
How intrinsic and extrinsic news factors affect health journalists' cognitive and behavioural attitudes toward media relations

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Abstract

Using a nationwide survey of 309 US newspaper health journalists, this study examines how intrinsic and extrinsic news factors influence journalists' perceptions and use of public relations materials. Health topics, reliance on medical journals, and metropolitan markets predict how journalists view corporate pharmacy media relations, while reliance on other media influences how journalists use public relations materials.¹

Introduction

The study of the interaction between journalists and public relations practitioners has focused on misperceptions about their relationship and the potential for conflict in that relationship (Shin & Cameron, 2003, 2005). A recent study using content analysis examined how external factors influenced the description of public relations in US newspapers and found influences of reporter gender, news topic, and circulation size on attributes of public relations (Lim & Bae, 2009). However, only a few studies have examined the relationship between journalists and public relations practitioners in health journalism. Previous studies on the health journalists' source selection in health reporting describe the probabilities of health journalists' reliance on public relations materials compared to other resources and show that health journalists get initial ideas mostly from health care providers, followed by press releases, press conferences, wire

service reports, and medical journals (Viswanath et al., 2008).

The present study advances research in this area by analysing data from a nationwide survey of 309 US newspaper health journalists about their cognitive and behavioural attitudes toward public relations materials and explores how these attitudes are influenced by individual-level, media-routine, and organisational-level factors. Previous analysis of this data set examining the attitudes of all health journalists working for different types of news media found that newspaper journalists were more sceptical about public relations resources than television and magazine journalists (Len-Ríos, Hinnant, & Park, 2009a). This study differs by looking expressly at newspaper journalists and by exploring the intrinsic and extrinsic predictors influencing newspaper journalists' sceptical views of public relations resources, which has been given little attention.

The purpose of this study is to examine the influences of intrinsic and extrinsic news factors (Shoemaker & Reese, 1996) on newspaper health journalists' attitudes toward corporate pharmacy media relations and behaviours in using public relations materials. These factors consist of three types: 1) individual-level factors (a journalist's gender, personal interest in health, educational background, and level of journalistic experience); 2) media-routine factors (news topics, use of medical journals, and reliance on other media); and 3) organisational-level factors (newspaper market size).

This study specifically focuses on health journalists' attitudes toward corporate

¹ Acknowledgement: Funding for this research was provided through a grant from the Missouri Foundation for Health, Agreement 07-0242-HL-07.

pharmacy media relations, which is defined as a news release distributed by a public relations agency representing local in-store pharmacies. Most survey research on health journalists' reliance on public relations materials categorises public relations resources broadly, such as a website or print materials, and focuses on the websites or news releases from government or public health organisations (Len-Ríos et al., 2009a; Len-Ríos, Hinnant, Park, Cameron, Frisby & Lee, 2009b; Tanner, 2004; Viswanath et al., 2008). However, this research elucidates the meaning of public relations resources and examines how corporate pharmacy media relations is viewed and influenced by factors endemic to journalists' news production processes.

Theoretically, this study investigates health journalists' gatekeeping role by looking at the relationship between intrinsic or extrinsic news factors and journalists' self-reported behaviour regarding public relations materials. Also, this study provides meaningful practical implications to media relations professionals working in a public relations agency representing the corporate pharmacies as their clients.

Literature review

Source-reporter relationships

In the context of gatekeeping, it would seem that journalists and public relations practitioners would play opposing roles – with public relations professionals seeking to deliver their messages to journalists' news audiences and with journalists resisting those messages so as to avoid the appearance of bias. In reality, public relations professionals provide a service to journalists by putting them in contact with news sources and supplying them with story ideas and background material at little cost (Curtin, 1999). In fact, some research indicates that a larger proportion of journalists view their relationships with practitioners as positive rather than neutral or negative (Sallot & Johnson, 2006). Other research has found that

journalists and public relations practitioners misperceive each other. In a survey of journalists and public relations practitioners, Shin and Cameron (2005) found “a tendency to perceive the other profession as a source of conflict in the source-reporter relationship although each profession actually shows some degree of accommodation or collaboration to the other profession” (p. 325). Also, scholars suggest that while journalists may say they dislike public relations practitioners in general, they are likely to say that they interact well with the public relations practitioners they know (Cameron, Sallot, & Curtin, 1997). Furthermore, a study of how three large newspapers reported on the field of public relations found that while public relations was most often defined by its media relations function, the field was depicted more favourably more often than not (Bishop, 1988). Business, entertainment, and health publicity were the three topics to receive the most positive treatment in newspaper content.

Numerous studies confirm that many journalists rely on and use public relations materials to create news content (De Semir, Ribas, & Revuelta, 1988; Morton, 1986, 1988; Morton & Warren, 1992; Turk, 1986; Walters & Walters, 1992). It has been argued that health journalists may be more likely to use public relations materials because of the technical nature and specialisation required to understand health issues (Cho & Cameron, 2007).

Factors affecting news selection and content

Reviewing the intrinsic and extrinsic news factors as outlined by Shoemaker and Reese (1996) and exploring how these factors have been used to explain journalist attitudes and behaviours in preceding studies further illuminates the foundation for this research. There are five levels in a communication setting that may influence media content: individual, routines of media work, organisational, social/institutional (extramedia) and ideological. While Shoemaker and Reese (1996) have charted how these different levels might influence media content, we examine

how they might influence attitudes and behaviours, which subsequently affect media content. In this study we focus on the first three levels and how they influence health journalists' thoughts and behaviours toward public relations material.

The first level, the individual level, covers factors that are intrinsic to the journalist, which include gender, personal interest in health, education, and professional experience, among others. It is worth noting that health is something that journalists do experience in their personal lives and so they might maintain stronger opinions on this subject than they would on topics that do not affect them directly. According to Shoemaker and Reese (1996), these individual-level characteristics directly and indirectly shape media content. Gender and personal interest in health would potentially have an indirect influence and be limited by professional values and organisational routines. Education and professional experience would have a direct effect on media content because they shape professional roles and ethics. As to how much influence these individual factors have, the consensus from Shoemaker and Reese (1996) and Weaver and Wilhoit (1996) is that the influence is limited unless the individuals have the power to influence media routines in their organisations. It is important to empirically measure these influences in research.

The second level of influence on media content is work routines, which include "those patterned, routinized, repeated practices and forms that media workers use to do their jobs" (Shoemaker & Reese, 1996, p. 105). The benefit of these routines is typically increased efficiency, less uncertainty, and overall consistency with a media product. Health journalists have systems to help them distil the sea of medical information. As with political news organisation rules and procedures, these "quasi-natural" rules (Cook, 1998, p. 71) offer a means to an end. Notable *New York Times* health and science journalist Gina Kolata (2003) describes in her book how she receives hundreds of press releases each

week, some based on good science, but many based on inadequate, unreliable research. She writes about "hucksters who promote programs with not even a pretense of objective evidence" (p. 11), studies with miniscule sample sizes and no control group, and data that are statistically insignificant. The work routines of the health journalist help him or her to separate the good science from the bad science and to predict which stories will resonate with readers.

One of the variables in news routines is news values, which reflect what journalists think audience members find interesting and important (Shoemaker & Reese, 1996). In this research, we ask health journalists about the topics they frequently cover in order to reveal what subject matter has news value within their routines. As part of their news routines, it is likely that health journalists typify information to be a story about cancer, diabetes, heart disease, etc... just as Tuchman's (1973) news journalists had typifications for hard news, soft news, and so forth. The health topics that journalists repeatedly cover show that the organisation finds these topics to be inherently appealing, so they may influence attitudes and behaviours toward public relations. Additionally, the way in which health journalists deal with raw material, or external sources and suppliers of news is the second variable we analyse within news routines. Sources take many forms, including expert interviews, press releases, journal articles, and lay people interviews. Shoemaker and Reese (1996) point out that public relations in particular has been a key part of systemising connections between journalists and institutions. We ask what kind of influence their source preferences as a news routine have on journalists' behaviours and attitudes. A final variable in work routines that we examine is the reliance on other media, also called inter-media agenda-setting and sometimes derided as 'pack journalism'. Looking for consensus on what is news provides consistency across news organisations and helps a journalist avoid error. This kind of inter-media influence could be just as valuable to health journalists as to political news journalists because they face the constant

flow of medical science news as well as the challenge of weighing the rigor and veracity of such news.

The third level of influence on media content that Shoemaker and Reese (1996) illuminate is that of the organisation, which is more macro in scope than the previous two levels. Qualities of a news organisation affect how it is bureaucratically structured and how it meets economic goals. One variable within organisations is the markets they serve. Whether a news outlet serves a national, metropolitan, or community audience means that it will have different organisational roles and structures and will seek to gain financial benefits from different types of markets. This could, in turn, influence the attitudes and behaviours of the health journalists working for the organisation.

Studies have analysed individual-level factors, media-routine factors, and organisational factors that influence how reporters do their jobs, but less is known about how these factors may be specifically related to the use of public relations. Studies in journalism have examined how individual-level factors affect journalists' decisions. Research on the topic of gender has been mixed. Some research has found that reporter gender sometimes influences news content (Armstrong, 2004; Zeldes, Fico, & Diddi, 2007) and is associated with certain types of news stories, while other research has found no or weak associations (Everbach, 2005). For instance, Rodgers and Thorson (2003) found gender effects for news routines in the use of sources, but the newspaper market factors mitigated some of those differences with fewer distinctions between male and female reporters in the larger circulation markets.

With regard to health reporting specifically, Corbett and Mori (1999) examined television news story content about cancer from 1975 to 1995 and found that male reporters reported more often on gender-specific cancers and tended to use more medical research in their reports, whereas female reporters' stories were more likely to

include celebrities. In a study of hormone replacement therapy stories, researchers found that female reporters wrote nearly three-quarters of the stories and used a 'self-help' frame more than twice as often as did males (Nelson & Signorielli, 2007). Male reporters, however, were almost four times as likely to use an 'economic' frame to their stories than were their female counterparts. Other research on reporter gender and reporting on gender-specific cancer stories in general audience and Black newspapers found no association between reporter gender and staff written stories about cancer or gender-specific cancers (Len-Ríos, Park, Cameron, Luke, & Kreuter, 2008). However, there has been little research that we are aware of in the public relations literature that specifically tests the association between health reporter gender and acceptance of public relations materials. Only a few studies have examined the relationship between reporter gender and the tone of frames of public relations in the US newspaper coverage of broad topics (Lim & Bae, 2009) and the relationship between Indonesian journalists' gender and the use of public relations materials (Sinaga & Wu, 2007). In fact, the latter study did not show either gender effects or education effects for the use of public relations materials.

Journalistic experience and media routines have also been thought to be associated with journalists' attitudes and behaviours. One study of Indonesian journalists shows that those with more experience were more likely to use public relations sources for story ideas (Sinaga & Wu, 2007). However, little research has evaluated whether journalistic experience is related to health journalists' attitudes and behaviours toward public relations sources. Viswanath et al. (2008) simply showed the profiles of US health journalists from a 2005 national survey of health journalists and described that more than one-third of US health journalists had more than 20 years journalistic experience. Turk (1986) found that media-routine factors were more prominent than organisational factors in the use of public relations materials for print journalists. She discovered that identifying the newsworthiness of the materials

had more sway on journalists' news selection choices than did staff size. Similarly, Berkowitz (1990) found that local television journalists were more apt to select stories that were timely and had great impact. As for market size, some research has indicated that newspaper market size does affect news release acceptance rates (Curtin, 1999), while other research has found that newspaper and TV market size do not predict attitudes towards public relations practitioners or public relations materials (Cameron & Blount, 1996; Pincus, Rimmer, Rayfield, & Cropp, 1993).

Research on the news factors influence perception and use of public relations materials shows significant results related to the use of medical journals and other media. For instance, Kiernan (2003) found journal articles received more coverage if the Associated Press picked it up. Kiernan clarifies that newspapers would often run original stories, instead of just running the AP story. Although public relations efforts through press releases seemed to have no direct effects on newspaper coverage, they were successful by getting placement through the wire service. The present research also questions whether reliance on medical journals and other media has an effect on behaviours toward public relations material.

More recently, Tanner (2004) found that television health journalists said their sources for story ideas most frequently were from being contacted by a public relations practitioner and then from news releases. She also discovered that the journalist's experience level appeared to be related to whether they thought community sources influenced whether stories were broadcast, with younger journalists perceiving more source influence.

Results of a national survey of 774 health journalists working for a variety of media found that journalists reported relying more on other news media and their own personal interest in determining story ideas, although they said they still used public relations resources (Len-Ríos et al., 2009b). An

analysis of a subset of that data by Len-Ríos et al. (2009a) examined journalistic rules for using public relations materials. They found that the rules for using public relations materials varied by media. Newspaper and freelance journalists reported that they viewed it as more inappropriate to use government news releases than did magazine, trade publication, or television health journalists. In addition, they found that news markets and experience level influenced perceptions of news release material. National journalists were less likely to say it was appropriate for them to use news releases from a local university or local state health department, and newspaper journalists with more experience were more likely to say it was inappropriate to use news release material from a local in-store pharmacy. However, the differences between highly experienced and less experienced newspaper journalists in their attitudes toward public relations do not reveal that journalistic experience is a significant predictor of newspaper journalists' attitudes toward corporate pharmacy media relations. Moreover, journalistic experience or news markets may not predict actual use of public relations materials in health reporting. Other individual characteristics or media-routine factors may better account for journalists' attitudes toward corporate pharmacy public relations or behaviours in using public relations materials when looked at in combination with other factors. This study examines these specific variables from within that data set.

Previous studies have found that medical journals and press releases are highly selected resources by health journalists across all types of media (Viswanath et al., 2008; Weitkamp, 2003). However, the intertwined relationship between reliance on medical journals or other media and journalists' attitudes or behaviours towards public relations materials has not been studied. Research to date suggests that health journalists do rely on public relations practitioners to produce news content, but that there may be individual level differences (e.g., experience), media-routine factors (e.g., reliance on other media), and organisational factors (markets served) that affect use of

public relations materials. Thus, we present the following research questions:

RQ1: Will individual-level factors (gender, personal interest in health, educational background, and level of journalistic experience) predict how health newspaper journalists perceive corporate pharmacy media relations and use public relations materials?

RQ2: Will media-routine factors (news topics, use of medical journals, and reliance on other media) predict how health newspaper journalists perceive corporate pharmacy media relations and use public relations materials?

RQ3: Will newspaper market size as an organisational-level factor predict how health newspaper journalists perceive corporate pharmacy media relations and use public relations materials?

RQ4: Which of the three level factors will be the strongest predictor of health newspaper journalists' attitudes toward corporate pharmacy media relations and behaviours in using public relations materials?

Method

A professional research centre at a Midwestern university conducted the survey between January-February 2008. The survey questioned health journalists about their attitudes, opinions, and newsgathering behaviours. The Association of Health Care Journalists developed a sampling frame using Bacon's Media directory online of the names of 2,966 health journalists, of which 2,805 were valid. The final response rate for the survey was 61.9% using standards by the American Association of Public Opinion Researchers. The final number of eligible completed surveys of newspaper journalists was $N = 309$.

Predictor variables

Individual-level variables. Individual level variables included the journalists' gender, their use of their own personal interest or that of someone on staff in generating story ideas

(7 = very often; 1 = not at all), training in health reporting (yes or no), and years of journalistic experience.

News-routine variables. Variables that represented media news routines were news topics, use of medical journals, and reliance on other media for story ideas. For news topics, journalists were asked if they ever wrote stories about cancer, heart disease, nutrition/fitness/diabetes prevention, mental illness, healthcare policy, and strokes. Use of medical journals was measured by asking journalists how often they get health "story ideas from a medical journal" with the response category (7 = very often; 1 = not at all). Reliance on other media was measured by "how often do you get story ideas from reading newspapers or other news publications" (7 = very often; 1 = not at all).

Organisational variables. Newspaper market size was used to represent the organisational-level factor. To determine the newspaper market size the journalists served, they were asked whether they served a (1) national, (2) metropolitan, or (3) small community audience.

Criterion variables

The two outcome behaviours measured were *health journalists' attitudes* and *health journalists' behaviours*. Journalists' attitudes toward corporate pharmacy media relations was measured by asking journalists how appropriate was "developing a story about local in-store pharmacies from a news release sent by a public relations agency representing the pharmacies" (7 = highly appropriate; 1 = highly inappropriate). Journalists' behaviour in using public relations materials was measured by asking how often journalists get story ideas from "a public relations person who pitches a story" (7 = very often; 1 = not at all).

Findings

Descriptive statistics were used to summarise respondents' profiles. Almost 62% of respondents were female, while 38% were male. The average years of journalistic experience reported was 19. Nearly 20% of the

respondents had special training in health reporting. In addition, 6% of respondents worked for national media markets, 52% worked for metropolitan, and 42% worked for small community media markets.

To answer RQ1, RQ2, and RQ3, a series of stepwise regression analyses was used. The analysis separately examined each of the three sets of predictor variables: individual-level factors, media-routine factors, and organisational-level factors on the criterion variables. For RQ4, a hierarchical regression was conducted to explore the relative strengths of all the independent variables found statistically significant in the previous regression analyses.

RQ1 asked whether individual-level factors, such as gender, personal interest in health, educational background, and level of journalistic experience, would predict health newspaper journalists' attitudes toward corporate pharmacy media relations and behaviours in using public relations materials. As a result, none of the individual-level factors was entered into the regression equation. In other words, none of the individual-level factors was a significant predictor of both attitude and behaviour criteria variables in the regression analyses. Thus, neither health newspaper journalists' attitudes toward corporate pharmacy media relations nor behaviours in using public relations materials were predicted by individual-level factors. However, it should be noted that journalists' gender correlated with the frequency of using public relations practitioners who pitch a story for their health story ideas ($r = .11$; $p < .05$). Specifically, female journalists say they got health story ideas from public relations materials more frequently than did male journalists.

Nonetheless, according to the regression tests conducted in this study, journalists' gender did not contribute significantly to the frequency of using information from a public relations practitioner's pitch.

Second, RQ2 addressed whether media-routine factors, such as news topics, use of medical journals, and reliance on other media, would predict health newspaper journalists' attitudes toward corporate pharmacy media relations and behaviours in using public relations materials. When examining influences of media-routine factors on health newspaper journalists' attitudes toward corporate pharmacy media relations, only two predictors were entered (See Table 1). Health news topic (stroke and stroke prevention) and the use of medical journals were the only significant predictor variables of health journalists' attitudes toward corporate pharmacy media relations. According to the results, health journalists who covered strokes or stroke prevention held negative attitudes toward using a news release provided by a public relations agency representing the pharmacies ($B = -.68$; $SE = .20$; $p < .001$), and frequency of using medical journals was positively related to health newspaper journalists' attitudes toward corporate pharmacy media relations ($B = .16$; $SE = .06$; $p < .01$). So, the more frequently health journalists said they got health information from medical journals, the more favourably journalists felt towards corporate pharmacy media relations. Even though other health topics (i.e., heart disease, obesity, mental illness, and healthcare policy) correlated with journalists' attitudes toward the use of a news release sent by public relations agency representing the pharmacies, those health topics did not contribute significantly to journalists' attitudes toward corporate pharmacy media relations.

Table 1: Regression analysis for media-routine factors on health journalists' attitudes toward corporate pharmacy media relations

Variables	B	SE	β
Health topic: Stroke (yes = 1)	-.68***	0.20	-.19
Use of medical journals	.16**	0.06	.15
Non-significant variables			
Reliance on other media	.07		
Health topic: Cancer	-.06		
Health topic: Heart disease	-.05		
Health topic: Obesity	-.08		
Health topic: Mental illness	-.09		
Health topic: Health policy	.08		

Note: $R^2 = .224$. * $p < .05$, ** $p < .01$, *** $p < .001$.

Regarding the influences of media-routine factors on health journalists' behaviours in using public relations materials, only one variable was entered into the regression equation (See Table 2). The results showed that the reliance on other media was a significant predictor of health journalists' behaviours in using a public relations practitioner who pitches a story for their health story ideas ($B = .42$; $SE = .06$; $p < .001$). Apparently, reliance on other

media accounted for more than one-third of the variance in the regression model ($R^2 = .37$). The more frequently health journalists read other newspapers and news publications, the more often they get health story ideas from a public relations person who pitches a story. In contrast to the attitude criterion variable, neither health topics nor the use of medical journals correlated with the behaviour criterion variable – frequency of using public relations materials.

Table 2: Regression analysis for media-routine factors on health journalists' behaviours in using public relations materials

Variables	B	SE	β
Reliance on other media	.42***	0.06	.37
Non-significant variables			
Use of medical journals	.03		
Health topic: Cancer	.04		
Health topic: Heart disease	.08		
Health topic: Obesity	.03		
Health topic: Mental illness	.01		
Health topic: Health policy	.03		
Health topic: Stroke	.10		

Note: $R^2 = .371$. * $p < .05$, ** $p < .01$, *** $p < .001$.

Third, RQ3 asked whether newspaper market size as an organisational-level factor would predict health newspaper journalists' attitudes toward corporate pharmacy media relations and behaviours in using public relations materials. The first stepwise regression was conducted to examine whether the newspaper market size that health journalists served predicted health journalists' attitudes toward using a news release sent by a public relations agency representing the pharmacies. Health newspaper journalists' perception of corporate pharmacy media relations was regressed on newspaper market size: national audience, metropolitan audience, and small community audience market. As seen in Table 3, only one newspaper market size, metropolitan audience market, was a predictor of health journalists' attitudes toward corporate pharmacy media relations ($B = .61$; $SE = .20$; $p < .01$). Whether or not health newspaper journalists serve a metropolitan audience was positively related to their attitudes toward corporate pharmacy media relations. In other

words, health newspaper journalists who served a metropolitan market thought using a news release sent by public relations practitioners representing the pharmacies was more appropriate. Additionally, a descriptive analysis of our data showed that the average of respondents thought corporate pharmacy media relations was somewhat inappropriate ($M = 3.01$, $S.D. = 1.77$). Indeed, health journalists who served national markets ($M = 3.19$, $S.D. = 2.00$) and small community markets ($M = 2.67$, $S.D. = 1.54$) evaluated corporate pharmacy media relations as less appropriate compared to journalists who served a metropolitan audience ($M = 3.33$, $S.D. = 1.87$). However, with regard to the second dependant variable, journalists' behaviours in using public relations materials, a result of the second stepwise regression analysis, in which the behaviour criterion variable was regressed on newspaper market size, showed that none of three newspaper markets was a predictor of health journalists' behaviours in using public relations materials.

Table 3: Regression analysis for newspaper market size as an organisational-level factor on health journalists' attitudes toward corporate pharmacy media relations

Variables	B	SE	β
Metropolitan market (yes = 1)	.61**	0.20	.172
Non-significant variables			
National market	.06		
Small community media	-.05		

Note: $R^2 = .172$. * $p < .05$, ** $p < .01$, *** $p < .001$.

Finally, a hierarchical regression was conducted to answer RQ4 about the relative strengths of all of the independent variables found statistically significant in the previous regression analyses. In the previous analyses, three variables were significant predictors of health journalists' attitudes toward corporate pharmacy media relations and only one factor, reliance on other media, was a significant predictor of health journalists' behaviours in using public relations materials. Since the reliance on other media was the only important predictor of the second criterion variable, health

journalists' behaviours in using public relations materials, only the first criterion variable, health journalists' attitudes toward corporate pharmacy media relations, was regressed on three independent variables: 1) health topic (stroke), 2) frequency of using medical journals as media-routine factors, and 3) market size as an organisational-level factor. Three predictors were entered in the regression equation one at a time. As a result, all three variables that were significant predictors of health journalists' attitudes toward corporate pharmacy media relations in the previous analyses remained

statistically significant when they were examined simultaneously in this model (Table 4). Specifically, journalists who reported on writing about strokes served as the strongest predictor ($\beta = -.17$; $p < .01$), followed by metropolitan market size and the use of medical journals. More specifically, health journalists who had covered stroke or stroke prevention stories were more likely to regard corporate pharmacy media relations as inappropriate. On the other hand, frequency of using medical journals ($\beta = .13$; $p < .05$) and whether or not health journalists served a metropolitan media

market ($\beta = .13$; $p < .05$) accounted for a similar proportion of the variance in health journalists' attitudes toward corporate pharmacy media relations. As explained earlier, the more often health journalists use medical journals for their health story ideas, the more favourably they felt towards corporate pharmacy media relations. In addition, health journalists who worked for metropolitan media markets are more likely to believe that corporate pharmacy media relations is appropriate.

Table 4: Regression analysis of all variables on health journalists' attitudes toward corporate pharmacy media relations

Variables	Health journalists' attitudes		
	B	SE	β
Media-routine factors			
Health topic: Stroke (yes = 1)	-.62**	.20	-.17
Use of medical journals	.13*	.06	.13
Organisational-level factor			
Metropolitan market	.45*	.20	.13

Note: $R^2 = .259$. * $p < .05$, ** $p < .01$, *** $p < .001$.

Discussion

In terms of how the news factors affect journalists' attitudes and behaviours toward public relations material, our findings reinforce findings from previous research. First, we examined four individual level characteristics; two that would have direct effects, education and level of journalistic experience, and two that would have indirect effects on media content, gender and personal interest in health. The idea that the influence of gender and personal interest in health is limited (Shoemaker & Reese, 1996; Weaver & Wilhoit, 1996) is supported in that gender and personal interest in health were not significant predictors. Gender, however, correlated with being receptive to story idea pitches, which provides some support to Lim and Bae's (2009)

findings that women were more positive about public relations material. Even though this study found that female reporters more frequently used public relations materials for their health story ideas compared to male reporters, reporter gender was not a significant determinant of behaviours in using public relations materials in health reporting. The other individual-level characteristics, which were health journalists' education and level of journalistic experience, would be expected to have more predictive power than personal characteristics because Shoemaker and Reese (1996) point out that they shape professional roles and ethics. However, journalists' education and level of journalistic experience did not significantly predict attitudes toward corporate pharmacy media relations. In this

study, the four individual-level variables did not appear to have much influence, whether direct or indirect. There are likely other factors, beyond individual-level characteristics, that predict journalists' attitudes and behaviours toward public relations materials.

The second level of influence, which is that of media routines, did show predictive power. These news values were predicted by reporting on the health news topic of stroke and stroke prevention, and use of medical journals. The health news topic of strokes could be different from the other health topics in that there is low public understanding of stroke and stroke prevention (Greenlund et al., 2003). It is possible (though it deserves further exploration) that there are not many public relations campaigns devoted to strokes and stroke prevention, which would help explain the low public recognition of strokes. If health journalists who cover stroke and stroke prevention were not accustomed to receiving public relations material, this unfamiliarity could breed discomfort with the material. Our data found that a minority of health journalists had covered strokes. Fully 41% of respondents said they had not reported on strokes. This was relatively high compared with journalists who said they had not reported on other health topics [i.e., cancer (16%) heart disease (16.6%), obesity (12%), mental illness (26.1%), and healthcare policy (35.7%)]. Thus, a lack of specialisation of health journalists in reporting on strokes compared with other health topics may also provide an explanation for the negative view of using pharmacy public relations materials.

Along the same lines, the journalists who reported more frequently using medical journals for story ideas in their media routines would likely be very familiar with the news releases that the medical journals themselves distribute, which would lead to evaluating the use of public relations information as appropriate. As an extension of previous research on health journalists' use of medical journals and reliance on public relations resources, this study revealed the interconnected relationship between reliance on

medical journals and journalists' attitudes towards public relations materials. It is generally considered that deadline pressure is one of the reasons why journalists rely on medical journals or public relations materials (Catalán Matamoros, Axelsson, & Strid, 2007; Viswanath et al., 2008; Weitkamp, 2003). Because of the high credibility of medical journals, health journalists also prefer to use medical journals as sources for their stories (Conrad, 1999; Viswanath et al., 2008). It may also be that medical journals are one of the counterbalancing sources to corporate sources of information when it comes to understanding the efficacy of drug effectiveness since the information from medical journals is peer reviewed. Also, when health journalists rely on medical journals, they might need to reshape complex and difficult health topics for a broad range of audiences. Thus, it is possible that frequent use of medical journals leads to positive attitudes toward the use of all public relations resources because they have a better understanding of the information. With regard to health journalists' behaviours in connection with public relations, the finding that reliance on other media meant an increased likelihood of using public relations practitioners for story ideas makes sense. If health journalists are already looking to other media in order to decide what is news, this routine could seamlessly extend to looking to public relations practitioners for help in deciding what is news.

Finally, organisational factors, which are part of the third level of influence, showed predictive power in terms of health journalists' attitudes toward corporate pharmacy media relations. The finding showed that health journalists who serve a metropolitan market were more accepting of news releases from a public relations agency representing the pharmacies. One explanation might be that health journalists have different news values depending on the media market journalists serve. Metropolitan markets are bigger than small community markets and have different publication schedules, as well as purposes and goals. Small community markets tend to cater to community news and hyper-local

information and are often bi-weekly or weekly. That means they have less space to give to things that are not specifically local events or activities. National media tend to cover public health stories with national implications and would be less likely to write about local in-store pharmacies as regularly as a metropolitan area that may have many pharmacy chain stores in its metro area, which would increase the news value of the story's 'impact'.

The characteristic that makes this research unique is that we have looked at how Shoemaker and Reese's (1996) first three levels influence an entity that is on the fourth level because public relations campaigns are considered an extramedia source. Instead of looking at the effects of lower level factors on media content, we look to their effects on another intermediate level, which in turn affects content. This study revealed that media-routine levels are the most influential factor on this source within the extramedia level, because media-routine factors consistently influenced both health journalists' attitudes toward corporate pharmacy media relations materials and the use of public relations materials. Under the news production process in health journalism, this study specifically looked at corporate pharmacy's media relations, which is rated differently by health journalists compared to news releases from the government or public health agencies (Len-Ríos et al., 2009b). In sum, not only did this study clearly specify the category of public relations resources, but it also explored factors in predicting health journalists' evaluations of acceptance of corporate pharmacy media relations, as well as their use of public relations materials.

One possible limitation is that this study is based on data from a survey on health journalists' self-reported behaviours regarding use of public relations materials. It is possible that actual behaviours in using public relations materials during the journalistic news selection process are different from our survey results. Thus, future research should compare a survey result with a content analysis of health news to shed light on the relationship between health journalists and public relations practitioners

working in corporate pharmacy media relations. In addition, other variables representing Shoemaker and Reese's (1996) factors should be measured. There could be other factors not measured here that relate to why newspaper health journalists who report on pharmacies would turn to medical journals. Future research should also find and explore these other factors.

References

- Armstrong, C. (2004). The influence of reporter gender on source selection in newspaper stories. *Journalism & Mass Communication Quarterly*, 81(1), 139-154.
- Berkowitz, D. (1990). Refining the gatekeeping metaphor for local television news. *Journal of Broadcasting & Electronic Media*, 80(4), 55-68.
- Bishop, R. L. (1988). What newspapers say about public relations. *Public Relations Review*, 14(2), 783-801.
- Cameron, G. T., & Blount, D. (1996). VNRs and air checks: A content analysis of the use of video news releases in television newscasts. *Journalism & Mass Communication Quarterly*, 73(4), 890-904.
- Cameron, G. T., Sallot, L. M., & Curtin, P. A. (1997). Public relations and the production of news: A critical review and a theoretical framework. In B. R. Burleson (Ed.), *Communication Yearbook* (Vol. 20). Thousand Oaks: CA: 111-155.
- Catalán Matamoros, D. J., Axelsson, R., & Strid, J. (2007). How do newspapers deal with health in Sweden? A descriptive study. *Patient Education and Counseling*, 67(1-2), 78-83.
- Cho, S., & Cameron, G. T. (2007). Power to the people – health PR people that is! *Public Relations Review*, 33, 175-183.
- Conrad, P. (1999). Uses of expertise: Sources, quotes, and voice in the reporting of genetics in the news. *Public Understanding of Science*, 8(4), 285-302.

- Cook, T. E. (1998). *Governing with the news: The news media as a political institution*. Chicago: University of Chicago Press.
- Corbett, J. B., & Mori, M. (1999). Gender-specific cancers, gender-specific reporters. *Science Communication*, 20(4), 395-408.
- Curtin, P. A. (1999). Reevaluating public relations information subsidies: Market-driven journalism and agenda-building theory. *Journal of Public Relations Research*, 11(1), 53-90.
- De Semir, V., Ribas, C., & Revuelta, G. (1988). Press releases of science journal articles and subsequent newspapers stories on the same topic. *Journal of the American Medical Association*, 35(5), 294-295.
- Everbach, T. (2005). The 'masculine' content of a female-managed newspaper. *Media Report to Women*, 33(4), 14-22.
- Greenlund, K. J., Neff, L. J., Zheng, Z.-J., Keenan, N. L., Giles, W. H., Ayala, C. A., et al. (2003). Low public recognition of major stroke symptoms. *American Journal of Preventive Medicine*, 25(4), 315-319.
- Kiernan, V. (2003). Embargoes and science news. *Journalism & Mass Communication Quarterly*, 80(4), 903-920.
- Kolata, G. (2003). *Ultimate fitness: The quest for truth about exercise and health*. New York: Farrar, Straus and Giroux.
- Len-Ríos, M. E., Hinnant, A., & Park, S. (2009a). Understanding how health journalists judge public relations sources: A rules theory approach. *Public Relations Review*, 35(1), 56-65.
- Len-Ríos, M. E., Hinnant, A., Park, S., Cameron, G. T., Frisby, C. M., & Lee, Y. (2009b). Health news agenda-building: Journalists' perceptions of the role of public relations. *Journalism & Mass Communication Quarterly*, 86(2), 315-331.
- Len-Ríos, M. E., Park, S., Cameron, G. T., Luke, D. A., & Kreuter, M. (2008). Study asks if reporter's gender or audience predict paper's cancer coverage. *Newspaper Research Journal*, 29(2), 91-99.
- Lim, J., & Bae, J. (2009). Influence of the gender of reporters, news topics, and circulation on framing of public relations. *Public Relations Journal*, 3(1). Online at http://www.prsa.org/Intelligence/PRJournal/Winter_09/
- Morton, L. P. (1986). How newspapers choose the releases they use. *Public Relations Review*, 12(3), 22-27.
- Morton, L. P. (1988). Effectiveness of camera-ready copy in press releases. *Public Relations Review*, 14(2), 45-49.
- Morton, L. P., & Warren, J. (1992). News elements and editors' choices. *Public Relations Review*, 18(1), 47-52.
- Nelson, D. E., & Signorielli, N. (2007). Reporter sex and newspaper coverage of the adverse effects of hormone therapy. *Women & Health*, 45(1), 1-15.
- Pincus, J. D., Rimmer, T., Rayfield, R. E., & Cropp, F. (1993). Newspaper editors' perceptions of public relations: How business, news, and sports editors differ. *Journal of Public Relations Research*, 5(1), 27-45.
- Rodgers, S., & Thorson, E. (2003). A socialization perspective on male and female reporting. *Journal of Communication*, 53(4), 658-675.
- Sallot, L. M., & Johnson, E. A. (2006). Investigating relationship between journalists and public relations practitioners: Working together to set, frame and build the public agenda, 1991-2004. *Public Relations Review*, 32(2), 151-159.
- Shin, J., & Cameron, G. T. (2003). The interplay of professional and cultural factors in the online source-reporter relationship. *Journalism Studies*, 4(2), 253-272.
- Shin, J. H., & Cameron, G. T. (2005). Different sides to the same coin: Mixed views of public relations practitioners and journalists

for strategic conflict management. *Journalism & Mass Communication Quarterly*, 82(2), 318-338.

Shoemaker, P. J., & Reese, S., D. (1996). *Mediating the message: Theories of influences on mass media content* (2nd ed.). White Plains, NY: Longman Publishers.

Sinaga, S. T., & Wu, H. D. (2007). Predicting Indonesian journalists' use of public relations-generated news material. *Journal of Public Relations Research*, 19(1), 69-90.

Tanner, A. H. (2004). Agenda building, source selection, and health news at local television stations: A nationwide survey of local television health reporters. *Science Communication*, 25(4), 350-363.

Tuchman, G. (1973). Making news by doing work: routinizing the unexpected. *American Journal of Sociology*, 79(1), 110-131.

Turk, J. V. (1986). Information subsidies and media content: A study of public relations influence on the news. *Journalism Monographs*, 100, 1-29.

Viswanath, K., Blake, K. D., Meissner, H. I., Saiontz, N. G., Mull, C., Freeman, C. S., et al. (2008). Occupational practices and the making of health news: A national survey of US health and medical science journalists *Journal of Health Communication*, 13, 759 - 778.

Walters, L. M., & Walters, T. N. (1992). Environment of confidence: Daily newspaper use of press releases. *Public Relations Review*, 18(1), 31-46.

Weaver, D. H., & Wilhoit, G. C. (1996). *The American journalist: A portrait of US news people and their work* (2nd ed.). Bloomington: Indiana University Press.

Weitkamp, E. (2003). British newspapers privilege health and medicine topics over other science news. *Public Relations Review*, 29(3), 321-333.

Zeldes, G. A., Fico, F., & Diddi, A. (2007). Race and gender: An analysis of sources and

reporters in local television coverage of the Michigan gubernatorial campaign. *Mass Communication & Society*, 10(3), 345-363.

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