INTERNATIONAL JOURNAL OF INTERDISCIPLINARY RESEARCH

VOLUME 5, NUMBER 1, August 2016 ISSN 2165-3240

A PUBLICATION OF FROSTBURG STATE UNIVERSITY AND THE INTERNATIONAL ACADEMY OF BUSINESS DISCIPLINES

WWW.IJIR.NET

INTERNATIONAL JOURNAL OF INTERDISCIPLINARY RESEARCH

VOLUME 5, NUMBER 1 August 2016

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Published By:
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ISSN 2165-3240 WWW.IJIR.NET

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INTERNATIONAL
JOURNAL OF INTERDISCIPLINARY RESEARCH

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Selection process

The August 2016 issue of the *International Journal of Interdisciplinary Research (IJIR)* has been the result of a rigorous process in two stages:

- Stage 1: all papers that were submitted to the 2016 IABD conference went through blind reviews, and high quality papers were recommended for presentation at the conference.
- Stage 2: approximately ten percent of the articles which were presented at the conference and one invited manuscripts (originally reviewed by the Chief Editor) were selected for possible publication in *IJIR*, and the respective authors were contacted and asked to resubmit their papers for a second round of reviews. These manuscripts went through a rigorous blind-review process by the editorial board members. In the end, four articles were recommended for publication in the August issue of *IJIR*.

IJIR is listed in *Cabell's* Directory of peer-reviewed publications. The Editorial Board members are committed to maintaining high standards of quality in all manuscripts published in *International Journal of Interdisciplinary Research*.

Ahmad Tootoonchi, Chief Editor

ACHIEVING QUALITY COMFORT CARE IN NURSING HOMES AND LONG TERM CARE UNITS THROUGH AMBIENT ASSISTED LIVING (AAL) ENVIRONMENTS

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ABSTRACT

Nursing home administrators are caught in a "perfect storm" of rapidly increasing health care costs, decreasing reimbursement, and increasing competition. This paper documents how these pressures create cascading misalignments resulting in compromises of the quality of comfort care. These problems are inevitable, given the increase in unfunded mandates, where performance evaluation is decoupled from actual performance. Ambient technologies are explored as a means of tracking actual care versus reported care. Independent quality of care tracking and documentation of ambient data, coupled with best practice research and rewards, are explored to promote quality care as a marketing advantage. Implications are discussed.

LONG-TERM CARE

Individuals who can no longer independently perform activities of daily living (ADLs) and require assistance with physical or emotional needs over an extended period of time require long-term care (Harris-Kojetin et. al., 2013; NIH, 2014). While most long term care happens at home (ACMQ, 2014; NIH, 2014), this paper focuses on skilled care provided in nursing homes, including those with long-term Skilled Nursing Units (SNFs). In 2012, about 58,500 paid, regulated long-term care services providers served about 8 million people in the United States (Harris-Kojetin et. al., 2013). About 70 percent of people over age 65 need some type of long-term care during their lifetime. More than 40 percent need care in a nursing home for some period of time (NIH, 2014). Approximately one quarter of that population resides in nursing homes, although increases are likely in the future as the Baby Boomers grow older. According to the Government Accountability Office ("GAO"), in 2009, more than 1.5 million people resided an estimated 16,000 nursing homes. (Aka, Deason & Hammond, 2011).

Long-term care as an industry grew 31 percent in the U.S. since 2006; the industry reached $259 billion in 2011 (Kolus, 2012). This industry includes long term care facilities in hospitals and well as nursing home care, and is forecasted to reach overall revenues of $352.8 billion in 2016. Broken out, nursing homes receive approximately 40% of long-term care expenditures. Revenues have grown from $92 billion in 2006 to $111 billion in 2011 to a projected $143 billion in 2016 (BISWorld, 2014; Kolus, 2012). The latest government statistics say that more than two-thirds of all U.S. nursing homes are for-profit facilities, compared with 27 percent that are nonprofit and 6 percent run by various government agencies on the federal or state level (Biery, 2012).

Care Tradeoffs in a Perfect Storm

From a stakeholder perspective, nursing home quality care is chronically misaligned. Simply stated, the expectations of government regulators, patients, their families and quality care experts systematically conflict with the legitimate needs of nursing home providers and their staff.

Rapidly increasing health care costs

The Affordable Care Act included a detailed analysis of the current reimbursement system for Medicare, which includes payments to long-term care and nursing homes. In short, the program is unsustainable, given rapidly increasing health care costs:

> The U.S. spent more than 16 percent of its Gross Domestic Product (GDP) on health care in 2009. Without reform, the nation's already excessive health care spending would have reached unsustainable levels within the next few decades. The Congressional Budget Office (CBO) projected in 2009 that national health care spending would be 31 percent of GDP by 2035 and 46 percent of GDP by 2080. The Medicare Trustees projected in 2009 that the Hospital Insurance (HI) Trust Fund, which pays for Medicare inpatient hospital, skilled nursing, certain home health, and hospice services, would be insolvent in eight years, by 2017. (CMS, 2015)

Similarly, patients and their families are shouldering an ever higher financial burden, with 16 percent of household consumption dollars devoted to health care costs (CMS, 2015). They are finding it increasingly difficult to accumulate the wealth necessary to afford institutionalized long term care (Shapiro, Loh, & Mitchell, 2011).

Decreasing funding

To realize cost control, the Affordable Care Act plans to (a) "modernize our health system" and have the Centers for Medicare & Medicaid Services (CMS) develop and promote new models of care delivery, (b) "fight waste, fraud, and abuse," and (c) "appropriately price" services by

stressing quality outcomes over quantity of procedures (CMS, 2015). Cost savings for Medicare/Medicaid are projected at more than $575 billion over the next 10 years (CMS, 2015). The impact of these reimbursement changes on providers is dramatic. Doctors still accepting Medicare patients will have a 21.2 percent average reduction in Medicare reimbursement rates (Matthews, 2015). Furthermore, industry experts warn that nursing homes are not sustainable given the current levels of private and government funding (Elliott et. al., 2015; José-Luis & Forder, 2012).

> Nursing centers rely heavily on two public programs, Medicare and Medicaid, to pay for the services they provide to most of their patients. The rates paid by states for Medicaid do not adequately reimburse the actual costs incurred by providers, resulting in a major disconnect between payment levels and the needs of the patients. (ELJAY, 2012, p. 2)

Increasing competition

The comparative cost alternatives to institutionalized long term care are compelling. "In 2010, the national average cost of nursing home care was about $78,000 per year...assisted living facilities reported charging $39,516 each year, ...the cost of basic home health care averaged $21 per hour" (NAIC, 2012, p. 3). Federal programs are steering funding away from institutionalized care in favor of cheaper alternatives, particularly residential care options (Kolus, 2012; Shapiro, Loh & Mitchell, 2011; Elliott et. al., 2015; José-Luis & Forder, 2012; Spetz et. al., 2015). The Medicare program advocates alternatives such as home care, subsidized senior housing, Board and care homes—"group homes," assisted living facilities, and home and community-based waiver programs (Harris-Kojetin et. al., 2013; Medicare.gov, 2015).

ALIGNMENT OF QUALITY OF CARE

Quality of care in nursing home settings results from a series of tradeoffs between the goals of different stakeholders and the degree to which the resulting strategic mix is aligned to support effective, quality care. In 1966, Donabedian created a new model for healthcare quality based around effectiveness, which looked specifically at structure, process, and outcomes. In this model, process can be further divided into leadership planning and organizational processes. While Donabedian acknowledged the importance of the patient-provider relationship, the mediating influence of industry norms and expectations was subsequently added to the model (Schiff & Rucker, 2001). The concept of organization alignment (Peters & Waterman, 1982) noted that unless these different aspects of an organization worked together and supported each other, effectiveness was undermined. This concept has been applied to health care and nursing homes (CMS, 2013; Goralski & Page, 2010). This expanded health care quality alignment model is illustrated in Figure 1 on the next page:

FIGURE 1: HEALTH CARE QUALITY ALIGNMENT MODEL

External Expectations

Congress enacted the Nursing Home Reform Act in 1987 which requires nursing homes that participate in Medicare and Medicaid to comply with quality standards that have goal of maximizing the "physical, mental, and psychosocial well-being of each resident" through a written comprehensive individualized treatment plan (Motley Rice LLC, 2016; ACMQ, 2014; Rice, 2014). Further, each state can legislate additional requirements (Rice, 2014). Subsequent legislation has resulted in over 150 standards (Aka, Deason, & Hammond, 2011).

Critics note that some rules are ambiguous in certain critical areas of care and have never been clarified (Anderson & Bjorklund, 2010; Kapp, 2014). For example, current rules do not call for staffing ratios recommended by healthcare experts (Bowblis, 2011), just that staffing must be sufficient to meet the undefined needs of nursing home residents (Mukamel et. al., 2012).

> [This standard is so vague] that it makes penalizing nursing homes that skimp on care almost impossible. Rules do require homes to have 8 hours of registered nursing and 24 hours of licensed nursing coverage per day. But the standard applies to all homes, no matter how many residents they have. So a nursing home with 200 residents can use the same-size staff as one with 20. (Lieberman, 2006, p. 42)

Even when rules are specific, enforcement tends to be lax (Aka, Deason, & Hammond, 2011). At the beginning of the new millennium, on average nursing homes received over seven deficiencies each inspection (Centers for Medicare & Medicaid Services 2001). While citations increased from 2003-2008 their severity dramatically declined. While severity codes range from A to L (widespread potentially lethal actual harm), most citations have become trivial, such as D level deficiencies which have no mandatory penalties (Lieberman, 2006). After 2009 the number of citations for deficiencies also steadily declined, along with the severity of those deficiencies. (CMS, 2013a). While industry advocates attribute this improvement to improved care and innovative new approaches towards a patient-centered organizational culture (Zhang, Unruh &

Wan, 2013), critics assert the decrease is at least partially an artifact of intense political lobbying by the industry (Eisler & Schnaars, 2015, GAO, 2009) and an inadequate evaluation and supervision process on both the state and national levels (GAO, 2009; Kapp, 2014; Mukamel et. al., 2012). Complaints are often ignored by under-funded regulators, to the point where over 1,200 Medicare complaints were not investigated due to staff shortages (Schulte, 2013). Further information on deficiencies can be suppressed due to pro-industry court rulings, leading to chronic under-reporting of deficiencies (Center for Medicare Advocacy, 2015; Eisler & Schnaars, 2015, GAO, 2009). On the state level, agency practices "explicitly and implicitly discourage the citing of deficiencies" (GAO, 2009). The GAO concluded that due to understatement of deficiencies either no enforcement occurs or that less significant remedies are imposed than the deficiencies actually warrant (Eisler & Schnaars, 2015, GAO, 2009).

When serious deficiencies are penalized, fines are relatively small, and often not collected because nursing home operators are entitled to court appeals that under-resourced regulators cannot afford (Aka, Deason, & Hammond, 2011; GAO, 2009; Lieberman, 2006). Consequently some administrators regard citations and fines as merely the cost of doing business. The costs of non-compliance—such as documented deficiencies, fines, or lower rating in quality report cards—have lost much of their deterrent effect (Mukamel et. al., 2012). Standards which lack teeth can easily be ignored, becoming more symbolic and ceremonial than real (Meyer & Rowan, 1979). Despite repeated initiatives to tighten and clarify regulation, the message is clear—when quality of care interferes with coast control, cost control criteria tend to dominate.

Leadership

While nursing home administrators recognize the need for quality, comprehensive care, they also must confront economic and demographic exigencies in an increasingly challenging market. They are literally in a "Catch 22" situation—they will be attacked if they provide low quality care at lower prices, but also if they provide high quality care at higher prices. Some analysts warn that in the coming decade nursing home operators will face a growing list of hardships:

- Unfunded government mandates for expanded staffing and services are increasing (Lieberman, 2006). For example, nurses have to divert more and more time away from patient care to required documentation and paperwork (Carayon, 2011).
- Government reimbursement rates are declining (ELJAY, 2012).
- Private insurance companies will increase pressure to control costs with tougher pricing negotiation from private insurance companies (Biery, 2012; Mukamel et. al., 2012).
- New government programs are moving away from institutionalized care towards residential care (Elliott et. al., 2015; José-Luis & Forder, 2012; Spetz et. al., 2015).

Compounding external pressures, owner/investors increasingly complain of substandard returns (Kolus, 2012). In 2011, nursing care facilities posted lower sales growth than private companies as well as other parts of the health care industry (Biery, 2012). While health sector profits rates averaged over 6%, nursing home returns averaged half that, and may decline further (BISWorld,

2014). In general, it is unreasonable to expect private investors to sacrifice return on investment for philanthropy. An effective strategic response must prioritize efficiency to boost financial returns (Francesca, Jérôme & Frits' 2011; Miller, et. al., 2010).

Unfortunately, research shows the primary mechanism being used to boost efficiency and increase profitability usually focuses on increasing Nurse and CNA staffing ratios despite the negative effects on quality of care (Bowblis, 2011; Carayon, 2011; Dellefield, et. al., 2015; Harrington et. al., 2012). In a comprehensive study, the most significant contributing factors leading to patient/resident neglect were low wages and heavy workload (including mandatory overtime) due to staffing shortages, and poor staff-to-resident-ratios (Hawes, 2003).

Research is emerging suggesting a positive, linear relationship between the size of the private nursing home chains and staffing ratios—the larger the chain, the larger the staffing ratios (Cabin et al., 2014; Lieberman, 2006). While expansion may garner economies of scale, it also seems to result in fewer nursing staff per patient.

> Poor quality of care is endemic in many nursing homes, but the most serious problems occur in the largest for-profit chains. The top 10 chains have a strategy of keeping labor costs low to increase profits. They are not making quality a priority. ...From 2003 to 2008, for-profit chains had fewer nurse "staffing hours" compared to non-profit and government nursing homes when controlling for other factors. Collectively, total for-profit nursing hours were 30% lower than government and non-profit nursing homes, and these companies also had the sickest residents. Furthermore, the top nursing home chains were significantly below the national average for RN and total nurse staffing, as well as below the minimum nurse staffing advised by experts. …Compared with the best nursing homes, the 10 largest for-profit chains were cited for 41% more serious [care] deficiencies and 36% more [less serious care] deficiencies. (Rattue, 2011, p. 2)

In these cases, investor pressure to improve profitability can become relentless in the for-profits, forcing administrators to prioritize financial returns over quality of care (Cabin et. al., 2014). For example, between 2003 and 2008 the four largest for-profit chains had more care deficiencies than any other type of nursing home after being purchased by private equity companies (Harrington et. al., 2012). In contrast, many not-for-profit owners and administrators take great pride in improving the quality of life for their patient/residents, mainly with those still capable of some rehabilitation, and document their successes (Oliver & Tureman, 2013).

Structure and Systems

Systems and structures encompass the entire service lifecycle through diagnosis, treatment, rehabilitation, education and prevention, and the information, monitoring, tracking, treatment and rehabilitation protocols, as well as documentation, equipment, facilities necessary for long-term care. All stakeholders regard efficiency and cost control as a high priority. There is some consensus on how to effectively manage them. Government and industry both support these strategies:

- **Technology-driven Quality Improvement** through the systematic use of resident assessment data and improved data reporting (Mercury, 2010). HHS developed a CMAS Innovation center improving accessibility and integration of health care databases to lower costs while improving health and quality (CMS, 2013; HHS, 2014; Mukamel et. al., 2012).
- **Training Programs and Practice Guidelines.** HHS provides both technical assistance and training materials (HHS, 2014) for education about improved treatment protocols, guidelines, data systems, care paths, and other tools that assist in managing conditions (Mercury, 2010).
- **Early intervention.** Immediate assessment of acute changes in the clinical status of nursing home residents can head off secondary diseases and unnecessary hospitalizations (HHS, 2014; Mercury, 2010).
- **Improve Payer Mix.** The coordination of Medicare and Medicaid benefits funds superior services and reduces unnecessary hospitalization (Mercury, 2010). The CMS is making the process smooth and streamlined (CMS, 2013; HHS, 2014; Mercury, 2010).
- **Limit Unwanted Care** through Advanced directives and hospice alternatives to prevent unwanted end-of-life care (HHS, 2014; Mercury, 2010; Minich-Pourshadi, 2012).
- **Reduce Turnover** given that CNA turnover rates are usually over 50% a year, leading to chronic recruitment and training costs for new hires (HHS. 2014).

However, nursing home consultants and administrators go further, targeting cost control strategies not embraced by government regulators, such as:

- **Admission and Screening Processes** to weed out patients whose health needs are resource-intensive (Mercury, 2010; Minich-Pourshadi, 2012).
- **Reducing Overtime:** particularly among the highly skilled workers, such as nurses (Minich-Pourshadi, 2012; Harrington et. al., 2012).
- **Minimizing Supplemental Labor** by minimizing use of temporary agencies to fill unanticipated absences, particularly among skilled employees (Mercury, 2010; Minich-Pourshadi, 2012; Harrington et. al., 2012).
- **Offloading Responsibilities** using highly skilled employees only for tasks a less skilled employee cannot perform under supervision (Arnold, 2010; Minich-Pourshadi, 2012).
- **Increasing Patient-to-staff Ratios** when staff workload capacity exceeds estimated patient needs, given the evidence-based profile of the group of patients assigned (Arnold, 2010; Minich-Pourshadi, 2012; Harrington et. al., 2012; Rattue, 2011).
- **Growing and Expanding** to realize the benefits of economies of scale as a means of minimizing material and administrative costs (Hoess, 2009; Mukamel et. al., 2012). Nursing home chains have undergone a significant expansion in recent decades. Private equity investment firms purchased some of the largest publicly held chains (Harrington et. al., 2012).

Nursing homes are under constant pressure to improve their efficiency and control costs (Francesca, Jérôme & Frits' 2011; Miller, et. al., 2010).

Capability

Most nursing homes require a variety of skilled service providers from Therapists to Social Workers to Certified Nursing Assistants (CNAs), sometimes called nursing aides (Aka, Deason, & Hammond, 2011). External partners provide a variety of services, and include physicians, audiologists, dietitians, orthotic and prosthetic professionals, pharmacists, psychologists and temporary replacement workers. While nurses and therapists focus on medical care, CNAs' primary focus is on custodial care—basic care and help with activities of daily living—which is the comfort care closely linked with a patient/resident's quality of life: hygiene, dressing, transfer, transportation, and nutrition (All Nursing Schools, 2013; BLS, 2014; Harris-Kojetin et. al., 2013). However, CNA responsibilities are increasing as administrators decouple highly skilled CNAs from comfort care towards basic medical care, such as ensuring medications are taken; informing the LPN, RN, or Physician if a certain patient's medical condition changes; working with medical technology; and completing medical paperwork (All Nursing Schools, 2013; Arnold, 2010; Minich-Pourshadi, 2012). This is cost-effective since CNAs receive the lowest compensation for certified staff.

Consequently, CNAs are the focus of the cost-control strategies administrators favor. Their responsibilities and duties increase, as does their patient load. While workload pressure increases, overtime and supplemental staff minimization strategies reduce temporary staff available to cover for absent or exiting workers, further compounding the problem. Given this conflict of interest between profitability and quality playing out mainly in staffing, some regulation is beginning to emerge. Maximum hospital staffing ratios (CNA/Resident) are mandated by nine states, but vary by state: day shifts range from 1:5-1:9, evening shift range from 1:9-1:13, and night shifts range from 1:14-1:22 (All Nurses, 2014). When LTC facilities such as nursing homes do not provide adequate staffing and services, this lack of care routinely results in increased patient/resident "deficiencies:"

- Skin degradation and pressure ulcers, sometimes left untreated
- Malnutrition, dehydration and semi-starvation
- Falls and resultant physical injury
- Infections and side effects from inadequate/missing medications. (Harrington et. al., 2012; Lieberman, 2006; Phillips, 2007; Rattue, 2011)

MINIMIZING SYSTEMIC NEGLECT

Nursing home care is trapped in a vicious self-amplifying cycle. Inadequate support leads to under-funded nursing homes, leading to staffing shortages which lead to quality lapses which lead to external regulations, which compound negative public image and support, resulting in under-funding problems. Given that in many nursing homes complete, quality care is virtually impossible due to funding, workload, and time constraints, cutting corners becomes standard operating procedure (Kostiwa & Meeks, 2009; Scaife, 2013). This usually occurs when externally mandated performance standards are perceived as unreasonable, and as organizations

tend to decouple formal evaluations from actual performance (Meyer & Rowan, 1977). When such care results in patient/resident deficiencies it becomes neglect.

While the prevalence of neglect has long been recognized (Harrington et. al., 2012), the issue has to be redefined away from how can neglect be eliminated—which society is unwilling to pay for—to how can neglect be minimized. Neglect is seldom deliberate, it is the structural consequence of being forced to leave duties for the next shift to meet scheduling requirements, despite the fact this usually means those tasks may never be completed—the next shift is under scheduling pressures as well. Every stakeholder shares culpability for quality care breakdowns and systemic neglect. Just as there are acceptable levels of contaminants in our air, food, and water, there are acceptable levels of deficient care at nursing homes. This situation will continue as long as the major stakeholders involved, from nursing care owners to politicians to patient families, are unable or unwilling to invest the funds needed to correct the situation—it simply costs too much (Lieberman, 2006; Elliott et. al., 2015; José-Luis & Forder, 2012; Mukamel et. al., 2012; Spetz et. al., 2015).

In nursing homes cost reductions are primarily achieved by offloading responsibilities from highly skilled employees to less skilled employees like CNAs and then increasing patient-to-staff ratios when staff workload capacity exceeds estimated patient needs, given an evidence-based profile of the group of patients assigned (Arnold, 2010; Minich-Pourshadi, 2012; Harrington et. al., 2012; Rattue, 2011). Care profile optimization promises to match care levels with resident need (Hoess et. al. 2009; (Zhang, Unruh & Wan, 2013). Criteria include:

- Patient satisfaction level, diagnosis, acuity and special needs
- Staff experience, specialization, special skills and commitment to quality
- Staff satisfaction level and turnover (CNA Vantage Point, 2014)

Strategic staffing, however, is only as good as its estimation process in assessing resident needs. While aligning staff capabilities and resident needs will become increasingly important, its quality is often problematic. "Until more efficient nursing care delivery exits, there may be no other way to safeguard quality except to increase nurse staffing in nursing homes" (Zhang, Unruh, & Wan, 2013). There are no legislated staffing maximums for CNAs in nursing homes in any state, and most states do not regulate nurse staffing ratios in nursing homes (Bowblis, 2011; Harrington, 2010). While research recommends a minimum daily average of 2.8 hours of care from nurse aides and 1.3 hours from licensed nurses, most nursing homes are staffed significantly below that (Lieberman, 2006). Given these cost control trends, some research suggests there are not enough CNAs to properly care for their nursing home residents (Harrington, 2010; Lieberman, 2006).

The question then becomes—just what corners have to be cut to meet efficiency and speed goals (Kostiwa & Meeks, 2009)? Table 1 offers a list of CNA services often passed from shift to shift, even in the higher quality nursing homes with more favorable staff ratios (6:1 to 9:1). These activities are critical to slowing the patient trajectory, but are prime candidates to leave for the next shift because they are too time consuming when done well. Table 1 offers feedback from a large CNA focus group (Hawes, 2003, p. 467), as well as previous empirical research (Ettinger & Chalmers, 2015; Saint Louis, 2013):

TABLE 1: "LEFT FOR THE NEXT SHIFT" CARE ACTIVITIES

Less Frequently	Most Frequently
Regular wound-care	Ambulation opportunities
Toileting, diaper or bedding changes	Range of motion exercises
Showering or bathing	Dental hygiene
Face and hand-care	Cueing, pacing and sequencing ADLs
Lotioning skin	Ignoring resident requests and call lights
Rushed nutrition and hydration	Rushing transfers

When a facility is short-staffed, the performance of the range of motion exercises and the turning or repositioning of residents is commonly postponed. It is also a common occurrence for CNAs to neglect residents who need assistance with hydration and nutrition (Hawes, 2003).

IMPLICATIONS

Numerous definitions of quality exist. Operationalizing “quality” from definitions such as these proffered by the IOM can be problematic as the definitions are extremely general and subjective. Unfortunately, nursing home quality is very difficult to holistically assess, and discrete individual measures tend to oversimplify. For example, Phillips, et. al. (2007) found that:

> We believe that currently strategies based on quantitative quality indicators, no matter how successfully implemented, are seriously flawed. These flaws are rooted in the inherent characteristics of nursing homes and nursing home residents and stymie researcher attempts to differentiate between nursing homes providing different levels of quality of care. These barriers to successful performance measurement include the:
>
> • Complex nature of quality in nursing homes
> • Diversity of the nursing home population
> • Lack of knowledge about how homes, as organizations, generate quality
> • Validity of comparisons among homes using current quality indicators
>
> These factors in combination create fundamental problems in providing consumers with meaningful evaluations of nursing home performance. (Phillips, et. al., 2007)

Policy makers and administrators seem to adopt a "remedial" or problem oriented approach towards change. They are seldom secure in their visualization of what "affordable quality" looks like, and their solutions are often more controversial than the problems they were intended to remedy. As the adage notes, "One man's heaven is another man's hell." A multi-stakeholder assessment of perceptions of quality care concluded: "Wide variation in respondent preferences was observed. Some respondents viewed several items that others valued highly as unimportant or undesirable" (Grabowski et. al., 2014, p. 65). There is only consensus on problems to avoid. Consequently, most of the attention on quality care focuses on (a) medical care, and (b) meeting

basic standards for assistance with ADLs. However, the implications of this research are clear—if the goal is to prevent rather than remediate patient deficiencies, quality comfort care is critical. Patients' families have been advocating these standards for decades:

- Quality hygiene care
- Stable relationships with caring, responsive staff
- Communication opportunities, preferably in community gathering spaces
- Friendly, comfortable, homelike environment
- Activities suitable for the elderly (Bowers, 1988; Rantz, et. al. , 1999; Weiner & Colón-Emeric, 2012).

In the past, family involvement was the most significant guarantee of quality of care (Carlson, 2010), and family members tended to "hold themselves responsible for monitoring and evaluating quality of care, teaching staff to deliver high quality care, and providing direct care intended to preserve the residents' self'" (Bowers, 1988, p. 16). In the past decade, however, research suggests that many elderly patients are virtually abandoned by their friends and family, receiving little to no visitation (Durkin, Shotwell, & Simmons, 2014). Today, most patient families appear to substitute technology for involvement. Resident/patient preferences are now assessed using surveys, and that data is often ignored due to time constraints (Rantz et. al., 1999). Patient families now primarily rely on staff professional skill, credentialing, and certification for assurance of care (Hasson & Arnetz, 2011). A meaningful rating of the quality of comfort care, if accurate and valid, could prove to be a valuable marketing credential for facilities who preserve that capacity.

Ambient Technologies

Ambient technologies have been investigated for decades as a way to remotely gather health data and monitor patient compliance, particularly at home (Augusto & Huch, 2012; Goetze. et. al., 2010). Ambient technologies involve:

> medical sensors, wireless sensors and actuator networks (WSANs), computer hardware, computer-networks, software applications, and databases, which are interconnected to exchange data and provide services in an Ambient Assisted Living (AAL) environment. Medical Sensors and actuators are connected with the AAL applications and home gateways for sending medical data to the health monitoring systems. (Memon et al., 2014, p. 4312)

These systems can be modified to track the delivery of health care in nursing homes, particularly when residents are no longer capable of giving cogent feedback themselves. While direct observation offers excellent assessment of care, the human costs involved have been prohibitive (Vanderbilt Center for Quality Aging, 2015). Ambient technologies can change that equation, although they cannot provide the depth and insight of a human auditor. For example, the Internet of Things (IoT) is one of the recent technological and social trends that will have (it has actually already started) a significant impact in the delivery of healthcare. The IoT represents a vision in which the Internet extends to the real world (Mattern & Floerkermeier, 2005),

connecting people with technology through various tools. By facilitating the flow of information, the IoT has a great impact over many domains from general and business relationships to management and economy (Couturier et al., 2012).

According to Sundmaeker et. al., (2010) and Guillemin & Friess (2009), the IoT can be defined as "a dynamic global network infrastructure with self-configuring capabilities [...] where physical and virtual 'things' have identities, physical attributes, and virtual personalities and use intelligent interfaces, and are seamlessly integrated into the information network." These things have the capability of directly interacting with each other and exchanging information (Sundmaeker et al., 2010, p. 41). Because any object can be connected to the Internet, the IoT can lead to major advances throughout different industries. However, the impact will not be the same in all sectors, healthcare being one to play a leadership role (Feller, 2011). The current advances in technology will benefit firstly the prevention and easy monitoring areas and secondly cases of accidents and the need for ad hoc diagnosis (Sundmaeker et al., 2010; Guillemin & Freiss, 2009).

Given the manual-centric current state in patient care management, there exists an opportunity for healthcare organizations to gather and assess quality and performance indicators within long-term care facilities utilizing Ambient Intelligence (AmI) technologies, or more specifically, Ambient Assisted Living (AAL) systems.

The Current-State Process involves:

1) Initial Meeting to Develop "Plan of Care" for patient
2) Nursing aide performs checklist of Patient Care Using Electronic or Telephonic system
3) Nursing Manager and Aide Perform QA of work performed versus plan of care.

The Proposed Actions involve:

1. Creating Independent Quality Review Organization & Accreditation to govern nationally recognized LTC standards and to review process for following Key Performance Areas:
    a. Cleansing & Bathing (of patients or residents)
    b. Toilet & Dress Assistance
    c. Turn, reposition, and transfer patients between beds and wheelchairs
    d. Intra-Facility Transportation
    e. Patients' Two-Way Communication with facility Staff
    f. Measurement and Triage of Patients' Vital Signs (such as blood pressure, glucose, weight, and temperature)
    g. Meal Service & Eating Assistance
2. Implementing an RFID (Radio Frequency ID) protocol and electronic reporting mechanism for use with Long-Term Care Facilities and Independent Quality Review Organizations to measure and determine the level of care being provided, based upon a specific set of metrics relative to the Key Performance Areas noted above.

The basic idea behind AmI is that by enriching an environment with technology (e.g., sensors and devices interconnected through a network), a system can act as an "electronic butler" which senses features of the users and their environment, then reasons about the accumulated data, and finally selects actions to take that will benefit the users in the environment (Cook 2009). Ambient Assisted Living (AAL) systems provide an ecosystem of medical sensors, computers, wireless networks and software applications for healthcare monitoring (Memon, 2014). The proposed future-state process is illustrated in Figure 2 and the metrics are defined in Table 2:

TABLE 2: DEFINED METRICS MODEL FOR COMPLIANCE

Performance Key Area	**Metric**	**Method:**	**Frequency**	**Quality Purpose**
Cleansing & Bathing (of patients or residents)	**Average Wait Time** between request for and start of support	RFID Tracking of 1. Patient Motion (sensors on body) 2. CNA Staff	Daily	To ensure timely hygiene versus poor hygiene
Toilet & Dress Assistance	**Average Wait Time** between request for and start of support	RFID Tracking of 1. Patient Motion (sensors on body) 2. CNA Staff	Daily	To ensure timely service versus skin deterioration
Turn, reposition, and transfer patients between beds and wheelchairs	# of Repositions in a 12 hour period	RFID Tracking of 1. Patient Motion (sensors on body) 2. CNA Staff 3. Location of Patient & Equipment	Daily	To ensure patient movement and exercise versus stagnation
Intra-Facility Transportation	**Average Wait Time** between dispatch for and start of transfer	RFID Tracking of 1. Transport Staff 2. Patient Location 3. Transport Equipment	As needed per transfer dispatch request	To ensure timely transport vs. excessive waiting
Patients' 2-Way Communication with facility Staff	**Average Wait Time** between request and arrival of staff	RFID Tracking of 1. Locations 2. CNA Staff	Daily	To ensure communication w/o extensive waiting
Measurement and Triage of Patients' Vital Signs (such as blood pressure, glucose, weight, and temperature)	**Average Wait Time** between observed abnormal vitals and arrival to patients' room	RFID Tracking of 1. Patient 2. CNA Staff 3. Integration of vital telemetry to notification.	Hourly	To ensure timely triage when abnormal vitals are recorded in real-time.
Meal Service & Eating Assistance	**Average Wait Time** between request for and start of support	1. Patient 2. CNA Staff	Daily	To ensure timely meal service w/o long waits.

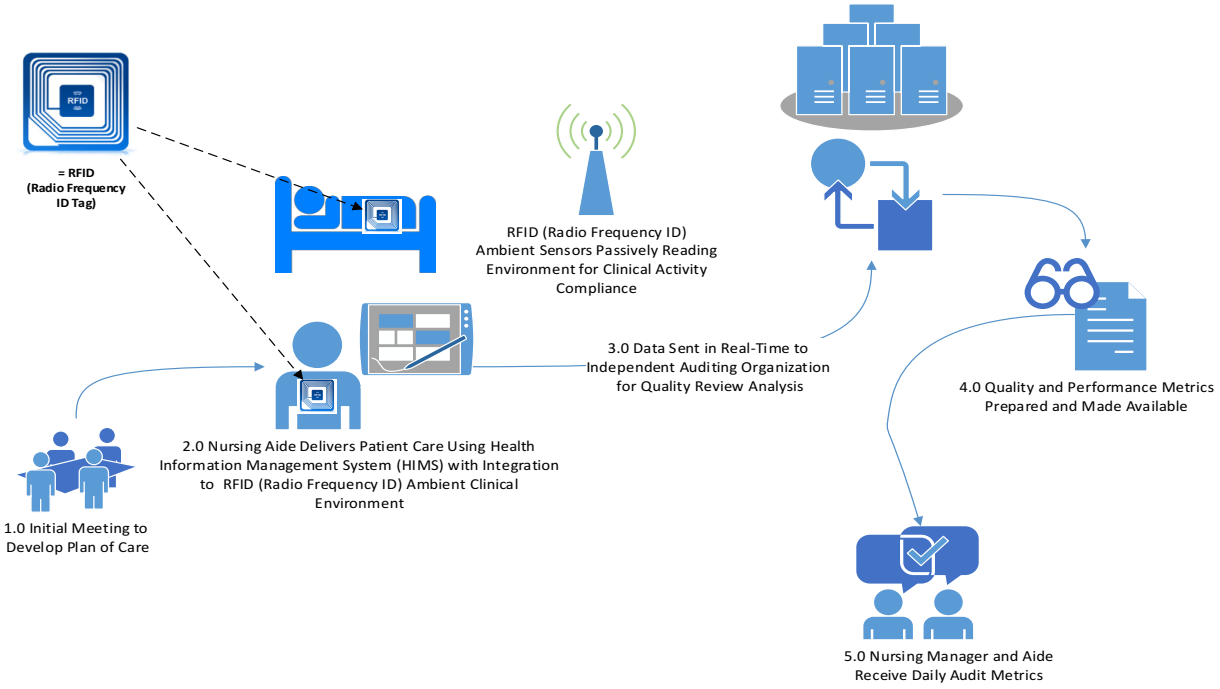

FIGURE 2: FUTURE-STATE PROCESS

IoT solutions enable the system management of a particular disease pathway bringing transparency of responsibilities and visibility of impact and effort of each activity involved in the disease management; the IoT solutions enable mindset and behavioral changes of the stakeholders in the system (COUTURIER et al., 2012). The Internet of Things has a significant potential to contribute to the overall decrease of healthcare costs while increasing health outcomes if it satisfies two conditions: namely if it enables the system management of a particular disease and the mindset and behavioral changes of the stakeholders in the system (Couturier et al., 2012).

CONCLUSION

The Affordable Care Act mandated an institutional cultural change towards a patient-centered, holistic treatment model (Hasson & Arnetz, 2011). Unfortunately the adoption of these reforms seems to be driven by resources and economies of scale.

> Characteristics of adopters and innovators who were later identified by experts to have implemented culture change were more often nonprofit-owned, larger in size, and had fewer Medicaid and Medicare residents. Implementers also had better baseline quality with fewer health-related survey deficiencies and greater licensed practical nurse and

> nurse aide staffing. States experienced greater culture change implementation when they paid a higher Medicaid per diem. (Grabowski et. al., 2014, p. 65)

Further, these quality initiatives often rely on documentation, and because they are perceived as unreasonable and sometimes impossible due to funding restraints, documentation is routinely falsified (Foebel et. al., 2013; Lundstrom, 2011; Schnelle et. al., 2004) For example:

- Serious conditions are masked and under-reported
- Reported care is not actually given
- Documentation tells auditors what they want to hear

The Vanderbilt Center for Quality Aging concludes:

> Evidence of often blatant inaccuracies recorded in medical charts and MDS assessments dictate against using these as the sole data sources for quality improvement efforts. Through a combination of care requirements that exceed industry resources and a survey process dependent on chart reviews, we have created a culture of inaccurate documentation in nursing homes. Under the current system, nursing homes risk penalties if their staff fails to record that such tasks as feeding assistance and repositioning are occurring regularly. So staff members make sure to chart the care as provided consistent with federal regulations, but too often do not actually deliver it. [External] Surveyors, however, cannot easily detect this ultimate failure. (2015, p. 4)

However, to the extent that ambient technologies are perceived as reinforcing unreasonable, unfunded mandates, they will be engulfed by this culture of non-compliance. Ambient technologies are easily challenged, given they open up a raft of legal issues, some of which are litigable (Cherney & Platt, 2014). For example, a large dependency on intelligent objects and sensors in the case of statistical error probabilities could have fatal consequences (Guillemin & Friess, 2009). The security and privacy complications of the IoT are monumental. Finally, providing the clinical evidence for the effectiveness and efficiency of the solutions would be another challenge that needs to be solved. Without such research there is no assurance that these solutions will be reimbursed by public and private health systems (Couturier et al., 2012).

Consequently, ambient technologies are best utilized voluntarily, as a source of brand differentiation and excellence. The evaluations would preferably be conducted by a third party who can furnish quality awards, much like the AHCA/NCAL National Quality Award Program, but with a Gereontological focus. Redefined as an honor instead of an obligation, as a source of excellence instead of punishment, and as a means of tracking and rewarding superior staff, this approach has real possibilities for meaningfully improving quality of care. Otherwise it will be gamed, just like the rest of the system.

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AN EMPIRICAL ANALYSIS OF HOW CONSUMERS VIEW OPTOMETRISTS' ADVERTISING

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ABSTRACT

This paper represents the responses of 423 consumers to a mail survey examining views concerning advertising by optometrists in the United States. Historically, most professions prohibited licensed members from engaging in speech activities that proposed a commercial transaction, i.e., advertising. However, the history of an optometrist's legal right to advertise is not the main focus of this article. A brief review of the past, present, and possible future of such rights might assist readers in understanding the revolutionary constitutional and commercial speech changes that have occurred over the past three decades. An optometrist's legal right to advertise in the United States has developed as part of the evolutionary interpretation of the First Amendment of the U.S. Constitution. Our purposes for this study were to determine (a) consumers' attitudes toward advertising by optometrists and (b) whether occupation, age, race, marital status, number of children in household, total family household income, education, and gender of the consumer accounted for any significant differences in consumers' attitudes concerning optometrists who advertise in the United States. It was the intent of the study to discover information that would be useful to optometrists in planning marketing strategies and improving the quality of their advertising. The study seems to confirm the belief of many marketing professionals that advertising and marketing clearly have a place in the future of optometrists' services.

INTRODUCTION

For the health professions, marketing has traditionally been a controversial issue, and the notion of using advertising to promote a professional's practice is relatively new. However, according to Rizzo and Zeckhauser, advertising by optometrists and healthcare professionals has increased dramatically during the past decade, and this trend seems likely to continue (Rizzo & Zeckhauser, 1992; Moser, 2008), although many professionals find themselves ill-equipped to handle the dynamics of a changing environment, especially without some form of ongoing marketing plan. Most professional societies and associations have prohibited the marketing of their services (Lee, 2002; Carabello, 2003; Altman, 2003; Johns Hopkins, 2013). These optometrists and healthcare professionals believe advertising would have an adverse effect on the image of the profession in general and have no impact on competitive price reduction (Duffus,

1990; Ward, 2014). Also, a 1985 study conducted by Wright, Raho, and Berkowitz concluded that advertising and marketing are controversial topics among healthcare professionals. The study further notes the perception that advertising is evil no longer persists. The study also states the fear that advertising would lead to fraud and hucksterism has not materialized. The chance of false advertising is becoming remote in a modern society where such practices would not be tolerated by consumers, other optometrists, or other healthcare professionals (Wright, Raho, & Berkowitz, 1989; DeCresenzo, 2002; Staff Writer, 2009).

However, in a study conducted by Stevens, McConkey, and Loudon in 1990 of marketing professionals in a southern metropolitan area, strong sentiments against advertising by medical professionals were noted. The results indicated that optometrists and healthcare professionals were concerned advertising would impair public confidence in the profession, would not be credible, would not help a patient make more informed decisions, and would not help patients choose the most competent optometrist for a specific problem (Stevens, McConkey, & Loudon, 1990). It was common for professional codes of ethics to proscribe direct client or patient solicitation of any kind. In 1977, the U.S. Supreme Court struck down many of the bans against advertising in the ruling *Bates v. the State of Arizona*, holding they effectively reduced competition by depriving organizations and individuals of the right to inform potential clients and patients about their services (Bates, 1977). Since the *Bates* ruling, professionals have increased their advertising, and many have developed comprehensive advertising campaigns (Kotler and Clarke, 1987). Consumers can experience advertising by optometrists and healthcare professionals through a variety of media including television, radio, newspapers, billboards, telephone, direct mail, professional magazines, and popular magazines (Gadish, 2008).

PURPOSE OF THE STUDY

During the past several years, optometrists have become highly competitive in marketing services to the public, and it has become common to see optometrists advertising their services via a number of media. In this study, the researchers used a survey instrument previously developed by Miller and Waller (1979) and Hite (1982) to determine (a) consumers' attitudes toward advertising by optometrists and (b) whether occupation, age, race, marital status, number of children in household, total family household income, education, or gender of the consumer accounted for any significant difference in attitude toward optometrists who advertise. The intent of this study was to discover information that would be useful to optometrists in planning marketing strategies and improving the quality of their advertising. The results of this study may be useful to optometrists and other professional service providers who want to create more effective promotional strategies and could also provide insights for those with promotional expertise who advise clients in these fields including academicians as well as advertising and public relations firms.

BACKGOUND AND GENERAL RESEARCH QUESTIONS

Commercial speech, e.g., business and professional advertising, has not always enjoyed First Amendment protection. Furthermore, most professional associations (American Bar Association, AMA, etc.) traditionally explicitly prohibited licensed members from engaging in advertising their services to the public (Kershen, 1990; Altman, 2003; Jacobson, 2013). Such proscriptions were usually upheld by the courts, whose longstanding legal position was clearly enunciated in an early decision by the U.S. Supreme Court (*Valentine*, 1942). The Court ruled that the First Amendment did not impose restraints on government regulation of commercial advertising. The Supreme Court did not critically re-examine this position for more than 30 years. Then in 1975 the Court held that the "relationship of speech to the marketplace of products or of services does not make it valueless in the marketplace of ideas" (*Bigelow,* 1975; *Goldfarb v. Virginia State Bar Association,* 1975).

One year later the Court clearly reaffirmed the new First Amendment protection for commercial speech. In 1976, the Court struck down a state statute that prohibited licensed optometrists from advertising prices of prescription drugs, stating that even if an advertiser's interest is "a purely economic one, that hardly disqualifies him from protection under the First Amendment" (*Virginia State Board of Pharmacy,* 1976: *Bates v. State Bar of Arizona*, 1977). The following year the Court recognized that providing healthcare services was both a profession and a business, and in order to survive in a changing and competitive environment, healthcare providers had to adopt modern business practices. These practices would include advertising for new patients (Endresen and Wintz, 2002). This was when the Court established the bedrock foundation for the constitutional protection of optometrists' advertising. The Court was asked to decide whether a "state may prevent the publication in a newspaper of appellant's truthful advertisement concerning the availability and terms of routine legal and healthcare services" (*Bates*, 1977). In response, the Court held that "blanket suppression of healthcare advertising—does abridge First Amendment rights" (*Bates*, 1977). In *Bates* and other decisions, the Court has recognized that a state has a "substantial interest" in professional and healthcare advertising and may impose "reasonable restrictions on the time, place, and manner of advertising" (Martel Jr., 1997).

During the 29 years since *Bates* was decided, courts have often reviewed the issue of constitutional protection for professionals who advertise. Cases have addressed such issues as the solicitation of patients in person, listing of professional practice specialties on letterheads, use of illustrations/pictures in ads, and use of targeted direct-mail solicitations. A review of these cases demonstrates that while the courts have permitted some state limitations on optometrists' advertising, the right of healthcare professionals to engage in truthful commercial advertising has consistently been upheld (*Ohralik*, 1978; *In re R.M.J.,* 1982; *Zauderer*, 1985; *Shapero*, 1988; *Peel*, 1990; *Florida Bar*, 1995; Ross, 2015).

During this time the business practices of healthcare professionals have undergone many changes. One of these changes is that consumers are becoming more involved in their own healthcare and are willing to take more responsibility to obtain adequate treatments than in the

past (Handlin, Mosca, Forgione, & Pitta, 2003). Another change is the frequent use of advertising. Today it is fairly common in most parts of the country for people to see one of the many thousands of optometrists' advertisements shown on television every day, receive a spam e-mail advertisement from an optometrist, view one of the many hundreds of yellow page optometrist ads while using the phone book, or even see some of the hundreds of highway billboards promoting healthcare services or optometrists that are permitted in some areas of the nation (Carabello, 2003). A marketing budget has become critical for most medical practices. Many healthcare professionals and optometrists now use marketing consulting firms or have their own internal marketing/advertising committees (Sahl, 2003; Gadish, 2009).

According to a study by Butler and Abernethy (1996), yellow page ads have been the most popular form of advertising by optometrists and healthcare professionals. This study revealed that every month approximately 21.6 million adults in the United States refer to the yellow pages before obtaining medical care (Butler & Abernethy, 1996), although a study conducted by Reade and Ratzan in 1987 revealed that yellow pages are potentially misleading to consumers and that member boards of the American Board of Medical Specialties should consider ways to diminish this possible misrepresentation (Reade & Ratzan, 1987). Such ads are now the top revenue category for the directory; optometrists and professionals such as doctors spend more than $700 million annually to be listed. In the year 2000 they spent $230 million on television advertising just in the nation's top 75 TV markets (Freedman, 2001).

While the attitude of optometrists and healthcare professionals toward advertising is mixed and the attitude of most state regulators has generally been negative, the attitude of consumers has historically been fairly positive (Hekmat & Heischmidt, 1991; Moser, 2008; Owens, 2005). Since professional organization advertising became commonplace after the *Bates* decision, there have been many professional organization-sponsored and academic studies designed to measure consumers' and healthcare providers' attitudes toward advertising. The results of a study conducted by Moncrief and Bush (1988) revealed that consumers felt advertising by professionals was somewhat helpful in making a decision about healthcare providers. Whether advertising attracts new patients, the concern of healthcare professionals and optometrists has been the focus of several academic studies. The answer has been a definite "yes." These studies show most optometrists and healthcare professionals who advertise will likely see an increase in the number of lower- to middle-income patients. Optometrists who advertise discover quickly that advertising, though usually very expensive, works if it is done properly and ethically. One study found the return on dollars invested in advertising by healthcare services providers was four to six times the cost (Freedman, 2001; Schnuckle, 2015).

The above discussion shows that professional advertising usually works, produces an increase in patient flow, yields a good return on optometrists' advertising dollars, and is protected by the First Amendment. It shows that historically consumers have not always had a positive view of optometrists who advertise but believe optometrists' advertisements provide useful information. This study explores opinions regarding the informational function of, importance of price in, deception in, future of, and appropriate media for optometrists' advertising. Specifically, the study examines attitudes concerning whether optometrists' advertising would (1) provide useful information to the public, (2) increase the costs of optometrists' services, (3) increase the quality optometrists' services in the future, (4) help consumers make more intelligent choices between

optometrists, (5) tend to lower the credibility and dignity of their services, and (6) make the public more aware of optometrists' services.

PROCEDURE

Much of the initial planning of this study was based on Hite's study at the University of Arkansas (Hite, 1982). The Hite study indicated that advertising and marketing can be advantageous to healthcare professionals. Most healthcare professionals will generally find that consumers are aware of their advertising and appreciate the information communicated to them through advertisements. Hite suggested that healthcare professionals who research their target market and its significant attitudes are likely to enjoy a competitive advantage over the competition. Acknowledgement is given to Hite's research instrument as well as Miller and Waller's (1979), which served as bases for the questionnaire in the current study. Also, acknowledgment is given to the organization and writing style of Hite's study, which served as a model for this paper.

A four-part questionnaire was used to collect the data. The first section of the questionnaire concerned demographic characteristics of the respondents including city of residence, occupation, age, sex, race, marital status, number of children in household, total family household income, and education.

The second section included 19 statements designed to measure how favorably consumers perceived advertising by optometrists. The respondents were asked to answer Likert-type questions regarding the strength of their agreement on a scale ranging from "strongly agree" to "strongly disagree." Tables 1 through 5 contain these 19 statements.

The third and fourth sections of the questionnaire listed 10 different media optometrists could use to advertise their services. The respondents were asked to answer Likert-type questions regarding the strength of their agreement as to whether each medium was appropriate for optometrists to use. The responses ranged from "very appropriate" to "very inappropriate." The researchers asked the Marketing System Group (a research company in Fort Washington, Pennsylvania) to draw a random sample of 4,000 consumers from the 10 metropolitan statistical areas (MSAs) in Tennessee: Chattanooga, Clarksville, Cleveland, Jackson, Johnson City, Kingsport-Bristol, Knoxville, Memphis, Morristown, and Nashville. Appropriate numbers from each MSA were drawn according to the ratio of each MSA's population to the total population of all 10 urban areas. The research instrument was mailed to these consumers, and 423 usable questionnaires were received and used in this study, representing a 9.55 percent response rate. This sample of 423 respondents represents a subset of the United States, or more specifically, a subset of the residents of the state of Tennessee.

STATISTICAL TESTS

The data obtained from the 423 respondents via the research instrument were analyzed by tabulating the frequency percentages for each item on the questionnaire. Cross-tabulations were then performed between the demographic factors (occupation, age, sex, race, marital status, number of children in household, total family household income, and education) and the 19 attitudinal statements in Section 11 of the questionnaire. Tables 1 through 5 provide the distribution of responses to the 19 statements in the questionnaire about optometrists' advertising. Chi-square tests were then performed to detect any significant differences between the cross-tabulations. In general, the chi-square analysis is employed when researchers want to determine whether there is an association between two or more populations or variables of a particular characteristic being studied. The significance level is the point at which a relationship is significant. This value lies between 0.0 and 1.0. Values closer to zero have greater significance. Therefore, a smaller level of significance (i.e., 0.05) means a conclusion is correct between 95 and 99 percent of the time. Chi-square probability of 0.05 is commonly used by social scientists doing business research (Lind, Marchal, & Wathen, 2005). The level of significance for all statistical tests for this study was set at 0.05.

FINDINGS

The data obtained from the 423 respondents via the research instrument were analyzed by tabulating the frequency percentages for each item on the questionnaire. Tables 1 through 5 illustrate the distribution of consumer responses to the 19 statements in the questionnaire about optometrists with respect to advertising for the 2016 sample.

Consumer Attitudes toward Advertising Optometrists' Services

The percentages given in Table 1 illustrate the distribution of consumer responses to the 19 statements in the questionnaire about optometrists' advertising. With regard to consumers' present image of optometrists (statement 9), 64.3 percent agreed they presently have a high image, 24.6 percent had no opinion, and 11.2 percent said they do not have a high image.

TABLE 1: FREQUENCY PERCENTAGES OF CONSUMER RESPONSES TOWARD ATTITUDE STATEMENTS (IN PERCENT) FOR OPTOMETRISTS' ADVERTISING

	Attitude Response				
Statement	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
4. It is proper for optometrists to advertise.	15.8	54.6	18.0	9.5	2.1
9. I presently have a high image of optometrists.	11.8	52.5	24.6	9.5	1.7
10. In general, my image of optometrists would be lower as a result of advertising.	0.7	11.1	22.5	54.6	11.1
15. Advertising by optometrists would tend to lower the credibility and dignity of their services.	4.7	19.4	16.8	48.0	11.1
19. I would use the services (if needed) of optometrists who advertise.	10.9	61.0	21.0	5.7	1.4

In general, consumers indicated a somewhat favorable image of optometrists' advertising. Seventy-one percent felt it is proper for optometrists to advertise (statement 4). Also, 71.9 percent agreed and only 7.1 percent disagreed with statement 19 that they would use the services (if needed) of optometrists who advertise. Also, 65.7 percent disagreed with statement 10 that in general their image of optometrists would be lower as a result of advertising. Finally, 59.1 percent disagreed with statement 15 that advertising by optometrists would tend to lower the credibility and dignity of their services, 24.1 percent agreed, and 16.8 percent were undecided.

Informational Function of Advertising Optometrists' Services

The percentages given in Table 2 illustrate the importance of information in optometrists' advertising and show that opinions are favorable on this topic.

TABLE 2: FREQUENCY PERCENTAGES OF THE PUBLIC'S RESPONSES TO ATTITUDE STATEMENTS ABOUT THE INFORMATIONAL ASPECT OF OPTOMETRISTS' ADVERTISING

Statement	Attitude Response				
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. The public would be provided useful information through advertising by optometrists.	13.2	68.3	11.3	5.7	1.4
5. Advertising by optometrists would be a useful means of informing potential clients about services and specialties.	26.5	53.0	9.7	8.0	2.8
11. Advertising would help the public make more intelligent choices among optometrists.	12.3	55.8	13.0	16.8	1.9
16. Advertising makes the public more aware of the services of optometrists.	12.5	56.0	13.9	14.4	3.1

The results show 81.5 percent of the respondents agreed with statement 1 that the public would be provided useful information through advertising by optometrists, while 11.3 percent were undecided. The respondents agreed (79.5 percent) that optometrists' advertising would be a useful means of informing potential clients about services and specialties (statement 5). Also, 68.5 percent agreed with statement 16 that advertising makes the public more aware of optometrists' services. Finally, 68.1 percent agreed that advertising would help consumers make more intelligent choices between optometrists (statement 11), while 18.7 percent disagreed. These results indicate members of the public view optometrists' advertising as a reliable source of information but still not more reliable than word of mouth.

Importance of Price in Advertising Optometrists' Services

The percentages given in Table 3 illustrate the importance of price in optometrists' advertising. In response to statement 7 that it is good to deal with optometrists who offer the lowest prices for routine services, 40.9 percent agreed, 37.6 percent disagreed, and 21.5 percent were undecided. Also, 73.8 percent agreed it is better to deal with a reputable optometrist than one who offers the lowest price (statement 18).

TABLE 3: FREQUENCY PERCENTAGES OF THE PUBLIC'S RESPONSES TO ATTITUDE STATEMENTS ABOUT THE IMPORTANCE OF PRICE IN ADVERTISING OPTOMETRISTS' SERVICES

	Attitude Response				
Statement	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
2. When optometrists advertise, the costs are passed on to customers through higher prices.	7.3	59.8	19.4	11.3	2.1
7. It is good to deal with optometrists who offer the lowest prices for routine services.	8.0	32.9	21.5	27.4	10.2
13. When optometrists advertise, prices are lowered due to more competition.	5.0	34.3	28.4	27.2	5.2
18. It is better to deal with reputable optometrists than with the one that offers the lowest price.	20.6	53.2	15.1	9.2	1.9

With regard to the effect on prices, 40.8 percent of respondents agreed with statement 13 that optometrists' advertising lowers prices due to more competition. Consumers also believed (67.1 percent) that prices were increased rather than decreased because of the costs of advertising (statement 2). It would appear the primary benefit of optometrists' advertising is not the communication of price information but providing information about optometrists' services. Respondents also indicated the optometrist's reputation, image, and services are more important than specific price information.

Deception in Advertising Optometrists' Services

The percentages given in Table 4 illustrate the distribution of the public's responses to statements in the questionnaire concerning deception in advertising optometrists' services. In response to statement 6 that advertising by optometrists would be more deceptive than other forms of advertising, 53.9 percent disagreed, and 23.7 percent agreed. Also, 64.1 percent of respondents disagreed with statement 12 that they would be suspicious of optometrists who advertise. However, 72.3 percent agreed with statement 17 that advertising by optometrists would primarily benefit the uninformed citizenry. Consumers agreed (64.3 percent) with statement 8 that people can rely more on what friends tell them about optometrists than on advertising. These results suggest that one of the primary benefits of optometrists' advertising is the communication of information about services rather than price.

They also indicate that while respondents view advertising by optometrists as potentially no more deceptive than other forms of advertising, personal recommendation was a more reliable source of information.

TABLE 4: FREQUENCY PERCENTAGES OF THE PUBLIC'S RESPONSES TO ATTITUDE STATEMENTS ABOUT DECEPTION IN OPTOMETRISTS' ADVERTISING

	Attitude Response				
Statement	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
6. Advertising by optometrists would be more deceptive than other forms of advertising.	5.7	18.0	22.5	42.6	11.3
8. You generally can rely more on what a friend tells you about optometrists than on advertising.	18.0	46.3	13.5	18.9	3.3
12. I would be suspicious of optometrists who advertise.	5.4	15.8	14.7	51.8	12.3
17. Advertising by optometrists would benefit the uninformed citizenry.	13.2	59.1	17.5	8.7	1.4

The Future of Optometrists' Advertising

The percentages given in Table 5 illustrate responses to statements in the questionnaire concerning consumers' attitudes about the future of optometrists' advertising. When asked if they would like to see more advertising by optometrists (statement 14), 37.6 percent of respondents agreed, 35.9 percent were undecided, and 26.5 percent disagreed. In addition, a majority (48.3 percent) of respondents agreed and 31.9 percent disagreed that advertising would increase the quality of optometrists' services in the future (statement 3). It would appear that optometrists need to conduct a comprehensive analysis of their target market to determine the attitudes and preferences of their clients.

TABLE 5: FREQUENCY PERCENTAGES OF THE PUBLIC'S RESPONSES TO ATTITUDE STATEMENTS ABOUT THE FUTURE OF OPTOMETRISTS' ADVERTISING

	Attitude Response				
Statement	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
3. Advertising will increase the quality of optometrists' service in the future.					
	10.9	37.4	19.9	28.4	3.5
14. I would like to see more advertising by optometrists.					
	5.4	32.2	35.9	22.2	4.3

IMPACT OF DEMOGRAPHIC CHARACTERISTICS ON CONSUMERS' ATTITUDES

Significant differences in consumers' attitudes were found with regard to age, occupation, gender, income, and education. Since the cross-tabulations of race and marital status were not significant for any of the 19 statements, it appears the perceptions/attitudes within these demographics toward optometrists' advertising are similar to the responses for all respondents. Findings follow for cross-tabulations for age, occupation, gender, income, and education for all statements for which significant differences (.05 level) in attitudes were found.

Age of Consumers and Advertising by Optometrists

The sample of 423 respondents was divided by age into two groups: consumers under 46 and consumers 46 and older. Significant differences in consumers' attitudes were found regarding statement 6 that advertising by optometrists would be more deceptive than other forms of advertising. Of younger respondents, 50.5 percent disagreed, and 26.5 percent agreed. Of older respondents, 64.2 percent disagreed, and 15.1 percent agreed. Significant differences in consumers' attitudes were found regarding statement 7 that it is good to deal with optometrists who offer the lowest prices for routine services. Most of the younger respondents (46.1 percent) agreed and 32.8 percent disagreed, while 51.9 percent of older respondents disagreed and 25.5 percent agreed. Significant differences in consumers' attitudes were found regarding statement 12 that they would be suspicious of optometrists who advertise: 61.2 percent of younger respondents disagreed, and 24.6 percent agreed. Of older respondents, 72.6 percent disagreed, and 16.0 percent were undecided. Significant differences in consumers' attitudes were found regarding statement 13 that when optometrists advertise prices are lowered due to more competition. Of the younger respondents, 41.3 percent agreed, and 29.0 percent disagreed; of the older respondents, 42.5 percent disagreed, and 33.0 percent agreed. A study by Yavas and Riecken in 2001 reported that attitudes toward professional advertising are not consistent or homogeneous across consumers and the healthcare segment.

They also reported that younger consumers hold more positive attitudes toward advertising by healthcare providers than their older counterparts (Yavas and Riechen, 2001). Significant differences in consumers' attitudes were found regarding statement 15 that advertising by optometrists would tend to lower the credibility and dignity of their services: of younger respondents, 54.9 percent disagreed, and 28.4 percent agreed; of older respondents, 71.7 percent disagreed, and 17.0 percent were undecided. Significant differences in consumers' attitudes were found regarding statement 18 that it is better to deal with reputable optometrists than with the one who offers the lowest price: of younger respondents, 69.4 percent agreed, 18.6 percent were undecided, and 12.0 percent disagreed; of older respondents, 86.8 percent agreed, and 08.5 percent disagreed. Significant differences in consumers' attitudes were found regarding statement 19 that they would use the services (if needed) of optometrists who advertise: of younger respondents, 68.1 percent disagreed, and 23.0 percent were undecided; of older respondents, 83.0 percent agreed, and 15.1 percent were undecided.

TABLE 6: DIFFERENCES IN CONSUMERS' ATTITUDES TOWARD ADVERTISING BY OPTOMETRISTS BASED ON AGE

Statement Age	Attitude Response: Agree or Strongly Agree	Undecided	Disagree or Strongly Disagree	Significance: Overall Chi Square Probability
6. Advertising by optometrists would be more deceptive than other forms of advertising.				
Younger	84 (26.5)*	73 (23.0)	160 (50.5)	0.0259
Older	16 (15.1)	22 (20.8)	68 (64.2)	
7. It is good to deal with optometrists who offer the lowest prices for routine services.				
Younger	146 (46.1)	67 (21.1)	104 (32.8)	0.0003
Older	27 (25.5)	24 (22.6)	55 (51.9)	
12. I would be suspicious of optometrists who advertise.				
Younger	78 (24.6)	45 (14.2)	194 (61.2)	0.0150
Older	12 (11.3)	17 (16.0)	77 (72.6)	
13. When optometrists advertise, prices are lowered due to more competition.				
Younger	131 (41.3)	94 (29.7)	92 (29.0)	0.0377
Older	35 (33.0)	26 (24.5)	45 (42.5)	
15. Advertising by optometrists would tend to lower the credibility and dignity of services.				
Younger	90 (28.4)	53 (16.7)	174 (54.9)	0.0012
Older	12 (11.3)	18 (17.0)	76 (71.7)	
18. It is better to deal with reputable optometrists than with the one that offers the lowest price.				
Younger	220 (69.4)	59 (18.6)	38 (12.0)	0.0008
Older	92 (86.8)	05 (04.7)	09 (08.5)	
19. I would use the services (if needed) of optometrists who advertise.				
Younger	216 (68.1)	73 (23.0)	28 (08.8)	0.0060
Older	88 (83.0)	16 (15.1)	02 (01.9)	

* Parentheses indicate row percentages.

Occupation of Consumers and Advertising by Optometrists

The sample of 423 respondents was divided into two occupational groups: professional and nonprofessional. Table 7 shows the significant differences between the attitudes of these two groups with regard to advertising by optometrists.

TABLE 7: DIFFERENCES IN CONSUMERS' ATTITUDES TOWARD ADVERTISING BY OPTOMETRISTS BASED ON OCCUPATION

	Attitude Response			Significance
Statement Occupation	**Agree or Strongly Agree**	**Undecided**	**Disagree or Strongly Disagree**	**Overall Chi Square Probability**
2. When optometrists advertise, the costs are passed on to customers through higher prices.				
Professional	71 (58.2)*	25(20.5)	26 (21.3)	0.0069
Nonprofessional	213 (70.8)	57 (18.9)	31 (10.3)	
3. Advertising will increase the quality of optometrists' service in the future.				
Professional	47 (38.5)	27 (22.1)	48 (39.3)	0.0341
Nonprofessional	157 (52.2)	57 (18.9)	87 (28.9)	
6. Advertising by optometrists would be more deceptive than other forms of advertising.				
Professional	19 (15.6)	26 (21.3)	77 (63.1)	0.0233
Nonprofessional	81 (26.9)	69 (22.9)	151 (50.2)	
13. When optometrists advertise, prices are lowered due to more competition.				
Professional	37 (30.3)	34 (27.9)	51 (41.8)	0.0167
Nonprofessional	129 (42.8)	86 (28.6)	86 (28.6)	
14. I would like to see more advertising by optometrists.				
Professional	35 (28.7)	54 (44.3)	33 (27.0)	0.0311
Nonprofessional	124 (41.2)	98 (32.6)	79 (26.2)	
15. Advertising by optometrists would tend to lower the credibility and dignity of their services.				
Professional	19 (15.6)	21 (17.2)	82 (67.2)	0.0285
Nonprofessional	83 (27.6)	50 (16.6)	168 (55.8)	

* Parentheses indicate row percentages.

In response to statement 2 (when optometrists advertise, the costs are passed on to customers through higher prices), more of the nonprofessional respondents agreed (70.8 percent), while more professional respondents also agreed (58.2 percent). More nonprofessionals agreed (52.2 percent) with statement 3 that advertising will increase the quality of optometrists' service in the future. More professional respondents disagreed (63.1 percent) with statement 6 that advertising by optometrists would be more deceptive than other forms of advertising. Nonprofessional respondents agreed more strongly (42.8 percent) with statement 13 that when optometrists advertise, prices are lowered due to more competition. More nonprofessionals also agreed (41.2 percent) with statement 14 that they would like to see more advertising by optometrists. More of the professional respondents disagreed (67.2 percent) with statement 15 that advertising by optometrists would tend to lower the credibility and dignity of their services.

Sex of Consumers and Advertising by Optometrists

The sample was divided into males and females. Table 8 shows the significant differences between the attitudes of these groups with regard to advertising by optometrists.

TABLE 8: DIFFERENCES IN CONSUMERS' ATTITUDES TOWARD ADVERTISING BY OPTOMETRISTS BASED ON SEX

	Attitude Response			Significance
Statement Sex	**Agree or Strongly Agree**	**Undecided**	**Disagree or Strongly Disagree**	**Overall Chi Square Probability**
2. When optometrists advertise, the costs are passed on to customers through higher prices.				
Male	161 (73.9)*	36 (16.5)	21 (09.6)	0.0072
Female	123 (60.0)	46 (22.4)	36 (17.6)	
3. Advertising will increase the quality of optometrists' service in the future.				
Male	113 (51.8)	48 (22.0)	57 (26.2)	0.0308
Female	91 (44.4)	36 (17.6)	78 (38.0)	
6. Advertising by optometrists would be more deceptive than other forms of advertising.				
Male	64 (29.4)	56 (25.6)	98 (45.0)	0.0006
Female	36 (17.6)	39 (19.0)	130 (62.4)	
12. I would be suspicious of optometrists who advertise				
Male	55 (25.2)	36 (16.5)	127 (58.3)	0.0346
Female	35 (17.1)	26 (12.7)	144 (70.2)	
15. Advertising by optometrists would tend to lower the credibility and dignity of their services.				
Male	68 (31.2)	35 (16.1)	115 (52.7)	0.0019
Female	34 (16.6)	36 (17.6)	135 (65.8)	

* Parentheses indicate row percentages.

In response to statement 2 that said when optometrists advertise, the costs are passed on to customers through higher prices, more male respondents agreed (73.9 percent), while more female respondents also agreed (60.0 percent). More of the males also agreed (51.8 percent) with statement 3 that advertising will increase the quality of optometrists' service in the future. More females disagreed (62.4 percent) with statement 6 that advertising by optometrists would be more deceptive than other forms of advertising. More female respondents also disagreed (70.2 percent) with statement 12 that they would be suspicious of optometrists who advertise. Also, more of the female respondents disagreed (65.8 percent) with statement 15 that advertising by optometrists would tend to lower the credibility and dignity of their services.

Income of Consumers and Advertising by Optometrists

The sample was divided into three income groups. The low-income group was defined as $30,000 or less, the middle-income group as $30,001-$60,000, and the high income group as more than $60,000. As shown in Table 9, no statements showed a significant disagreement in overall opinion among the three income groups. All three income groups did not agree with statement 3 that advertising will increase the quality of optometrists' service in the future. The low-income group agreed as strongly as the middle-income group (60.7 percent for low, 50.0 percent for middle). Also, the higher (66.7 percent), middle (49.4 percent) and low-income (46.2 percent) groups disagreed with statement 6 that advertising by optometrists would be more deceptive than other forms of advertising. A somewhat deeper analysis of the data shows that the middle income group is almost equally divided between professional and nonprofessional respondents, and the nonprofessional respondents in the high income group do not agree as strongly with statement 7 as the other groups. More of the high- and low-income respondents disagreed with statement 12 that they would be suspicious of optometrists who advertise. More of the middle-income respondents agreed (30.4 percent), while more of the high income respondents disagreed (72.6 percent). Low-income respondents agreed more strongly (47.7 percent) with statement 13 than when optometrists advertise, prices are lowered due to more competition. Significant differences in consumers' attitudes were found regarding statement 14 that they would like to see more advertising by optometrists: of middle income respondents, 48.5 percent agreed and 27.7 percent disagreed. More high-income respondents disagreed (74.8 percent) with statement 15 that advertising by optometrists would tend to lower the credibility and dignity of their services. High-income respondents disagreed more strongly (79.3 percent) with statement 18 that it is better to deal with reputable optometrists than with the one that offers the lowest price.

TABLE 9: DIFFERENCES IN CONSUMERS' ATTITUDES TOWARD ADVERTISING BY OPTOMETRISTS BASED ON INCOME

	Attitude Response			Significance
Statement Income	**Agree or Strongly Agree**	**Undecided**	**Disagree or Strongly Disagree**	**Overall Chi Square Probability**
3. Advertising will increase the quality of optometrists' service in the future.				
Low	79 (60.7)*	21 (16.2)	30 (23.1)	0.0005
Middle	79 (50.0)	27 (17.1)	52 (32.9)	
High	46 (34.1)	36 (26.6)	53 (39.3)	
6. Advertising by optometrists would be more deceptive than other forms of advertising.				
Low	32 (24.6)	38 (29.2)	60 (46.2)	0.0024
Middle	47 (29.7)	33 (20.9)	78 (49.4)	
High	21 (15.6)	24 (17.7)	90 (66.7)	
7. It is good to deal with optometrists who offer the lowest prices for routine services.				
Low	64 (49.2)	30 (23.1)	36 (27.7)	0.0310
Middle	63 (39.9)	35 (22.2)	60 (38.0)	
High	46 (34.1)	26 (19.3)	63 (46.6)	
12. I would be suspicious of optometrists who advertise.				
Low	26 (20.0)	22 (16.9)	82 (63.1)	0.0034
Middle	48 (30.4)	19 (12.0)	91 (57.6)	
High	16 (11.8)	21 (15.6)	98 (72.6)	
13. When optometrists advertise, prices are lowered due to more competition.				
Low	62 (47.7)	36 (27.7)	32 (24.6)	0.0077
Middle	67 (42.5)	41 (25.9)	50 (31.6)	
High	37 (27.4)	43 (31.9)	55 (40.7)	
14. I would like to see more advertising by optometrists.				
Low	63 (48.5)	31 (23.8)	36 (27.7)	0.0031
Middle	58 (36.7)	62 (39.2)	38 (24.1)	
High	38 (28.1)	59 (43.8)	38 (28.1)	
15. Advertising by optometrists would tend to lower the credibility and dignity of their services.				
Low	34 (26.2)	28 (21.5)	68 (52.3)	0.0000
Middle	56 (35.4)	21 (13.3)	81 (51.3)	
High	12 (08.9)	22 (16.3)	101 (74.8)	
18. It is better to deal with reputable optometrists than with the one that offers the lowest price.				
Low	87 (66.9)	30 (23.1)	13 (10.0)	0.0348
Middle	118 (74.7)	19 (12.0)	21 (13.3)	
High	107 (79.3)	15 (11.1)	13 (09.6)	

* Parentheses indicate row percentages.

Education of Consumers and Advertising by Optometrists

The sample of 423 respondents was divided into a low-education group and a high-education group. The low-education group was defined as having less than a college degree and the high-education group as having a college degree. More high-education respondents agreed (69.0 percent) with statement 11 that advertising would help the public make more intelligent choices among optometrists. More lower-income respondents also agreed more strongly (44.6 percent) with statement 13 that when optometrists advertise, prices are lowered due to more competition. Significant differences in consumers' attitudes were found regarding statement 14 that they would like to see more advertising by optometrists: 42.5 percent of the high-income group were undecided and 36.8 percent agreed. Also, more of the high-education respondents disagreed (66.7 percent) with statement 15 that advertising by optometrists would tend to lower the credibility and dignity of their services.

TABLE 10: DIFFERENCES IN CONSUMERS' ATTITUDES TOWARD ADVERTISING BY OPTOMETRISTS BASED ON EDUCATION

	Attitude Response			Significance
Statement Education	**Agree or Strongly Agree**	**Undecided**	**Disagree or Strongly Disagree**	**Overall Chi Square Probability**
11. Advertising would help the public make more intelligent choices among optometrists.				
Low	168 (67.7)*	25 (10.1)	55 (22.2)	0.0194
High	120 (69.0)	30 (17.2)	24 (13.8)	
13. When optometrists advertise, prices are lowered due to more competition.				
Low	111 (44.6)	67 (26.9)	71 (28.5)	0.0218
High	55 (31.6)	53 (30.5)	66 (37.9)	
14. I would like to see more advertising by optometrists.				
Low	95 (38.2)	78 (31.3)	76 (30.5)	0.0251
High	64 (36.8)	74 (42.5)	36 (20.7)	
15. Advertising by optometrists would tend to lower the credibility and dignity of their services.				
Low	69 (27.7)	46 (18.5)	134 (53.8)	0.0282
High	33 (19.0)	25 (14.4)	116 (66.7)	

* Parentheses indicate row percentages.

Race of Consumers and Advertising by Optometrists

Table 11 shows the significant differences between the attitudes of the 423 respondents based on race. The sample was divided into two groups: white and nonwhites. Table 11 shows the five

areas of disagreement between the two groups on their overall opinion. More of the nonwhite group (51.3 percent) agreed with statement 7 that it is good to deal with optometrists who offer the lowest prices for routine services. More of the nonwhite group (66.2 percent) agreed with statement 9 that they presently have a high image of optometrists. More of the white group (67.5 percent) disagreed with statement 12 that they would be suspicious of optometrists who advertise while, 50.0 percent of the nonwhite group also disagreed. The white respondents disagreed more strongly (62.1 percent) with statement 15 that advertising by optometrists would tend to lower the credibility and dignity of their services. Finally, 71.1 percent agreed with statement 16 that advertising makes the public more aware of optometrists' services

TABLE 11: DIFFERENCES IN CONSUMERS' ATTITUDES TOWARD ADVERTISING BY OPTOMETRISTS BASED ON RACE

	Attitude Response			Significance
Statement Race	**Agree or Strongly Agree**	**Undecided**	**Disagree or Strongly Disagree**	**Overall Chi Square Probability**
7. It is good to deal with optometrists who offer the lowest prices for routine services.				
White	132 (38.5)*	69 (20.1)	142 (41.4)	0.0036
Nonwhite	41 (51.3)	22 (27.5)	17 (21.2)	
9. I presently have a high image of optometrists.				
White	219 (63.8)	91 (26.5)	33 (09.7)	0.0393
Nonwhite	53 (66.2)	13 (16.3)	14 (17.5)	
12. I would be suspicious of optometrists who advertise.				
White	59 (17.2)	53 (15.5)	231 (67.3)	0.0001
Nonwhite	31 (38.8)	09 (11.2)	40 (50.0)	
15. Advertising by optometrists would tend to lower the credibility and dignity of their services.				
White	72 (21.0)	58 (16.9)	213 (62.1)	0.0064
Nonwhite	30 (37.5)	13 (16.2)	37 (46.3)	
16. Advertising makes the public more aware of the services of optometrists.				
White	244 (71.1)	40 (11.7)	59 (17.2)	0.0133
Nonwhite	46 (57.5)	19 (23.7)	15 (18.8)	

* Parentheses indicate row percentages.

Marital Status of Consumers and Advertising by Optometrists

The sample of 423 respondents was divided into groups based on marital status: single and married/once married. Table 12 shows the four areas with disagreement among groups on their

overall opinion. More of the single group (54.8 percent) agreed with statement 3 that advertising will increase the quality of optometrists' service in the future than the married/once married group (43.5 percent). More of the married/once married disagreed (60.6 percent) with statement 6 that advertising by optometrists would be more deceptive than other forms of advertising, while 44.6 percent of the single group also disagreed with this statement. Also, more of the single group agreed (47.5 percent) with statement 7 that it is good to deal with optometrists who offer the lowest prices for routine services, while 41.8 percent of the married/once married group disagreed. Once again, more of the married/once married disagreed (66.7 percent) with statement 15 that advertising by optometrists would tend to lower the credibility and dignity of their services, while 48.6 percent of the single group disagreed.

TABLE 12: DIFFERENCES IN CONSUMERS' ATTITUDES TOWARD ADVERTISING BY OPTOMETRISTS BASED ON MARITAL STATUS

	Attitude Response			Significance
Statement Marital Status	**Agree or Strongly Agree**	**Undecided**	**Disagree or Strongly Disagree**	**Overall Chi Square Probability**
3. Advertising will increase the quality of optometrists' service in the future.				
Single	97 (54.8)*	26 (14.7)	54 (30.5)	0.0300
Married/Once Married	107 (43.5)	58 (23.6)	81 (32.9)	
6. Advertising by optometrists would be more deceptive than other forms of advertising.				
Single	51 (28.8)	47 (26.6)	79 (44.6)	0.0051
Married/Once Married	49 (19.9)	48 (19.5)	149 (60.6)	
7. It is good to deal with optometrists who offer the lowest prices for routine services.				
Single	84 (47.5)	37 (20.9)	56 (31.6)	0.0469
Married/Once Married	89 (36.2)	54 (22.0)	103 (41.8)	
15. Advertising by optometrists would tend to lower the credibility and dignity of their services.				
Single	52 (29.4)	39 (22.0)	86 (48.6)	0.0008
Married/Once Married	50 (20.3)	32 (13.0)	164 (66.7)	

* Parentheses indicate row percentages.

Children of Consumers and Advertising by Optometrists

The sample of 423 respondents was divided into two groups: no children and children. Table 13 shows the three areas of disagreement between the two groups on their overall opinion. More of the children group disagreed (61.0 percent) with statement 6 that advertising by optometrists would be more deceptive than other forms of advertising, while 47.5 percent of the no-children group also disagreed. Also, more of the children group was undecided (43.0 percent) with

statement 14 that they would like to see more advertising by optometrists. More of the children group disagreed (66.0 percent) with statement 15 that advertising by optometrists would tend to lower the credibility and dignity of their services than the no-children group (52.9 percent).

TABLE 13: DIFFERENCES IN CONSUMERS' ATTITUDES TOWARD ADVERTISING BY OPTOMETRISTS BASED ON CHILDREN

	Attitude Response			Significance
Statement Children	**Agree or Strongly Agree**	**Undecided**	**Disagree or Strongly Disagree**	**Overall Chi Square Probability**
6. Advertising by optometrists would be more deceptive than other forms of advertising.				
No Children	60 (26.9)*	57 (25.6)	106 (47.5)	0.0213
Children	40 (20.0)	38 (19.0)	122 (61.0)	
14. I would like to see more advertising by optometrists.				
No Children	92 (41.3)	66 (29.6)	65 (29.1)	0.0163
Children	67 (33.5)	86 (43.0)	47 (23.5)	
15. Advertising by optometrists would tend to lower the credibility and dignity of their services.				
No Children	63 (28.3)	42 (18.8)	118 (52.9)	0.0226
Children	39 (19.5)	29 (14.5)	132 (66.0)	

* Parentheses indicate row percentages.

CONCLUSIONS

The results of this study have a number of implications. First, although consumers' opinions about advertising by optometrists are mixed, they look for and generally favor advertising as a means of obtaining some kinds of information about optometrists. The results in Tables 1 and 2 indicate consumers desire more information about the services of optometrists and feel that advertising by optometrists could help them learn about services and specialties of particular optometrists. Optometrists and other healthcare providers should be informed of these and similar survey results so they can begin to satisfy the healthcare needs and desires of the public.

However, it is interesting to note that, as indicated in Table 5, 37.6 percent wished to see more advertising by optometrists, 26.5 percent did not wish to see more advertising, and 35.9 percent of respondents were undecided about wanting to see more advertising by optometrists. Second, opinion leaders among the healthcare industry should be encouraged to use informational advertising. Much has been written about the ethical implications of advertising by professionals and the attitudes of those professionals who must make the decision whether or not to advertise.

Although many optometrists have indicated they would not advertise even if others did, it is likely some of these optometrists could be encouraged to try advertising if they were convinced it could be done tastefully and for the purpose of informing and serving the community.

From the marketer's viewpoint, the rapid change of attitudes based on changing demographic and cultural factors dictates a greater need for understanding the optometrists' market. The results in Table 6 indicate consumers of all ages are not in favor of optometrists' advertising their professional services; however, older consumers disagreed more strongly than the younger group. Both age groups also agreed that advertising will increase the quality of optometrists' services in the future. Here the younger consumers showed stronger agreement. Both groups strongly agreed it is better to deal with a reputable optometrist than one who offers the lowest price. Older consumers are more likely to identify with advertisements that depict them in roles similar to the ones they occupy in real life. Optometrists and other healthcare professionals who market services must closely monitor the changing attitudes of various age groups and be prepared to make whatever adjustments are necessary to keep pace with their expectations. Optometrists must clearly define potential consumers and devise well-defined marketing strategies.

Opinions based on race regarding the use of advertising by optometrists were mixed, according to Table 11. The results indicate that nonwhites viewed advertising as an information tool more favorably than whites. The white group felt advertising by optometrists would provide useful information, make the public more aware of the services and specialties of optometrists and help consumers make more intelligent choices between optometrists. Nonwhites also agreed regarding this information function. However, more whites disagreed that advertising by optometrists would be more deceptive than other forms of advertising. More of the younger group agreed that when optometrists advertise, prices are lowered due to more competition.

Both groups agreed the public would be provided useful information through advertising by optometrists. Also, all groups strongly agreed advertising would help the public make more intelligent choices among optometrists. The results in Table 8 indicate the male group agreed more strongly that advertising by optometrists would be more deceptive than other forms of advertising. The female group strongly disagreed they would be suspicious of optometrists who advertise.

This study seems to confirm the belief of many marketing professionals that advertising and marketing clearly have a place in the management and operation of an optometrist's practice. Although the present image of optometrists is positive, opinions are rather mixed as to whether it is proper for optometrists to advertise. The study also confirmed the quality of service and the reputation of optometrists are more important to the consumer than price. Optometrists will now find that consumers are generally receptive to their use of advertising as a means of communicating information about their services (Barr & McNeilly, 2003). Optometrists who carefully research the market and investigate attitudes and preferences of specific socioeconomic groups are likely to enjoy a competitive advantage over other optometrists.

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THE ADEQUACY OF OBESITY CONTENT FOR THE GENERAL PUBLIC ON STATE PUBLIC HEALTH DEPARTMENT WEBSITES

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ABSTRACT

This applied research study investigates the current state of online obesity information available to the general public as content on state public health department websites. The study provides insight into whether or not these sites provide access to consumer-targeted obesity prevention information to combat the current obesity epidemic in the United States. The states with the ten highest obesity rates were examined (CDC, 2014). Most of their sites did not mention obesity on the home page, lacked clear navigation for the word "obesity," or failed to provide current obesity-related consumer information. Health professionals, rather than consumers, were the predominate target audience. Recommendations for improving these sites include: increased focus on obesity information for consumers, links to obesity information on the home page, improved navigation to obesity content, increased quality of obesity content, and more interactive features on the site or on auxiliary sites to engage consumers.

INTRODUCTION

For almost two decades, obesity has held the status of a public health epidemic by the Centers for Disease Control (CDC) (Dietz, 2015). According to "The State of Obesity Report," no state had an obesity rate above 15 percent in 1980. Currently, more than 34.9 percent of adults, or 78 million Americans, are obese and nearly 17 percent of 2 to 19 year-olds are obese (Ogden, Carroll, Kit, & Flegal, 2014). The United States needs to increase efforts to address the problem.

Obesity is one of the leading causes of death in the United States. Masters, Reither, Powers, Yang, Burger, and Link (2013, p. 1900) estimated that "obesity accounted for a large share of US adult mortality in recent decades—about 18% of all deaths between ages 40 and 85 years during the time period 1986 to 2006." The economic cost of obesity is estimated to be over 147 billion dollars per year in the United States (Cawley & Meyerhoefer, 2012).

Schwarte, Samuels, Boyle, Clark, Flores, & Prentice (2010) identify state public health departments as potential change agents in obesity prevention by advocating healthier lifestyles

consisting of consumers eating healthier foods and engaging in beneficial physical activity to decrease disease and maintain health. At the same time, experts maintain that "funding and staff skill may influence the degree of public health department engagement in obesity prevention" (Schwarte et al, 2010, p. E17). Public health departments as agents of civic engagement are expected to use online communication as a tool to provide consumer accessible and helpful health information. Research calls for civic websites such as state public health agency websites to move beyond functional usability to productive usability, which "allows citizens to access information but also provides guidance for them to understand and use that information" (Simmons & Zoetewey 2012, p. 271).

Owned media are online communication such as websites and social media platforms on which organizations create content for their audiences. The websites of public health departments and their social media pages are considered owned media. Research indicates that good quality content on owned media can provide a successful communication channel to reach and engage online audiences (Baetzgen & Tropp, 2015). When online content fails to provide useful information to users, it is considered a "content gap" (Atkinson, Saperstein, Desmond, Gold, Billing, & Tian, 2009). Given that content-centric factors are important in gaining audience engagement in organizational media messages, this case study examines how state public health departments are using their owned media to provide online content that educates and guides its publics to combat obesity. Additionally, this study provides insight into how state public health departments can better utilize online communication to address obesity as a public health crisis.

Since there is scant research on how state public health departments utilize owned media to address chronic public health crises, a descriptive case study method for data collection and analysis is employed. Case studies are well-suited to exploratory research seeking to identify and explain system complexities within set contexts (Rowley, 2002; Stake, 2005). Applying a cross-case instrumental case study, an analysis of state public health department websites was conducted on ten states in the United States ranked the highest in obesity according to the CDC 2014 report. After findings are presented, recommendations for improvements are provided.

LITERATURE REVIEW: eHEALTH, PUBLIC HEALTH, AND OBESITY

Regular evaluation of web-based health information is an effective process for improving health information resources meant for the public (Rosenfeld, Shepherd, Agunwamba, & McCray, 2013). eHealth can function as a means of informing the public about health concerns and motivating people to change their behaviors (Enwald & Huotari, 2010). eHealth is an emerging field crossing multiple disciplines, including information technologies, public health, business, supporting health services, and information delivered though web-based technologies to improve healthcare (Boogerd, Arts, Engelen, & van de Belt, 2015). In particular, eHealth has potential because "reducing the burden of chronic disease involves engaging patients and consumers in health promotion activities (e.g., healthy eating and increased physical activity) which require sustained behavior change" (Ahern, Kreslake, & Phalen, 2006). Websites, mobile health applications, social media platforms, and online social support networks can provide individuals

with information resources to gain greater control of their health (Gallant, Irizarry, Boone, & Kreps, 2011; Kreps & Neuhauser, 2010; Nagler, Ramanadhan, Minsky, & Viswanath, 2013).

Throughout the history of the Internet, searches for health and medical information have ranked as one of the most common online user activities (Akerkar & Bichile, 2004; Gallant, Irizarry, & Boone, 2008). People with a medical condition conduct online searches for health information more than healthy individuals (Goldner, 2006).

Audiences interested in tailored health information are enthusiastic and interested in online materials designed for their needs (Atkinson et al, 2009). This aligns with an important reason people use information technologies. Perceived usefulness of an information technology is defined as the degree a person deems a technology will enhance a task (Wang, Wang, Lin, & Tang, 2003). Perceived usefulness also is a strong predictor of why people use websites (Gefen, Karahanna, & Straub, 2003); thus, as an online task, healthcare consumers search to gain knowledge about their health and medical conditions (Nash & Gremillion, 2004). Given the use of the Internet to gain health information, health professionals need to use their websites and social media accounts to inform and engage people seeking health information.

"eHealth communication provides a new means to prevent obesity from becoming a global epidemic" (Enwald & Huotari, 2010). While social media also are considered owned media, state public health departments rarely use social media to communicate health information to their publics. A study of 281 public relations professionals from state public health departments in 48 states concluded that social media has a low adoption rate with only 17 percent of practitioners using social media to disseminate health information (Avery, Lariscy, Amador, Ickowitz, Primm, & Taylor, 2010).

Users can use online health information to evaluate personal health risks with the best practices connecting risk evaluations to more in-depth patient information (Holmberg, Harttig, Schulze, & Boeing, 2011). Evaluations of online health information have revealed numerous important issues discouraging its productive use: "inconsistent, incorrect or outdated content, high literacy demands of the presented content, confusion about the intended audience, lack of interactivity problems with layout and navigation, and overall design flaws" (Rosenfeld et al, 2013, p. 975).

Content should be updated continuously and meet the literacy needs of the target audience. An appropriate audience analysis to provide strategic alignment between online content and audience engagement goals, such as promoting healthy lifestyle changes to reduce obesity, should be evident on websites. Online audience activity and targeting are database driven analyses which rely on different organizational and diffusion patterns for informational messaging than in traditional mass media channels and contexts (Gallant & Boone, 2011). The organizational patterns or information architecture of a website has an impact on navigation and overall user interaction. Poor website usability, especially on health websites, decreases user trust and credibility (Gallant, Irizarry, & Kreps, 2007), which in turn can affect the credibility of the website's owners.

RESEARCH QUESTION

What is the extent of obesity-labeled content available to consumers on the websites of state public health departments in ten states in the U.S. with the highest obesity levels?

METHOD

A case study is an empirical inquiry used for exploratory research to gather insight where there is little established research (Rowley, 2002; Yin, 2009). Case studies provide insight into a system's complexities within environmental contexts (Stake, 2005). To be methodologically sound, the boundaries of the case need to be well defined (Culter, 2004; Stake, 2005). In applied communication research, important boundaries are: the institution or practitioner; the identified time line of a project; and, "the issue or campaign being focused upon" (Culter, 2004, p. 368). Further, a case study focusing on a particular situation provides a delineated analysis of a phenomenon (Culter, 2004; Yin, 2009).

Yin (2009) states four functions of case studies: 1) to explain; 2) to describe; 3) to illustrate; and 4) to enlighten. The most important application of a case study is to explain the "causal links in real-life interventions that are too complex for the survey or experimental strategies" (Yin, 2009, p. 19). The primary focus of this case study on state public health departments' earned media is to analyze how website content, layout, and navigation relate to obesity-labeled information intended for the public. Social media platforms also are appraised for obesity-labeled content.

The descriptive function defines the intervention or phenomena and the "real-life" context in which it happened. Illustrating provides a descriptive mode in which multiple parts of a case can be explored. The last application, *enlighten*, provides feedback on interventions and program situations with no clear set of outcomes.

This case study of state public health departments' earned media fulfills these functions by analyzing how website content, layout, and navigation relate to obesity-labeled information available to consumers. Social media platforms also are appraised for obesity information content. The environmental context is the long-standing national public health crisis in obesity. An illustrative example is the case concentrations on ten states in the U.S. ranked the highest in obesity according to the CDC 2014 report. Within the framework of the findings, the discussion section presents recommendations for how state public health departments can use earned media more effectively to reduce obesity by engaging users with access to relevant, well-designed content and online media.

Yin (2009) outlines a four-part process of case study development: case design; collecting data; analysis of data; and, reporting the data as a case study. The current research is best suited to an instrumental case study design with embedded multiple cases. An instrumental case study produces results that can foster understanding of other larger issues and disciplinary expectations (Stake, 2005). Illustrative cases are applied research which helps answer questions that researchers and practitioners need to know to advance research and practice (Stake, 2005).

The outcomes of this study can provide both theoretical insights and practice guidance. The rationale for using an embedded approach is that there is complexity to system and context (Yin, 2009). Since the use of social media and the design of websites' organizational structure, content, and interactive navigation are not standard, methods, such a content analysis and heuristic reviews, cannot capture the complexity of analyzing multiple state public health departments' owned media as catalysts for fostering changes in consumer behavior through online communication.

Data collection is framed by a directed content analysis approach which is primarily deductive in its use of predefined categories or concepts; yet, is open to the re-definition of concepts as analysis proceeds (Hsieh & Shannon, 2005).

Directed Content Analysis Coding Categories

The following coding categories were used in the directed content analysis:

Mention of Obesity on Home Page. Did the word *obesity* appear on the home page of the state health department website? If found, the word *obesity* was noted. If *obesity* had a link on the home page, it was "clicked" to view the linked page and information. Since page layout varied among sites, linked page sections were searched, including upper banner, left, center, and right segments based on availability.

Link to Obesity Page from Home Page. Is there a link on the home page that brings the user to another page with information on obesity?

Number of Clicks to Obesity Information–Primary and Secondary Level Navigation. In a search using primary navigation, did the word "obesity" appear on the primary navigation bar of the state public health department website? If found, the word "obesity" was noted. If obesity on the primary navigation bar had a link, it was "clicked" to view the linked page and information. Since page layout varied among sites, linked page sections were searched, including upper banner, left, center, and right segments based on availability. In search using second tier navigation, did the word "obesity" appear ? If found, it was described. If not found on the second tier, search was under topics such as an A-Z index listing.

Feature Box Labeled Obesity on Home Page. Did the home page have a feature box with "obesity" content? If found, it was noted.

"O" in A-Z Topics Feature Opens to Obesity. Did the home page have an alphabetical topical subject search leading to "obesity" content? If found, it was noted.

Link to Auxiliary Site on Obesity. If an auxiliary site was found, it was noted.

Information in Top Search Results of Word **Obesity.** Information was noted.

Social Media Links. Are there links on the site to social media platforms? If found, which ones?

Search on Obesity Leads to Consumer Information on Obesity and/or Some Information on Healthy Eating and Lifestyle. Using the "Search" function feature, what results were generated from a search of the word *obesity*? First page results were analyzed and the first ten search results were described. When searching the word *obesity,* what links appeared? The results were analyzed and if the links brought the user to auxiliary or campaign sites, it was noted whether these were part of the state public health department site, or, if not, the type of partnering (government, grants, nonprofits, corporate health organization, or other) was noted.

Resources. When information was found on obesity using any method, what types of resources were found? The results were analyzed for the presence of interactive tools, nutrition information, diet programs and tips, and physical activity information.

FINDINGS

The cross-case analysis shows that the ten state public health department websites do not provide an online communication vehicle effectively designed to engage consumers in fighting obesity. If obesity is mentioned there is little to no guidance to change health and behaviors; instead the content on obesity is overwhelmingly in the form of formal governmental documents reporting on obesity initiatives, statistics, policy level goals, and strategies. When state public health department websites provide content on consumer information to fight obesity, it is commonly provided in the form of auxiliary websites. These auxiliary or campaign sites often are a partnering or collaborative effort between the state public health department and another organization. Given the analysis, the answer to the research question is that there is little to no obesity-labeled content available to consumers on the websites of state public health departments in the ten states in the United States with the highest obesity levels.

More specific findings are presented in three tables and in individual case descriptions of each state's health department website. Table 1 provides findings on each coding category. Overwhelmingly, the results show a lack of obesity-labeled content and information on state public health department websites.

TABLE 1. FINDINGS FOR DIRECT CONTENT CODING CATEGORIES

Coding Category	Findings
Mention of Obesity on the Home Page	Only two out of the ten websites mention obesity on the home page.
Link to Obesity Page from the Home Page	Five out of ten websites provide a link from the home page to another page, which mentions obesity in some informational form. Most information is not directed at health consumers but is intended for healthcare officials or policy makers.
Number of Clicks to Obesity Information: Primary and Secondary Level Navigation	Navigating through the website by clicking links, other than the main navigation bar, proves difficult in finding obesity information. Using the navigation bar to reach obesity information is available on two state websites, Mississippi and Alabama. Users would not find obesity information on two websites. Users have to click either two or three levels down before reaching obesity information for seven websites. Only one website provided obesity information one click away from the home page.
Feature Box Labeled Obesity on Home Page	Two state websites, Arkansas and Mississippi, feature obesity in the main home page's content by highlighting the information in a feature box.
"O" in A-Z Topics Feature Opens to Obesity	One-half of the websites (five) provide obesity as a topic in informational guides such as health dictionaries or topical guides.
Link to Auxiliary Site on Obesity	Six websites provide links to auxiliary websites providing information on obesity. The information provided on these types of linked websites is the most consumer-friendly and tend to be part of health campaigns to prevent and decrease obesity.
Information in Top Search Results of Word "Obesity"	All of the ten websites had a search function that produced some results on obesity, but it does not lead to consumer information on obesity, such as diet, exercise, or healthy eating.
Social Media Links	Nine states out of ten had social media links on the main page or on related state public health department sites.
Search Function on Obesity Leads to Citizen Consumer Information on Obesity and/or Some Information on Healthy Eating and Lifestyle	Six of the websites produced consumer information. Four states did not have adequate consumer information on obesity (see Table 3).

Tables 2 and 3 provide insight into user information-seeking by exploring pages and links as well as utilization of search functions. Table 2 presents findings on consumer obesity information by page browsing without using a website's dedicated search function. In other words, the website user searches for obesity-related information by reading pages and moving through the website by clicking links without using a search function. Table 3 shows whether or not each site's search function results in obesity information (e.g., diet and healthy life style behavior) that is tailored to consumers.

TABLE 2. CONSUMER OBESITY INFORMATION WITHOUT SEARCH FUNCTION

	Ten States with the Highest Obesity Levels	Mention of Obesity on Home Page	Link to Obesity Page from Home Page	Number of Clicks to Obesity Information	Primary Navigation Bar Leads to Obesity Information	Feature Box Labeled Obesity on Home Page	"O" in A-Z Topics Feature Opens to Obesity	Link to Auxiliary Site on Obesity	Information in Top Search Results of Word *Obesity*	Social Media Links
1	Arkansas	Yes	Yes	2	No	Yes	Yes	Yes	Yes	Yes
2	West Virginia	No	Yes	3	No	No	No	No	Yes	No
3	Mississippi	Yes	Yes	1	Yes	Yes	Yes	Yes	Yes	Yes
4	Louisiana	No	No	NA	No	No	No	Yes	Yes	Yes
5	Alabama	No	Yes	2	Yes	No	Yes	Yes	Yes	Yes
6	Oklahoma	No	No	2	No	No	No	Yes	Yes	Yes
7	Indiana	No	No	2	No	No	Yes	Yes	Yes	Yes
8	Ohio	No	No	NA	No	No	No	No	Yes	Yes
9	North Dakota	No	No	3	No	No	Yes	No	Yes	Yes
10	South Carolina	No	Yes	2	NA	No	No	Yes	Yes	Yes

TABLE 3. CONSUMER OBESITY INFORMATION USING SEARCH FUNCTION

	Ten States with the Highest Obesity Levels	Search on *Obesity* Leads to Some Consumer Information
1	Arkansas	No
2	West Virginia	No
3	Mississippi	Yes
4	Louisiana	No
5	Alabama	Yes
6	Oklahoma	No
7	Indiana	Yes
8	Ohio	Yes
9	North Dakota	Yes
10	South Carolina	Yes

Individual Case Analyses

The individual case descriptions analyze each state health department's website for obesity-related information. The ten states are presented in rank order from highest obesity rank to the lowest.

Arkansas. The Arkansas Department of Health website (http://www.healthy.arkansas.gov) mentions obesity on the home page as a line item within the first box under *Health and Safety Topics* (bottom half of the page). *Obesity* appears as an option under the header *Diseases & Conditions* but it is not an active link. A click on the header results in a long list of diseases and conditions. The word *obesity* appears in the first category, *Chronic Disease*, as *Obesity Prevention*. Clicking on *Obesity Prevention* brings up an obesity prevention page which warns of the seriousness of obesity and presents BMI information and charts with Arkansas data from 2008 and National Heart Lung and Blood Institute data from 2009. At the bottom of the page,

there are links to an auxiliary site from the Arkansas Coalition for Obesity Prevention (ArCOP) (http://www.arkansasobesity.org). This site contains some obesity content but there is no consumer-friendly approach on the site to isolating current obesity-related information from the promotional information about the coalition that sponsors the site. Advice for consumers is most heavily represented under two box headings in the middle of the page: 1) *Increase Access to Health Foods*; and 2) *Increase Access to Physical Activity*. Clicking *Learn More* in either box leads to dated information. ArCOP has a Twitter page and a Facebook page that announce meetings, grants, and other basic information. Posts are infrequent. These social media pages do not focus on helping consumers prevent or reduce obesity.

West Virginia. On the West Virginia Department of Health and Human Resources Bureau for Public Health website (http://www.dhhr.wv.gov/bph/Pages/default.aspx), there is no mention of obesity. The feature on the first page is on blue green algae. Obesity is not listed on the alphabetic topic listing on the navigation bar nor is it listed under any other topic. Obesity is listed under *healthy lifestyles* after three clicks. The *healthy lifestyles* webpage in early November 2015 had two goal statements from the Division of Health and Chronic Disease (HPCD). One goal is on increasing healthy weight with no other information on obesity on that page. Search on HPCD goes to *Everyday WVA* that does discuss the CDC guidelines written for health and community leaders on obesity. The healthy lifestyle page was not renewed. A notice states: "This domain name expired on 11/15/2015 and is pending renewal or deletion" (http://wvohl.com/?reqp=1&reqr=nzcdYaS1qJHhnzxhqTWc). The search does bring up 333 results on obesity. The audience for the search on obesity is not the general public. Instead the search results include technical reports for program administrators, average weight information, statistics, and maps with the highest and lowest obesity rates by county. There were no social media pages linked to the West Virginia Department of Health and Human Resources Bureau for Public Health website.

Mississippi. The Mississippi State Department of Health website (http://www.msdh.state.ms.us) features the word *Obesity* on the home page as the second item in a list under *Healthy Living*. Clicking on *Obesity* opens a consumer information page on *Obesity and Obesity Prevention*. There are five buttons toward the top of this page: *Weighing Right, Getting Active, Links, Obesity, Action Plan,* and *Reports*. Each has consumer-related content. There also is a sidebar on the page leading to interactive tools, including a link to a *USDA SuperTracker* tool (http://www.ChooseMyPlate.gov) to track progress and a *Take Charge of Your Health* tool to help consumers lose weight and improve their health. Additional clicks on the buttons lead to additional interactive tools and other forms of consumer information. The Mississippi State Department of Health website was the strongest site among the ten analyzed for obesity-related content designed for consumers. The public health website has social media links to Facebook and Twitter. Only limited information on obesity is on its social media pages. One good example was found on Twitter on September 3, 2015–"What can parents do about childhood obesity? Start with the tips at http://www.cdc.gov/features/childhoodobesity."

Louisiana. There is no obesity information on the home page of the Department of Health & Hospitals State of Louisiana Office of Public Health website (http://dhh.louisiana.gov). There is no link from the home page that a user can follow to reach obesity content. Since navigating through links to find obesity information was non-productive, the search function was used and

brought up information that was overwhelmingly focused on policy positions and annual reports. The search page results' URLs verify that a user could not follow a direct information architecture path flow to any of this content from the home page. Most of the obesity content found with the search option were governmental reports and not campaigns to change the health of consumers. The scant information available on obesity is predominantly associated with diabetes. While these two are connected, the predominance given to diabetes reduces information about obesity and strategies to reduce and prevent it. Instead, the focus is on diabetes, which could be a complication of obesity. There is a related website called *Own your Own Health* that links to eating plans, programs on obesity in children, and control or prevention of diabetes. Louisiana does have links to social media on Facebook, Twitter and YouTube, but there was little mention of obesity on these sites.

Alabama. The Alabama Department of Public Health has no direct mention of obesity on its home page (http://www.adph.org). There is a left sidebar with *Nutrition* and *Physical Activity*. These links go to information for the general public on losing weight, physical activity, healthy eating, my plate, and fruits and veggies. One of the best examples is the state program called *Scale Back Alabama* (http://scalebackalabama.com). This program offers people tips for reducing weight, expert advice, contests, support programs, local groups, and social media pages to engage the public. State and local winners are announced each year. The Facebook page for *Scale Back Alabama* has 5,400 likes. This was one of the best social media sites on obesity reduction among the ten states analyzed. The department's main page has a variety of links to social media sites such as Facebook, Twitter, Pinterest, Instagram, and a mobile site.

Oklahoma. The Oklahoma State Department of Health website (http://www.ok.gov/health) does not have the word *obesity* on its home page, nor does the word obesity appear on the navigation bar. While the word obesity is not used, the center page has a link to *Healthy Oklahoma 2020: OHIP Update*, which brings the user to an auxiliary website (http://ohip2020.com). At this auxiliary site, the user can click on the top obesity tab. This continuous scroll website automatically brings the user down the page to information on Oklahoma's obesity statistics and policies. The health department website center page also has a link to another auxiliary website, *Certified Healthy Oklahoma Programs* (http://certifiedhealthyok.com), which brings the user to a text heavy page describing a voluntary certification program for businesses, communities and schools to promote health behaviors. Overall, the Oklahoma State Department of Health website has little to no content on helping consumers with individual education and behavioral steps on obesity. There are links to social media sites for Facebook, Twitter, and YouTube but there is little content on obesity itself.

Indiana. The Indiana State Department of Health website (http://www.state.in.us/isdh) does not have the word obesity on its home page; thus, obesity is not on the navigation bar nor is it featured in a text box. The number of user clicks to obesity content is two and follows a path from the alphabetized topical list. Under *O* on the alphabetized topical list, the user can click on *Obesity*. This page, which is text heavy and makes the user scroll, has two major headings: *Baby-Friendly Hospital Initiative* and *Division of Nutrition and Physical Activity (DNPA)*. The first heading has a breast-feeding focus. The second section, which requires a user to scroll down the page below the fold, addresses the "problems of poor nutrition, sedentary behaviors, and obesity and other chronic diseases in Indiana." There are six bulleted points describing the division's

role. After finding obesity by clicking *O* on the main page alphabetical topic list, a user can click on *obesity* and is brought to the page: *Nutrition & Physical Activity Home*. On this page, there are links to auxiliary sites on the left side navigation bar. Two links focus on page content with health-related consumer campaigns. The first link brings the user to a page titled: *Indiana Healthy Weight Initiative*. There is a link to a PDF report: *Indiana's Comprehensive Nutrition & Physical Activity Plan, 2010-2020*. The page introduces the *Indiana Healthy Weight Initiative*, but does not provide an accessible link for users to the corresponding auxiliary website. The link to the auxiliary site is at the bottom of a text-heavy web page. The users must scroll below the fold to reach the auxiliary site, *INShape Indiana*, which also is the second link on the left navigation bar of the *Indiana Healthy Weight Initiative* page. The auxiliary website's core mission is presented on its home page: "INShape Indiana motivates, educates, and connects Hoosiers to valuable resources that help them eat better, move more and avoid tobacco." Social media sites such as Facebook, Twitter, and YouTube are linked to the main page of the department's website. Some information on reading food labels and healthy weight in pregnancy was on Facebook.

Ohio. The Ohio Department of Health does not mention obesity on the first page of its website (http://www.odh.ohio.gov) nor is obesity listed in the *A-Z* navigation bar on the first page. The search on obesity produces government statistics, medical reports, and data on obesity during pregnancy, childhood obesity, and BMI reports. Most results are for state, county, or medical officials. Some information as contained on *Reducing Obesity in Ohio* (https://www.odh.ohio.gov/features/odhfeatures/Strategic%20Priorities-Obesity/Reduce%20Obesity.aspx) does have links to *Healthy Lifestyles*, *Healthy Eating*, and *Active Living* that has information for the general public on calories, my healthy plate, and exercise (http://www.ohioactionforhealthykids.org), as well as Let's Move (http://www.letsmove.gov/get-active), and Kids Eat Right (http://www.eatright.org/resources/for-kids). These state, national, or nonprofit programs are addressed to the public, and are intended to motivate people to get involved and to take action on their health. Some of the links go to county pages that have links to regional pages, programs, or local social media sites on obesity. The department has links to Facebook, Twitter, and YouTube. Its Facebook page had posts on exercise, the 200-calorie portion size, and on diabetes.

North Dakota. The North Dakota Department of Health (http://www.ndhealth.gov) has no direct mention of obesity on its public health department home page. Obesity is listed under the navigation bar, *Topics A-Z*. The page links to *Maternal and Child Nutrition* with a Microsoft Word document on nutritionists in North Dakota. On the home page there is left sidebar with a link to *Healthy North Dakota* (http://home.healthynd.org). This page discusses hunger prevention, healthy eating, physical activity, healthy living, and workplace wellness. These pages often are tailored to targeted groups such as families, children, adults, or seniors. Some of the copy is written for the public, such as *Families from Across North Dakota* which shares how to include more fruits and vegetables as you shop, in family meals, for kids, or eating "on the go." Other pages are toolkits (http://www.healthynd.org/publications/HKHW_Toolkit.pdf) with ideas for fitness, health, or nutrition and are filled with local sites and recommendations. The site has a Facebook and Twitter page. Its Facebook page had many good posts in November for Diabetes Month on weight loss, exercise, and obesity prevention.

South Carolina. The South Carolina Department of Health and Environmental Control (DHEC) website (http://www.scdhec.gov) does contain the word *obesity* on its home page but navigating to any obesity content was not intuitive. The site has no left navigation bar. From the five-tab navigation block at the top of the page, users have options for: *Vital Records*, *Public Health*, *Environment*, *Food Safety* and *Permits & Compliance*. Users are given the choice of selecting *I want to…* or *I am a ….* The options under *I want to…* do not lead to obesity-related information. If the user selects *I am a…*, the user can then select *Citizen* – the last option on the list. A click on *Citizen* leads to *I want information about…* and a list of topics. Obesity is not on the list, although smoking and tattoos are listed. The easiest route to obesity-related information on the site is through the site's search function. A search on the word *Obesity* brings up an obesity link to www.scdhec.gov/Health/Obesity. This page is headed *Obesity* and the user can choose: *Resources for Community Partners, Nutritional Counseling Program,* or *Tips for Healthy Weight, and Nutrition* on the top line. Below these options under *Related Topics*, there is a BMI calculator from the CDC. *The Tips for Healthy Weight* option provides limited general information on obesity and a link to the South Carolina *Eat Smart, Move More* website (http://www.eatsmartmovemoresc.org). This is primarily an advocacy site and is not targeted directly at consumers. Its segments include: *Advocacy, Community Action, Youth Engagement,* and *Join the Movement*. The South Carolina site is primarily a vehicle of the department and its content is aimed at practitioners more than consumers. The social media pages linked from the public health website have an occasional consumer tip on reducing calories on Thanksgiving or on healthy eating on Facebook or Twitter.

DISCUSSION AND RECOMMENDATIONS

State public health department websites in the ten states with the highest obesity levels in the United States need to increase their focus on obesity-labeled information for the general public on their websites. To help combat the obesity epidemic in the U.S., the sites need to provide links to obesity information on the home page, improve navigation to obesity content, increase the quality of obesity content, and have more interactive features either on the site or on auxiliary sites to engage consumers. If sites are not improved over current offerings, "…civic sites might fail to support technical literacy, productive inquiry, collaboration, and a multidimensional perspective—all essential ingredients for citizen-initiated change online" (Simmons & Zoetewey, 2012, p. 251).

Those who design state public health department sites must bear in mind that,

> Designing and testing websites for citizen knowledge work requires creating a relationship with the audience in which the designer believes that citizens have something to contribute to the conversation and in which the designer works to develop a site that supports how people really want to use the information at a particular moment in time. (Simmons & Zoetewey, 2012)

Three major areas for improvement are: audience analysis and user experience; information design; and engagement and content strategy.

Audience Analysis and User Experience

Segmenting and targeting people for enhanced user experiences starts with a defined audience analysis. This includes what information is desired and useful to the audiences as well as how is the information best delivered and designed for the audience:

- Prioritize the public as a target audience of state public health department sites.
- Prioritize space on owned media for state specific health concerns aimed at consumers.
- Leverage the health site and all owned media by creating a segment containing information for the general public with attention to health literacy for general populations.

Information Design

Basic design of the organization and information architecture of websites matched with users' information seeking can improve the usefulness and impact on behavioral changes for healthier lifestyles.

- Improve labeling of navigation terminology related to important and state prioritized health topics such as "obesity."
- Have links to prioritized health topics such as obesity information on the home page.
- Include prioritized health topics like obesity in the *A-Z* topic listings. (When pressing *O*, it leads to obesity information.)
- Develop individual pages on general consumer-oriented public health information for state prioritized health topics such as obesity.

Engagement and Content Strategy

User engagement is a mixture of providing audience-appropriate content to gain users' attention so that they consume the information and encouraging user interaction with online tools such as discussion boards or individual health applications.

- Populate the page with current information.
- Use updated interactive tools to engage the public.
- Augment state information by using auxiliary sites for content enhancement.
- Use social media platforms to engage the public in obesity prevention (e.g., Alabama).
- Ensure state public health department sites co-promote campaigns on its state site and on other state departmental sites (e.g., West Virginia, Department of Education; Arkansas banner on state).
- Perform web analytics to determine user search keywords.

State public health departments can use the findings in the three proceeding categories to increase their reach to at-risk population in a post-mass media environment.

IMPLICATIONS FOR FURTHER RESEARCH

In addition to improving their websites, state public health departments need additional strategies to ensure more interactivity with users:

> Messages sent by email appeared to promote a modest short-lived increase in use of a disease prevention website by some adults. Those who responded to the messages by logging on to the website may have been influenced to improve their diet. (Woodall, et al, 2007)

Future research should focus on how social media can be utilized for public health campaigns on obesity. Online communication using social media can be successful in motivating users to make small behavior health changes and hold promise for public health campaigns (Cugelman, Thelwall, & Dawes, 2011; and, Freeman, Potente, Rock, & Melver, 2015).

STRENGTHS AND LIMITATIONS

This descriptive analysis of ten state public health department websites and social media efforts provides an organic observational data collection and analysis approach in which the researchers provide details of user experience. Case studies are useful in applied fields such as health because the research is instructive leading to improved practices and possible policies changes. While the explanatory power of case analysis can lead to process improvement, care has to be taken with generalizing findings to circumstances not similar to the cases under study.

CONCLUSION

To help combat the obesity epidemic in the United States, state public health departments need to increase consumer-targeted content and help support auxiliary campaigns on obesity that inform and engage the public. Constraints on these departments often consist of their need to adhere to guidelines for web content from the state site and on state public health department lack of resources for web development. Even with limited resources, state public health departments can improve navigation for obtaining obesity information, ensure that all content is current, and make increased use of social media and auxiliary sites to engage the public.

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PUTTING THE SOCIAL BACK IN SOCIAL MEDIA: A LONGITUDINAL, META-ANALYSIS OF SOCIAL MEDIA RESEARCH

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ABSTRACT

This paper examines the state of social media theory and research by conducting a longitudinal, meta-analysis of public relations research about social media. The current study examines the most recent four years of *Public Relations Review*, extending a 2011 study that examined social media articles in *Public Relations Review* from 1998–2011. The essay considers three topics: a brief review or the history of social media technology, a report of data from the longitudinal, meta-analysis, and a discussion about the inconsistency between social media potential and social media practice. The essay also offers public relations professionals and scholars suggestions for moving forward in this research area.

INTRODUCTION

Today, nearly every business, non-profit and service organization has a social media strategy that contributes to their public relations, advertising, and marketing goals. Social media have emerged as tools to communicate with consumers, publics, and audiences. The business disciplines of advertising, marketing, and public relations have embraced social media, and the academic study in these three areas has also turned its attention to social media. Pick up almost any advertising, marketing, or public relations journal and you will find articles about social media.

In our efforts to be able to make claims about social media as communication tools of value for clients and stakeholders, we have lost sight of what social media was intended to do—connect people. Facebook was not invented to sell tacos or make it easier for Wal-Mart to reach customers—although that has clearly emerged as one of its strengths. Facebook was invented to make it easier for people to connect with others and share in other people's lives. Twitter, which was originally described as a micro-blog, quickly morphed into a tool for marketing, advertising, and branding. If blogging is a tool capable of providing substantive commentary, Twitter, as a "micro-blog," cannot provide the depth of analysis possible by its predecessor. All social media were initially envisioned as a way for like-minded people to come together and share, but many social media quickly transformed from social tools to sales tools.

New communication technologies are neither good nor bad: they are what people use them for. Early studies from Heath (1998), Coombs (1998), Esrock and Leichty (1998), Kent and Taylor (1998), and others examined the potential of the Internet to level the playing field. Scholars were optimistic that the Internet could provide access to citizens and activists, and communicate more effectively via dialogue and interactive communication channels. Indeed, the early rhetoric of the Internet described a place of equalized power and access to information for everyone. In the 2000s, politicians, educators, and community leaders all wanted to get on board the Internet train before it left the station. They hoped the Internet could provide information and the foundation for relationships in communities and society. Today, public relations, marketing, and advertising academicians and professionals are still at the train station hoping that social media will provide value for organizations. However, the authors of this article believe that public relations, marketing, and advertising should not *all* be standing on the *same platform* taking the *same trip*. The route that public relations takes in this journey should be different than where advertisers and marketers plan to travel. Each business discipline should take a unique route in its use and study of social media because each discipline has different goals for organization–public communication and relationships.

This paper examines the state of social media research by conducting a longitudinal, meta-analysis of public relations research about social media. To better understand the relational aspects of social media, the essay considers three issues. In the first section, we unpack the history of social media technology, providing a framework for how it should be viewed as a social tool capable of meeting the socio emotional needs of users. The second section details a longitudinal, meta-analysis of social media journal articles published in the top journal in public relations. The third section discusses the inconsistency between social media potential and social media practice, and identifies a way forward for public relations to think about the study and practice of social media.

UNPACKING SOCIAL MEDIA TECHNOLOGY

Critical/theoretical research exploring social media is thin. Although dozens of studies have been conducted on particular aspects of social media (described below), and many studies proceed from the assumption that social media are a new phenomenon, as Kent (2010) argues, social media has been around for decades:

> [S]peaking about technology in public relations as "new technology" is a misnomer. Most of the "new" technologies that we now regularly use in public relations are well established as communication technologies, with the Internet introduced in the 1960s, e-mail in the 1970s, hypertext in the 1980s, the World Wide Web in 1993, and blogs in 1999. Even concepts such as "social media" are not new. (p. 644)

In the 80s, we had instant messaging capabilities on local area networks. Around this same time (1986), Eric Thomas invented the Listserv (http://www.lsoft.com/corporate/ericthomas.asp), nearly 20 years before Facebook (2004), revolutionizing Internet communication. The listserv was one of the first Internet tools that allowed people to time shift their communication, and in

many ways worked like Facebook. Messages were uploaded to the network and only members of the network could see the postings. Some Listservs were not moderated (similar to Facebook and some blogs), and members of the list saw the messages of their friends and colleagues whenever they checked their email. With moderated lists, responses are sent to network moderators and distributed either in bulk or as they came in. Thus, threaded dialogue (as on blogs) and social media appeared decades ago.

Commercial e-mail also emerged in the late 80s (1988) with "MCI Mail" (http://www.livingin ternet.com/e/ei.htm) and AOL in 1989. Wide area networks like BITNET and USENET also emerged in the late 70s and early 80s, providing access to a wider range of individuals and allowing for person-to-person messaging.

The important point to take away from this brief history is to understand that the phenomenon we now study as social media (which includes blogs, Facebook, Twitter, LinkedIn and hundreds of other tools) has deep roots. Given the age and ubiquity of social media tools (all the old ones still exist), efforts to prove that social media have special value seem misplaced. As McLuhan (1999/1964) explained over fifty years ago, every media has value and new media never simply replace old media but take on new roles and fill different niches. Social media's strength should lie in its relationship-building capacity, as it incorporates aspects of many other existing mass media tools. Yet, the field of public relations may not be maximizing this potential.

SOCIAL MEDIA AS COMMUNICATION TOOLS: BEYOND THE HYPERBOLE

The phrase *social media* is a relatively new concept in public relations, having only emerged in the last few years. As Kent (2010) explains,

> On the most basic level, any interactive communication channel that allows for two-way interaction and feedback could be called a social media (Listservs, e-mail, radio call-in programs, etc.). Shortwave radio, Citizen's Band (CB) radio, and the telephone are probably the oldest broadcast media that allow for social interaction and networking. (p. 645)

Modern social networks are characterized by the potential for real-time interaction, reduced anonymity (with Facebook, Twitter etc., but not with blogs and lists), a sense of propinquity (brought on by the use of augmented reality, avatars, graphical interfaces, automated messages, etc.), short response times, and the ability to "time shift," or engage the social network whenever suits each particular member. Thus, blogs, Twitter, and Facebook are considered social media because of the responsiveness of participants and the vastness of networks, as are interactive Listservs, newsgroups, Usenet, and real-time chats like IRC.

The promise of the network society of social media is to build a place where organizations, publics, stakeholders, and stakeseekers could come together to build stable relationships. As Granovetter (1973) suggested of "the strength of weak ties," and Daft and Lengel (1986) suggested of "media richness," technologies that allow people to communicate more intimately,

and in a more networked fashion, have the potential to strengthen relationships, foster trust, and keep people informed of events and issues.

Given this "network centric" definition, the way that an academic discipline studies social media will influence what is learned. The very same research questions and methods that help us to draw conclusions can, at the same time, blind us from seeing the whole picture of a phenomenon. The next section provides a longitudinal, meta-analysis of social media research in public relations by examining publications from the largest and oldest public relations journal: *Public Relations Review.*

LONGITUDINAL, META ANALYSIS OF SOCIAL MEDIA IN THE TOP PR JOURNAL

Longitudinal studies are useful because they provide a systematic tool to identify trends in an academic area over time. A meta-analysis is another useful research tool to understand a field. Meta analyses conduct research about a large body of scholarship. A meta-analysis allows scholars to look at bodies of knowledge and look for common themes, questions, methods, and findings. Kuhn (1970) noted that fields of research are dominated by paradigms. Paradigms are powerful in that they identify the questions that can be asked and the methods that can be used to generate knowledge in a field. The value of a meta-analysis is that it allows a researcher to make tacit that which might be hidden. The meta-analysis method generally conducts longitudinal research that allows scholars to study changes over time. Most research provides a snapshot of a phenomenon and the one point in time snapshot limits what we can see. Longitudinal research allows scholars to see new ideas, methods and lines of research providing both a deeper and broader understanding of a body of knowledge.

For this meta-analysis, we examined every article on the topic of social media in *Public Relations Review* (Elsevier). *Public Relations Review* has an impact rating of 0.656, placing it as one of the top communication journals in the world. *Public Relations Review* is also the oldest and largest journal dedicated to the study of public relations. It publishes on average 110 articles in 5 issues per year. *Public Relations Review* has an international readership and is considered the top ranked public relations journal in the SCImago Journal & Country Ranking,[1] and is considered one of the top journals in communication (https://scholar.google.com.au/citations?view_op=top_venues&hl=en&vq=hum_communication).

Method

To conduct the meta-analysis, the authors identified every article published in *Public Relations Review* that considered the key term *social media* in a substantive way. The journal's home page on the publisher's website (Elsevier) was used, and "social media" was used as part of a keyword search. Results were then limited to the last four years (2011–2014). The total number of articles over the four-year period included 259 pieces. Articles qualified for the inclusion in the meta-analysis if they met the following criteria[2]:

(1) The words *social media* were used throughout the study to describe research conducted or the topic(s) of analysis.

(2) The words *social media* were specifically used in one or more of the research questions examined in the study, or studied a specific type of social media, such as Facebook, to provide a better understanding of social media use by individuals or groups.

(3) The literature review or methods section described a type of social media tool (blogs, Facebook, Twitter, etc.) that was examined by the author(s) as part of the study conducted.

(4) The author(s) engaged in criticism or theory building in relation to social media.

(5) The context was clearly social media. Articles examined must have been actually studying social media, rather than treating it as a medium for obtaining information that had no relevance to social media. Thus, context mattered when examining the articles to see whether they were genuinely studying social media.

Based on the screening criteria, 89 articles comprise the sample. See Table 1 below.

TABLE 1
NUMBER OF SOCIAL MEDIA ARTICLES BY YEAR

Year	Total	Actual # after screening
2015	(98)	41 (42%)
2014	(50)	10 (20%)
2013	(51)	20 (39%)
2012	(60)	18 (30%)
Total	**259**	**89**

The meta-analysis method allows scholars to ask a range of questions. This study asked the following four research questions:

RQ1: What are the most common research methods used?

RQ2: What are the most common theories used to guide research?

RQ3: Are there any trends apparent over the last four years in terms of theory and method?

RQ4: Has a body of "social media theory" begun to emerge?

The answers to the four research questions provide the data for the meta-analysis of the field of public relations research on social media.

RESULTS

The descriptives of the articles suggest certain trends in the actual social media studied in the journal. Table 2 reports the data on the appearance of various social media terms in *Public*

Relations Review from their first mention in 1998 to the present. The data that follow focus specifically on the use of the term "social media."

TABLE 2
TECHNOLOGY TERMS

Topic	PRR 1998–2011		PRR 2012–2015
Social Media	**82**	(first mention 1998, first study 2008)	**260**
Twitter	**38**	(first mention & first study 2008)	**137**
Blog	**88**	(first mention 2003, first study 2006)	**117**
Facebook	**33**	(first mention 2008, first study 2009)	**135**
LinkedIn	**9**	(first mention 2009, first study 2010)	**19**
Total	**250**		**667**

Note: Of the numbers in parentheses, the first number represents when the topic was first mentioned, while the second number represents when the topic was actually discussed in an article or studied.

Research Question 1: Dominant Research Methodologies

RQ1 asked *What are the most common research methods used?* In an earlier study, Kent (2012) found that the most common methods used to study social media included surveys and content analysis. Table 3 presents the data on the theories tested in the 89 articles in this study.

TABLE 3
RESEARCH METHODS USED IN STUDIES

METHOD	Number	2015	2014	2013	2012
Binary Logistic Regression	1			1	
Case Study	8	5	1	1	1
Criticism	10	5	1	1	3
Content Analysis	40	14	4	10	9
Discourse Analysis	1				1
Delphi	1		1		
Experimental	2	1		1	
Focus Group	3	1		1	1
Interviewing	8	3	1	3	1
Survey	25	11	3	5	6
Textual Analysis	1	1			
Thematic Analysis	1	1			
Value Modeling	1			1	
Total	**89**	**42(41)**	**11(10)**	**24(20)**	**22(18)†**

Note: More than one method is sometimes employed in articles, so the frequency of methods can exceed the number of articles published (indicated in parentheses). Most scholars do not use multiple methods.

† The numbers in parentheses represent the number of social media articles published in that particular year.

The results show that surveys and content analysis emerged as the most frequently used research methods in public relations research about social media. Indeed, content analysis of social media messages represents 45 percent of all studies conducted over the last four years. Combined, content analyses and surveys represent the methods used in more than 70% of all public relations studies of social media conducted over the last four years.

Research Question 2: Dominant Theories

RQ2 asks, *What are the most common theories used to guide research?* The public relations research on social media is often "theory free." The most common theory used was to have no theory, with nearly one in four (24%) studies having no guiding theory. Social media use in crisis communication appeared next in 18 percent of all studies, with dialogue and engagement as the next largest theoretical frames. Finally, social media theories, typically in the form of critical and theoretical essays exploring social media concepts represented 8 percent of the studies. OPR was used in 6 percent of the studies.

TABLE 4
THEORIES USED IN STUDIES

	Number	2015	2014	2013	2012
Activism	2	2			
Advocacy	1	2			
Agenda Setting	1	2			
Branding	1			1	
Crisis	16	7	1	5	3
Co-orientation	1	1			
Culture	2	2			
Democracy	1			1	
Dialogue	8	1	1	2	4
Engagement	9	3	1	3	2
Empowerment	1	1			
Framing	2	1		1	
Gender	1	1			
Health	1			1	
History	2				2
Interpersonal Communication	1	1			
Leadership	1				1
Media Uses	2	2			
NO THEORY	21	11	5	3	2 ‡
OPR	5	3		2	
Org. Learning Theory	1	1			
Persuasion	1				1
Political	1			1	
Relationship	1				1
Reputation	1	1			
Role Theory	1	1			
Situational Theory	1	1			
Social Identity Theory	1	1			
Social Media	7	2	2	3	
Social Networking	1				1
Symmetrical	2		1		1
Transparency	1				1
Trust	2	1		1	
Total	**89***	**37(41)**	**6(10)**	**21(20)**	**17(18)†**

***** More than one theory is sometimes employed in articles, so the numbers by year do not add up to 89.

‡ The no theory numbers are excluded from the totals below.

† The numbers in parentheses are the total number of articles published that were on social media in that particular year.

About half of the studies applied a mainstream public relations theory (Crisis, Dialogue, Engagement, OPR) to the study of social media and, as mentioned, 24 percent of the articles

contained no theory. Of the remaining studies, about one in four applied a novel, or uncommon public relations theory to inform their inquiry (Branding, Empowerment, Political, Reputation, Role Theory, Social Identity). We do see an interesting shift in theories in social media. For the last two decades, the field of public relations has replicated studies using symmetrical, co orientation, and situational theory of publics (STP) in many different contexts. These theories are no longer dominating the field and are rarely being used to study social media.

Research Question 3: Emerging Trends

RQ3 asks, *Are there any trends apparent over the last four years in terms of theory and method?* The review of 89 articles over four years made several trends evident. First, it appears that public relations researchers are not viewing social media as persuasive communication tools. Only one study in four years has explored persuasion (Waters, Amarkhil, Bruun, & Mathisen, 2012), a concept that would seem to be central to the way that public relations' practice views social media as part of its communication strategy. Second, scholars are not applying interpersonal communication theories to social media. Only two articles (Coombs & Holladay, 2015; Men & Tsai, 2012) looked at social media through an interpersonal lens. Third, there is a notable lack of any studies using social network analysis, a tool that is also uniquely suited to making sense out of data rooted in relational networks.

Research Question 4: Social Media Theory Generation in Public Relations

RQ4 asks, *Has a body of "social media theory" begun to emerge?* The answer to RQ4 is no. As the data above suggest, only a small number of articles even critique or criticize social media—both in the formal "theory building" sense and in the critical "point out flaws and try to improve" sense. As Kuhn (1970) has argued, most researchers do "mop up work" where they explore the boundaries of a theory in a variety of contexts. This type of research makes the theory more robust.

The closest that social media research has come to generating new theories can be seen in the various studies of dialogic social media with have included a broad range of contexts including smartphones (Avidar, Ariel, Malka, & Levy, 2015), health (Hether, 2014), dialogue and social media criticism (Kent, 2013; McAllister, 2012), presidential debates (Adams & McCorkindale, 2013), academic social media use (Linvill, McGee, & Hicks, 2012), and engagement (Wigley & Lewis, 2012). Dialogic theory applied to social media probably comes closest to building social media theory because dialogue was reintroduced to the field as a theory that informed relationships made possible through new technology (Kent & Taylor, 1998, 2002).

Social media, like television, radio, newspapers, magazines, and other media, have their own content and design features. They have their own *telos* that makes them unique. The next sections discuss the research findings in more detail with suggestions for putting the "social" back in the study of public relations and social media.

DISCUSSION

One of the benefits of conducting a meta analysis is the opportunity to look at all of the research that has been conducted in an area and draw some conclusions from the body of knowledge. Of the more than 400 articles published over the last four years in *Public Relations Review,* about one in four examined social media. Given the diversity of possible research topics in public relations, and the abundance of social media research, we believe that social media comprises a dominant topic in the literature. There is enough literature to be able to state what we know, how we know it and what these academic findings mean for the practice of public relations. The first question, then, is where are the theory development articles?

Where is the Theory Development?

Our findings suggest that public relations researchers treat social media as if it were a channel. The dominant research line exploring social media use in crisis is devoted to testing and refining *crisis theories*. Social media are just the *channel* for an organization's crisis communication.

This trend is troubling. The development of theory should be a guiding principle in any field, but social media research (with 24% of the articles having no theory at all) seems to be an area where theory free research is possible. As Ferguson (1984) argued three decades ago:

> Within any area of theory development one of the first steps must be development of conceptual definitions that allow the members of the research community to communicate with one another. This too is applicable to the development of theories of public relationships. (p. 22)

The current research on social media has not lived up to this thirty-year-old call. The number of scholars who have looked at social media critically—not assuming that social media are inherently great but trying to understand how to actually use them effectively—is quite small (Carim & Warwick, 2013; Kent, 2013; Kent & Saffer, 2014; Kent & Taylor, 2016; Valentini, 2015; Yang & Kent, 2014; Yoo & Kim, 2013), and largely revolves around the work of a few scholars.

An additional question asks, "Why are studies of social media persuasion and interpersonal communication so rare?" Social media provide a unique blending of interpersonal, mass, and group communication contexts. Moreover, social media play a central role in socialization and identity formation among youth and are used by politicians and organizations as persuasive tools. The study of these dimensions of social media tools and message seems timely.

Another theoretical issue worth noting would be the tremendous role played by social media in individual's interpersonal lives that include issues such as surveillance, bullying, friendship, health (depression, happiness), natural disaster responses, etc. (Kent & Saffer, 2014). There are

hundreds of genuinely relevant aspects of social media that transcend their use as informational channels. But, our meta-analysis suggests that these aspects have been ignored in the journal's research over the last decade.

Where is the Methodological Diversity?

The data considering social media research methodologies point to a number of interesting observations about public relations research in social media. First, one must ask, "Why are there so few experimental studies?" One explanation, of course, is that there is very little actual social media theory in public relations to be tested in experiments. But this just begs the question. As a relatively understudied medium, social media seems to be a prime context for experimental research. Experimental studies have the potential for exploring an assortment of rhetorical and persuasive concepts—such as issues of trust, relationship building, as well as aspects that seem so much a part of social media that we take them for granted: message length, tone, imagery, rhetorical tactics, the use of informational graphics, video (few have studied any of the visual social media like YouTube or Pinterest), and aspects of threaded dialogue. The aspects of social media that make them unique go beyond their mere use as carriers of information and publicity/advertising/marketing content, but also include interpersonal, group, and rhetorical features. Yet, scholars typically treat social media as a channel for messages.

A second methodological issue would be to ask "Why so little criticism of social media?" Where are the critics? Social media are filled with personal and organizational risks in terms of self-disclosure, employment issues, discrimination, and identity. Social media are an area of the public relations field that are probably most in need of ethical interrogation (cf., Kent & Saffer, 2014) in terms of surveillance, exploitation of personal information, and limited media literacy skills among users. There are dozens of ethical and theoretical issues that still need to be explored in social media. Our meta analysis suggests that no one is taking up the call.

A final methodological issue concerns big data. As noted above, social network analysis (SNA) has played almost no role in methods of studying social media. Given the enormous potential of SNA research for explaining relationships, and how and why people use their social networks, this absence is surprising. Additionally, judging by the previous scholarship, public relations professionals and scholars seem to have little understanding of the potential of big data to be used, or abused, by organizations.

The Importance of Qualitative Research and Theory Building

Almost half a century ago, John Waite Bowers (1968) in his essay "The Prescientific Function of Rhetorical Criticism" argued "Science is the search for relationships between antecedents and consequents. It attempts to explain (that is, enable predictions about) things and events in terms of other things and events" (p. 128). Bowers explained the importance of posing and testing hypotheses, and the scientific method. Bowers was actually arguing that criticism was useful for

identifying issues and developing hypotheses, which were then placed within the purview of the scientist to test. Although Bowers' disparaging essay about the nature of rhetoric and science, or qualitative vs. quantitative research if you like, has been attacked over the years, the gist of his argument about the nature of science rings true.

To advance a body of ideas, scholars need to have questions about the *phenomenon*. As Kuhn (1970) has suggested, science requires scholars to test a particular paradigm. Formative research asks questions, defines concepts, and explores relationships. It is not until a science is "mature" that scholars occupy their time doing "mop up work" (1970, p. 24). We believe that the majority of the social media scholarship that exists in public relations assumes, explicitly or implicitly, that social media is already part of an existing paradigm or body of scholarship. Our meta-analysis results dispute this assumption.

Much of the current public relations scholarship that considers social media view social media as tools or channels. Social media researchers ignore the interactional, mediated, co creational, and relationships, and instead count "the number of tweets," or "the length of social media posts." Researchers have asked college students, practitioners, and consumers about their perceptions of organizations without studying the actual social relationships with each other and with organizations. What we see is a body of articles that have neglected to study the "social" in social media.

CONCLUSION: PUTTING THE SOCIAL BACK IN SOCIAL MEDIA

In order to move social media research forward as an area of study in public relations, scholars need to shift their focus to understanding the social phenomenon itself. We need studies, for example, about how to motivate users to take action via social media, understanding what kinds of language are most effective (metaphorical, ideographic, identificational, bold, agreeable, scandalous, etc.), what kind of symbolism works best (video/still, risqué, parody, user generated, tables, etc.), and what kind of people are seen as more credible in social media spaces. We should be exploring ways of building relationships via social media.

For public relations research to advance in an age of technology, we need to stop focusing on the technology itself and start asking questions about public relations theory and communication. A number of excellent research projects have been conducted by organizations like PEW Internet and American Life Project (http://www.pewinternet.org), and the Berkman Center for Internet and Society (http://cyber.law.harvard.edu), which give us insight into the demographic and psychographics of internet users, and yet we ignore such data and continue to ask journalists their opinions of Facebook and Twitter, or survey teens about how they use social media, when abundant secondary data exists on these topics. Our research needs to be more sophisticated, both critically and rhetorically, building and testing theory, as well as empirically and scientifically posing and testing hypotheses about social media. Surveys and content analyses, although interesting and easy to conduct, are not taking us very far. We need to do more.

As long as we continue to treat social media like just another information dissemination channel, we will make no progress toward putting the social back in social media. This process begins not by assuming that social media are "easy," and "great tools for sharing information" but rather as sophisticated communication tools, capable of being used with subtlety and restraint; capable of being used persuasively, as part of informational and persuasive campaigns; and capable of being used in genuine relationship-building.

NOTES

1 The SCImago Journal & Country Rank is a portal that includes the journals and country scientific indicators developed from the information contained in the Scopus database (http://www.elsevier.com). These indicators can be used to assess and analyze scientific domains.

2 The authors included "articles in press" that had not yet been assigned to an issue. These articles are online and available for review and thus constitute part of the body of knowledge in public relations.

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INTERNATIONAL

JOURNAL OF INTERDISCIPLINARY RESEARCH

VOLUME 5, NUMBER 1 August 2016

Published By:
Frostburg State University and the International Academy of Business Disciplines
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ISSN 2165-3240 WWW.IJIR.NET

Printed in the USA by Commercial Press Printing Company