

The image of the nurse on the Internet

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The media image of the nurse is a source of concern because of its impact on: recruitment into the profession; the decisions of policy makers who enact legislation that defines the scope and financing of nursing services; the use of nursing services by consumers; and the self-image of the nurse. This article reports on the results of a study of the image of nursing on the Internet utilizing content analysis methodology. A total of 144 Websites were content-analyzed in 2001 and 152 in 2004. Approximately 70% of the Internet sites showed nurses as intelligent and educated and 60% as respected, accountable, committed, competent, and trustworthy. Nurses were also shown as having specialized knowledge and skills in 70% (2001) and 62% (2004) of the Websites. Scientific/research-oriented, competent, sexually promiscuous, powerful, and creative/innovative increased from 2001–2004 while committed, attractive/well groomed, and authoritative images decreased. Doctoral-prepared nurses were evident in 19% of the Websites in 2001 and doubled in 2004. The results of this study suggest that there are important opportunities to use the Internet to improve the image of the nurse.

The image of the nurse is noted as a significant problem in many countries of the world including Australia,^{1,2} Britain,^{3,4} Canada,^{5,6} Ireland,⁷ Poland,⁸ Hong Kong,⁹ Taiwan,¹⁰ and the United States.^{11–12} One of the major influences on the image of the nurse is the mass media portrayal of the profession.^{18–20} What individuals see, hear, and read in the media influence the image they develop of nursing. Although there have been a few successful efforts to reshape the media image of nursing, the image is still largely inaccurate

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and negative.^{2,11,21–25} Nurses are under-represented and often invisible in media portrayals of healthcare.

This article reports the results of a study investigating the newest form of the mass media, the Internet. The Internet image of nursing has become increasingly more important in recent years because of the public's (especially young adults' and teens') growing use of this form of media to obtain information and learn about the world.²⁶

BACKGROUND

Image of Nursing

Although the image of nursing on the Internet had not been previously studied, the image of nursing in other forms of media has been the subject of a number of research studies over the past 2 and a half decades.^{2,3,19,20,27–40} These researchers uncovered a number of distinct images (eg, angel of mercy, girl Friday, heroine, wife/mother, battleaxe, sex object) that have emerged over time.^{1,20,30–34,41–43}

A negative image of nursing has a number of negative consequences. It impacts the quality and quantity of persons who choose nursing as a profession.^{1,15,20,35,44–46} A public constantly presented with inaccurate and negative nurse images will view a career in nursing as undesirable. This is especially relevant to the recruitment of men—in that media portrayals have focused primarily on women^{3,16} and the image of a male nurse is often negative.⁴⁷

The public image of the nurse also affects decisions of policymakers who enact legislation that defines the scope and financing of nursing services and allocates the scarce resources that undergird nursing practice.^{19,20} Consumers are also affected by the public image of the nurse. Since the media do not portray nurses as instrumental health care providers and have failed to mirror the changing role of the nurse, the public lacks awareness of the many vital services that nurses currently do provide. The physician continues to receive nearly all of the credit for any positive health care outcomes.^{1,4,20}

The negative image of nursing also creates problems with nurses' self-image. While some nurses may not consciously recognize the impact of media depictions of their profession, on a subliminal level the impact is unmistakable.^{2,3,20,48,49}

The Impact of the Internet

The introduction of Netscape's Mosaic browser on October 13, 1994 changed the way Americans' access and gather information.²⁶ The US Department of Commerce in their 2002 report, *A Nation Online: How Americans Are Expanding Their Use of the Internet*, states, "Increasingly, we are a nation online."⁵⁰ The Pew Research Center (2005) confirms this growth: "The Web has become the 'new normal' in the American way of life; those who don't go online constitute an ever-shrinking minority."²⁶ The increase in Americans using the Internet translates into 63% of American adults (age ≥ 18) and 81% of the nation's teenagers (age 12–17).²⁶ The Pew Research Center (*Trends 2005, Internet*) points out that many people "can scarcely imagine what the world was like way back when people weren't always connected, 'always on,'"²⁶ and "the longer the Internet is around, the more people expect of it. Increasingly, it is seen as a utility rather than a novelty."²⁶ This increase in Internet use is broad-based, affecting every demographic group, regardless of income, race, gender, education, and age group.⁵⁰

RESEARCH QUESTIONS

The research questions for this study are:

- What is the image of nursing on the Internet?
- Has the image of nursing on the Internet changed from 2001 to 2004?

STUDY METHOD

A descriptive comparative research design was selected to examine the image of nursing on the Internet and to compare the image of nursing on the Internet in 2001 and 2004.

Content Analysis Tool

A content analysis research instrument, the *Internet Nursing Image Tool*, was developed to systematically and objectively measure the image of nursing on Internet Websites. An initial pool of 136 items was derived on theoretical grounds from historical content analysis research conducted on the image of the nurse in the mass media (ie, television, motion pictures, novels, newspapers and magazine articles) by Kalisch and Kalisch.^{20,30–34,41} These initial items were reviewed for relevance and clarity by a working group of 7 reviewers (nurses with a master's or PhD degree or working toward a graduate degree) and reduced to a set of 93 items. This 93-item tool was then reviewed item-by-item by a panel of experts (12 nurses from practice and education) to establish face validity. After revisions were made based on this review, content validity was substantiated by a group of 5 researchers with experience in tool development and knowledge of research on the media image of the nurse. All of these individuals rated each item for clarity and relevance. Further revisions resulted in an 81-item instrument.

A codebook/user guide with detailed coding instructions was developed. The instrument was then independently applied by each of the 7 members of the original working group to a sample of 25 nursing Websites. Inter-rater reliability was assessed between dyads of the principal investigator with each rater and between 2 raters. Items considered confusing, ambiguous, redundant or with low inter-rater reliability were removed or revised. Revisions were then made in the codebook. This process was completed 5 times and resulted in a refinement of the final tool to 65 items. Before the actual coding of Websites took place, the coders underwent training in the use of the tool until they reached a percentage of agreement of at least 85% with the principal investigator.

The tool devoted to measuring 17 nurse characteristics included: (1) intelligent, (2) respected, (3) autonomous, (4) warm, kind/compassionate, (5) educated, (6) accountable, (7) trustworthy, (8) diverse, (9) cool/ "with it" (10) attractive/well groomed, (11) competent, (12) sexually promiscuous, (13) committed, (14) creative/innovative, (15) powerful, (16) scientific and (17) authoritative. Each item was scored as present, not present, or cannot determine. Characteristics that were present were clearly portrayed on the Website. The characteristic was considered not present if there was no evidence or opposite evidence of the characteristic. If there was a lack of sufficient information for the reviewer to evaluate the attribute, it was then marked undeterminable.

The Cronbach coefficient α for the 65-item scale was .772 in 2001. Based on Nunnally et al's (1994) criteria that .70 is adequate for newly developed instruments and .80 is adequate for more developed instruments, the *Internet Nursing Image Tool* was considered to be reliable.⁵¹ Before the tool was used again in 2004, the reliability was tested to verify that the tool was still valid, considering the changes to Internet technology. Again, 25 sites were tested. The Cronbach coefficient α was .911 in 2004. To find the overall reliability of the tool for both years, 50 sites (25 from 2001 and 25 from 2004) were tested for reliability. For both 2001 and 2004, the Cronbach coefficient α was .881.

Sample

Sample selection in both years utilized search engine technology. The aim was to select sites that received the most exposure to the public. In 2001, the sample selection process involved prompting what were then the top 10 search engines with the word "nursing" (Yahoo, Alta Vista, AOL, HotBot, Google, Lycos, Excite, Infoseek, Profusion and Northern Light). The word "nursing" was chosen to depict the profession of nursing as opposed to an individual nurse. Therefore, the analysis focuses on nurses as a profession, not a single nurse. The top 20 Websites that emerged on each of the search engines were cross-referenced in order to

eliminate duplicate Websites. This process resulted in the selection of 144 Websites for 2001.

By 2004, major changes had occurred in search engine technology. Some search engines had disappeared and others emerged. In addition, certain search engines in 2004 supplied other search engines. For example, Google provides data not only for its own search engine but for other search engines such as Yahoo, AOL, and Netscape. Based on these changes in search engine technology and in keeping with the aim of including the sites with the most audience reach, the sample selection process was altered to base the selection on the Nielsen/NetRatings.⁵² There were 122 sites selected from Google, which had the largest audience reach. The number of sites from the other search engines was as follows: 41 from Look Smart, 17 from Ovature, 25 from TEOMA, and 7 from Infospace. Nursing Websites that were duplicates were eliminated, making the final sample size 152 for 2004.

The country of origin of the Websites was similar in both years with 93% being in the US, 5% in England, and 2% in Canada.

Data Analysis

The data was entered into Statistical Package for the Social Sciences (SPSS) version 13.0 for analysis. Descriptive statistics provided a general picture of the nursing image on the Internet. Pearson χ^2 tests were calculated to compare the variables between 2001 and 2004. Nonparametric tests were used for the analysis because the data was ranked according to whether more or less of the characteristic was seen in either year. Significant findings were reported using the $P < .01$ criteria.

FINDINGS

Primary Subjects

As can be seen in Table 1, the top Website subjects in both years of the study were professional nursing organizations, resource/Website directories, and job sites. In 2004, the resources/Website directory decreased 16% while job sites, basically designed to recruit nurses for various healthcare organizations, remained the same percentage but moved up to second place. Schools of nursing increased slightly.

Characteristics of Nurses

In terms of the 17 nursing characteristics, χ^2 tests were run on all 17 variables for both 2001 and 2004. While there was not a significant difference between 7 variables from 2001 to 2004, the cross-tabulations for both years illustrate interesting findings (see Table 2). Approximately 70% of the Websites showed nurses as intelligent and educated while only 6.1% lacked intelligence and 4.1% lacked education (see Table 2). Nurses were also shown as respected, accountable, and trustworthy in approximately 60% of the Websites (see

Table 1. Subjects of Nursing Websites

Subject	2001 N (%)	2004 N (%)
Professional nursing organizations	35 (24)	28 (18)
Resources/Website directory	33 (23)	17 (11)
Job site	25 (17)	26 (17)
Nursing companies/businesses	7 (5)	9 (6)
Other companies	7 (5)	13 (9)
Government	5 (4)	6 (4)
Schools/colleges of nursing	6 (4)	10 (7)
Nursing publications	6 (4)	8 (5)
Commercial business (selling sites)	5 (4)	16 (10)
Entertainment sites	1 (1)	12 (8)
Other	14 (9)	7 (5)
Total	144 (100)	152 (100)

Table 2). The variable compassionate appeared in approximately half of the Websites. Finally, diversity appeared in about 35% of the Websites (see Table 2).

Table 3 illustrates the significant differences found in 10 of the 17 variables between the 2 years. The results suggest that the variables of attractive/well groomed, competent, sexually promiscuous, committed, creative/innovate, powerful, scientific/research-oriented, authoritative, cool/ "with it" and autonomous significantly changed (See Table 3). Investigating these changes further by examining the cross-tabulations illustrated that attractive/well groomed, competent, sexually promiscuous, and cool/ "with it" significantly increased from 2001 to 2004. Committed, creative/innovated, powerful, scientific/research-oriented, authoritative and autonomous were seen to have significantly decreased from 2001 to 2004.

Educational Level

Although a large percentage of the Websites made no mention of the educational level of the nurse (60.4% in 2001 and 37.5% in 2004), of those sites that did, there were slightly more BSN (5.4%) than AD degrees (2.0%). Master's degrees were evident in 13.2% of the Websites in 2001 and 14.5% of the Websites in 2004. The largest and significant increase was noted in the doctoral category, where the percentage of sites mentioning or showing doctoral-prepared nurses grew from 18.8% in 2001 to 40.8% of the total in 2004 ($\chi^2 = 20.949$, $df = 4$, $P = .000$).

Gender and Ethnicity

Similar to the nursing workforce, more female images were presented on the Internet. In 2001, 29% of the sites had all female pictures and only 1% of Websites had all men pictures ($\chi^2 = 21.01$, $df = 4$, $P =$

Table 2. Characteristics of Nurses on the Internet

Variable	Evidence N (%)	No Evidence N (%)	Unclear N (%)	Total N (%)	χ^2	df	P-value
Intelligent	208 (70.3)	18 (6.1)	70 (23.6)	296 (100)	1.842	2	.398
Respected	179 (60.5)	22 (7.4)	95 (32.1)	296 (100)	0.487	2	.784
Warm, Kind and Compassionate	139 (47)	19 (6.4)	138 (46.6)	296 (100)	3.793	2	.150
Educated	210 (70.9)	12 (4.1)	74 (25)	296 (100)	1.191	2	.551
Accountable	185 (62.5)	14 (4.7)	97 (32.8)	296 (100)	5.248	2	.073
Trustworthy	175 (59.1)	14 (4.7)	107 (36.1)	296 (100)	2.637	2	.286
Diverse	103 (34.8)	92 (31.1)	101 (34.1)	296 (100)	1.752	2	.416

Table 3. Characteristics of Nurses on the Internet: Significant Changes from 2001 to 2004

Characteristics	χ^2	df	P-value	Evidence	
				N (%) 2001	N (%) 2004
Attractive/Well groomed	13.025	2	.001	66 (45.8)	94 (61.8)*
Competent	31.286	2	.000	81 (56.3)	90 (59.2)*
Sexually Promiscuous	190.409	2	.000	5 (3.5)	9 (5.9)*
Committed	7.162	2	.028	96 (66.7)	80 (52.6)**
Creative/Innovative	190.409	2	.000	74 (51.4)	35 (23.0)**
Powerful	29.561	2	.000	80 (55.6)	51 (33.6)**
Scientific	15.217	2	.000	78 (54.2)	66 (43.4)**
Authoritative	86.917	2	.000	81 (56)	63 (41)**
Autonomous	6.714	2	.035	86 (59.7)	81 (53.3)**
Cool/With it	32.597	2	.000	53 (36.8)	55 (36.2)*

*Increased from 2001–2004.
**Decreased from 2001–2004.

.000). In 2004, the number of all male images increased to 3% while the number of all female pictures decreased to 24% ($\chi^2 = 21.01$, $df = 4$, $P = .000$). Equal numbers of male and female images increased from 2001 (6%) to 2004 (11%) ($\chi^2 = 21.01$, $df = 4$, $P = .000$). The number of Websites containing images of men did increase (even if it was only 1–2 images) between 2001 (10%) and 2004 (27%). The majority of the Websites displayed no images in 2001 (55%) and 2004 (36%).

While the majority of images were White Caucasian (42% in 2001 and 63% in 2004), there was a significant increase in African-American, Hispanic, and Asian images. In 2001, the number of African-Americans increased from 12% to 30% in 2004 ($\chi^2 = 14.15$, $df = 1$, $P = .000$). A 17% increase was seen in the number of Hispanic pictures from 2001 to 2004 ($\chi^2 = 24.68$, $df = 1$, $P = .000$). Asian images increased from 6% in 2001 to 22% in 2004 ($\chi^2 = 17.17$, $df = 1$, $P = .000$). While 56% of the images were unclear in 2001, increasing clarity was present in 2004 with only 36% of the images being unclear as to the ethnicity of the nurse image ($\chi^2 = 12.80$, $df = 1$, $P = .000$).

Knowledge and Skill

The Websites were also coded as to the extent that they showed nurses as knowledgeable and skilled. In 2001, 74.3% of the Websites contained the image that nurses had a knowledge and skill base, while in 2004, it fell to 61.8% ($\chi^2 = 19.705$, $df = 2$, $P = .000$).

Nurses as Concerned Health Authorities

Nurses were shown on Websites as “concerned health authorities” in 49.3% of the sites in 2001 and 45.4% in 2004. For example, nurses were shown as being knowledgeable about healthcare issues, such as cardiac disease in women, colon cancer prevention, or smoking cessation (see Table 4).

Nurses as Influential in Healthcare Politics

Another item addressed the depiction of nurses in healthcare politics. Participation in politics decreased significantly from 2001 to 2004 ($\chi^2 = 23.847$, $df = 2$, $P = .000$). Nurses were shown as involved in the political arena in 41% of the Websites in 2001 and 20.4% in 2004 (See Table 5). Websites showing nurses as influential in the policy process depicted nurses with polit-

Table 4. Nurses as Concerned Health Authorities

Year	Agree		Disagree		Unclear		Total	
	n	(%)	n	(%)	n	(%)	N	(%)
2001	71	(49.3)	47	(32.6)	26	(18.1)	144	(100)
2004	69	(45.4)	70	(46.1)	13	(8.6)	152	(100)

Table 5. Nurses Engaged in Healthcare Politics*

Year	Agree		Disagree		Unclear		Total	
	n	(%)	n	(%)	n	(%)	N	(%)
2001	59	(41)	58	(40.3)	27	(18.8)	144	(100)
2004	31	(20.4)	104	(68.4)	17	(11.2)	152	(100)

* $\chi^2 = 23.847$, $df = 2$, $P = .000$.

ical opinions or being involved in political activities such as participation in legislative efforts, letter writing, and/or informing others about current political issues.

Demographic Characteristics

In terms of demographic characteristics of nurses on the Internet, 52.6% in 2004 were between the ages of 31–50. This was a 22.7% increase in this age group from 2001. Similarly, nurses < 30 years old decreased from 25% to 17.1%, which is the typical recruitment age group for the profession. Of those Websites from both years which identified the gender of the nurse (mostly through pictures), 26% were female and 2% were male. A small increase in the number of males was seen in 2004 (2.6%) over 2001 (.7%). While the number of Caucasian nurses increased in 2004 by 20.8%, so did African-Americans (17.8%), Hispanic (17.7%), and Asians (16.8%).

DISCUSSION AND IMPLICATIONS

Overall, the findings from this study reveal a relatively positive image of nursing on the Internet. Approximately 70% of the Internet sites showed nurses as intelligent and educated, and 60% as respected, accountable, committed, competent, and trustworthy. Nurses were also shown as having specialized knowledge and skills in the majority of the Websites in both years of the study. In terms of a related variable, 54% of the Websites depicted nurses as scientifically oriented in 2001. It is unfortunate that this fell to 43% in 2004, yet this level of exposure depicting nurses using a scientific basis for practice is positive and is a foundation to build on.

It is also an encouraging trend that nurses with master's-level education showed up in approximately 15% of the Websites in both years studied. Doctoral-prepared nurses were evident in 19% of the Websites in 2001 and doubled in 2004.

Unfortunately, a downward trend in positive nurse characteristics is evident. Respect, autonomy, scientific, committed, accountable, trustworthy, creative, powerful, and authoritative all declined. There was also a decrease in the number of sites that showed nurses as knowledgeable and skilled, as concerned health authorities, and as influential in healthcare politics. The only positive characteristics which increased over this time period were attractive and well-groomed, diverse (which was low in 2001), competent, cool/ "with it", warm, and educated.

It is noteworthy that in 2004, professional nursing organizations, which contain a large amount of positive imagery with descriptions of nurses engaged in activities such as research, education (including post-doctoral training), world/global affairs, scholars-in-residence, publications, and health policy, dropped 6% from the 2001 level. Job sites, on the other hand, are generally devoid of quality representations of nurses and nursing, and they moved up from third to second place in 2004. As the nurse shortage worsens, the number of sites advertising various positions in nursing have increased and will, undoubtedly, continue to do so. Another factor that makes it more likely that job sites will be more exposed on the Internet is that companies assisting healthcare organizations to recruit nurses have the resources to pay search engines to ensure that their Websites appear high in the search process.

Diversity appeared in more Websites in 2004 than in 2001; however, this was largely due to the fact that there was an increase in the number of pictures of nurses on the Websites. It was not possible to code for diversity unless the Website contained pictures of nurses. Thus, there were not only more African-Americans, Hispanics, and Asians; there were also more Caucasian nurses in evidence. This is also true of men in nursing, who were scarcely evident on the Internet. Current media images such as Ben Stiller's character in "Meet the Parents," who was ridiculed for being a male nurse, create challenges to recruit men into the nursing profession.⁵³ However, while these types of images are recruitment barriers, recruiters from corporations, healthcare organizations, and nursing schools are focusing their attention on the male nurse population.⁵³ There is a substantial opportunity to expand the exposure of male nurses and nurses from various ethnic groups on the Internet by offering more images or personal stories on Websites.

The fact that nurses were portrayed as older in 2004 than in 2001 may be due to the fact that the job sites have come to recognize that they are recruiting from the > 30 year-old nurse cohort. Between the years of

1983–1998, the average age of the working nurse has increased by 4.5 years.⁵⁴ The job sites appear to be trying to appeal to the older nurse. However, the young person surfing the Internet for possible career choices will likely be confronted with nurses 30–50 years old, which may not always encourage them to think of themselves as nurses. On the other hand, the portrayal of nurses in a wide range of ages demonstrates the fact that nursing is a long-term career and is also appealing to the growing number of individuals who are choosing nursing as a second career.

It is discouraging that the depiction of nurses being involved and influential in politics and policy dropped significantly from 41% to 20%. In the election year of 2004, it is disconcerting that the Internet did not show nurses more active in the political process. This may be due to nurses' lack of involvement in politics.^{55–57} Portraying nurses engaged in political activities and impacting health and nursing policy on the Internet is an opportunity to improve the image of the nurse.

Although nurses were shown as “concerned health authorities” in 49% of the Websites in 2001 and 45% in 2004, there is a great deal of opportunity to expand this image on the Internet. This finding is substantiated by a national survey conducted by Sigma Theta Tau which asked 1,000 adults if they would seek healthcare advice from a nurse. In only 4 of 30 areas (15%) did 50% of the respondents state that they had or would seek the advice of a nurse.⁵⁸

There are many positive nursing sites on the Internet that, unfortunately, do not emerge as top Websites on the search engines. Schools of nursing, for example, are very much under-represented on the search engines. Almost every School of Nursing has a Website and many show nurses in the most progressive and positive light, yet these did not emerge in the search process. The technology of search engines is an area of rapid expansion and opportunity. It is important for nurses to become well-versed about these advances in Internet technology and to learn to use this technology to improve access to quality nursing sites.

The Internet represents a very viable avenue for improving the public image of the nurse. The portrayal of nursing is already much more positive than it is in the entertainment media. Thus, this new mass medium offers an important opportunity to demonstrate the best aspects of the profession. In order for this to occur, a systematic and comprehensive plan needs to be developed to effectively improve the exposure of nursing on the Internet.

FURTHER RESEARCH

There is a need to replicate this study at additional points in the future and with larger numbers of Websites. The results of such a longitudinal study will provide essential data on the evolving image of the

nurse on the Internet and will offer data to encourage nurses to place the quality of their image on the Internet on their agenda for change.^{13,14,17}

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