

A Descriptive Analysis of 10 Years of Research Published in the *Journal of Health Communication*

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This article describes the contents of the articles from the first decade of The Journal of Health Communication (JOHC). Three hundred and twenty-one published articles were reviewed and coded to determine the characteristics of the researchers, the types of research presented, the common health topics covered, and the research designs used. The results led to the following profile of a typical article. Its primary author is a U.S. academic. It probably focuses on smoking, HIV/AIDS, or cancer. It is an empirical research study, more likely to use quantitative, specifically survey methods, rather than qualitative methods. It probably is not driven by theory. It is much more likely to examine mass media communication than interpersonal communication. Its purpose is just as likely to be audience analysis as message design, as evaluation of a planned communication intervention. If its purpose is to evaluate a planned communication intervention however, that intervention is almost certainly a successful one.

In February 1996, a new journal devoted exclusively to health communication, the *Journal of Health Communication: International Perspectives*, was introduced. The *Journal of Health Communication (JOHC)* stated its mission as “presenting timely research into and evaluations of the use of communication to prevent disease and promote good health” (Ratzan, 1996, p. vii). It differed from the one other journal in health communication by focusing on research and practice while including an international perspective. The editor, Scott C. Ratzan, outlined objectives for this new endeavor as, “Expanding the realm of health communication to include . . . advocacy, marketing, media, persuasion, and global communication, . . . fostering a shared understanding of community ideals to . . . begin to eliminate the current bureaucratic maze, simplify medical and behavioral jargon, and nurture supportive personal, family, work, and community environments” (Ratzan, 1996, pp. v–vii). A multidisciplinary

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editorial board was established to meet these objectives; it was comprised of experts in communication, medicine, psychology, public health, sociology, government, and marketing, reflecting the multifaceted nature of health communication.

The field of health communication has undergone significant growth since the introduction of *JOHC*. As noted in an article in a recent issue of *JOHC*, there are now at least 10 formal health communication programs at U.S. universities (Edgar & Hyde, 2005). Many other universities offer courses in health communication and are actively engaged in health communication research. The growth in the field is reflected in the increased numbers of yearly manuscript submissions to *JOHC*. In the past 5 years alone submissions have doubled, leading the journal to increase its frequency from four to eight issues per year. Since its birth, *JOHC* has published 321 articles in the first 10 volumes, the editor-in-chief has penned 51 editorials, and supplemental issues devoted to a single topic have been sponsored by the Centers for Disease Control and Prevention, The Robert Wood Johnson Foundation, the Joint United Nations Programme on HIV/AIDS (UNAIDS), and the National Cancer Institute's Cancer Information Service. Research from programs in more than 30 countries has been published in the journal.

The purpose of this article is to describe the contents of the articles from the first decade of *JOHC*. All of the articles accepted for publication since the launch of the journal were included in this analysis. Three hundred and twenty-one published articles were reviewed and coded to determine the characteristics of the researchers, the types of research presented, the common health topics covered, and the research designs used.

Method

Inclusion Criteria

All 255 peer-reviewed articles published in the regular issues of the first 10 volumes of *JOHC* were included in the analyses. The 66 articles published in the five supplement journal issues also were coded but analyses frequently are presented separately. Ninety-one (91) items published in the *JOHC* were not part of the analyses: These consisted of editorials by the editor-in-chief, book reviews, and published proceedings from a conference. In total, 321 articles were included in the analysis.

Procedure and Reliability

Coding was performed by the authors of this article. In order to determine the codes to be used for the analysis, the authors reviewed the articles together to identify possible categories and subcategories of interest. A codebook was developed that each author used during coding. The second author coded 105 articles and the third author coded the remaining 216 articles. Fourteen percent of the articles ($n = 46$) were selected randomly and then coded by the first author to determine intercoder reliability. Intercoder reliability was calculated for each tier of coding using Scott's pi.¹ Intercoder reliability scores are presented below under the respective variables.

¹Unlike calculating a simple percent agreement, Scott's pi does not assume that all categories have equal probability of being observed and instead adjusts the weights assigned to various levels of agreement (http://www.temple.edu/mmc/reliability/out_hand_all.htm).

Coding Schema

The following coding was applied to the eligible articles.

Descriptive Characteristics of Empirical/Rhetorical Studies and Program Descriptions. Each article was coded for its descriptive characteristics: the country of the first author, the affiliation of the first author (university, government agency, or nongovernmental organization), and the main health topic of the article. The country where the research was conducted also was coded if the article was either an empirical study or a program description. The double-coding resulted in a Scott's pi score of 1.0 for each of these variables except country of research, which had a Scott's pi score of .95.

Since each of the five supplements focused solely on one health topic or communication intervention and included up to 14 articles, the decision was made to remove the supplements from the overall descriptive frequencies to avoid skewing the data.

Type of Article. Articles were reviewed to determine whether they fell into one of three mutually exclusive categories: a research study, a program description, or a commentary. Research studies were defined as those articles that included original data collection and analysis, secondary data analysis, or reviews of published literature. Articles were classified as a "research study review" only if they were longer than five pages of text and had at least one full page of citations. Articles coded as program descriptions illustrated a health promotion program or intervention. No data were presented in these articles. Commentaries were defined as brief presentations of a point of view with limited or no references. The Scott's pi score was .94 for this variable.

Use of Theory/Model. Articles were reviewed to determine whether they used a theory or theoretical model to drive their research. Articles initially could receive one of four codes: no theory or theoretical constructs used; use of one theory as the basis of their article/research (e.g., Diffusion of Innovations); use of multiple theories (e.g., Health Belief Model and Social Cognitive Theory); or use of theoretical constructs but with no attribution to specific theories (e.g., perceived behavior control but no mention of the Theory of Planned Behavior). All articles marked as using theory also were coded as whether it was the original presentation of the theory or theoretical model.

The Scott's pi analysis revealed an unacceptable intercoder reliability score as a result of including the "constructs only" code: most discrepancies resulted from one reviewer coding this affirmatively for "constructs only" while the other said "no theory." Because of the difficulty involved in interpreting this fourth code, the authors decided to omit it and only coded for the first three. All previous "constructs only" were changed to read "no theory." The final Scott's pi score was .78 for this variable. Coding error resulted from one coder marking "multiple theories" while the other marked "one theory only." In debriefing, coders noted that authors often mentioned theories in their article's introduction section but did not clearly articulate whether these theories directly were related to the remainder of their article; thus, this variable posed substantial challenges to code even accounting for the "constructs only" code. The Scott's pi score was 1.0 for whether the theory was an original presentation.

Type of Research. Those articles identified as research studies were further coded to assess whether they were an empirical study, rhetorical study, or a review. Empirical studies included articles that described a research study and presented findings using either qualitative or quantitative data. Rhetorical studies included critical and historical research. Reviews were those articles that summarized published research using extensive references but with no original data presented. Classifications at this level were mutually exclusive. The Scott's pi score was .95 for this variable.

Methodology Used in Empirical Research. Additional coding was done on those articles defined as empirical. All were classified according to the methodology used in the article. In the case where more than one method was used, coders were instructed to identify the primary method and report this for the classification. Quantitative methods coded included the following: laboratory or field studies (using either an experimental or quasi-experimental design); surveys or interviews (that were not part of an experimental or quasi-experimental design); content analyses; discourse analysis; meta-analysis; observation; and studies that focused on scale/metric development or methodological testing. The Scott's pi score for the type of quantitative method coded was .97. Qualitative methods coded included case studies, focus groups, in-depth interviews, and observations. The Scott's pi score was .85 for the type of qualitative method coded. Articles coded as either laboratory studies or field studies were coded for their design, either experimental or quasi experimental (Scott's pi was .85 for whether research was coded as experimental or quasi experimental).

Communication as Audience or Message Focused. In developing the coding schema for articles, the authors wanted to be able to classify each of the research studies according to the purpose of the research. The authors identified four possible purposes of research: to better understand audiences so that effective messages could be developed for them; to better understand elements of messages and how they affect audiences; to describe content only; or to evaluate planned communication interventions. All research empirical studies that were not content analyses or impact evaluations of planned interventions (i.e., the latter two categories) were classified according to their focus on understanding audience ("audience analysis": those articles that explore audience knowledge, attitudes, and practices) or understanding message elements ("message development": those articles that test effects or future effects of messages on audiences or reactions to existing messages or both). Of these two mutually exclusive codes, the authors considered audience analysis to be the predecessor for message development; thus, when coders believed an article addressed both, they were instructed to select message development over audience analysis. Coders had the option of marking "0" for this variable. The Scott's pi score for this variable was .63. A review of the coding indicated that all errors were a result of one coder marking "0" while the other assigned the article either audience analysis or message development. There was perfect agreement on the articles where both coders assigned a code.

Specific Communication Medium/Channel. Research articles were coded for the medium or channel used in the research. Channel coding options follow: doctor-patient communication, peer network communication, interactive communication technology, entertainment media, multimedia campaigns, news media, advertisements, and technology assisted communication (e.g., telephone). Because many articles used multiple channels, coders were instructed to code for as many channels

Table 1. Description of final communication medium/channel categories

Communication medium or channel	Articles address/explore
Doctor–patient communication	Interpersonal relationships between health care professionals and their clients or among health care professionals themselves
Peer network communication	Interpersonal relationships other than those between health care professionals and their clients
Interactive communication technology	Use of Internet, world wide web, or other new technologies in the health context
Entertainment media	Health messages appearing in entertainment programming
Multimedia campaigns	Use of print or broadcast media (excluding news-related topics); public communication campaigns. Includes materials developed for or used in campaigns
Advertisement	Advertisements, but not part of a campaign effort
News media	News media coverage of health topics
Technology assisted communication	Use of telephone to deliver health messages

as appropriate for each article. Full descriptions of the communication medium/channel are in Table 1.

The Scott's pi reliability score for communication medium/channel was .60. It increased to .85 when only those articles coded by both coders were considered (i.e., removing those articles where one coder marked "0" and the other assigned it a code).

Planned Communication Intervention. Research articles were coded for whether a planned communication intervention was discussed. This variable was defined as an intervention purposely designed to achieve a health outcome. If coded positively, articles were further examined to determine if the intervention was guided by theory and if an impact or summative evaluation was conducted. If a summative or impact evaluation was conducted, articles were coded to determine whether the intervention was successful. The Scott's pi score was .62 for whether a planned intervention was discussed; .37 for whether it was theory driven; .82 for whether the intervention was evaluated; and 1.0 for whether the intervention was deemed successful. The low Scott's pi score for theory driven or not appears to be directly related to the aforementioned problem in coding the overall "theory" variable: authors often were unclear as to whether their research was driven by the theories they discussed in their introductions. The theory code was dropped from further analysis.

Results

The following are the results of the content analysis using the established coding schema described above.

Descriptive Characteristics

Authorship. Of the 321 articles coded, 80% of the 255 regular articles, and 95% of the supplement articles, had a primary author from a U.S.-affiliated institution. Of those articles with U.S.-based authors ($n = 267$), 75% were affiliated with U.S. universities, 13% from nongovernmental organizations, and 12% from U.S. government agencies.

Health Topic. The percentage rankings for health topics were as follows for the 255 peer-reviewed articles in the regular journal issues: 15% focused on smoking/tobacco, 14% HIV/AIDS; 13% cancer-specific; 12% no central health topic focus, 8% on alcohol/drugs, 5% each on family/planning pregnancy and crime/violence/injury; 4% on pharmaceutical issues, 3% for dietary/nutrition, 2% each for genetic testing/genomics, chronic disease, sexually transmitted diseases (STDs) and immunization. The remaining topics accounted for 1% or less: food safety, other infectious diseases, physical activity, pain management, disabilities, e-health, environmental risks, and Alzheimer's disease.

A total of five supplement issues were published ($n = 66$). The first supplement (vol. 3, 1998) articles reported on the National Cancer Institute's Cancer Information Service. The second supplement (vol. 5, 2000) focused on HIV/AIDS and related public communication campaigns. Supplement three (vol. 8, 2003) addressed risk communication in the context of bioterrorism. The fourth supplement (vol. 9, 2004) presented articles on the diffusion of innovations. The final supplement (vol. 10, 2005) was an update on National Cancer Institute's Cancer Information Service.

Type of Article

Of all 321 articles coded, 78% were coded as research studies, 14% were commentaries, and the remaining 8% were considered program descriptions.

Program Description. Of the 24 program descriptions, 21% were published in one of the five supplement issues of the journal. Seventy-five percent discussed U.S.-based programs while the remaining 25% discussed international programs. Forty-two percent of the program description articles used theory as the basis for their program. HIV/AIDS and cancer were more grounded in theory than other health topics. Of the primary authors for the program description articles, 37% were from U.S. universities, 29% from U.S. government agencies, 21% from nongovernmental U.S. organizations, and 13% from outside the United States.

Commentaries. Of the 46 commentaries, 78% were published from the year 2000 on, and 48% were published in one of the five supplemental issues of the journal. As a result, the majority of commentaries focused on issues addressing the diffusion of innovations and risk communication in the context of bioterrorism. Of the primary commentary authors, 46% were affiliated with U.S. universities, 28% by persons from U.S. nongovernmental organizations, and 13% each from a U.S. government agency and from outside the United States.

Use of Theory

Sixty-two percent of all articles ($n = 200$) did not report the use theory as the basis for their research. Of those that did not use theory, 53% were classified as research

studies, 22% were commentaries, and 7% were program descriptions. Additionally, of those that did not use theory, 40% were coded as empirical, 10% were reviews, and 3% were rhetorical.

Of the articles that reported using theory as the basis for their research ($n = 121$), 62% based their work on a single theory and the remaining 38% used multiple theories. The most common single theory named was Social Cognitive Theory followed by the Health Belief Model. Seven original theoretical frameworks/models were presented in the past 10 volumes of the *JOHC*.

Type of Research

Of those articles coded as a research study ($n = 251$), most (83%) were empirical studies, 13% were reviews, and 4% were considered rhetorical studies.

Reviews. Of the total reviews ($n = 32$), 22% were published in the supplement issues of the journal. Similarly, 38% had no specific health topic. Of those that have a health topic, HIV/AIDS and smoking/tobacco received the most attention. Sixty-six percent of primary authors of the review articles were from a U.S. university, 22% from outside the United States, and the remaining 12% from U.S. nongovernmental organizations.

Rhetorical Studies. Of the rhetorical studies ($n = 11$), none were published in the supplement issues. Forty-five percent used theory as the basis for their research. Thirty-six percent had HIV/AIDS as the primary health focus. Primary authors were predominantly from U.S. academic institutions (82%), with the remaining 18% from international organizations.

Empirical Studies. Of all empirical studies ($n = 208$), 85% were published in the regular issues of the journal. Ninety-four percent of the empirical studies (not including supplements) had a specific health topic focus; more articles discussed HIV/AIDS, followed closely by cancer and smoking/tobacco, than any other topics. Sixty-seven percent of the primary authors were from a U.S. university, 15% from an international institution, and 9% each from a U.S. nongovernmental organization or from a U.S. government agency.

Methodology Used in Empirical Research

Empirical studies ($n = 208$) were classified based on their primary methodology employed in the study: the majority (86%) used a quantitative method as their primary methodology, while the remaining 14% used a qualitative method.

Quantitative Methods. The articles using a quantitative method ($n = 178$) were further coded as to type of study: 48% used a survey; 21% a content analysis; 21% had a quasi- or experimental design (14% laboratory studies, 7% field studies); 5% scale, measurement, or methodological testing; 3% discourse analysis; and, 1% each for meta-analysis and case study. Four percent used multiple methods (e.g., content analysis and survey).

Qualitative Methods. Of the articles coded as using predominantly qualitative methods ($n = 35$), 51% used in-depth interviews, 37% focus groups, 20% case studies, and 9% observation.

Use of Communication in Empirical Studies

Communication as Audience or Message Focused. There were a total of 170 empirical articles analyzed for communication as audience or message focused (as a reminder, content analyses and those reporting on an intervention's impact or summative evaluation were excluded for this analysis). Thirty-seven percent of the 170 articles were coded as communication for audience analysis, 33% were not coded ("0"), and 29% were coded as communication for message development.

Communication Channel. All research articles ($n = 251$) were coded for communication channel. Eight percent of the articles had no definable channel (code of "0"). Of those with a reported channel ($n = 219$; multiple channels were allowed to be coded), multimedia campaigns was the most common communication channel, with 21% of the coded channels reporting this type. The remaining percentage of channels coded were as follows: 18% advertisements, 13% for news media, 12% for peer network communication, 11%, doctor-patient communication and interactive communication technology, 7% for technology-assisted communication, and 6% for entertainment education.

Discussion of Planned Communication Interventions. Empirical research articles (excluding content analyses, $n = 170$) were coded for whether the authors discussed a planned communication intervention designed specifically to achieve a health outcome. If the field was coded positively, it then was coded for whether the intervention was guided by theory, had a summative or impact evaluation, and whether it was effective at achieving a health outcome. Thirty-one percent discussed a planned intervention. Of these, 60% were guided by theory and 77% had a summative or impact evaluation. Of those evaluated, 100% reported successful health outcomes as a result of their intervention.

Discussion

This content analysis of 10 years of the *JOHC* allows us to construct a profile of the typical article. Its primary author is a U.S. academic. It probably focuses on smoking, HIV/AIDS, or cancer. It is an empirical research study, more likely to use quantitative, specifically survey methods, rather than qualitative methods. It probably is not driven by theory. It is much more likely to examine mass media communication than interpersonal communication. Its purpose is just as likely to be audience analysis as message design, as evaluation of a planned communication intervention. If its purpose is to evaluate a planned communication intervention however, that intervention is almost certainly a successful one. This profile probably is not too surprising to regular readers of the *JOHC* and is fairly consistent with the state of the art of health communication research, but it does reveal some gaps that are worth noting.

The most obvious gap is the small percentage of primary authors who work outside the United States and the small percentage of research that occurs outside the United States. Despite that an international focus is the niche for this journal, only 20% of primary authors of regular articles were affiliated with organizations that were outside the United States. The picture is similar when we examine the location of the research study. Eighteen percent of these research studies were conducted outside the United States. These percentages have remained fairly stable across the 10 years of the *JOHC*'s history.

A further examination of the 54 articles with non-U.S. primary authors reveals that most of these authors are from developed countries such as England, Australia, Canada, Finland, and Sweden. Only nine of the primary authors are from developing countries—five are from African countries, one from India, one from Mexico, one from Jamaica, and one from Pakistan. There are many opportunities for increasing authorship from developing countries since so much health communication work is taking place in these countries.

A second initial expectation for this journal was that it would emphasize health communication using the mass media. This expectation has been realized. Nearly 60% of the articles where a channel was coded used a mass media channel such as campaigns, entertainment education, advertisements, or news media. Only 23% of the articles with channel codes were interpersonal channels including doctor–patient and peer network communication. Given how much attention new technology has been receiving in this last decade, it is surprising that only 18% of the articles coded for channel had this focus. This is an area where practitioners are eager for advice and might warrant a special issue focused on these e-health applications.

It is interesting to assess whether the journal publication record reflected the most significant health topics in this decade. HIV/AIDS, cancer, and smoking/tobacco were the most frequently appearing health topics. These topics are significant and ones where communication researchers have a history of being involved. Chronic diseases and risk factors associated with them, however, are relatively unaddressed by authors published in this journal. Only 2% of the articles in this analysis focused on chronic diseases and only 3% on diet and nutrition and less than 1% on physical activity. These results seem surprising given the prominence of the obesity epidemic in the media. One explanation could be that despite obesity's prevalence in the United States, it has only recently received attention nationally as a public health threat. As a result, we could very well see an increase in the upcoming issues of the journal (accounting for the lag time between submission and publication of manuscripts).

What does this decade-long publication record tell us about the methods being used in health communication research? First, it would suggest that most of the health communication research is empirical. Only 11 articles in this time period were rhetorical studies. This record reflected the health communication field fairly well in the first few years of the journal's history but suggests that the journal has not capitalized on the burgeoning number of rhetorical scholars who have turned their attention to health topics in the last few years. Recent conferences of the National Communication Association, for example, include several sessions of rhetorical scholarship on health communication topics.

Second, most of the empirical studies use quantitative rather than qualitative data. Almost half of the studies coded as quantitative employed survey methodology, with another fifth using content analyses. Only one fifth of the quantitative research used experimental or quasi-experimental designs. Very few studies used discourse analyses, described scale development, or reported meta-analyses.

Surprisingly, few articles published by the journal in the past decade used qualitative data despite the increasing trend for that type of research in health communication. About half of those empirical studies employing qualitative data used in-depth interviews, another third used focus groups, and a fifth used case studies. There may be a perception that the journal prefers empirical studies with quantitative data. To encourage more diversity in research methods, the editor

and his board may want to explicitly address the perceptions and solicit manuscripts that are more diverse in methodology or present a triangulation of methods.

Another significant finding concerns the use of theory as a foundation for these research studies. Less than half of the research studies analyzed reported basing their research on some theoretical framework. The authors had much difficulty coding this characteristic as frequently researchers cited theories as they reviewed previous research but did not explicitly describe how the theories influenced their own approach or measures. Social Cognitive Theory and the Health Belief Model were the two theories used most frequently. Others mentioned several times included Diffusion of Innovation, Elaboration Likelihood Model, and the Theory of Reasoned Action. The state of theory development in health communication would be enhanced if authors clearly articulated which theoretical ideas were influencing their thinking and then described the implications of their results for that theory. We also would encourage more original theoretical work, as only seven articles in these 10 years presented an original theory or model.

The decade of health communication research published in the journal is quite impressive and clearly has contributed to a growing maturity of this field, both in theory and practice. By presenting some of the gaps identified through this descriptive content analysis of the past decade, we hope to provide direction for future health communication scholarship.

References

- Edgar, T. & Hyde, J. N. (2005). An alumni-based evaluation of graduate training in health communication: results of a survey on careers, salaries, competencies, and emerging trends. *Journal of Health Communication, 10*, 5–25.
- Ratzan, S. C. (1996). Introduction. *Journal of Health Communication, 1*, v–vii.