

# Word-of-mouth in the health care sector: a literature analysis of the current state of research and future perspectives

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**Abstract** Health care is a tremendously expensive service that deeply impacts the daily life of individuals. It has become crucial to understand all the factors that influence the usage of these services. Word-of-mouth (WOM) is such a factor, because it strongly affects the health behavior. A research gap exists when it comes to the analysis of the current state of WOM research in the health care sector. Based on a comprehensive literature review of the leading scientific journals in the health care sector, this paper investigates existing WOM studies. The investigated studies emphasize hospital recommendations as well as the necessary preconditions for WOM. The studies highlight that there are factors which are favorable to WOM and might be influenced by service providers and payers. Fewer studies concerned the spread and impact dimension. In this regard it is somewhat unexpected that three times more studies focus on the preconditions for WOM than the actual impact of WOM. Only a small number of electronic WOM studies could be found. Stakeholder theory suggests emphasizing factors which benefit WOM. As WOM might spread in networks and influence large groups of people, stakeholder theory further proposes considering WOM as a possible way to distribute specific health care recommendations. Even if the studies highlight the importance of WOM, several research gaps still exist. For example, due to the strong focus on hospitals, recent research seems to neglect WOM concerning health care providers such as a general practitioners or nursing homes.

**Keywords** Word-of-mouth · Hospitals · Literature review · Stakeholder theory · Agenda setting

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## 1 Introduction

“Consumers frequently talk to other consumers about their consumption experiences, a phenomenon called ‘word-of-mouth communication’” (Wetzer et al. 2007, p. 661). For most consumers, word-of-mouth (WOM) might be the only chance to also learn something about the negative aspects of a purchase (Singh 1990). The strategic importance of WOM for organizations could be proved by a variety of studies (e.g. Goyette et al. 2010). Due to increasing competition and new forms of online communication, the WOM concept will continue to gain importance, which includes players in the health care sector (Goyette et al. 2010; Trigg 2011).

Patients increasingly want to be included in the decision-making process of their health care provider as well as in their medical treatment (Liang and Scammon 2011; Niehues et al. 2012). This may even include the selection of a hospital (Sloane et al. 1999) since “according to the German Federal Census Bureau, 63 % of total surgeries are elective” (Hinz et al. 2012, p. 3). Such freedom of medical choice is only possible based on necessary medical information, including information about potential medical providers and treatment options. Still, medical services are often difficult to judge for patients. Therefore, patients are showing growing interest in comprehensible health care information (Berry and Bendapudi 2007; Niehues et al. 2012). Such health care information might be obtained by WOM and frequently allows patients to gain somehow authentic information provided by other consumers who have already dealt with the health care provider and medical treatment in question (Swan and Oliver 1989). As “[h]ealth care is an enormously expensive, highly complex, universally used service that significantly affects economies and the quality of daily living” (Berry and Bendapudi 2007, p. 111), health economics should encourage an efficient use (Berry and Bendapudi 2007). This especially includes an in-depth understanding of all relevant factors influencing the utilization of a health care service (Deri 2005), such as WOM.

There exist no studies which systematically compile and analyse the current WOM research in the health care sector. Still, as WOM strongly influences health care behavior (Heather et al. 2014) and therefore enormously impact health care providers and payers, access to such compilation of WOM literature seems to be essential for, both scholars as well as practitioners. A deeper understanding of WOM related factors might, for example, reduce the multiple and unnecessary change of physicians (doctor shopping), the retaking of several medical tests and consequently reduces costs (Otani et al. 2009). Therefore, based on a systematic literature review, this study aims to:

- identify existing WOM studies,
- classify and describe WOM-related research findings,
- and carve out potential needs for further research in this field.

To address the research objectives, the paper is structured as follows: After the introduction (section 1), section 2 presents a comprehensive definition of WOM and emphasizes the relevance of WOM as an instrument of stakeholder engagement. In this context the stakeholder and agenda setting theories are introduced as the theoretical framework for the study. The methodological approach of the literature review is described in section 3, whereas the empirical results of the review are presented in section 4. A discussion is presented in section 5 and the conclusion and implications for further research in section 6.

## 2 Conceptual framework

### 2.1 Definition of WOM as a theoretical construct

Goyette et al. (2010) analyzed WOM definitions used in articles which were published between the years 1967 and 2001. In order to include the scientific developments after the year 2004, the results of Goyette et al. (2010) were additionally complemented by three more recent WOM studies. As indicated in Table 1, the broad majority of studies characterize WOM as an exchange of comments and thoughts about the ownership or characteristics of a particular product or service and/or their provider. Nearly 40 % of the articles point out that such a communication process is informal and identifies WOM as post-purchase behavior. In this way the conversation is particularly focused on concrete consumption experiences and the resulting level of satisfaction. Also six of the 19 articles address the non-commercial characteristics of a WOM conversation, meaning that the conversation takes place between private parties which are independent of the service provider or retailer. In this way the current literature often describes WOM as an informal and non-commercial exchange of post-purchase information about a concrete product or service.

### 2.2 Relevance of WOM for major stakeholders in the health care sector

Stakeholders might be “any group or individual who can affect or is affected by the achievement of the organisation’s objectives” (Freeman 1984, p. 46). As these stakeholders may tremendously impact the company and its objectives, stakeholder theory suggests an active management of stakeholder relationships (Freeman 1984). This includes the collection of relevant stakeholder information, for example, stakeholders’ expectations and criticism (Pedersen et al. 2013) as well as the integration of this information in the corporate decision-making process (Freeman and Evan 1990). By doing so, companies are able to pay attention to the different stakeholder interests, which may result in a competitive advantage (Wall and Greiling 2011).

In a highly competitive market such as the health care sector, stakeholder management might even gain importance (Otani et al. 2009). As one important group of stakeholders, patients are increasingly demanding to be integrated into both the choice of a health care provider as well as the treatment (Liang and Scammon 2011; Niehues et al. 2012). Such patient participation, for example, might take place in the case of elective surgery, but is of course in the case of urgent care limited (Hinz et al. 2012). In order to make a sound health decision, patients need information such as possible health care providers, quality of the providers’ services, treatment options, treatment risks and costs (Niehues et al. 2012). Even though patients are nowadays better educated and have improved access to various online information than a decade ago, seeking health information is still a complex process (Otani et al. 2009; Gagliola et al. 2012). “Patients must know the topic of interest, where to look or ask, how to assess and comprehend, and how to evaluate the credibility and trustworthiness of the sources.” (Gagliola et al. 2012, p. 109). In this context, Hinz et al. (2012, p. 3) point out that the “most important sources of information include personal experience, referrals, health care provider information, public reporting, and recommendations in the form of (e)WOM.” Also Streuf et al. (2007) highlight the important role of WOM

**Table 1** Definitions of word-of-mouth

	Definitions of WOM <sup>a</sup>	Dimensions <sup>b</sup>				
		I	F	N	C	E
Arndt 1967	"...is defined as oral, person-to-person communication between a receiver and a communicator whom the receiver perceives as non-commercial, concerning a brand, a product, or a service." (p. 3)	X		X		X
Richins 1983	"The WOM communication was defined as the act of telling at least one friend or acquaintance about the dissatisfaction" (p. 17)				X	
Brown and Reingen 1987	"The WOM exists at the macro level of inquiry (e.g., flows of communication across groups), as well as the micro level (e.g., flows within dyads or small groups)" (p. 350)					X
Higie et al. 1987	"Conversations motivated by salient experiences are likely to be an important part of informal diffusion" (p. 263)				X	X
Westbrook 1987	"In a postpurchase context, consumer word-of-mouth transmissions consist of informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services and/or their sellers." (p. 261)	X			X	X
Haywood 1989	"WOM is a process that is often generated by a company's formal communications and the behavior of its representatives," (p. 58)		X			X
Swan and Oliver 1989	"Postpurchase communications included positive versus negative word-of-mouth and complaints and praising directed at the three entities in the exchange (i.e., the salesperson, dealer, and manufacturer)" (p. 523)				X	X
Singh 1990	"(c) telling others about the unsatisfactory experience (that is, negative word-of-mouth)." (p. 1)				X	
Bone 1992	"WOM communication is conceptualized herein as a group phenomenon – an exchange of comments, thoughts, and ideas among two or more individuals in which none of the individuals represents a marketing source." (p. 579)			X		X
File et al. 1992	"Positive and negative word-of-mouth are examples of exit behaviors exhibited by consumers at the conclusion of a service encounter." (p. 7)				X	
File et al. 1994	"Word-of-mouth, both Input and Output, is the means by which buyers of services exchange information about those services, thus diffusing information about a product throughout a market." (p. 302)					X

**Table 1** (continued)

	Definitions of WOM <sup>a</sup>	Dimensions <sup>b</sup>				
		I	F	N	C	E
Bone 1995	“Word-of-mouth communications (WOM), interpersonal communications in which none of the participants are marketing sources,...” (p. 213)			X		X
Anderson 1998	“Word of mouth refers to information communications between private parties concerning evaluations of goods and services.” (p. 6)	X				X
Mangold et al. 1999	“WOM was far more likely to be initiated by receivers’ need for information than by communicators’ satisfaction level.” (p. 83)	X			X	
Kim et al. 2001	“Word of mouth is the interpersonal communication between two or more individuals, such as members of a reference group or a customer and a salesperson.” (p. 276)					X
Silverman 2001	<p>“1) Word-of-mouth is communication about products and services between people who are perceived to be independent of the company providing the product or service, in a medium perceived to be independent of the company.” (p. 4)</p> <p>2) Word-of-mouth is originated by a third party and transmitted spontaneously in a way that is independent of the producer or seller.” (p. 4)</p>	X		X		X
Brown et al. 2005	“The basic idea behind WOM is that information about products, services, stores, companies, and so on can spread from one consumer to another. In its broadest sense, WOM communication includes any information about a target object (e.g., company, brand) transferred from one individual to another either in person or via some communication medium.” (p. 125)	X		X		X
Mazzarol et al. 2007	“WOM excludes formal communication between customers and an organization (e.g., complaints) or between organizations and customers (e.g., promotions, seminars). [...] Second, there is considerable debate about whether WOM involves an active recommendation or is merely a positive or negative discussion about a product or other offering. [...] Clearly, a distinction exists between simply recounting	X		X		X

**Table 1** (continued)

	Definitions of WOM <sup>a</sup>	Dimensions <sup>b</sup>				
		I	F	N	C	E
	experiences with an organization and actively recommending that organization and this issue also needs to be addressed.” (p. 1477)					
Wetzer et al. 2007	“Consumers frequently talk to other consumers about their consumption experiences, a phenomenon called ‘word-of-mouth communication’. When their consumption experience was averse, the content of WOM is negative as well” (p. 661)	X			X	X
Total		8	1	6	8	15

Source: Own compilation based on Goyette et al. 2010, p. 7

<sup>a</sup> Loose translation

<sup>b</sup> *I* informal, *F* formal, *N* noncommercial, *C* post-purchase behavior, *E* exchange/flow of information/communication/ conversation

for patients in obtaining health information. Another important group of stakeholders is the actual providers of health care services. In an increasingly competitive market, these health care providers “continually seek new ways to achieve competitive advantage and word of mouth (WOM) represents such an opportunity because it has a powerful influence on consumers’ attitudes and behaviors” (Mazzarol et al. 2007, p. 1475). More precisely, WOM directly impacts the selection of a health care provider as well as treatment and is seen as a significant measure of patient satisfaction (Haase et al. 2006; Otani et al. 2009). As health care services are in most cases not or only partially paid by the patients, the actual payers of these services, like insurance companies, may be introduced as a third group of major stakeholders (Streuf et al. 2007). Health care services are enormously expensive (Berry and Bendapudi 2007), therefore payers should foster an efficient use of health services, which is only possible by understanding the relevant determinants of health care utilization (Deri 2005). WOM is such a determinant, because it strongly impacts health care utilization (Heather et al. 2014) and therefore might offer potential to reduce costs. For example, WOM provides important insights towards the multiple and unnecessary change of physicians (doctor shopping), which might result in the retaking of several medical tests and therefore increases costs (Otani et al. 2009). To sum up, WOM seems to influence patients’ consumption of health services and therefore enormously impacts health care providers and payers. Stakeholder theory suggests the collection of relevant stakeholder information as well as the integration of this information in the corporate decision-making process (Freeman and Evan 1990; Pedersen et al. 2013). This includes a deeper understanding of the current research on WOM, which is the objective of the following chapters.

### 2.3 Increasing relevance of WOM due to electronic agenda setting

The agenda setting theory emphasizes the ability of the news media to influence public and political opinions (McCombs 1997; Merilainen and Vos 2011). Regarding the theory, the news media, the general public as well as political leaders are limited to a number of issues which they are able to recognize as important. The individual issues often vary in their perceived importance. The combination of issues and their ranked importance is called “agenda” (Sheafer and Weimann 2005). In this context, the agenda setting theory highlights that by emphasizing specific issues and their reported frequency, the news media may strongly impact the public and political agenda (Dearing and Rogers 1996; Brown and Deegan 1998). Brown and Deegan (1998) clarify that “the media are not seen as mirroring public priorities; rather, they are seen as shaping them” (Brown and Deegan 1998, p. 25). When the theory was created, the traditional media had monopolistic power with respect to the formulation and delivery of news content (La Rosa 2014). In recent years the rapid development of interactive web applications has shifted this agenda-setting function from the news media towards online communities. Nowadays, using online communities, everyone is able to highlight specific issues and might impact the public, political or even media agenda (Merilainen and Vos 2011; La Rosa 2014). “[W]e all tend to pay closer attention to those things our friends and trusted colleagues point to as being interesting, useful, or otherwise noteworthy” (Mergel and Greeves 2012, p. 38). This also includes recommendations, which may easily be spread and shared in online communities (Mergel and Greeves 2012). Such electronic word-of-mouth (eWOM) has grown exponentially (Goyette et al. 2010), including in the health care sector (Heather et al. 2014). “[O]nline rating platforms for physicians and hospitals worldwide are gaining influence. On such platforms, patients as well as relatives write anonymous reviews about their experiences, in contrast to traditional WOM reviews, which have a potentially larger audience because they are published online” (Dreves and Hinz 2014, p. 230). In this way “[i]nternet healthcare rating has become a viable tool for guiding patients in making health decisions” (Niehues et al. 2012, p. 4). It seems to be important to differentiate electronic and the traditional face-to-face WOM. In contrast to face-to-face communication, online communication allows the sender as well as the receiver to stay anonymous. Such anonymity especially seems to be important for individuals which might face a social stigma due to specific diseases such as HIV. Therefore the medical condition could impact the way how recommendations are searched or provided. Additionally face-to-face WOM requires that the sender and receiver are at the same time at the same geographically location. EWOM allows overcoming such logistical obstacles (DeAndrea 2015). Besides medical condition and logistical obstacles, health communication and behaviors is additionally strongly influenced by the individuals ethnical background (Kreuter and McClure 2004; Tang and Peng 2015). For example, US-Latinos seek health related information differently than non-Latinos (Geana et al. 2011). Therefore a focus on cultural characteristics becomes essential in understanding health communication (Kreuter and McClure 2004), including face-to-face as well as eWOM.

### 3 Methodological approach

Based on a comprehensive literature review of the leading scientific journals in the health care sector, this paper investigates existing WOM studies in an eleven-year timeframe from January 2005 to December 2015. The journals were selected on the basis of the German VHB-JOURQUAL 2.1 as well as the SJR 2013 ranking. Regarding the VHB-JOURQUAL 2.1 ranking, journals with an A or B rating and a strong focus on health care management were selected. With respect to the SRJ ranking, only journals in the highest rating quartile and a strong focus on health care management in the subject areas (1) business, management and accounting, (2) economics, econometrics and finance or (3) medicine were selected. As illustrated in Table 2, the aforementioned criteria were met by the journals *Health Care Management Science*, *Journal of Health Economics* and *Health Care Management Review*. WOM is strongly related to communication. Therefore the *Journal of Health Communication* was added to the list of investigated journals although it is not ranked in the VHB-JOURQUAL 2.1 ranking.

The review of the selected journals included an analysis of the journal titles as well as abstracts. More than 2000 abstracts were carefully read. Articles with a focus on WOM were included in the analysis (first level). If the selected articles referred to other WOM articles in the health care sector, these articles were additionally included into the analysis (second level). If articles of the second level were linked to supplementary WOM articles in the health care sector, these articles were also added (third level). In order to systematically analyze the identified articles, the objectives of this research paper require a classification system, which is shown in Fig. 1. According to this system, the articles are classified into the three dimensions (1) preconditions, (2) spread and (3) impact of WOM.

The precondition dimension focuses on the influence and motivations necessary for the creation of WOM (Trigg 2011). The spread dimension describes instead how and with whom recommendations are shared (Brown et al. 2005; Wetzter et al. 2007). Referring to chapter 2.3, such spread may, for example, be face-to-face or electronic.

**Table 2** Investigated journals

Journal		Journal rating			
		VHB-JOURQUAL 2.1		SJR 2013*	
		Rating	Rank	SJR-Indicator	Ranking 2013
1	Health Care Management Science	A	51	0.66	Q1
2	Journal of Health Economics	A	64	2.5	Q1
3	Health Care Management Review	B	127	0.85	Q1
4	Journal of Health Communication	–	–	1.19	Q1

Source: Own compilation

\* subject areas : 1. business, management and accounting; 2. economics, econometrics and finance; 3. medicine. Only journals with a Q 1 ranking in described area of research

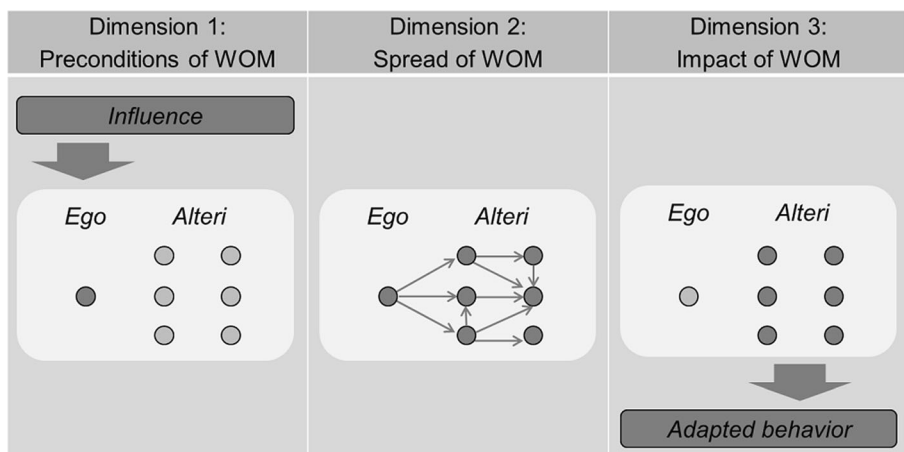


The third dimension focuses on the impact of WOM on the various stakeholders, which is mentioned in chapter 2.2.

## 4 Empirical findings

### 4.1 General findings

Twelve WOM articles could be identified in the first level journals that the author studied. Seven articles were published in the *Journal of Health Communication* and five articles in the *Health Care Management Review*. No WOM articles could be found in the *Journal of Health Economics* or *Health Care Management Science*. Regarding the second and third levels, an additional 17 WOM articles could be collected. Therefore, the analysis of this research paper comprises a total of 29 studies focusing on WOM in the health care sector. Concerning the applied methodology, most studies carried out surveys (12) or conducted interviews (12). Additionally, reviews and messages (4) posted on online rating sites, online discussion boards or other health related social networking sites as well as secondary data (3) from, for example, the Veterans Health Administration (US Department of Veterans Affairs) were analyzed. Moreover one online experiment (1) was applied. The majority of the studies investigated the behavior of inpatients as well as outpatients as senders or receivers of WOM (17). Other studies frequently observed individuals or even groups who systematically search for or provide WOM-related information regarding a specific health condition, such as pregnant women, members of an obesity group or members of an online cancer discussion group. One study investigated the WOM behavior of relatives. With respect to the WOM content, a strong emphasis on hospital recommendations could be recognized (18). Only one study concerned a nursing home, two studies a primary care physician (PCP) and one study a health care professional for children. Some research papers did



**Fig. 1** Classification system of existing WOM studies. Source: Own compilation

not highlight a specific person, group or institution as the content of WOM. Instead, attention was paid to specific health conditions/illnesses, positive health behaviors, physical activity, prenatal health and attitudes (7).

With respect to the WOM dimensions, 16 studies could be classified as WOM preconditions, seven as WOM spread, and six as WOM impact. Out of the 29 studies, six eWOM studies were found. Regarding the country focus, more than half of the studies deal with the situation in the USA (17). Europe is focused on in eight studies, Asia in two and other regions in three research papers. Only one study of Dobeles and Lindgreen (2011) compared WOM among different countries. The results are summarized in Table 3 and a more detailed analysis of the WOM dimensions is presented in the following pages.

## 4.2 Precondition of WOM

16 articles addressed the precondition dimension, including two papers with a special focus on electronic WOM. Nine studies were carried out in the USA, four in Germany, one in Kuwait, one in Canada and one in Taiwan. A research study by Leisen and Hyman (2004) concerned a primary care physician. This study highlighted the importance of building a relationship with the patient and gaining trust as the key factors for patients' recommendations. Regarding nursing homes, one paper by McCaughy et al. (2014) revealed a negative relationship between the amount of work-related injuries of nurses and their willingness to recommend their employer as a place to work or seek care. Most research papers emphasized WOM in hospitals, including studies with a special focus on emergency departments (14). With respect to hospitals, there seems to be two different categories of factors influencing the WOM behavior of patients. The first category includes factors the hospital can influence, whereas the second category comprises factors which might not or only partly be influenced by the hospital (e.g., Boudreaux et al. 2000; Jha et al. 2008). Factors the hospital is able to impact can be separated into medical and atmospheric factors. Important components of medical factors are interpersonal ones. For example, Boudreaux et al. (2000) and Brandmaier et al. (2003) highlight the relationship between WOM and the care given by and interaction with medical staff (see also Burroughs et al. 1999; Cheng et al. 2003; Haase et al. 2006; Ferguson et al. 2010). Klinkenberg et al. (2011) even describe that interpersonal aspects of care, consisting of the behavior of physicians and nurses, can be seen as the strongest indicators of patients' willingness to recommend (Klinkenberg et al. 2011). Especially nursing care seems to be a crucial WOM factor (Boudreaux et al. 2000; Al-Mailam 2005; Haase et al. 2006; Jha et al. 2008) and includes courtesy, respect and the ability to carefully listen to patients' needs (Klinkenberg et al. 2011). Additionally, the technical abilities of the hospital, such as the clinical competence and hospital equipment (Cheng et al. 2003), the hospital process quality (Tajeu et al. 2015), the information provided, the perceived pain and discomfort (Ferguson et al. 2010) as well as recovery outcomes (Brandmaier et al. 2003; Cheng et al. 2003; Ferguson et al. 2010) seem to be medical factors that strongly impact patients' WOM.

In addition to medical factors, patients' WOM is likewise influenced by atmospheric factors, e.g., ambience, cleanliness, meals, cafeteria, accommodation and recreational activities (Brandmaier et al. 2003; Haase et al. 2006; Klinkenberg et al. 2011).

**Table 3** Results of the literature review

First level	Author	Journal	Methodology	Focused	WOM content	WOM			Country focus				
						Group of people	Dimensions	Forms	USA	Europe	Asia	Others	
													Precon.
	Lee 2005	Health Care Management Review	interviews	outpatients	hospital		X	X					X
	Macias et al. 2005	Journal of Health Communication	analyzing messages	persons that posted messages	different health conditions	X			X				X
	Colon-Ramosan et al. 2009	Journal of Health Communication	survey	health-networked individuals	positive health behaviors	X			X				X
	Geana et al. 2011	Journal of Health Communication	survey	Latinos, non-Latinos	health conditions	X			X				X
	Klinkenberg et al. 2011	Health Care Management Review	-data on hospitals-telephone interviews	inpatients	hospital	X			X				X
	DiFonzo et al. 2012	Journal of Health Communication	survey	online cancer discussion group	cancer	X			X				X
	Friedman et al. 2012	Journal of Health Communication	interviews	African American men	physical activity	X			X				X
	Dreves and Hinz 2014	Health Care Management Review	-analyzing Online reviews -survey	-patients -relatives	hospital	X				X			X
	Heather et al. 2014	Journal of Health Communication	survey	pregnant women	prenatal health		X			X			X
	McCaughy et al. 2014	Health Care Management Review	telephone interviews	nursing assistance	nursing home	X			X				X
	Li et al. 2015	Journal of Health Communication	online-experiment	residents	physician		X			X			X

Table 3 (continued)

Autor	Journal	Methodology	Focused Group of people	WOM			Country focus						
				WOM content	Dimensions		Forms	USA	Europe	Asia	Others		
					Precon.	Spread						Impact	WOM <sup>1</sup>
Tajeu et al. 2015	Health Care Management Review	secondary data	patients	hospitals	X		X			X			
Mack et al. 1995	Health Care Manage Rev.	telephone interviews	privately insured individuals	hospital/ emergency department	X		X			X			
Hall and Press 1996	Hospital & Health Services Administration	analyzing secondary data	outpatients	hospital/ emergency department	X		X			X			
Burroughs et al. 1999	Journal on Quality Improvement	-focus groups -interviews -surveys	-inpatients -outpatient	hospital	X		X			X			
Boudreaux et al. 2000	The American Journal of Emergency Medicine	telephone interviews	mostly uninsured patients	hospital/ emergency department	X		X			X			
Brandmaier et al. 2003	Führen Wirtschaft Krankenhaus	survey	patients	hospital	X		X			X		X	
Cheng et al. 2003	Journal of Quality in Health Care	telephone interviews	patients	hospital	X		X					X	
Leisen and Hyman 2004	Journal of Business Research	survey	patients of primary care physician	primary care physician	X		X			X			
Al-Mallam 2005	Quality Management in Health Care	survey	inpatients	hospital	X		X			X			X
Haase et al. 2006	International Journal of Rehabilitation Research	analyzing secondary data	inpatients	rehabilitation hospital	X		X			X			
Leister and Stausberg 2007	Journal of hospital marketing & public relations	interviews	patients	hospital				X		X		X	
Streuf et al. 2007				hospital		X				X			X

Table 3 (continued)

Autor	Journal	Methodology	Focused Group of people	WOM content	WOM		Country focus			
					Dimensions	Forms	USA	Europe	Asia	Others
					Precon.	Spread	Impact	WOM <sup>1</sup>	eWOM <sup>2</sup>	
Jha et al. 2008	Gesundh Ökon Qual Manag New England Journal of Medicine	telephone interviews survey	clients of a health insurance patients	hospital	X		X	X		
Ferguson et al. 2010	Journal of Service Management	survey	inpatients	hospital	X		X			X
de Crupé and Geraedts 2011	Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz	interviews	inpatients	hospital		X		X		
Dobele and Lindgreen 2011	Journal of Marketing Management	interviews	female patients with children	health care professionals for children		X	X	X		X
Liang and Scammon 2011	Journal of Consumer Behaviour	analyzing messages	members of an obesity group	health conditions		X		X		
Hinz et al. 2012	HCFE Working paper series	-analyzing Online reviews -survey	review writers	hospital	X			X		
<sup>1</sup> WOM = WOM in general; <sup>2</sup> eWOM = electronic WOM										
Source: Own compilation										

Factors which might not or only partly be affected by the hospital are hospital as well as patients' characteristics. With respect to hospital characteristics, Jha et al. (2008) discovered that the geographical location of a hospital in the USA strongly influences patients' willingness to definitely recommend the institution. Whereas in Birmingham (AL) an average of 76.5 % of the patients would recommend the regional hospitals, in Chicago only an average of 61.3 % and in East Long Island (NY) an average of 56.8 % would do so. The profit status also seems to impact the likelihood of patients to "definitely recommend a hospital". A higher percentage of around 69 % would definitely recommend a not-for-profit hospital compared to around 62.2 % who would recommend a for-profit hospital. According to Klinkenberg et al. (2011), the academic status and size of the hospital influence the WOM behavior of patients as well. "Academic medical centers in our sample had a somewhat higher percentage of patients who would definitely recommend than did nonacademic medical centers; likewise, larger hospitals had a somewhat higher proportion of persons who reported that they would definitely recommend than did smaller hospitals" (Klinkenberg et al. 2011, p. 354). In addition to hospital characteristics, patient characteristics, e.g., age, health status, ethnic background, education, insurance status or patient values impact the likelihood of patients' recommendations (e.g. Ferguson et al. 2010; Klinkenberg et al. 2011). "Persons over age 65 years were more likely to respond 'definitely yes' for willingness to recommend than were persons under age 65 years" (Klinkenberg et al. 2011, p. 354). Moreover, the willingness to recommend increases with the perceived health. In other words, people with perceived good or excellent health were more likely to participate in positive WOM. White participants would also more often recommend a health care provider than members of another racial group. Additionally, the education of patients influenced their WOM behavior. Patients with a higher education were more willing to recommend (Klinkenberg et al. 2011, p. 354). Ferguson et al. (2010) also proved a connection between patients' values and patients' WOM intention. The analysis of reviews on a German online platform specialized in hospitals reviews Dreves and Hinz (2014, p. 223) concluded that "Patients who choose a hospital themselves write more positive online reviews than those with an other-directed choice. Relatives' online reviews more often deal with negative hospital experiences and are more likely to reflect a desire for retaliation." Furthermore, the analysis of this German online platform revealed that reviews were predominantly positive and "that altruistic motives override egoistic motives. For both positive and negative service experiences, helping or warning others is more important to reviewers than expressing positive or venting negative feelings" (Hinz et al. 2012, p. 18). Regarding emergency departments (EDs), patients' WOM is influenced by the feelings of safety and security, the insurance status of a person, clarity of discharge instructions (Boudreaux et al. 2000), satisfaction with medical care (Mack et al. 1995) and physicians who "make patients feel that their ED visit is justified" (Hall and Press 1996). Convenience issues like parking, waiting room comfort or billing are far more weakly related (Hall and Press 1996). Whereas Klinkenberg et al. (2011) acknowledges a connection between the patients' age towards their WOM behavior in an emergency department, Hall and Press (1996, p. 515) "find that demographic variables such as age and sex do not significantly influence the decision to recommend." Neither did the study of Hall and Press (1996) confirm a relationship between the size of an emergency department and the likelihood of patients' recommendations. A further analysis of the

WOM studies revealed a scholarly disagreement between several authors regarding the relationship between satisfaction and WOM. For example, Haase et al. (2006) used the level of recommendations as an indicator to determine patients' satisfaction. In contrast, Boudreaux et al. (2000) found different determining factors for patients' satisfaction and their willingness to recommend. Cheng et al. (2003, p. 352) even proved "that a certain proportion (20.8 %) of the 'not satisfied' patients still recommend the hospital. This means that a hospital with high percentages of patient satisfaction does not necessarily receive a similar level of recommendation."

### 4.3 Spread of WOM

Five American and two German research papers are concerned with the spread of WOM, including one eWOM study. In contrast to the first dimension, only few papers highlight specific health care providers such as hospitals (Streuf et al. 2007; de Cruppé and Geraedts 2011). Instead the focus is on the spread of information about specific health conditions. The results of the analyzed studies clearly reveal that WOM is used to distribute health-related information among large groups of individuals (Colon-Ramosan et al. 2009; Geana et al. 2011; DiFonzo et al. 2012; Friedman et al. 2012). Macias et al. (2005) emphasized the important role of the internet for the distribution of WOM related health care information, because it offers both anonymity and the possibility to overcome geographical barriers. In this way also highly sensitive health related information might be exchanged. DiFonzo et al. (2012) additionally highlight the essential role of WOM in providing emotional support. Still, the actual relevance of WOM for individuals is influenced by their age, education, ethnic background and health status. A significant source of WOM-related health information and advice are family, friends and acquaintances (de Cruppé and Geraedts 2011; Geana et al. 2011; Friedman et al. 2012). The use of this information source decreases with increasing age (Streuf et al. 2007). Geana et al. (2011, p. 589) state that "Latinos and non-Latinos younger than the age of 45 years listed friends as the primary source for health information. [...] Among those older than 45 years of age, the primary source of health information is the newspaper [...], followed by brochures [...], and the pharmacist". In addition to age, education seems to impact WOM behavior. The relevance of this information source decreases with a lower level of education (Streuf et al. 2007; de Cruppé and Geraedts 2011). Furthermore, Geana et al. (2011) identify differences between American Latinos and American non-Latinos in the usage of WOM as a source of health information. Therefore, a person's ethnic background also affects the way information is sought. Additionally, health status seems to influence WOM behavior, because the role of WOM decreases in critical health situations when selecting a health care provider (de Cruppé and Geraedts 2011).

### 4.4 Impact of WOM

The impact dimension of WOM was explored by three American, one German and one South Korean study as well as one cross-national one between Australia, Belgium and the UK. Two papers focused on hospital patients (Lee 2005; Leister and Stausberg 2007), one on potential patients of a physician (Li et al. 2015), one on female patients of a health care professional for children (Dobele and Lindgreen 2011), one on

pregnant women (Heather et al. 2014) and one on members of an obesity group and their health conditions (Liang and Scammon 2011). Of the five research studies three papers emphasized eWOM.

Leister and Stausberg (2007) state a high relevance of recommendations by relatives and acquaintances in selecting a health care provider. Regarding physician review websites, Li et al. (2015, p. 453) “examined how the proportion and position of negative reviews on such websites influence readers’ willingness to choose the reviewed physician. [...] As hypothesized, an increase in the proportion of negative reviews led to a reduced willingness to use the physician’s services.” Beside the proportion of negative reviews, also the review order influenced such willingness. If the negative reviews were presented before positive ones, participants were less willing to choose the reviewed service (Li et al. 2015). In the case of health care professionals for children, “informants valued referrals as a means to confirm information, understand options, and reduce information search anxiety and time.” (Dobele and Lindgreen 2011, p. 285). WOM might also provide practical advice to cope with certain health conditions. In addition to this informational component, WOM might provide emotional support (Liang and Scammon 2011). In this context, Dobele and Lindgreen (2011) and Heather et al. (2014) point out the important role of trust in the WOM source. The papers not only investigated the influence of patients as WOM sources towards a third party, such as colleagues, friends or relatives. Lee (2005, p. 157) additionally states that an “outpatient’s intention to recommend is the most explanatory determinant of revisit intention among the predictors.” (Lee 2005, p. 162–163). WOM and especially eWOM may provide a “new opportunity to engage the public in achieving better health.” (Heather et al. 2014, p. 1435). Still, if inaccurate health information circulates, WOM might become a risk factor for patients who act according to the advice provided (Heather et al. 2014).

## 5 Discussion and practical implications

This literature review revealed 29 WOM studies with a health care focus. A reasonable amount of the analyzed studies used WOM in a wider context than the recommended definition in chapter 2.1. For example, WOM research is often not limited to one specific health provider or service. Instead, studies may also focus on WOM concerning a health condition or general recommendations regarding a healthier way of life (e.g. Colon-Ramosan et al. 2009; Geana et al. 2011; Friedman et al. 2012). McCaughey et al. (2014) even investigated the WOM behavior of nurses, whereas Dreves and Hinz (2014) focused on relatives’ WOM. Both studies proved that in addition to the actual patient, other parties also experience the health care service and consequently may be engaged in the creation and spread of WOM. In this context, Dreves and Hinz (2014) point out that there are tremendous differences between the WOM of patients and their relatives. Further studies emphasize that in addition to its informational component, WOM also offers an emotional support function (e.g. Liang and Scammon 2011). Including these various aspects of WOM in future studies and broadening the commonly-used WOM definitions which are described at the beginning of this paper should be considered.



Most WOM studies concern the recommendation of hospitals. Surprisingly, only two studies focus on a primary care physician, one on a health care professional for children and one on a nursing home (Leisen and Hyman 2004; Dobeles and Lindgreen 2011; McCaughey et al. 2014). This does not reflect the important role of these players in the health care sector. The agenda setting theory does help to understand the important role of electronic WOM, which was only investigated in six studies (e.g. Dreves and Hinz 2014; Li et al. 2015). None of these studies examines the differences between electronic and face-to-face WOM. Moreover, the research is strongly focused on the USA, and only one study by Dobeles and Lindgreen (2011) compared WOM behavior among several countries. Regarding the WOM preconditions, the current research mainly focuses on hospitals. The analyzed studies describe factors which benefit WOM and can be influenced (e.g., Brandmaier et al. 2003; Tajeu et al. 2015). Stakeholder theory suggests that providers and payers of hospital services should emphasize these factors and integrate them into their business processes (Freeman and Evan 1990; Pedersen et al. 2013). The WOM studies additionally point out that there are WOM-related factors which might not or might only be partly influenced by the service providers and payers (Jha et al. 2008). Still, these factors are also important in order to understand the WOM behavior of patients and need to be taken into account by comparing the WOM behavior in different hospitals. With respect to the relationship between WOM and patient satisfaction, a disagreement among various authors could be detected. Some studies use recommendations as an indicator for satisfaction (e.g. Haase et al. 2006; Tajeu et al. 2015). In contrast, Cheng et al. (2003) proved that even a high proportion of “not satisfied” patients may still recommend a hospital. Therefore, it can be said that WOM does not seem to be a reliable indicator of satisfaction.

As WOM might spread in networks and influence large groups of people (Macias et al. 2005), stakeholder theory proposes that providers and payers should consider WOM as a possible way to distribute specific health care recommendations. Especially family and friends are significant WOM sources of health information (Friedman et al. 2012), and the importance of WOM as an informational source is strongly influenced by factors such as age, education, ethnic background and health status (Streuf et al. 2007; de Crupé and Geraedts 2011; Geana et al. 2011). Therefore, providers and payers would need to consider these sources and influencing factors. Moreover, the agenda setting approach does help to highlight the relevance of the internet towards the spread of WOM (Goyette et al. 2010). Nevertheless, only one eWOM study could be found regarding the spread dimension, which does not seem to reflect the importance of internet-based communication. With respect to the impact dimension, stakeholder theory suggests that providers and payers of health services should be aware of WOM as an important information source that deeply influences behavior (Freeman and Evan 1990). It is somewhat unexpected that almost three times more studies focus on the preconditions of WOM than the actual impact of WOM. Regarding hospitals, this difference is even considerably larger. 14 research papers exist which spotlight the creation of WOM in a hospital environment while there are only two papers which actually try to investigate the impact of WOM on the selection of a hospital. Especially the impact dimension should be interesting for researchers as the actual impact of WOM is a key justification for the entire research of WOM. Still, some of these justifications might be provided by the highlighted research papers which emphasize the influence of WOM towards patients, the potential of gaining new patients on the

basis of positive WOM (Leister and Stausberg 2007) and patients' WOM as the most important determinant of revisit intention (Lee 2005). However, recent studies also point out the potential risk factors of WOM which might arise due to a circulation of false health-related information (Heather et al. 2014). Examples might be inaccurate advice for medical treatment by relatives or inappropriate work-out recommendations by colleagues. Health care providers and payers should consider monitoring and if possible preventing such misleading information.

## 6 Conclusion and prospects

Due to increasing competition between providers of health care services and new forms of online communication, the WOM concept will gain importance. To the best of our knowledge, this is the first study that assesses the current state of WOM research in the health care sector. The conducted literature review revealed 29 articles in leading scientific health care journals which examined various WOM aspects. In the investigated studies a special focus is drawn on hospital recommendations as well as the necessary preconditions of WOM. Fewer studies concerned the spread and impact dimension. Only a small number of eWOM studies could be found. Therefore, even if the studies highlight the importance of WOM, several research gaps still exists. For example, due to the strong hospital focus, recent research seems to neglect WOM concerning health care providers such as a general practitioners or nursing homes. Furthermore, attention is mainly paid to patients as senders or receivers of WOM. However, Dreves and Hinz (2014) proved that in addition to patients, other stakeholders such as relatives may also be heavily engaged in WOM. According to the stakeholder theory, future studies should therefore emphasize the WOM behavior of all relevant stakeholders. Relating to the agenda setting approach, it appears that there are fundamental differences between eWOM and face-to-face WOM. Nevertheless, no study could be found which explicitly compared both WOM forms. Regarding cultural differences, only one paper compared WOM behavior among countries. As cultural components strongly differ, so may WOM and additional comparative studies could provide new scientific insights. It might also be interesting to investigate the relationship between health conditions and a person's WOM. For example, how does the WOM behavior of a pregnant woman compare with the WOM behavior of a diabetic patient? Relating to the WOM preconditions, none of the studies investigates motives for face-to-face WOM in the health care sector, nor do the studies consider the intensity of WOM. Still, this might be a crucial factor, because recommendations may be given in one short sentence or a one-hour monolog. Concerning the spread dimension, future studies could examine the circulation of WOM in personal networks. In particular, the differences between the spread of positive and negative health care-related WOM, the influence of personal network structure towards such spread, the assessment of the credibility of the source and the development of WOM frequency following a patient treatment could be interesting areas of research. With respect to the WOM impact, it might be useful to further investigate the potential risks which could arise due to the spread of inaccurate health care information. It should also be examined if there exists a correlation between WOM and the actual performance of health care providers as well as how WOM could strategically be used to improve health literacy. By providing an

overview of the recent literature, this paper highlights the relevance of WOM in the health care sector and the necessity for further research. However, the research is limited to the articles in the investigated journals.

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### Compliance with ethical standards

**Conflict of interest** The author has disclosed that he has no significant relationship with or financial interest in any commercial companies pertaining to this article.

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