number of graduate programs in a region during a given year. The authors found these data in the Membership Sourcebook and entered them into SPSS as four separate variables.

During the first analysis, the authors compared the total number of posters presented by each region during each year. This involved an analysis of variance (ANOVA) with the number of posters presented as the outcome and region as the independent variable. For the second set of analyses (Research Question #2), the authors conducted a multiple regression analysis on the aggregated data to determine the extent to which three substantive predictor variables (membership, undergraduate, and graduate) as a set predict the number of posters presented at the national conference. This analysis involved entering all of the predictors into the regression model and determining if the overall model was statistically significant. Additionally, partial (r) and semi-partial (sr) regression coefficients and their corresponding squared coefficients were examined to determine the unique and individual contribution of the predictor variables to variance in the number of posters presented. As the international category did not have a designated number of undergraduate or graduate programs associated with it, those data were excluded from this latter analysis. For the final research question, following the systematic search by keyword and primary author last name, the authors calculated the percentage of published posters in both AMTA and non-AMTA journals. The authors tallied the number of published posters by specific journal.

Results

The first research question investigated whether the number of research poster presentations differed significantly by region. The authors conducted an analysis of variance (ANOVA) to determine whether the number of research poster presentations differed by region. Results were significant, $F(7, 80) = 14.15, p < .001$, partial $\eta^2 = .59$. Presenters from the Southeastern, Great Lakes, and Midwestern regions presented the greatest number of posters, respectively. Descriptive statistics concerning posters by region are depicted in Table 1. Pairwise comparisons with Bonferroni adjustments for multiple evaluations were utilized to determine differences between regions. Adjusted $p$ values for these variables are depicted in Table 2. Concerning total posters presented, the largest number of posters was presented in 1999 at the AMTA and World Federation of Music Therapy joint conference while the lowest number of posters was presented in 2001. Poster presentation data by year and region are depicted graphically in Figure 1.

To address the next research question, the authors conducted a multiple regression analysis to evaluate the extent to which the substantive variables (i.e., regional membership, number of undergraduate programs, and number of graduate programs) predicted the total number of research posters. The overall model containing the combination of the three predictors was statistically significant, $R = .74, F(3, 73) = 29.77, p < .001$. As the overall model predicts approximately 55% ($R^2 = .55$) of the total variance, there is sufficient evidence to suggest that the overall model predicts the number of posters presented. Of the three predictors, regional membership yielded a standardized regression coefficient with negative weights ($\beta = -.44$) when entered into the full model. This coefficient did not reach statistical significance, $p > .034$. Further examination of semi-partial correlation coefficients suggests that, after removing the effects of the other two variables, each predictor accounts for the following unique proportion of total variance in predicted number of research posters: regional membership, $sr^2 = .03 (2.8%)$; number of undergraduate programs, $sr^2 = .001 (0.01%)$; and number of graduate programs, $sr^2 = .14 (14%)$.

Due to the relatively small numbers of published posters, the authors did not utilize inferential statistics to explore the relationship between poster presentations and publication trends. Instead, the authors calculated percentages to determine the number of posters published in AMTA scholarly journals. Since 1998, 76 (14.90%) posters were published in the Journal of Music Therapy and 12 (2.35%) posters were published in Music Therapy Perspectives. Thus, a total of 88 (15.47%) posters were published in AMTA journals. A total of 20 (3.92%) posters were published in non-AMTA journals including, but not limited to, Arts in Psychotherapy, Journal of Research in Music Education, and Journal of the Association for Music and Imagery.

Discussion

A frequently overlooked aspect of research is dissemination of the results (Sherbinski & Stroup, 1992). Therefore,
the purpose of this study was to utilize inferential statistics to predict poster session and publication rates in the AMTA. Concerning research posters presented at the AMTA national conference, researchers from the Southeastern, Great Lakes, and Midwestern regions presented the greatest number of posters. It seems appropriate that these results are mostly congruent with those of AMTA journal publications (Waldon, 2007). Researchers presented the greatest number of posters during the 1999 AMTA conference. Silverman (2008) noted that this was likely a function of the AMTA combining with the World Federation of Music Therapy for a single conference. In 2001, the smallest number of posters was presented, likely an effect of the 911 terrorist attacks. It should be noted that the fluctuating number of posters is likely a function of conference location and geographic region (Madsen, personal communication, June 4, 2007).

Although the authors found that regional membership size was related to number of posters presented, it did not contribute to a large proportion of variance alone. As this relationship was relatively small, one may wonder whether the research interests of the majority of the association’s constituency is being represented at the national conference. If there is no significant relationship between the size of a region’s membership and the amount of research being generated, further exploration of the ways in which new knowledge is being produced (beyond those factors investigated in the present study) seems warranted. For example, it may be that members of large regions who are not as well represented at the national conference poster session are finding additional means of circulating new research findings such as regional publications, local conferences, or lectures/presentations. This certainly constitutes an area for future investigation.

The number of schools in a region was also significantly related to the number of posters presented at AMTA national conferences, and its proportion of explained variance is larger than regional membership. However, of the variables investigated in this study, the number of graduate programs alone evidenced the largest proportion of explained variance. Considering the research emphasis in graduate programs, this result is not surprising. One explanation could be that graduate students not only conduct research required for their degree program, but also present findings at the AMTA national poster session. Furthermore, it may be that graduate program faculty present at research poster sessions more frequently because there is more time and other resources devoted to research activities compared to schools without graduate programs. Additionally, due to AMTA regulations, graduate programs tend to have more faculty members than undergraduate programs. Regardless, it is not unexpected that a higher number of graduate programs in a region is related to a higher number of research poster sessions.

Nevertheless, it could also be that clinicians and scholars who are not affiliated with an institution but come from regions with more graduate programs are presenting research...
posters. In fact, 113 posters were presented by independent clinicians/scholars. During the studied time period, independent clinicians/scholars presented five more posters than the university with the largest number of posters. Regardless, data from the current analysis, Silverman (2008), and Standley (1984) indicate that clinicians have been – and continue to be – active presenters at the research poster session.

Concerning the final research question, the majority of research posters presented at AMTA national conferences were not published. However, of the posters that were published, most (14.90%) were published in the Journal of Music Therapy, which is predominantly a research journal. Considering that the mission statement of Music Therapy Perspectives (where only 2.35% of posters were published) emphasizes the dissemination of evidence related to enhancing clinical practice (as opposed to research), this finding is not surprising. Nonetheless, 20 (3.92%) posters were published in non-AMTA journals. From these data, it would seem that researchers are aware of other journals that publish music therapy literature and seek the most appropriate journal venue for their papers.

As noted above, 402 (78.82%) posters were not published. This large number is alarming as much of the knowledge gained through the research process may be lost. Perhaps authors do not submit posters for publication consideration or the quality of these posters is not high enough to warrant publication. Fortunately, the AMTA began posting all abstracts on their website in 2008 and interested persons now have access to abstracts (outside from attending the research poster session) and can contact authors for additional information. As expected, the largest percentages of published posters were from the earlier years and lower percentages of posters were published from the 2007 and 2008 poster sessions. Perhaps these researchers are editing their manuscripts, finding an appropriate journal for publication, or are in a stage of publication (i.e., in review or in press).

From the results of this study, it appears that a large proportion of music therapy research goes unpublished. This is perplexing as a notable proportion of music therapists hold advanced degrees: In the 2010 Member Sourcebook (AMTA, 2010), 25% of the membership held a master’s degree while six percent held a doctoral degree. If such large percentages of music therapists hold these advanced degrees (during which the terminal project is often a research study), it seems that more research would be available. However, it may be that clinicians discontinue their research lines after completion of their terminal graduate-level projects. Despite being in an opportunistic position to carry out research, it may be that advanced degree-holding clinicians find it time and cost-prohibitive to conduct research as part of their clinical duties. Exploring methods enabling all clinicians to continue and present their research could lead to greater numbers of projects and potential collaborations for multi-site clinical trials and partnerships with universities.

Limitations of this study include potential change of region and affiliation: Authors of posters and publications certainly can change locations and affiliations. This phenomenon seems especially relevant concerning graduate students who complete their research projects and may change region for employment purposes. The authors of the present study did not attempt to control for this potentially confounding variable. Furthermore, the authors theorize that many presented posters are not submitted for publication consideration. Additionally, publications may not necessarily be presented as research posters at AMTA conferences prior to publication. Moreover, potential publications may be presented at non-AMTA conferences in poster format. Another potential limitation of the current study is graduate programs that offer a non-research track. Nevertheless, the authors recommend that all research should be presented in the highest-level format possible (i.e., posters and publications) to continue the advancement of the music therapy profession. As healthcare continues to move toward evidence-based treatment, practice, and decision-making, all types of research will enable music therapists to continue expanding the profession and providing non-pharmacological treatment for individuals in need.

Additional limitations concerning predictors in the regression analysis include, but are not limited to, location of the conference, conference attendance by region, and graduate enrollment. Moreover, results were dependent upon accurate AMTA membership data. Other factors, such as the recent downturn in the economy, may certainly influence poster session participation. Researchers could also explore barriers to publication and the well-articulated gap between research and clinical practice (Arzin & Goldman, 2005).

As results from the present study explain only a small proportion of the variance related to the number of research posters presented, the authors suggest exploring additional variables (e.g., individual author productivity, area of clinical expertise, content, available populations, etc.) and the extent to which they may influence modes of research presentation. Furthermore, future research could utilize inferential statistics to predict poster presentation and publication rates in other fields. These data could be compared to data from the present study to determine whether related fields (e.g., music education or other creative arts therapies) evidence similar trends in research dissemination. In the future, researchers could also investigate the number of posters and published studies conducted with certain clinical populations. This evidence may expose areas of clinical practice or specialty warranting further study for those interested in contributing to the research base.

Overall, results from the current study suggest two important points. First, the number of research posters presented differs significantly by AMTA region with number of graduate programs serving as the strongest predictive factor. Second, there is a discrepancy between the number of posters being presented and the number of these studies being published in professional journals. For the continued advancement of the profession, the authors support the AMTA’s recommendation that researchers and clinicians collaborate in an effort to continue building the profession’s body of research. Partnerships may involve researchers serving in a consultative role, assisting clinicians with study design, data collection, analysis, and interpretation of results. Furthermore, after the projects have been completed, these consultants can provide assistance in determining the most appropriate venue for results dissemination and publication. As the music therapy profession is relatively small when compared to many other helping professions (i.e., nursing, occupational therapy, physical therapy), research will continue to be the driving
force behind establishing clinical positions and providing high quality treatment to persons who need or desire services.

Conflicts of interest: None declared.

References
