The accuracy of references in the Hong Kong Medical Journal

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We have reviewed the reference citations in volume 1 (1995) and volume 2 (1996) of the *Hong Kong Medical Journal* to determine their accuracy. One hundred references were randomly selected from each volume. After excluding references not from indexed journals, all citations were examined in detail by dividing them into six component elements and comparing them with the original. We found that 61% of references in volume 1 and 51% of references in volume 2 contained inaccuracies, giving an overall error rate of 56%. Thirty-eight percent of references contained errors in one element, 16% contained errors in two elements, and 2% contained errors in three or more elements. The most common errors were those of the title or authors' names. The rate of citation errors in the *Hong Kong Medical Journal* is at the high end of the range compared with other medical journals. Contributors to this journal need to take more care in checking their references before publication.

HKMJ 1997;3:377-80

Key words: Bibliography; Documentation; Periodicals; Publishing

Introduction

Articles published in medical journals normally include a list of references. These provide a source of information to the reader, as well as a means of verification of the assertions and interpretations of the paper. Previously, a high rate of errors in reference citations has been identified in journals of different medical specialties.[1-8] The aim of this study was to determine the accuracy of references in articles published in the *Hong Kong Medical Journal*.

Methods

We examined all issues of the *Hong Kong Medical Journal* from volume 1 (1995) and volume 2 (1996), excluding supplements. All references in the journal were numbered sequentially, and a computer-generated table of random numbers was used to choose a representative sample of 100 citations from each volume. References in non-journal items, such as books, proceedings of scientific meetings, and newspaper articles were excluded, as were references in journals not indexed in *Index Medicus*. The remaining citations were then examined in detail for accuracy.

We obtained the original of each reference from our institution's library. Any articles not available in the library were requested by interlibrary loan. Each of the numbered citations from the *Hong Kong Medical Journal* were then compared with the original. Each of the six standard elements of bibliographic citation were examined: authors, including spelling, initials, order, and number; title, including spelling and punctuation; journal name, including use of correct abbreviation as listed in *Index Medicus;* year; volume; and page numbers, including first and last page numbers. Citations were considered incorrect if there was an error in any of these six elements. The percentage of citations containing errors was calculated and the proportion of errors in each of the elements was determined. Errors within each element were subdivided into categories according to the types of error found. The overall error rate and rates of error within each element were compared between volumes using the Chi squared test and Fisher's Exact test, as appropriate. A value of $P<0.05$ was considered statistically significant.

Results

A total of 2449 references (1056 references from volume 1 and 1393 from volume 2) were included in the

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Table 1. Errors in references in the *Hong Kong Medical Journal*

Total numbers of errors	**1995 n (%)**	**1996 n (%)**
Total number of references checked	80	81
Number of references with errors		
Error in any element	49 (61.3)	41 (50.6)
Errors in one element	30 (37.5)	31 (38.3)
Errors in two elements	19 (23.8)	7 (8.6)
Errors in three or more elements	0 (0)	3 (3.7)
Errors in each reference element	**1995 n (%)**	**1996 n (%)**
1. Authors		
Number of references with errors	34 (42.5)	31 (38.3)
Type of error		
Spelling errors	15 (18.8)	12 (14.8)
Incorrect initials	15 (18.8)	12 (14.8)
Incorrect number	9 (11.3)	2 (2.5)
Incorrect order	1 (1.3)	5 (6.2)
2. Title		
Number of references with errors	21 (26.3)	15 (18.5)
Type of error		
Spelling errors	7 (8.8)	9 (11.1)
Punctuation errors	9 (11.3)	5 (6.2)
Omissions	6 (7.5)	2 (2.5)
3. Journal		
Number of references with errors	2 (2.5)	2 (2.5)
Type of error		
Incorrect abbreviation	1 (1.3)	2 (2.5)
4. Year		
Number of references with errors	0 (0)	3 (3.7)
Type of error		
Wrong year	0 (0)	3 (3.7)
5. Volume		
Number of references with errors	1 (1.3)	3 (3.7)
Type of error		
Incorrect volume number	1 (1.3)	3 (3.7)
6. Page numbers		
Number of references with errors	7 (8.8)	7 (8.6)
Type of error		
Incorrect first page number	0 (0)	2 (2.5)
Incorrect second page number	5 (6.3)	7 (8.6)
Typographical errors	2 (2.5)	0 (0)

study. Twenty references were excluded from the initial sample of 100 from volume 1 and 19 were excluded from volume 2. This left a total of 80 references from volume 1 and 81 from volume 2 which were examined in detail. Of these, 31 (39%) from volume 1 and 40 (49%) from volume 2 were considered accurate. Overall, 90 citations (56%) contained at least one error; of these, 61 contained errors in one element (38% of the total), 26 (16%) contained errors in two elements, and three (2%) contained errors in three or more elements. There was no significant difference between the two volumes in terms of the overall error

Examples of errors

Each reference is shown as it appeared in the journal, with the error underlined. The correct citation is shown in square parentheses.

A. Errors in author element

Spelling error (also contains page number error)

1. Weisman MH, McDonald EC, Wilson CB. Studies of the pathogenesis of interstitial cystitis, obstructive uropathy, and intestinal malabsorption in a patient with systemic lupus erythematosus. Am J Med 1981;70:875-80.

[Weisman MH, McDanald EC, Wilson CB. Studies of the pathogenesis of interstitial cystitis, obstructive uropathy, and intestinal malabsorption in a patient with systemic lupus erythematosus. Am J Med 1981;70:875-81.]

Initials error

2. Tombran-Tink J, Chader GJ, Johnson LV. PEDF: a pigment epithelium-derived factor with potent neuronal differentiative activity. Exp Eye Res 1991;53:411-4.

[Tombran-Tink J, Chader GG, Johnson LV. PEDF: a pigment epithelium-derived factor with potent neuronal differentiative activity. Exp Eye Res 1991;53:411-4.]

Missing author (also contains spelling error)

3. Riis BJ, Thomsen K, Strom V, et al. The effect of percutaneous estradiol and natural progesterone on postmenopausal bone loss. Am J Obstet Gynecol 1987;156:61-5.

[Riis BJ, Thomsen K, Strøm V, Christiansen C. The effect of percutaneous estradiol and natural progesterone on postmenopausal bone loss. Am J Obstet Gynecol 1987; 156:61-5.]

Extra author (also contains initials error and title error)

4. Yim AP, Ho JK. Minimizing chest wall trauma in video assisted thoracic surgery [letter]. J Thorac Cardiovasc Surg. In press.

[Yim APC. Minimizing chest wall trauma in video assisted thoracic surgery [letter]. J Thorac Cardiovasc Surg. In press.]

B. Errors of title element

Incomplete title (also contains author error)

5. Luengo M, Picado C, Del Rio L, Guanabens N, Montserrat JM, Setoain J. Vertebral fractures in steroid dependent asthma and involutional osteoporosis. Thorax 1991;46:803-6.

[Luengo M, Picado C, Del Rio L, Guañabens N, Montserrat JM, Setoain J. Vertebral fractures in steroid dependent asthma and involutional osteoporosis: a comparative study. Thorax 1991;46:803-6.]

Word error (also contains author error)

6. Klaidman LK, Tombran-Tink J, Adams J, Johnson LV. Effects of medium conditioned by retinal pigmented epithelial cells on transmitter phenotype in retinoblastoma cells. Cancer Lett 1993;68:207-13.

[Klaidman LK, Tombran-Tink J, Adams JD, Jr, Johnson LV. Effects of medium conditioned by retinal pigmented epithelial cells on neurotransmitter phenotype in retinoblastoma cells. Cancer Lett 1993;68:207-13.]

C. Errors of journal element

Incorrect journal abbreviation (also contains title error)

7. Wood P, Murray A, Sinha B, Godley M, Goldsmith HJ. Case reports - Wernicke's encephalopathy induced by hyperemesis gravidarum. B J Obstet Gynaecol 1983;90: 583-6.

[Wood P, Murray A, Sinha B, Godley M, Goldsmith HJ. Wernicke's encephalopathy induced by hyperemesis gravidarum. Case reports. Br J Obstet Gynaecol 1983;90: 583-6.]

D. Errors of volume element

Incorrect volume number (also contains author error)

8. Halioua L, Anderson JJ. Lifetime calcium intake and physical activity habits: independent and combined effects on the radial bone of healthy premenopausal Caucasian women. Am J Clin Nutr 1989;48:534-41.

[Halioua L, Anderson JJB. Lifetime calcium intake and physical activity habits: independent and combined effects on the radial bone of healthy premenopausal Caucasian women. Am J Clin Nutr 1989;49:534-41.]

E. Errors of page number element

Incorrect last page number

9. Riggs BL, Melton LJ, III. Involutional osteoporosis. N Engl J Med 1986;314:1676-84.

[Riggs BL, Melton LJ, III. Involutional osteoporosis. N Engl J Med 1986;314:1676-86.]

rate or the error rate in each element. Details of error rates for each volume are shown in Table 1. Examples of errors in each element of the references are shown in the boxed section.

Rates of reference citation errors for journals of different disciplines are shown in Table 2. The reference citation error rate in the *Hong Kong Medical Journal* was at the high end of the range. In common with other journals, the elements most commonly inaccurate in the *Hong Kong Medical Journal* were authors' names and titles.

Discussion

Several previous studies have examined the accuracy of references in medical and dental journals, and have found error rates ranging from 8% to 56%.[1-8] The *Hong Kong Medical Journal* is a relatively new journal which was first published in 1995. This study examined the eight issues of the first two years of publication and has shown that the overall rate of errors in reference citations, at 56%, is at the high end of the range compared with that found in studies of other journals.

Reference citation errors can make it difficult for the reader to retrieve references and obtain, check or verify information to which the text of a paper refers. Certain errors such as incorrect year, volume or page number make it particularly difficult to locate references and can be a source of frustration to the reader. Errors in the title and names of authors are also important, because they detract from the credibility of the paper, the authors, and the journal.

Table 2. Citation error rates in journals of different medical specialties

Specialty	Error rate (%)	References
Anaesthesia	37-56	1,2
Hong Kong Medical Journal	56	Present report
Rehabilitation	54	3
Surgery	46-48	4,5
Dental	42	6
Public health	31	7
Nursing	21-38	8
Medicine	8-26	5

Whose responsibility should it be to ensure the accuracy of references? The *Information for authors* in the *Hong Kong Medical Journal* states that "Authors are responsible for the accuracy of references and must verify them against the original documents." Our study shows that this is not being done satisfactorily. An alternative would be for the editors or the reviewers to assume responsibility for checking papers before sending them to the publisher. However, this would be very time-consuming, considering the large number of papers that are submitted to journals, although a sample of references from each paper could easily be checked, and papers containing errors could then be returned with instructions to the authors to check the remaining citations.

Finally, it is inevitable that some errors will arise from transcription by editors or printers. This should be reduced, however, now that many journals such as the *Hong Kong Medical Journal* require authors to submit electronic versions of manuscripts accepted for publication on computer disk.

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4. Evans JT, Nadjari HI, Burchell SA. Quotational and reference accuracy in surgical journals. A continuing peer review problem. JAMA 1990;263:1353-4.
5. de Lacey G, Record C, Wade J. How accurate are quotations and references in medical journals? BMJ 1985;291;884-6.
6. Doms CA. A survey of reference accuracy in five national dental journals. J Dent Res 1989;68:442-4.
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8. Foreman MD, Kirchhoff KT. Accuracy of references in nursing journals. Res Nurs Health 1987;10:177-83.