

# Citation Patterns and Scientific Impact of the Nordic Journal of Music Therapy, 1992–2005

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## Abstract

**Background:** Bibliometric research involving counts and patterns of citations has been used to examine relations between fields and disciplines, and to evaluate the impact of scientific work. The aim of this study was to assess how, where, and to what extent articles published in the NJMT have influenced the scientific discourse within and outside the discipline of music therapy. **Method:** The ISI Web of Science database and reference lists of previous NJMT issues (1992-2005) were searched for citations to NJMT articles. All citation events were entered into a database and analysed numerically and graphically. NJMT's (unofficial) impact factor was calculated for all years and compared with that of related journals. **Results:** A graphical inspection of the results suggested that later articles (from around 1997 onward) were cited more often than earlier articles, especially in journals outside the discipline. The journal's impact factor was highest in 1998 and 2000 (lower bound: 1.06 and 0.80, respectively). On average, the journal's impact factor was equal or higher than that of related journals. **Discussion:** The analysis of citation patterns reflects the journal's development towards internationalisation and broadened readership during its first 15 years of existence. Although limitations exist, citations can be one of several useful sources of information in evaluating scientific production. Future research may use more inclusive data sources than ISI or link citations and contents more systematically.

**Keywords:** bibliographic research, bibliometric research, impact factor, music therapy journals.

Editorial note: The authors of this article are members of the editorial team of the NJMT. The first author is now editor-in-chief (but was not at the time when conducting the study). The authors may therefore have a conflict of interest when researching the impact of the journal. Lars Ole Bonde has taken the role of editor for this article. The potential conflict of interest is also discussed in the limitations section of the article.

## Background

Music therapy as a field of research can be understood as a loose web of ideas which are linked to each other and influence each other over time. Within this web, some links are probably closer, while others are less closely connected (as would be expected given the many sub-disciplines and interest groups within this discipline, whether they be based on shared theoretical assumptions, fields of practice, methods of work, or methods and philosophies of research). This web of ideas within music therapy also has many links to other such webs in related fields. As a discipline with a highly interdisciplinary nature, music therapy has always taken up ideas from related fields, but it may also itself influence the scientific discourse in those related fields.

The *Nordic Journal of Music Therapy* (NJMT) is one of the places where the exchange of ideas within music therapy takes place. The articles published in the NJMT may be perceived as points in the web of ideas, and the journal's position in the diverse field of music therapy may be described by the relations between these points and others. Although NJMT is one of the younger journals in music therapy, it has now been in existence for almost 15 years, and it may be time to examine where it stands and in what direction it has developed.

Bibliographic and bibliometric research

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are two related terms and are sometimes used interchangeably. Both are concerned with bibliographic material and are used to identify trends and issues in a specific research literature (typically all articles published in the history of one journal or a group of journals). An example of bibliographic research in the music therapy literature is the article by Brooks (2003), which examined how the distribution of different types of articles (such as quantitative, qualitative, theoretical, or clinical) varied across English-language music therapy journals. Such research where the properties of individual articles (e.g., concerning the research methodology they used) is sometimes also labelled with the term "bibliometric," as an example from the psychotherapy literature shows (Borkenhagen, Decker, Brahler, & Strauss, 2002). In a narrower sense, however, the term bibliometric research is used for studies examining relationships between individual items (articles), usually based on the patterns of citations. We were unable to find examples of this type of research in the music therapy literature. An example from a related field can be found in van Raan, Visser, Van Leeuwen, and van Wijk (2003), who analysed how closely the content of one journal (*Psychotherapy Research*) was linked to a number of other journals, based on articles citing and cited by the journals.

This latter type of bibliometric research is also often concerned with the "performance" of journals, where performance is construed as the number of times its articles are cited. This way, journals can be ranked with respect to their relative importance. It is often emphasised that this is only meaningful within the same scientific discipline. The most prominent term in this context is the "impact factor." It was originally suggested in 1955 (Garfield, 1955) and has since grown most influential, governing libraries' decisions as to what journals to subscribe to, authors' decisions as to where to submit their work, and sometimes even funding agencies' decisions as to what research to support (Cockerill, 2004; Moed, 2002). There is an ongoing discussion on how journals and scientific production should be rated and evaluated, and some national agencies, for

example in Norway, have developed their own system which is partly, but not entirely, based on the impact factor. The discussion is controversial (Seglen, 1997).

The (journal) impact factor is “a measure of the frequency with which the ‘average article’ in a journal has been cited in a particular year; ... [it] is calculated by dividing the number of current citations to articles published in the two previous years by the total number of articles published in the two previous years.” (Institute for Scientific Information, 2000). A few things are notable here: First, there is not really such a thing as an “average article” - usually a small portion of the articles published in a journal will account for a large proportion of the citations (Seglen, 1997). Second, the two-year period is a compromise which may not always be appropriate. It may be a long period for some quickly evolving disciplines in the natural sciences, but for most of the social sciences it is a rather short period. In a field where it takes several years to complete and publish a study, it may be impossible to conduct and publish a replication within the two-year period. Although it may be argued that the early impact of an article predicts its later influence, this may not always be the case.

On a more general level, one needs to keep in mind that scientific impact, in terms of citation, is not necessarily the same as scientific quality. As an extreme example, consider the case of “negative citations” where an article receives many citations because it is cited as an example of poor science, unacceptable opinion or the like. In our context, Eysenck’s (1952) much-criticised study comes to mind, which claimed that psychotherapy had a negative effect. It certainly was influential in stimulating more and higher quality research in psychotherapy, but it has become famous mainly for its poor, rather than its good, methodological quality. By August 2006, the ISI Web of Science database has counted 716 citations to this article.

In spite of these limitations, citation analysis remains popular for evaluating scientific production. The main arguments for using the “association of ideas” (Garfield, 1955) are its high reliability and ease of use (as opposed to committees reading and judging large amounts

of research production). When used with appropriate caution, citation patterns may form a valuable source of information which may help to evaluate and guide the process of research within a discipline.

### **Aim of the Study**

The aim of this study was to assess how, where, and to what extent articles published in the NJMT have influenced the scientific discourse within and outside the discipline of music therapy. Specifically, we addressed the following questions:

- What patterns (frequency patterns and other characteristics) can be identified among the citation of NJMT articles in other articles (both within NJMT and in other journals)?
- Are there any changes over time in these citations that may indicate changes in the NJMT and/or in its readership?
- To what extent are NJMT articles being cited within two years of publication? What is the journal's impact factor? Where does the NJMT stand in relation to related journals that are included in the Journal Citation Reports?

In addition to the questions above, we also examined which NJMT articles and authors were most often cited (within NJMT and in other journals), and explored some of their characteristics.

## **Method**

### **Database Searches**

The ISI (Institute for Scientific Information) Web of Science (including Science Citation Index Expanded, 1945-present; Social Sciences Citation Index, 1956-present; and Arts & Humanities Citation Index, 1975-present) was searched for articles in journals included in that database citing NJMT articles. Since source titles are abbreviated and NJMT itself is not yet included in this database, it was necessary to check for possible variations in the abbreviated

journal name. We identified three different abbreviations, with citations to NJMT appearing as either NORD J MUSIC THER, NORDIC J MUSIC THER, or NORDIC J MUSIC THERA. All these variations were included in our search. The search was last performed in June 2006, but only citations occurring before the end of 2005 were included. Any errors in the identified citations were corrected manually (e.g., we encountered one wrong year of publication and several spelling errors in authors' names). The ISI's Journal Citation Reports database was searched for related journals' impact factors.

### Hand Searches

The reference lists of all previous issues of the NJMT were searched for citations to other NJMT articles.

### Descriptive Analyses

All citations to NJMT articles, both from articles in ISI-listed journals and from articles in NJMT, were entered into a database. The data were analysed graphically and numerically using R, a general, open-source statistical software and programming language (R Development Core Team, 2006). Citation patterns were analysed using balloon plots (Jain & Warnes, 2006), which are enhanced tabular displays of data where the number occurring in each cell is visualised through a "balloon" with corresponding size. Individual citations were shown using arrow diagrams and rank lists. Means, standard deviations, and medians were calculated for the time lag from cited to citing articles.

### Calculation of NJMT's Impact Factors

Impact factors for the NJMT were calculated for each year<sup>1</sup> using ISI's original definition, by "dividing the number of current citations to articles published in the two previous years by the total number of articles published in the two previous years" (Institute for Scientific Information, 2000). While the numerator of this equation is straightforward (ISI uses the number of cites in the current year to *any* items published

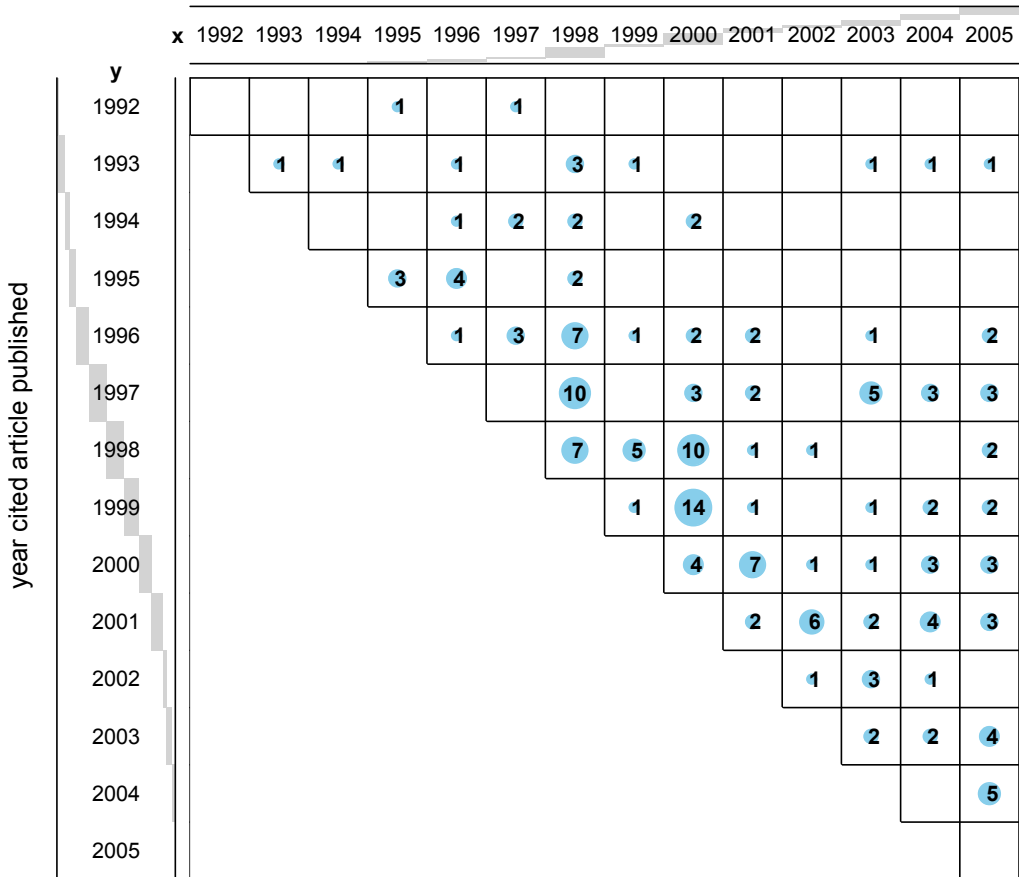
in the journal in the previous two years; Garfield, 2005, p. 5), the denominator (the total number of *articles* published) is not as unambiguous as it may seem. Only "substantive" articles or "source items" are to be counted in the denominator (Garfield, 2005, p. 5). Not every item published in a journal can always be neatly categorised, and "human judgement" is involved (Garfield, 2005, p. 6). "Substantive research or review articles" are to be included, whereas "correspondence, letters, news stories, obituaries, editorials, interviews, and tributes" are not (Garfield, 2005, p. 6).

From 1992 to 2005, the NJMT published 89 research articles, 11 essays, 31 dialogues, 32 clinical perspectives/perspectives on practice, and 26 archives articles, and it is not easy to determine which ones of these should be considered as "source items". Clearly, all the research articles are to be included in the denominator, whereas the "archives" articles which are republications of older work are not. Also, editorials, book reviews, and the like are to be excluded. However, essays, dialogues, and perspectives on practice may or may not be included in the count. Therefore we chose to calculate and present both alternatives (including and not including all the non-research articles in the denominator), in order to provide a lower and upper bound of the impact factor. The more conservative calculation (including essays, dialogues, and clinical perspectives/perspectives on practice in the denominator) was used as the main result.

To identify NJMT's position within its field, we compared these "unofficial" impact factors to those of related journals which are included in the Journal Citation Reports and therefore have an "official" impact factor. This is currently only the case for one music therapy journal (the *Journal of Music Therapy*), and, in addition, one related journal (*Arts in Psychotherapy*). The impact factors for these journals were available for the period 1997 to 2005. Since the impact factor varies every year (and can vary substantially, especially in journals publishing small numbers of articles), we calculated means and standard deviations for this period and compared these

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<sup>1</sup> NJMT's impact factor was calculated for the period from 1994 to 2005. Because the calculation is based on two previous years, there can be no impact factor for the first two years the journal was published (1992 and 1993)



Note: This figure represents citations to NJMT articles from NJMT and other journal articles. “Balloon” sizes represent the number of citations in a given combination of years. The grey bars in the margins represent the number of citations to/from a given year.

**Figure 1:** Citations to NJMT articles

between the three journals.

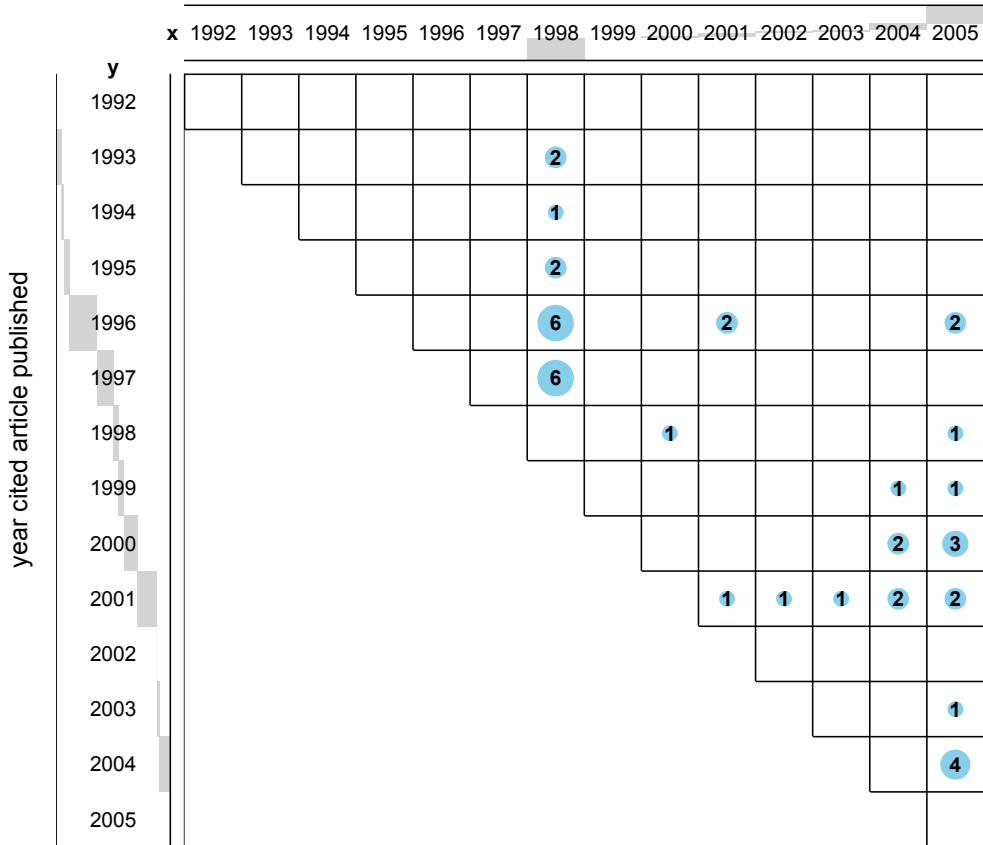
**Results**

**Citation Patterns: Overview**

An overview of the results, including all citations, can be seen in the “balloon plot” in Figure 1. Some interesting trends can be seen in the “balloons”: First, the earlier articles (up to about 1995) had relatively little impact compared to the later ones (from about 1996 or 1997). However, even the early articles do still receive some attention

long after their publication—1993 articles were cited as recently as 2005. “Later” articles seemed to have a generally greater impact (receiving more citations overall), and especially a greater short-term impact: Peak numbers of citations were typically reached one or two years after publication of the original articles. However, also the later articles continued to receive citations in later years. When examining the margins of cited and citing years, respectively, it can also be seen that some years were particularly strong.

Figure 2 shows a similar graph for the subset of citations from other journals (those listed



Note: This figure represents citations to NJMT articles from articles in other (ISI-listed) journals. “Balloon” sizes represent the number of citations in a given combination of years. The grey bars in the margins represent the number of citations to/from a given year.

**Figure2:** Citations to NJMT articles in ISI journals

in the ISI Web of Science database) to NJMT articles. This permits a closer examination of the impact that NJMT articles have had outside the field.<sup>2</sup> It can be seen that citations to NJMT articles did not occur before 1998 (although the citations occurring then did also concern some of the very early articles). Generally, it seems to take a longer time before NJMT articles are being recognised outside the field. There seems to be a steep increase of citations within the last two years. These citations concern recent as well as

older NJMT articles (with articles dating back to 1996 still being cited).

**Individual Citations**

Let us now take a closer look at the individual citations (for the latter subset of citations from outside NJMT). These are shown in Figure 3. The varying time span between the publication of an article and its citation by another article can be seen again, this time by the length of the arrows. In addition, one general tendency that

<sup>2</sup> “Outside the field” in this context does not necessarily mean outside the “field” of music therapy. Although most journals in the database are non-music therapy journals, the *Journal of Music Therapy* (JMT) is also included. It can, however, be argued that the JMT may cover a different part of the discipline of music therapy. “Field” in this context, therefore, is meant in a narrow sense.

	M (SD)	Median
Cites in all journals	2.59 (2.43)	2.0
Cites in NJMT	2.41 (2.48)	1.0
Cites in other journals	3.14 (2.18)	2.5

Note: All data in years.

**Table 1:** Time lag from publication of NJMT article to publication of citing article

can be seen is that the only music therapy journal in that database, the *Journal of Music Therapy* (JMT), was earlier in citing NJMT than journals in other disciplines. Lately, NJMT has been increasingly cited in journals from disciplines such as psychiatry, neurology, psychology, and psychotherapy, but also occasionally in rehabilitation, palliative care, geriatric care, and musicology journals. Most of these citations concern articles in later issues of NJMT.

Two ‘abnormalities’ can also be seen in the individual citations in Figure 3: First, one article (Forinash, 1998) accounts for a large number of citations to the early NJMT articles. This article was special in that it introduced qualitative research to the JMT and therefore included a bibliography of qualitative studies, many of which were from the NJMT. Second, there are some instances where authors cite themselves. Both types of ‘abnormalities’ are known to occur in all fields of research and do not necessarily represent a systematic bias, although they do have the potential of influencing the results, especially where such small numbers are involved.

### Time From an Original Publication to Its Citation

Table 1 shows the average time span between the year an original article was published and when it was cited. As might be expected, the time lag was somewhat longer for citations outside NJMT. With a median time difference of less than three years in both groups, it can be said that NJMT articles are being cited relatively quickly. (A comparable index in the Journal Citation Reports, the “cited half-life”,<sup>3</sup> was above ten years for the *Journal of Music Therapy* and *Arts*

in *Psychotherapy* in 2005). However, this may be influenced by NJMT’s rather brief publication history of just 15 years.

### Unofficial Impact Factors of NJMT

Table 2 shows the calculation of NJMT’s unofficial impact factors for the period from 1994 to 2005. (Because of the two-year rule, there can be no impact factor for the first two years a new journal is published.) The first three columns show the data on which the calculations for a given year are based. The following column shows a conservative estimate of the impact factor, taking articles of all the different genres into account. It can be seen that the impact factor varied from year to year, and that it was highest in 1998, when it reached 1.06. It was also quite high in 2000 (0.80). The alternative calculation, as shown in the last column, identifies even higher impact factors (up to 1.60 in 2000). However, the variability is quite high (as would be expected for a journal with just two issues per year), and for some years the impact factors are much lower. The high impact factor for 1998 and 2000 indicates that NJMT had apparently published influential papers in the two preceding years (i.e., 1996-1997 and 1998-1999, respectively).

Two thematically related journals that are listed in the ISI are the *Journal of Music Therapy* and *Arts in Psychotherapy*. Both have a longer publication history than NJMT (over 40 and over 30 years, respectively). On the date of our search, their impact factors were available for the period from 1997 to 2005. We calculated the average of the three journals’ impact factors for this period. The results are shown in Table 3. The average impact factor was 0.41 for the *Journal of Music Therapy* and 0.21 for *Arts in Psychotherapy*.

<sup>3</sup> The cited half-life is defined as “the number of publication years from the current year which account for 50% of current citations received” (Institute for Scientific Information, 2000).

Year	Original articles published in two previous years	Research articles published in two previous years	Cites in current year to articles published in two previous years	Impact factor of NJMT (lower bound <sup>a</sup> )	Impact factor (upper bound <sup>b</sup> )
1994	13	7	1	0.08	0.14
1995	18	8	0	0.00	0.00
1996	19	11	5	0.26	0.45
1997	18	13	3	0.17	0.23
1998	16	13	17	1.06	1.31
1999	21	15	5	0.24	0.33
2000	30	15	24	0.80	1.60
2001	33	15	8	0.24	0.53
2002	31	16	7	0.23	0.44
2003	31	14	5	0.16	0.36
2004	29	12	3	0.10	0.25
2005	27	14	9	0.33	0.64

Note: <sup>a</sup> Conservative estimate, calculated by dividing the number of cites by the number of original articles, including any type of article. <sup>b</sup> Alternative estimate, calculated by dividing the number of cites by the number of research articles.

**Table 2:** Calculation of "unofficial" impact factors for NJMT

Journal	Mean impact factor	SD
NJMT (upper bound)	0.63	0.49
Journal of Music Therapy	0.41	0.16
NJMT (lower bound)	0.37	0.33
Arts in Psychotherapy	0.21	0.10

**Table 3:** Comparison of average impact factors (1997-2005) between journals

Article	Times cited (total)	Times cited (ISI journals)
Rolvjord 1998	8	0
Merker, Bergström-Isacson & Engerström 2001	7	5
Ruud 1997b	7	1
Trevarthen & Malloch 2000	6	4
Bonde 1997	5	1
Kenny 1999	5	2
Nordoff & Robbins 1998	5	0
Ruud 1997a	5	1

Note: Included in this table are articles that have been cited at least five times.

**Table 4:** Most frequently cited NJMT articles



In the same time period, NJMT had an average impact factor of 0.37 with the conservative method described above, or a higher value of 0.63 with the alternative method. Therefore, NJMT's impact was at least on an equal level with related journals in the field.

### Characteristics of Frequently Cited Articles

In addition to the more formal analyses above, we also asked which articles were most frequently cited and what might characterise those. The NJMT articles and authors with the highest total citation count are shown as rank lists in Tables 4 and 5, respectively. Which articles and authors have been most often cited *outside* NJMT can easily be seen from Figure 3.

Table 4 lists a total of eight papers that have been cited five times or more. It is interesting to note that six of these most-cited papers were from the years 1997 to 1999, directly preceding the years when NJMT's impact was particularly high (as discussed in the previous paragraph). As the table shows the articles with the highest total citation counts (as opposed to counts covering the first two years after publication only, as used for the impact factor), it seems that papers receiving much immediate attention also tend to receive much attention in the longer term.<sup>4</sup>

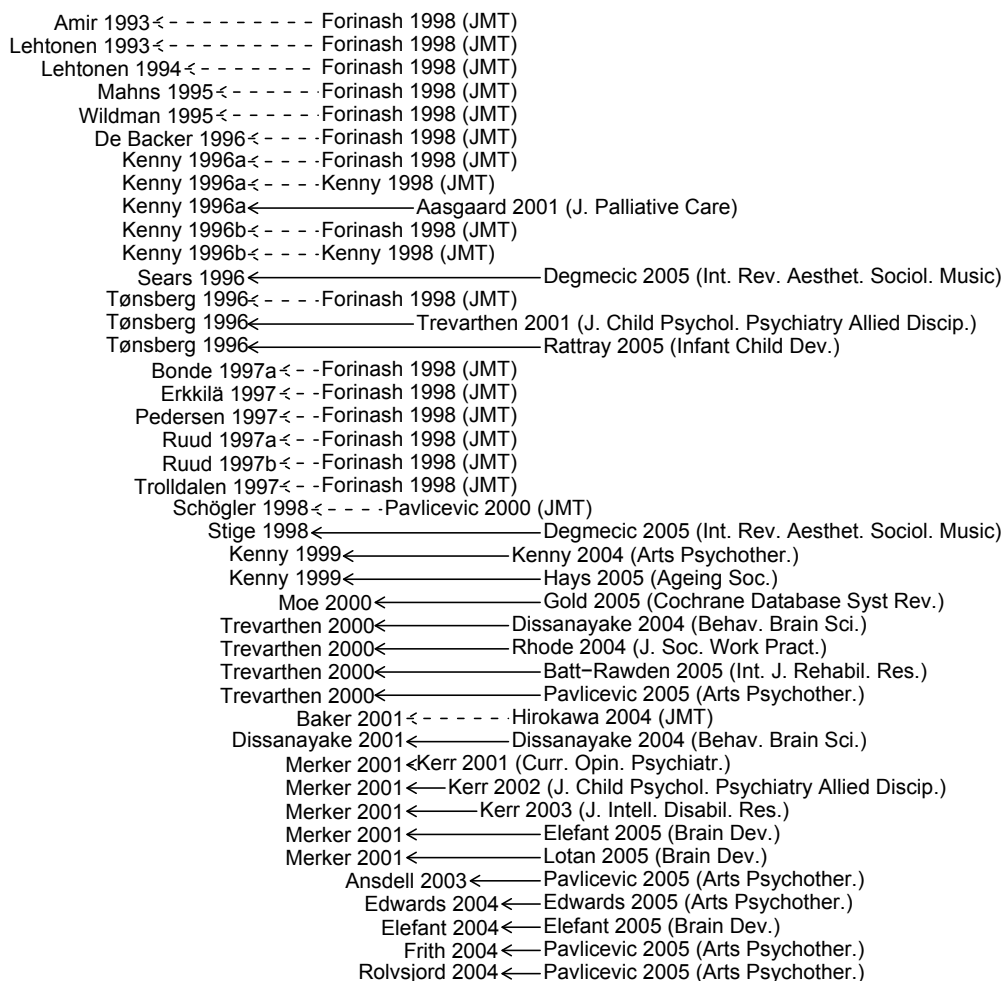
However, not all of these articles were necessarily cited much in ISI-listed journals, as can be seen from the last column in Table 4. The most-cited articles here were Merker, Bergström-Isacsson & Engerström 2001 (cited 5 times in ISI journals) and Trevarthen & Malloch 2000 (4 times). A quick look at Figure 3 confirms that these were in fact the most-cited articles in this category. Both articles had some interesting similarities: Not only were they from later years than the other, more often "internally" cited papers, they were also both works by several authors, including people from related disciplines other than music therapy; they were

published in English; their genre could best be described as a combination of empirical research and theoretical discussion; and their content was relevant in terms of building a rationale for music therapy. Merker et al. presented a survey on the significance of music in the lives of people with Rett syndrome; Trevarthen and Malloch discussed the implications of infancy research and the concept of communicative musicality for music therapy. The other much-cited articles tended to be published earlier; written by one music therapist alone; some of them were written in a Scandinavian language; and they tended to have a more theoretical focus (often with some illustrative clinical vignettes, but less systematic empirical data). In short, these articles might have been more relevant for the internal discourse among music therapists than for other disciplines. The list of frequently cited authors in Table 5 shows a similar trend, with the authors widely cited within NJMT not always being the same as those who have received most attention outside the field. (However, it must be recognised that this analysis is purely exploratory, and the general limitations discussed below will apply even more strongly here.)

### Discussion

In this study we used a quantitative bibliometric analysis to examine qualities of the *Nordic Journal of Music Therapy*'s publication activities. We have shown that the work published in NJMT is being recognised both within and, increasingly, outside the discipline; that it is recognised both quickly and during extended time periods; and that its impact is at least on an equal plane with well-established journals of long standing in the same or related disciplines. During the first 15 years of its existence, the journal has developed from a publication of primarily regional significance to

<sup>4</sup> An interesting related question is whether the availability of some articles as free downloads on the NJMT website had an impact on the citation rate. Fifteen articles have been selected for online access so far (in addition to the printed version in the journal). Two of them (Bonde, 1997 and Ruud, 1997b) appear on the list of most-cited articles in Table 4, and several others have been cited at least once in an ISI journal and appear in Figure 3. This suggests that there may be a relationship between online availability and citation rate; however, neither does free online access seem to guarantee frequent citation, nor does lack of free online access prevent it.



Note: The arrows show relationships between citing and cited articles, with arrow length depicting the time span between their respective publication. Line type indicates citations from within the discipline of music therapy (JMT - dashed line) versus from journals other disciplines (other journals - solid line). Only first authors are named in this diagram.

**Figure 3:** Individual citations to NJMT articles in ISI journals

one that serves authors and readers from many countries. The readership has quite generally broadened, both geographically and in terms of contents, as is reflected by the citation patterns examined in this study.

One important milestone in the journal's development towards a more international audience was the shift from Scandinavian to English language which took place in the period from 1996 to 1998. It is interesting that many of the most-cited papers of NJMT were published soon after that, contributing to the journal's

exceptionally high impact factors for 1998 and 2000.

Most of the frequently cited papers were published in English, making it inevitably easier for non-Scandinavian authors to use and cite them. However, there are also exceptions to that rule: The article on top of the rank list was in Norwegian language. Obviously, language is only one of many characteristics of an article that influence whether it will be cited by others. Other, perhaps more interesting characteristics are related to the type and content of the work.

Author	Times cited (total)	Times cited (ISI journals)
Ruud	14	2
Kenny	13	7
Rolvstjord	11	1
Bonde	9	1
Merker	8	5
Stige	7	1
Trevarthen	6	4
Nordoff	5	0

Note. Included in this table are first authors that have been cited at least five times.

**Table 5:** *Most frequently cited NJMT authors*

While our analyses offered some ideas about how the type of work may determine its spread within and outside NJMT's readership, these must be seen as very preliminary. The impression arising from our exploratory examination was that articles combining an empirical and a theoretical focus were more likely to be cited outside NJMT, whereas articles with a theoretical and clinical focus seemed more relevant within the discipline. The former also tended to be the work of several authors. Future studies may explore the link between contents of articles and their citation rate more systematically.

### Limitations

This study is limited in several ways: First, not all journals that may be relevant in the scientific discussion in music therapy and related fields were covered in our database. Only citations within NJMT and in journals covered by ISI's citation database were included. Citations in other music therapy journals or books were not included. Although it could be argued that the journals covered by ISI are those typically considered most important in the general scientific discussion, such may not always be true. It is known that the database has, as a result of its history, a bias in favour of English language journals and journals published in the USA, and natural science journals. The humanities are also known to be underrepresented (Seglen, 1997). Many citations within music therapy might occur in music therapy books or in smaller (including national) journals. New, popular databases, such

as Google Scholar or Google Book Search, are more inclusive than ISI's Web of Science and may have revealed further citation patterns that were not shown in our analysis. Such broadened analyses may be worthwhile for a new study, but were outside the scope of this article.

Secondly (and more importantly), citations are quite generally only an imperfect indicator of the importance or influence of a piece of work. An important work may often be cited "implicitly", that is, ideas from it may be used without directly referencing to it. It may also be cited indirectly by citing other publications which themselves cited the original. Conversely, an article may also receive a high number of citations for reasons unrelated to its importance in the scientific discourse. There are examples of highly cited papers whose authors said that they did not consider this paper their most important one. The author of the single most-cited paper in the history of science (a biochemical paper from 1951 which has been cited almost 300,000 times by 2005; Garfield, 2005, p. 7) commented the following: "It is flattering to be 'most cited author,' but I am afraid it does not signify great scientific accomplishment. [...] Nevertheless, although I really know it is not a great paper (I am much better pleased with a lot of others from our lab), I secretly get a kick out of the response." (Lowry, 1977). However, even if there is no perfect match between a paper's significance and its citation rate, there certainly is a relationship between them. The same author also noted that the method described in their most-cited paper was studied

“pretty thoroughly” and was “still applicable in most cases without modification” (Lowry, 1977). There are certainly many factors influencing the number of citations an article receives. They include popularity, utility, accessibility, type of article, and other less relevant aspects—but they also include the importance and the quality of the work.

Finally, it needs to be mentioned that the authors of this review are not neutral observers, but are members of the NJMT’s editorial team. They may therefore have a conflict of interest when writing about an issue that is so closely linked to the journal’s position. However, the calculations themselves are objective and based on a formula that has been widely used for a longer time than NJMT has existed. The authors have tried to make the calculations as transparent as possible, by providing lower and upper bounds of the impact factor. The discussion of the results might be more vulnerable to bias. Our position as members of the editorial team may have influenced the discussion either in the direction of “advertising” too much, or in the direction of being overly modest in an attempt of avoiding the former. However, the authors have tried to provide transparency and balance also in the discussion.

## Conclusion

The use of bibliometric methods is rather new in music therapy. This study has shown just a few possibilities for using citations of articles to identify trends in the research production of music therapy journals. The possibilities of such research are increasing as the technological development enables the emergence of similar, but more inclusive citation databases than ISI’s Web of Science (Cockerill, 2004). Simultaneously, as music therapy is becoming more established as a scientific discipline, it is to be hoped that the visibility of music therapy journals will also further increase. We have demonstrated how ideas published in the *Nordic Journal of Music Therapy* have begun to spread into related fields and disciplines. Music therapy as a discipline

needs to continue to actively seek this type of interdisciplinary communication.

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