

Research article

## Representation of women's health in general medical versus women's health specialty journals: a content analysis

Jocalyn P Clark <sup>\*1</sup>, Georgina D Feldberg <sup>2</sup> and Paula A Rochon <sup>3</sup>

Address: <sup>1</sup>Department of Public Health Sciences University of Toronto and The Centre for Research in Women's Health Toronto, Canada, <sup>2</sup>York Centre for Health Studies York University Toronto, Canada and <sup>3</sup>Kunin-Lunenfeld Applied Research Unit Baycrest Centre for Geriatric Care and Departments of Medicine and Public Health Sciences University of Toronto Toronto, Canada

E-mail: Jocalyn P Clark\* - [j.clark@utoronto.ca](mailto:j.clark@utoronto.ca); Georgina D Feldberg - [ginaf@yorku.ca](mailto:ginaf@yorku.ca); Paula A Rochon - [paula.rochon@utoronto.ca](mailto:paula.rochon@utoronto.ca)

\*Corresponding author

Published: 20 June 2002

Received: 2 April 2002

*BMC Women's Health* 2002, **2**:5

Accepted: 20 June 2002

This article is available from: <http://www.biomedcentral.com/1472-6874/2/5>

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### Abstract

**Background:** Women's health, traditionally defined, emphasises reproductive and maternal conditions without consideration of social contexts. Advocates urge a broader conceptualisation. The medical literature influences the definitions and delivery of women's health care. We compared how women's health was represented in leading general medical (GM) versus women's health specialty (WS) journals.

**Methods:** Original investigations published between January 1 – June 30, 1999 in leading GM (n = 514) and WS (n = 82) journals were compared. Data were collected from 99 GM and 82 WS articles on women's health. Independent reviewers conducted content analyses of sample characteristics, study design, and health topic. Each article was classified as "Traditional" (e.g. menstruation, breast cancer), "Non-traditional" (e.g. abuse, osteoporosis), or "Both."

**Results:** Of the GM articles, 53 (53.5%) focused solely on a traditional women's health topic; half were reproductive and half female cancers. In contrast, 22 (26.8%) WS articles were traditionally focused. A non-traditional topic was the sole focus of 27 (27.3%) GM articles versus 34 (41.5%) WS articles. One-fifth of GM and one-third of WS articles addressed both. RCTs dominated the GM articles, while 40% of WS articles used qualitative or mixed study designs. Leading sources of women's death and disability were not well covered in either type of journal.

**Conclusions:** Most GM articles drew on a narrow definition of women's health. WS journals provided more balanced coverage, addressing social concerns in addition to "navel-to-knees" women's health. Since GM journals have wide impact, editorial decisions and peer review processes should promote a broader conceptualisation of women's health.

### Background

Women represent over half the population and use more than 50% of health care resources [1,2]. Peer-reviewed journals are health care practitioners' major sources of information about women's health. The leading general

medical journals are particularly important because they are prestigious, widely read across clinical, research, and policy disciplines, and elicit news coverage [3,4]. Thus, their content is instrumental in defining "health."

**Table 1: Quality indicators of leading general medical and women's health specialty journals**

Journal (Location)	Impact Factor *	Citation rate Immediacy Index *	Current Circulation †	Inclusion in MEDLINE
<b>General medical</b>				
<i>Annals (U.S.)</i>	10.097	1.959	91,097	Yes
<i>BMJ (U.K.)</i>	5.143	1.992	117,000	Yes
<i>JAMA (U.S.)</i>	11.435	3.728	3,705,000	Yes
<i>Lancet (U.K.)</i>	10.197	2.634	45,000	Yes
<i>NEJM (U.S.)</i>	28.857	6.445	183,000	Yes
<b>Women's health speciality</b>				
<i>HCWI (U.K.)</i>	NR	NR	612	Yes
<i>JWH (U.S.)</i>	1.038	0.128	5,000	Yes
<i>W&amp;H (U.S.)</i>	0.974	0.186	1,225	Yes
<i>WHI (U.S.)</i>	0.404	0.031	3,000	Yes

\* Institute for Scientific Information or Social Science Citation Index Journal Citation Reports, 1999. Impact factor is a measure of the frequency with which the "average article" in a journal has been cited in a particular year, 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. Immediacy Index is a measure of how quickly the "average article" in a journal is cited, calculated by dividing the number of citations to articles published in a given year by the number of articles published in that year. Higher values indicate higher impact. † Current circulation obtained from Ulrich's International Periodicals Directory, 39<sup>th</sup> Edition, 2001 and/or confirmed by communication with publisher. NR = not ranked *Annals* = *Annals of Internal Medicine*, *BMJ* = *British Medical Journal*, *JAMA* = *Journal of the American Medical Association*, *NEJM* = *New England Journal of Medicine* *HCWI* = *Health Care for Women International*, *JWH* = *Journal of Women's Health & Gender-based Medicine*, *W&H* = *Women & Health*, *WHI* = *Women's Health Issues*

Leading causes of women's death and disability include heart disease, lung and breast cancers, depression, and abuse [1,5]. Women's health advocates argue that reproductive and maternal conditions have been over-emphasized in clinical research at the expense of the broad range of health issues contributing to women's disease burden [5]. Indeed, non-traditional women's health concerns have significant impacts on population health and health care costs. Optimal health care for all is said to draw upon a broad definition of women's health that takes into account social, economic, and political contexts [6-8]. This is accomplished by both quantitative and qualitative research methods [9].

Information published in the general medical literature defines the parameters of women's health and fosters its relative importance as a topic of clinical and scholarly concern. Women's health journals, similarly to clinical specialty journals, devote focused attention to a particular area, but have less impact on conventional criteria (Table 1). Women's health journals provide a reflection of the state of the field and their portrayal of women's health may be instructive to general medical journals.

This study compared the representation of women's health in general medical journals with its portrayal in women's health specialty journals.

## Methods

### Sample selection

Original investigations published in the leading general medical (GM) journals *Annals of Internal Medicine*, *BMJ*, *JAMA*, *Lancet*, and *New England Journal of Medicine (NEJM)* published between January 1 and June 30, 1999 were compared to original investigations published in leading women's health specialty (WS) journals *Health Care for Women International*, *Journal of Women's Health & Gender-based Medicine (JWH)*, *Women & Health*, and *Women's Health Issues* for the same time period (Table 2).

Only original investigations studying adult human populations were included, providing an initial sample of 514 GM and 82 WS articles.

### Identification of women's health articles

All WS articles were included and three strategies were used to identify GM articles with a women's health focus. First, we (JPC, PAR) identified all 88 articles that studied women-only samples. Second, three independent reviewers (JPC, PAR, PdN) read all 514 titles and conducted searches for keywords: "woman," "women," "female," "sex," or "gender," those related to female-specific conditions (e.g., breast cancer, fertility, estrogen, etc.), and keywords related to social determinants of health generally (e.g., education, social, equity, poverty, etc.). Results of the keyword searches were compared and consensus reached. Eighty-nine articles were identified, 11 of which

were supplementary to the first method of identification. Third, a MEDLINE search was conducted for the following medical subject headings: "women's health," "women's health services," and "women." Limiting the MEDLINE search to the journals in our sample and the time period of study, 16 articles resulted, only 4 of which were original investigations; none of these were supplementary. Using these three search strategies, 99 GM articles with a women's health focus were identified. A more detailed review (JPC) confirmed all GM and WS articles contained women's health content and met the original inclusion criteria.

**Table 2: Sections containing original investigations in leading general medical and women's health specialty journals**

Journal	Section
<b>General medical</b>	
<i>Annals</i>	Articles Academia and Clinic
<i>BMJ</i>	Papers General Practice
<i>JAMA</i>	Original Contributions Caring for the Critically Ill Preliminary Communication Clinical Investigations
<i>Lancet</i>	Articles Early Reports
<i>NEJM</i>	Articles Special Articles
<b>Women's health specialty</b>	
<i>HCWI</i>	Articles
<i>JWH</i>	Original Articles
<i>W&amp;H</i>	Articles
<i>WHI</i>	Articles

### Content analysis of articles

We developed a semi-structured content analysis instrument to assess sample characteristics, study design, and health topic evaluated in each article. Study design was identified and classified according to a standard taxonomy [10,11] modified to include qualitative research (i.e., randomised controlled trial (RCT), cohort, case-control, cross-sectional, case report, or qualitative) and health topic was identified and examined using an approach consistent with other investigators [12–14]. All health topics were then classified according to definition of women's health used [9]: Traditional, non-traditional, or both. Traditional topics involved reproductive conditions. i.e., fertility, pregnancy, childbirth, breastfeeding, menstruation, menopause, hormone replacement therapy, and female-specific cancers such as breast, cervical, endometrial, and ovarian. Non-traditional topics were all other health conditions, including those which afflict women to a greater

extent than men such as abuse, osteoporosis, and eating disorders. Articles classified as drawing on "both" definitions evaluated, as an example, depression in pregnancy.

The instrument was pilot tested on 10 articles. Two independent coders (JPC, GDF) reviewed articles. Interrater reliability ranged from 91% to 100% agreement per item. Coders had 91% agreement on health topic classification. Discrepancies were resolved by consensus.

### Results

Among the 514 GM articles in our sample, 99 (19.2%) were related to women's health. Most of these 99 appeared in *Lancet* (26.3%), *BMJ* (23.2%), and *NEJM* (22.2%). Eighty-eight (88.9%) of the GM women's health articles reported on women-only study samples; the remaining 11 (11.1%) were of mixed-gender. Most of the 82 WS articles appeared in *JWH* (37.8%) and *Women & Health* (29.3%). Similarly to the GM articles, 87.8% of the WS articles reported on women-only study samples.

### Representation of women's health issues (Table 3)

To compare how women's health issues were represented, we categorised articles into three mutually exclusive groups: Traditional, non-traditional, or both. The distribution of topics was significantly different between GM and WS journals ( $X^2 = 13$ ;  $p = 0.0013$ ). Fifty-three (53.5%) of the 99 GM articles addressed solely a traditional women's health topic. Of these, 26 (49.1%) related to reproductive health issues and 27 (50.9%) studied female-specific cancers. In contrast, 22 (26.8%) WS articles focused solely on traditional women's health. Of these, 15 (68.2%) related to reproduction and 7 (31.8%) to female cancers.

Twenty-seven (27.3%) of the GM articles concerned a women's health topic more broadly defined and were categorised as non-traditional women's health: heart disease ( $n = 6$ ), health care delivery ( $n = 3$ ), HIV/AIDS/STDs ( $n = 3$ ), musculoskeletal conditions such as osteoporosis ( $n = 3$ ), obesity/physical activity ( $n = 3$ ), and a range of other women's health topics ( $n = 9$ ). With respect to WS articles, 34 (41.5%) addressed solely a non-traditional women's health topic: obesity/physical activity ( $n = 7$ ), general health ( $n = 5$ ), musculoskeletal ( $n = 4$ ), depression ( $n = 3$ ), heart disease ( $n = 3$ ), HIV/AIDS/STDs ( $n = 3$ ), and a range of topics ( $n = 9$ ).

Nineteen (19.2%) of the GM women's health articles addressed *both* a traditional and non-traditional women's health topic, compared to 26 (31.7%) WS articles which incorporated both types of women's health. While overall more than 40% of both GM and WS articles related in some way to women's reproduction, WS articles much more frequently combined this narrow women's health

**Table 3: Comparison between women's health original investigations in leading general medical versus women's health specialty journals**

GENERAL MEDICAL JOURNALS		WOMEN'S HEALTH SPECIALTY JOURNALS	
Characteristic	N	Characteristic	N
<b>Journal</b>		<b>Journal</b>	
<i>Annals</i>	10 (10.1%)	<i>HCWI</i>	20 (24.4%)
<i>BMJ</i>	23 (23.2%)	<i>JWH</i>	31 (37.8%)
<i>JAMA</i>	18 (18.2%)	<i>W&amp;H</i>	24 (29.3%)
<i>Lancet</i>	26 (26.3%)	<i>WHI</i>	7 (8.5%)
<i>NEJM</i>	22 (22.2%)		
<b>Total</b>	<b>99</b>	<b>Total</b>	<b>82</b>
<b>Representation of Women's Health</b>		<b>Representation of Women's Health</b>	
Traditional	53 (53.5%)	Traditional	22 (26.8%)
Reproduction	26	Reproduction	15
Female cancer	27	Female cancer	7
Non-traditional	27 (27.3%)	Non-traditional	34 (41.5%)
Heart disease	6	Obesity/physical activity	7
Health care	3	General health	5
HIV/AIDS/STDs	3	Musculoskeletal	4
Musculoskeletal	3	Depression/mental health	3
Obesity/physical activity	3	Heart disease	3
Other	9	HIV/AIDS/STDs	3
		Other	9
Incorporating Both Traditional and Non-traditional	19 (19.2%)	Incorporating Both Traditional and Non-traditional	26 (31.7%)
Reproduction & other	16	Reproduction & other	24
Female cancer & other	3	Female cancer & other	2
<b>Total</b>	<b>99</b>	<b>Total</b>	<b>82</b>

topic with a non-traditional issue (e.g. HIV in pregnancy). Specifically, 42 GM articles focused on reproduction, of which 16 (42.4%) incorporated a non-traditional issue, while 24 of 39 (61.5%) WS articles combined both perspectives. This combined approach reflects the broad, contextual definition of women's health advocated by scholars, practitioners, and patients [8,9].

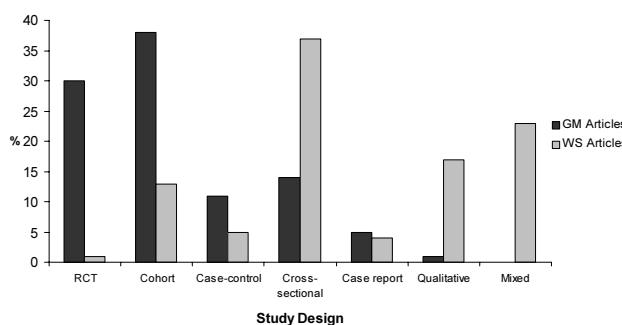
Only one (1.0%) article published in GM journals used a non-quantitative research method. The others reported on RCT (n = 30), cohort (n = 38), case-control (n = 11), cross-sectional (n = 14), and case report (n = 5) designs. In contrast, a full 40% of WS articles involved qualitative or mixed methodologies, as advocated by women's health scholars [5,15]. The remaining WS studies were dominated by the cross-sectional (n = 30) design (Figure 1).

## Discussion

Our study offers valuable insight into the presence and nature of women's health content in general medical versus

women's health journals. Among the GM journals, each devoted approximately 20% of their original investigations content to women's health. This is encouraging and may reflect burgeoning scholarship of women's health researchers, government initiatives, and leadership of medical editors to include comprehensive approaches to health care. However, most GM articles drew on a narrow definition of women's health. WS journals provided more balanced coverage of women's health, publishing articles that addressed key women's health topics in context, more broadly defined, and based on mixed quantitative-qualitative methodologies. These integrated approaches are in keeping with principles designed to promote women's health across all clinical and research disciplines.

Leading sources of women's death and disability were not well represented across either set of journals. Lung cancer is the leading cancer killer of women but was not the focus of any articles published during the first half of 1999; in contrast, breast and cervical cancer articles together ac-



**Figure 1**

This figure compares the proportions of women's health articles published in general medical (GM) versus women's health specialty (WS) journals according to the study design used. It demonstrates that GM journals are more likely to publish articles using study designs higher up the conventional hierarchy of evidence (i.e., RCT), and WS articles incorporate qualitative and mixed study designs.

counted for one-fifth of the entire sample. No GM articles and only five (6.1%) WS articles addressed violence against women. Likewise, heart disease produces significant illness burdens for women, but accounted for only 6% of articles in our entire sample.

The representation of women's health in WS journals is an important yardstick for the general medical literature which has greater influence on the health message communicated to practitioners and the public. Recently, *JAMA* published a second special theme issue on women's health (the only leading GM journal thus far) that included a range of topics such as heart disease, ovarian cancer, and HIV [16]. This is a significant leadership move because these issues draw attention to health topics and imply topic importance; indeed, readers appear to prioritise women's health [17,18]. In addition, *Lancet* recently published a six-part series on violence against women that will surely raise the profile of violence's impact on women's health. Where possible, a better strategy might be to profile the range of women's health topics regularly, rather than under the auspices of special issues and series.

On conventional criteria, GM journals clearly have more impact (i.e., circulation, citation rate) than WS journals, appear to publish articles higher up the hierarchy of evidence (i.e., RCTs and intervention studies), and thus likely publish articles of superior quality. This may mean that health topics less amenable to RCT design (e.g., abuse) stand a better chance of publication in non-GM journals. Regardless, the focus of GM journals on "navel-to-knees" women's health may contribute to an uneven evidence base regarding women's health care. GM journals are chal-

lenged to maintain scientific excellence while incorporating the range of topics reflective of women's lives and health care needs. Precisely because GM journals have wide impact, it would be of benefit for editorial decisions and peer review mechanisms to promote a broader conceptualisation of women's health.

### Limitations

We chose a particular time period, but our study provides an important preliminary audit of a developing field. Second, our results may not be generalisable to all medical and women's health journals, but it is unlikely that less prestigious journals provide better women's health coverage. We only evaluated original investigations and it is possible that issues relevant to broadening the definition of women's health are discussed in reviews and editorials. However, original investigations are important for leading new scientific understanding. Finally, we relied upon a primarily quantitative method. Additional in-depth and qualitative analysis of the medical literature, including its quality across types of journals, would enhance explorations of the representation of women's health.

### Conclusions

Most women's health articles in the general medical literature represented traditional conditions, while specialty journal articles were more likely to address non-traditional topics. Neither type of journal well represented leading sources of women's death and disability. Since women's reproductive and maternal capacities represent only a fraction of women's health issues, leading journals should include articles about women's health that incorporate social, economic and political contexts. Because the leading general medical journals have wide impact, it would be of benefit for editorial decisions and peer review to promote a broader conceptualisation of women's health.

### Competing interests

None declared.

### Authors' contributions

JPC conceived of the study, collected data, and drafted the manuscript. GDF and PAR contributed to study design and acquisition of data. All authors obtained funding, contributed to analysis and interpretation of data, and read and approved the final manuscript.

### Acknowledgements

JPC is a doctoral fellow of the Canadian Institutes for Health Research (CIHR) and the Inner City Health Research Unit, University of Toronto, and is the 2001 Mitchell/Venn Fellow in Women's Health. PAR is supported by an Investigator Award from CIHR. The work was also facilitated by the National Network on Environments and Women's Health with funding from the Centres of Excellence Programme, Health Canada. Financial support from these sources is gratefully acknowledged. We also wish to thank M. Binns, P. de Nobrega, J. Dergal, D. Laxer, and A. Misra for their assistance.

A version of this paper was presented at the Fourth International Congress on Peer Review in Biomedical Publication, Barcelona Spain, September 16, 2001.

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## Pre-publication history

The pre-publication history for this paper can be accessed here:

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