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Full Length Research Paper

Social media as a means to overcome stress and depression among women

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Depression constitutes a serious challenge in personal and public health. Tens of millions of people each year suffer from depression and only a fraction receives treatment (de Choudhury, 2013). Stress and depression drains one of the feel-good factors essential to sustain the energy that gives the impetuous to hope and move forward. Depression in women is made more complex because of factors such as reproductive hormones and social pressures. Social media platforms make the way to connect with the public, disseminating helpful information, and establishing control over their online presence. The study analyzes the stress and depression of women-related information on the select pages of Facebook and videos of YouTube. Social Norms Theory and Agenda Setting Theory are employed as theoretical frameworks. Content analysis of Facebook pages and YouTube videos which deal with stress- and depression-related information related to women were undertaken to measure the type and content of messages. The key findings of the study are as follows: Majority of the social media users suggested traditional methods such as physical exercise and yoga to overcome stress and depression; In YouTube, reality videos were mostly used followed by demonstration, testimonial and animation formats: and social media sets the agenda for women with regard to responses to stress and depression, and helps reinforce and redefine social norms amidst patriarchy.

Key words: Facebook, YouTube, stress, depression, social media, women.

INTRODUCTION

Social media allow people to get closer than ever before, regardless of where they are in the world. It cannot be denied that social media (such as Facebook) has changed the way people around the world communicate, interact and socialize with one another (Kietzmann et al., 2011; Xiang and Gretzel, 2010).

Overall, women tend to report more stress than men. But, those women who use a number of digital technologies to communicate with others tend to report less stress than women who do not use these technologies. Social media use is related to even higher levels of awareness of the stressful events that unfold in the lives of people they know (Hampton et al., 2015).

Social networking sites such as Facebook and YouTube have numerous contents to gain consciousness on stress and depression vis-à-vis women in the recent years. To a greater extent, many turn to social media to get information related to healthcare. Depression constitutes a serious challenge in personal and public health. Tens of millions of people each year suffer from

depression and only a fraction receives treatment (de Choudhury, 2013). Depression in women is made more complex because of factors such as reproductive hormones and social pressures.

The estimate of the global burden of disease predicts that depression will be the second-leading cause of disability worldwide by 2020. Depression is widely prevalent in women in all age groups especially in India where 1.2 billion population lives (Bohra et al., 2015). Stress and depression are a severe state that can impact every aspect of women's life. They affect social life, family relationships, career, and one's sense of self-worth and purpose. If one experiences stress over a long time and no action is taken, it may become chronic. Some do not know they have a problem until acute stress causes a heart attack or something worse. Stress starts interfering with one's ability to live a normal life. The longer the stress, the worse it is for both one's mind and body. Reducing stress levels can not only make one feel better right now, but may also protect one's health for a long time to come.

According to World Health Organisation (WHO) (2016), Indians are reported to be among the world's most depressed. Women report higher levels of psychological distress and have higher rates of mood and anxiety disorders, while men have greater alcohol and drug problems, substance use disorders, aggressive behaviours, and anti-social personality disorders (Kessler et al., 2005; Kessler and Zhao, 1999; Mirowsky and Ross, 2003).

In addition, depression is also an important cause of domestic violence, which affects the lives of women. Regular screening of all women patients visiting general hospital settings for domestic violence should be made mandatory to prevent damage to their physical and mental health. Recently, there has been a growing trend in India of shifting the age-old status of women from homemakers to the working class, which offers them independence, financial freedom and stability.

Long hours of working under strict deadlines lead to depression or general anxiety disorder compared to women with lesser levels of psychological demands at work. Work pressure and deadlines have resulted in skipping meals and opting for junk food. Women working in the sectors that demand strenuous work are unable to take leave when unwell. Factors such as exposure to the poor quality of sleep, lack of exercise, deprived nutrition and, at times, excess consumption of alcohol cause depression.

Social media offers an ambient understanding of instant connection with the public and for the interactive spreading of vital information. While social networking can help strengthen guest loyalty and satisfaction, it can also lead to unfair negativity, inaccurate information and undue criticism. When the input is mostly anonymous, as it is with many social platforms, participants are likely to have a polarized stance, opinion or critique. Social media

is a new and continually developing area. While there is a growing body of research on health information in social media, most of them concentrate on how women could use this information. This study analyzes how social media influences women in healthcare vis-à-vis stress and depression. The objectives of the study are:

(1) To analyze the content related to stress and depression with regard to women posted in social media.
(2) To find the use of social media as an interactive platform for women to overcome stress and depression in the Indian context.

STATEMENT OF PROBLEM

The study analyzes the stress and depression of women-related information in the select pages of Facebook and videos of YouTube in the Indian context.

REVIEW OF LITERATURE

Stress processes include three components: an internal state of the organism (strain), an external event (stressor) and an experience that arises from a transaction between a person and the environment (Mason, 1975). Strain refers to physiological, emotional and cellular reactions. For example, emotional reactions include negative affect, emotional numbing and lower positive affect. Stressor refers to trauma, life events, hassles / daily stressors, aversive physical environment, chronic role strain, and cumulative adversity. Some researchers focus on the psychological perspective of stress.

For example, Lazarus and Folkman (1984) defined psychological stress as involving "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p.19). For instance, Grant et al. (2003) defined stress as environmental events or chronic conditions that objectively threaten the physical and/or psychological health or well-being of individuals of a particular age in a particular society. A number of researchers use external events as stress, and use the experience that arises from a transaction between a person and the environment as the mediating or moderating mechanisms between stress and the first component, i.e., biological, physical or emotional outcomes. Likewise, the aggregated external life events were used as the operationalized definition of stress (Zhang, 2013).

Petersen et al. (1991) found that reports of significant episodes of depressed mood (lasting two weeks or longer) increased from early adolescence to middle adolescence for both boys and girls. Depressive syndrome refers to a constellation of emotions and behaviours that occurs together (Reinemann and

Swearer, 2005). Researchers investigate the relationship between stress and the severity levels of depressive symptoms. The assessment of major depression is more labour-demanding and requires professional training for interviewers compared to depressive symptoms checklists (Zhang, 2013).

Gibney and McGovern (2011) studied the relationship between social interaction and mental health which is an area of continued focus for the social sciences. They examined the effect of social support network type on mental health in the context of two competing psychological models, pertaining to social influence and tangible resource. The magnitude of this effect is comparable to divorce, and appears to be mediated through feelings of loneliness. They found no evidence that being in such a network exacerbated the distress associated with traumatic life events. Strong spousal support was also found to have a positive effect, but again only for women. Profiling individuals by their social network type provided a means of identifying those most at risk of developing depressive symptoms as they age.

Facebook remains the most popular social media platform, with its users visiting the site more regularly than users of other social media sites. Roughly three-quarters (76%) of Facebook users report that they visit the site daily, 55% visit several times a day, and 22% visit about once per day. This represents a modest but a statistically significant increase from the 70% of Facebook users who indicated that they visited the site daily in 2015. Further, Instagram and Twitter occupy the middle tier of social media sites in terms of the share of users who log in daily. Roughly half (51 percent) of Instagram users access the platform on a daily basis, with 35 percent saying they do so several times a day. And, 42 percent of Twitter users indicate that they are daily visitors, with 23 percent saying they visit more than once a day (Greenwood et al., 2016).

Social networking site (SNS) users under the age of 50 are particularly likely to use a SNS of any kind, and those aged 18-29 are the most likely of any demographic cohort to do so (83%). Women are more likely than men to be on these sites. Those living in urban settings are also significantly more likely than rural internet users to use social networking. Facebook remains the most-used social networking platform, as two-thirds of online adults say that they are Facebook users. Women are more likely than men to be Facebook users, and Facebook use is especially common among younger adults (Duggan and Brenner, 2013).

Delivery of interventions that use existing online social networks such as Facebook and Twitter appears to offer particular promise for sustained engagement, due to their high level of user retention and engagement, whether retention and engagement with specific aspects of these platforms (such as a specific app or Facebook group delivering a health intervention) matches this is currently unclear. Innovative approaches reflecting the way people use online social networks (with existing friends and for entertainment) are warranted. This research may be useful for both health researchers and human-computer interaction researchers who design and implement technology-based interventions integrating social networking to facilitate health interventions (Maher et al., 2014).

The Social Marketing plan is a professional alternative to introduce customer orientation as regards integrated marketing to promote consumer satisfaction through behaviour change in the public health. The plan guides the entire processes from the individual's perspective, increasing the chances of success of a given campaign and decreasing the discrepancies between the planned and the performed. But the introduction of Social Marketing culture is an unfolding of the lack of customer-orientation in the health campaigns (Silva and Afonso, 2015).

Now these technologies are beginning to pervade the healthcare space, just as they have so many others. Today, patients appear to be becoming more engaged with their care in general, and one of the many results is that they are increasingly using the internet to share and rate their experiences of healthcare. They also use the internet to connect with others having similar illnesses, to share experiences, and begin to manage their illnesses by leveraging these technologies. They suggest using natural language processing and sentiment analysis to transform unstructured descriptions of patient experience on social networks, blogs, Twitter and hospital review sites into usable measures of healthcare performance (Rozenblum and Bates, 2013).

Valkenburg et al. (2006) studied the consequences of friend networking sites (for example, Friendster, MySpace) for adolescents' self-esteem and well-being. They conducted a survey among 881 adolescents (10 to 19-year olds) who had an online profile on a Dutch friend networking site. Using structural equation modelling, the study found that the frequency with which adolescents used the site had an indirect effect on their social self-esteem and well-being. The use of the friend networking site stimulated the number of relationships formed on the site, the frequency with which adolescents received feedback on their profiles, and the tone (that is, positive vs. negative) of this feedback. Positive feedback on the profiles enhanced adolescents' social self-esteem and well-being, whereas negative feedback decreased their self-esteem and well-being.

de Choudhury et al. (2013) explored the potential to use social media to detect and diagnose the major depressive disorder in individuals. The study first employed crowdsourcing to compile a set of Twitter users who report being diagnosed with clinical depression, based on a standard psychometric instrument. Through their social media postings over a year preceding the onset of depression, the study measured behavioural attributes relating to social engagement, emotion,

language and linguistic styles, ego network, and mentions of anti-depressant medications. There is a need to identify and enable those suffering from depression to be more proactive about their mental health.

Oh et al. (2014) examined the effect of supportive interactions on social networking sites. They used a series of multilevel models and a path model to see the relationships. Supportive interactions enhanced positive affect after the interaction. The positive affect indirectly enhanced sense of community and life satisfaction. Perceived social support mediated the effect of positive affect on these outcomes. The purpose of this study is to examine whether supportive interactions on social networking sites mediate the influence of SNS use and the number of SNS friends on perceived social support, affect, sense of community, and life satisfaction. A path model revealed positive associations among the number of SNS friends, supportive interactions, affect, perceived social support, sense of community, and life satisfaction.

According to Clerk et al. (2013), social networking sites like Facebook represent a potentially valuable means for individuals with low self-esteem or inter-personal difficulties to connect with others; however, recent research indicates that individuals who are most in need of social benefits from Facebook may be ineffective in their communication strategies, and thereby sabotage their potential to benefit inter-personally. The study tested whether reassurance seeking via Facebook negatively influenced self-esteem. Results provided evidence that Facebook reassurance seeking predicted lower levels of self-esteem, which in turn predicted increased feelings that one does not belong and that one is a burden.

According to Best et al. (2014), to review and synthesise systematically current empirical research on this topic, identifying both the beneficial and harmful effects of online communication and social media technology among young people. A systematic narrative review of research published between January 2003 and April 2013 retrieved using rigorous searching on eight bibliographic databases. The benefits of using online technologies were reported as increased self-esteem, perceived social support, increased social capital, safe identity experimentation and increased opportunity for self-disclosure. This systematic narrative review has revealed contradictory evidence while revealing an absence of robust causal research regarding the impact of social media on the mental well-being of young people.

Jindani et al. (2015) found that yoga may be effective in the reduction of post-traumatic stress disorder (PTSD) symptomology. The study evaluated the impact of a Kundalini Yoga (KY) treatment on PTSD symptoms and overall wellbeing. A 15-min daily home practice was integrated into the 8-week protocol. A 20-min YouTube video was created to make the support and instruction of a teacher available to participants as needed. The rationale for the home practice was that participants would learn tools to self-soothe in the programme that they could use upon programme completion. The yoga programme also integrated guidelines for trauma sensitive yoga which emphasize inviting participants to try poses but never to stay in a posture that makes them uncomfortable. This yoga study demonstrated significant changes in PTSD scores and other areas of well-being between the yoga and waitlist control groups.

THEORETICAL FRAMEWORK

The media is successful in influencing the people in all aspects. The study relies on Agenda Setting Theory and Social Norms Theory. According to Agenda Setting Theory, people get influenced more on any issues which are constantly emphasized by the media. The people will consider an issue to be important if the media covers it repeatedly. There are a plenty of evidences that could prove the efficiency of the media in setting an agenda. At the same time, the agenda setting effect is said to be low for issues that the people can figure out the reality. When people are well aware of the issue the media portrays them, there are more chances they counter argue the version provided by the media on the particular issue (McCombs and Shaw, 1972). In case of social media, in particular, people put in content so that it dictates the content of even the mainstream media, which is termed as reverse agenda setting. The media's agenda-setting effect on the public is the most celebrated of the theories in communication studies. It explains the correlation between media and public opinion, and advocates that mass media has a significant impact on shaping the agenda for political campaigns by making people aware of important political issues. But the proliferation and expansion of the social media has challenged the role of the conventional mass media in setting the public agenda by coming out with a new approach that it is no longer the media but the public which propose issues on the agenda and reversely that agenda is accepted by the conventional media as public agenda. This approach is popularly accepted as reverse agenda-setting which urges that the opinion of people, disseminated through various social media platforms, influences news converges and sets the media agenda (McCombs, 2014). Social Norms Theory describes the condition where an individual changes attitude or adapt to certain behaviour due to the peer group or social influence. This can be both good and bad based on the behaviour adapted. It has been found that the social norms have been successful in the anti-smoking and anti-alcohol campaign (Lederman and Stewart, 2005). Thus social norms could have an impact on the health behaviour of an individual when it comes to stress and depression too.

METHODOLOGY

This research mainly analyses the social media text with

regard to stress and depression on women. Content analysis, which is used in this study, is a quantitative method used to measure attitudes, opinions, behaviours and other defined variables and simplify result from a larger sample population. It analyses the presence of certain words, phrases, concepts, and characters in a text or sentence, and quantifies them objectively. The text in this study is defined as messages or articles related to a specific health issue, and reactions to them. To analyze the content, the researchers have stratified the text into manageable categories such as articles, repeat articles, comments, photographs, or videos.

In this study, select Facebook pages and YouTube videos were analyzed. Audience reactions to the content were also analyzed using the units of measurements such as characteristic of the message: type of message, interactivity rate, interaction rate based on post type, number of comments, number of likes, number of shares, and relevant message; and content of the message: type of information covered, and targeted age. A Facebook page is essentially an online community for fans of a business, product, or celebrity, and it provides a platform for comments, photographs, videos, and other links. The following parameters were analyzed:

Likes: The number of "likes" a post receives is the number of users who have viewed it.
Comments: "Comments" are any content that has been posted by a user on the Facebook page.
Shares: "Shares" refer to any post that has been re-clogged from the Facebook post onto an individual's Facebook page.
Reaction: "Reactions" can be used to comment on a post Love, Ha-ha, Wow, Sad and Angry to express their views.
Followers: In a social media setting, a "follower" refers to a person who subscribes to your account to receive your updates.

The researchers coded the articles for characteristic, content and framing of the article. The characteristics of the articles include variables such as the type of message, interactivity rate, interaction rates, like, shares, etc. The variables in the content include health issues covered, target age, and visual image or video. The content of the messages could be classified as: type of information covered, and targeted age.

Sampling procedure

The time period of the study is from the beginning of December 2016 to the end of January 2017 (two full months). The 'stress' and 'depression' have high rising trend issues among 'women'. Using 'stress', 'depression' and 'women' as key words, Facebook pages were selected based on popularity assessment. The same procedure was followed in the selection of YouTube videos. The items were chosen during the specified two-month period using the purposive sampling technique.

Using #verified in Facebook which lets people know that the pages are authentic, the most popular stress- and depression-related pages were selected. An authentic page must have a blue badge on a page; it means that Facebook confirmed that this is the authentic page for a public figure, a media company or a brand. The Facebook search is user centric and the results are always based on the previous use of the users. To avoid errors, a new Facebook account was created with minimum information such as name, age and gender. The search history and cookies were also deleted while searching for pages. The selection of pages was made by viewing the top posts on the topic. The pages focusing only on women were selected and hence the men's health pages were left out. According to Facebook, "if someone uses a reaction, Facebook will infer that person wants to see more of that type of post".

In this study, content analysis helped to find how women actively followed up stress- and depression-related posts, using keywords to analyze based on a number of parameters. These parameters were used to analyze the details of healthcare information message posts. This helped understand the influence and effectiveness of women accessing Facebook pages and YouTube videos vis-à-vis stress and depression. YouTube has developed into a prominent online video-sharing destination, whereas Facebook not only has videos but also has interactivity. Quantitative content analysis has thus been used (as coded in Appendix 1) added with qualitative interpretations. The lists of Facebook pages and YouTube videos selected are presented below. The following 11 Facebook pages / YouTube videos were selected for the analysis:

(1) BuzzFeedVideo is Motion Picture's flagship channel. Sometimes funny, sometimes serious, always shareable.
(2) Glamrs.com is the first Indian make-up, beauty, style, fitness and lifestyle video platform for women. You may tune in daily for the latest and trendy make-up tips, healthcare, fashion ideas, nail art, daily life hacks, interesting do it yourself (DIY) videos and much more.
(3) Mom Junction Kids is one junction to know everything about pregnancy and parenting.
(4) POPxo is about fashion, beauty, lifestyle which is everything the modern Indian woman needs. They release articles which mostly revolve around daily lives and thoughts of a regular woman. Posts are mostly on a to-do things you should know, remedies, home tips, etc.
(5) StyleCraze offers a global trend catering to women's beauty, fitness and health. It has a massive number of informational videos on various niches such as health, beauty, yoga, fitness and natural home remedies. From make-up techniques to mehndi [drawing on hand] art, fitness regimes to yoga asanas [exercises], and also to use simple things you find at home to cure the physical and mental ailments.
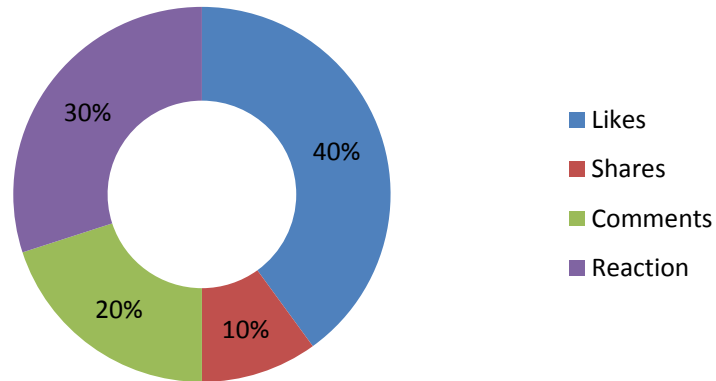
Figure 1. Reaction to stress and depression Facebook posts.

(6) Super Healthy Kids provides healthy ideas for children and families.

(7) Women's Health provides actionable tips and expert advice on fitness, health, nutrition, weight loss, relationships, beauty, style, career and everything in between. To become a better version of yourself, it gives you the latest insight and resources to get there and the encouragement you need to feel great about yourself every step of the way.

(8) Women's Health and Fitness Summit brings together world renowned presenters and cutting edge information to offer fitness professionals, women's health physiotherapists and women united by women's health as an event of education and networking.

(9) Doyouyoga.com bridges body and mind, bringing the world's best online yoga classes, motivation and inspiration to the yoga community worldwide.

(10) World Health Organization (WHO) offers the official public health information of WHO.

(11) Homeveda provides some awesome natural home remedies for all your health and beauty concerns. It also provides you symptom and causes information for all the health conditions, helping you identify and prevent health problems from recurring.

ANALYSIS AND INTERPRETATION

Figure 1 shows the ways Facebook users of the pages on stress and depression have reacted to the posts. Users have various access tools on Facebook such as a number of likes, reaction, share and comments. The analysis of Facebook pages shows that 40% of users visit the posts and give 'like' to information updated only by the organizations, while 30 percent of users react to the post updated. And 20% of users actively comment, and the remaining 10% of users share updated posts regarding stress- and depression-related issues. Users have a great preference for likes and least for shares. The likes are more because it is the easiest to do without much effort. The comments comprise 20 percent. Not

many comments are elaborate. The likes and comments push the message to the top of the pages of the Facebook users, thus setting the agenda among the social media users.

As shown on Figure 2, women who fall under 25 years of age were actively involved (45%) in seeing the posts on stress and depression on social media, whereas women above the age of 35 were least users (5%). Age is strongly correlated with social media usage: Those aged below 31 have always been ardent users of social media (75%). Young women are considered the 'power users' of social media. Stress and depression information on Facebook has various categories such as videos, articles, facts, events and advertising as seen in Figure 3.

While analyzing various categories of information delivered through Facebook and YouTube, 40% of posts were articles, 35% were videos, 10% was about the healthy and important facts in our daily life, 5% was about conducting events such as training, workshops, conference related to health, and 10% about promoting the health sector advertising in Facebook pages and YouTube videos. Articles and videos take a major share as they have enough space and time to pass on some vital information. Articles are mostly written in-depth by experts, whereas videos give moving visuals which captivate the attention of the viewers by presenting the issue in the social context.

'Physical' refers to ailments arising out of stress. 'Relationship' stress may be caused by a drip-drip effect of never-ending criticism, feeling unheard, and sexual problems. 'Fitness' is stress because of not being happy about one's shape such as being over-sized. 'Post-partum' depression is common among new mothers with the symptoms of overwhelming sadness, feelings of hopelessness, worthlessness, and low self-esteem.

As seen in Figure 4, these types of stress and depression were depicted in Facebook and YouTube. As much as about 25% of information is of post-partum depression concerning stress after the pregnancy / child birth. Post-pregnancy period offers the maximum stress nowadays in India in particular, with the joint family
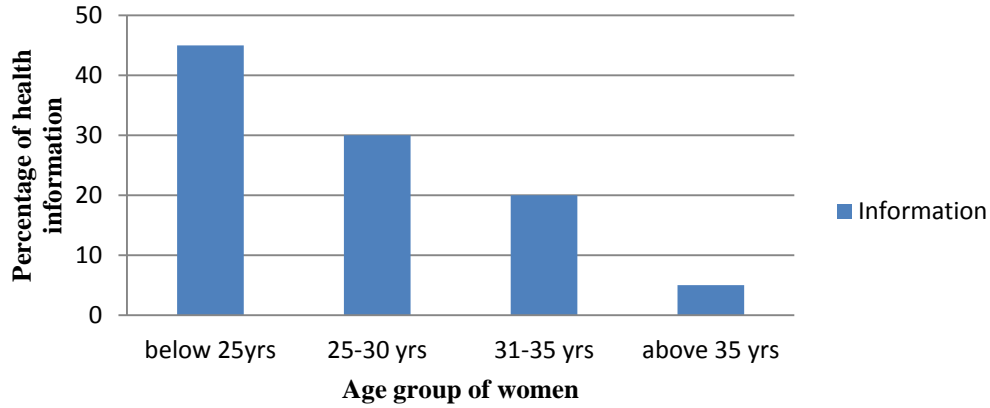
Figure 2. Age group of women using social media.
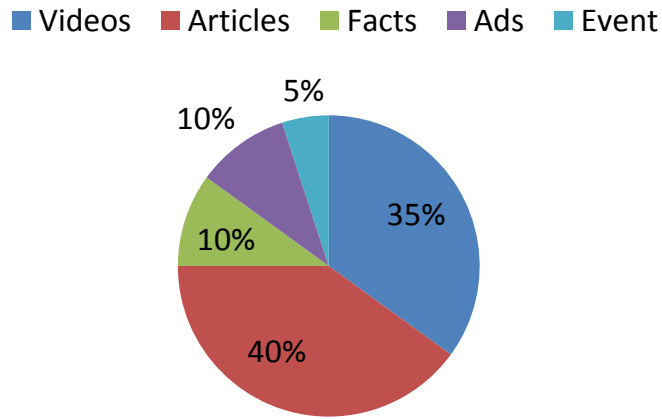
Figure 3. Categories of stress and depression information delivered.
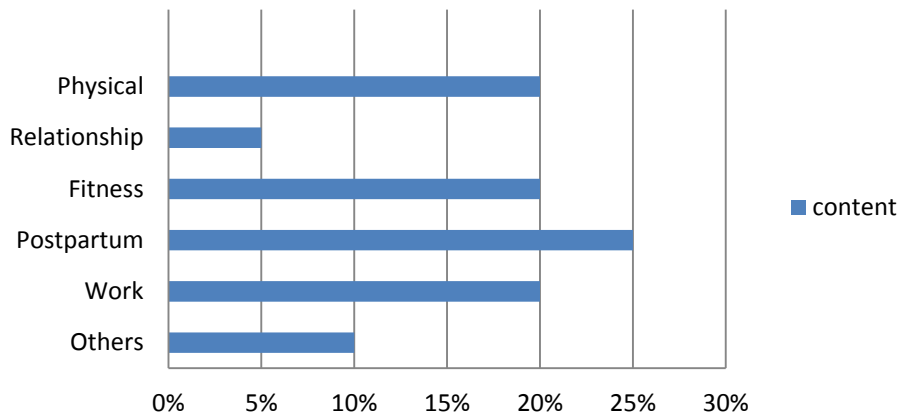
Figure 4. Types of information covered regarding stress and depression.

system waning rapidly and the much-needed societal support now not forthcoming. About 20% of information covered physical stresses such as menstrual cramps, pain and health problems, and another 20% of information was content based on work-related stress.

Fitness is an important content covered which too
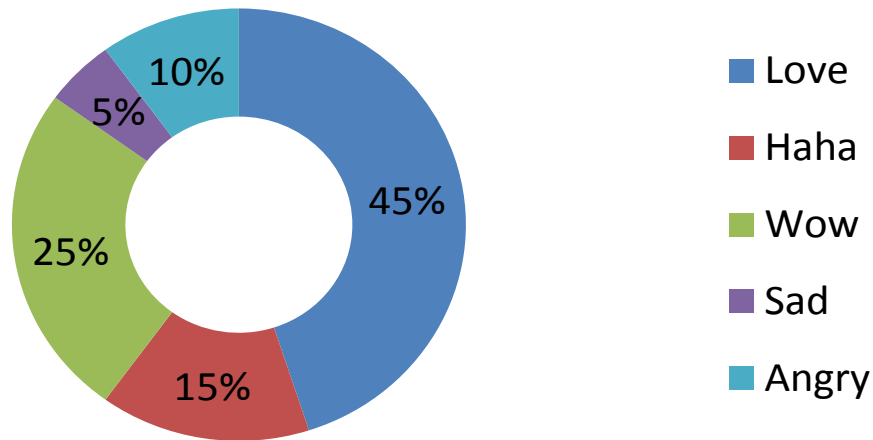
Figure 5. User reactions in emotive icons.
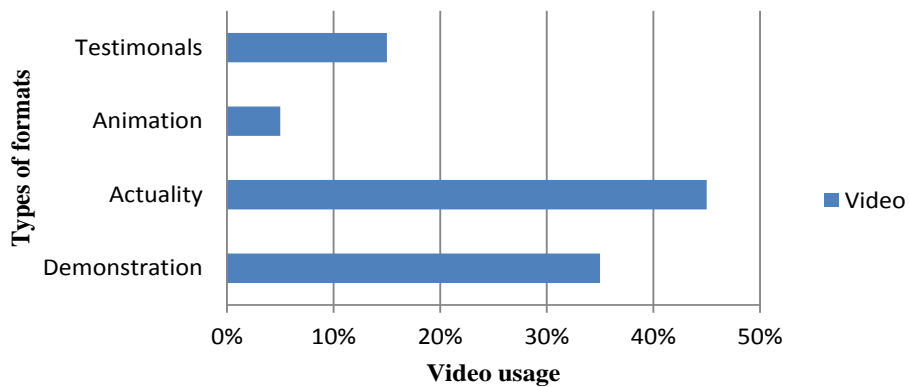
Figure 6. Formats of videos used in YouTube.

occupied about 20% messages on daily lifestyle, diet, fashion, sleeping and food habit stress. About 5% of stress is regarding relationship content, and this stress may come due to ego, misunderstanding, sexual problems, and sharing a personal experience. About 10% of information covered other stress-related information. Emotive icons communicate a lot. There are now five different Facebook reactions you can use to comment on a post: Love, Ha-ha, Wow, Sad and Angry (Figure 5 and Appendix 1). About 45% of the users used Love, which is a heart emoticon, being used when you liked the post or the person who posted it. About 15% used Ha-ha, which is a squinty-eyed grin, instead of writing "Ha-ha" or "LOL" in a comment. And 25% used Wow, it is a surprised face, used when something catches you off-guard, positively or negatively. And 5% used sad emoticon which is fairly self-explanatory. If a post gives you sad feelings, one could use the sad reaction. The same goes for the scowling angry face which happens for about 10% of the messages posted on Facebook – this post makes me angry is a pretty direct reason to use this reaction icon.

Nearly half the reactions were in terms of 'Love' which is a basic instinct which most of the young women share to send positive vibrations.

Social Norms Theory posits that your behaviour is influenced by misperceptions of how your peers think and act. Overestimations of problem behaviour in your peers will cause you to increase your own problem behaviours; underestimations of problem behaviour in your peers will discourage you from engaging in the problematic behaviour. Accordingly, the theory states that correcting misperceptions of perceived norms will most likely result in a decrease in the problem behaviour or an increase in the desired behaviour (Perkins and Berkowitz, 1986).

Thus, social media content on stress and depression initiates peer discussions and is capable of correcting misperceptions of perceived norms. Formats of videos in communicating stress and depression information played a major role in gaining the attention of the audience as seen in Figure 6. In YouTube videos, 45% of video format were actuality like giving tips or remedies about stress and depression issues, 35 percent of video formats were

Figure 7. Facebook versus YouTube.

in demonstration such as yoga and physical exercises, 15% were in testimonial format such as explaining their personal experience, and the remaining 5% were animation video to attract users' attention. The video format of actuality was most popular as it gave more authenticity. It presented instances from real life and helped reinforce social norms. Demonstration of physical exercises and yoga gave the users an opportunity to keep themselves fit by learning tips even while remaining at home.
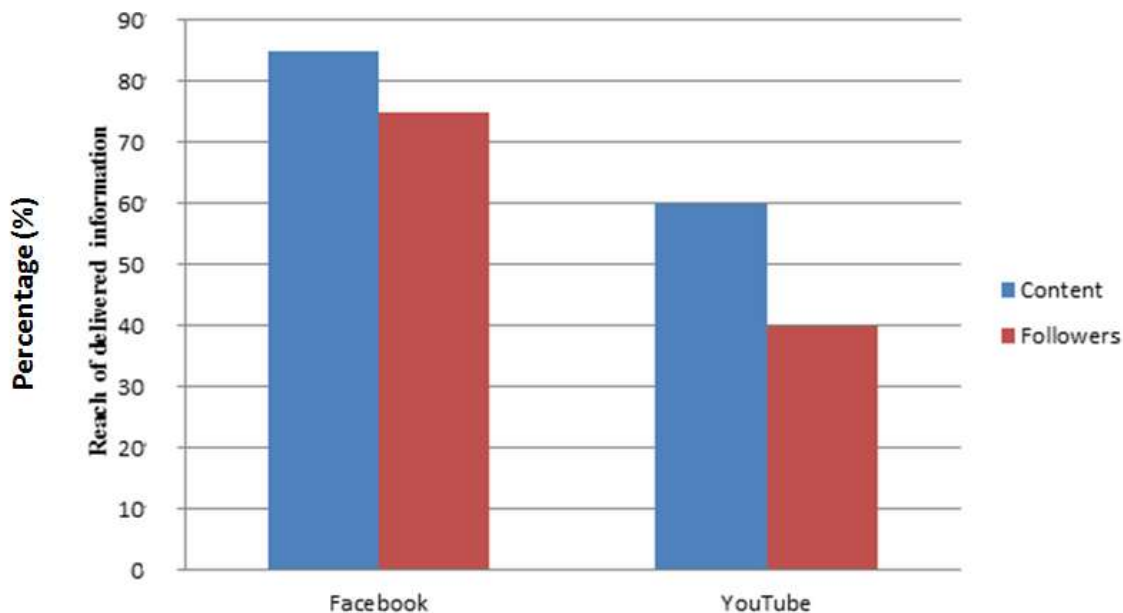
Figure 7 presents the amount of content and followers the Facebook pages and the YouTube videos have. About 75% of the followers were in Facebook whereas only 40% of the followers were in YouTube. About 85% of content was delivered through Facebook and 60% was delivered through YouTube. No doubt, Facebook is more popular particularly since the pages could open up in low bandwidth too and it offers you interactivity. Most women use Facebook as a means to overcome depression rather than YouTube. This also means that the interactivity of Facebook helps women to go beyond agenda setting and get into a programme of action besides setting reverse agenda for the mainstream media, unlike in YouTube.

CONCLUSION

The rapid growth and diffusion of social media and social networking sites in the last decade have created opportunities for people to find and share information about a wide variety of stress and depression, and to realize the importance of mental health. The first of the two objectives of the study is to analyze the content posted in the social media with regard to stress and depression on women.

Facebook users of women discussed stress and depression regarding their physical health and their lifestyle. The majority (65%) of the users suggested traditional methods such as physical exercises and yoga to overcome stress and depression. Traditional remedies offer the easiest and compact ways to give solutions, particularly of self-help, without the face-to-face consultation with health specialists. Pregnant and post-partum women are interested in practising yoga for normal delivery and later to get back to shape. Jindani et al. (2015) found that the rationale for the home yoga practice through YouTube videos was that participants would learn tools to self-soothe in the programme that they could use upon programme completion. Activities like yoga and relaxation exercises not only help reduce stress but also boost immunity (Kiecolt-Glaser and Glaser, 2018).

The second and the final objective of the study is about the use of social media as an interactive platform for women to overcome stress and depression. The findings show that women communicate a lot through emotive icons. The reason is that most of the content focus on problems faced by young women, new mothers and elderly women. Facebook reactions they use are: Love, Ha-ha, Wow, Sad and Angry. About half the users made use of 'love' which is a heart emoticon, being used when you liked the post or the person who posted it. This is because love is a one of the most basic instincts. About 15% used a squinty-eyed grin, instead of writing "Ha-ha" or "LOL" in a comment. And 25% used Wow, a surprised face. And 5% used sad emoticon to share sad feelings. The same goes for the scowling angry face which

happens for about 10% of the messages.

More women use Facebook as a means to overcome depression rather than YouTube particularly because the interactivity in the medium helps women to set reverse agenda for the mainstream media besides getting reassurance from the peer group for the problems at hand. Users have various access tools on Facebook such as a number of likes, reaction, share and comments. The likes are more (40%) because it is the easiest to do without much effort, whereas the comments constitute 20%. The likes and comments push the message to the top of the pages of the Facebook users, thus setting the agenda. In YouTube, reality videos were mostly used followed by demonstration, testimonial and animation formats. About 25% of messages were relevant to post-partum information regarding stress and depression related to post-pregnancy. Earlier, women in India had much support from the joint family system which has drastically reduced in the recent years.

Social media sets the agenda for women with regard to responses towards stress and depression, and helps reinforce and redefine social norms amid patriarchy. To adopt a (desirable) social norm, you need inter-personal confirmation through peer groups on the issue presented in the media preferably, and this inter-personal dialogue could happen through Facebook and not much through YouTube. The social norms theory says that the gap between perceived and actual is a misperception, however, by social media challenging through peers one's behaviour influenced by misperceptions, one could imbue desirable social norms which would promote good mental health. This means that Facebook goes beyond agenda setting by not only bringing the issue to limelight but also motivating women through interactions for reverse agenda setting for the mainstream media and for taking personal action.

The reason for lesser followers for YouTube could also be attributed to certain public institutions blocking YouTube videos in their work environment. Facebook and YouTube could have a symbiotic relationship with one supporting the other. However, both Facebook pages and YouTube videos are effectively used to set the agenda of a need to grapple with stress and depression among women, which will go hand-in-hand with face-to-face initiatives for promoting mental health among women.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Best P, Manktelow R, Taylor B (2014). Online communication, social media and adolescent wellbeing: A systematic narrative review. Children and Youth Services Review 41:27-36. https://www.sciencedirect.com/science/article/pii/S019074091400063

Bohra N, Srivastava S, Bhatia MS (2015). Depression in women in Indian context. Indian Journal of Psychiatry 57(2):239-S245.

Clerk EM, Smith AR, Hames JL (2013, November). The interpersonal effects of Facebook reassurance seeking. Journal of Affective Disorders 151(2):525-530.

de Choudhury M, Gamon M, Scott C, Horvitz E (2013). Predicting depression via social media. Proceedings of the Seventh International AAAI Conference on Weblogs and Social Media.

Duggan M, Brenner J (2013). The demographics of social media users, 2012. Pew Research Center. Feb. 14, 2013. Retrieved from http://www.pewinternet.org/2013/02/14/the-demographics-of-social-media-users-2012/

Gibney S, McGovern M (2011). Social networks and mental health: evidence from SHARE. Journal of Epidemiology Community Health 65(1): 9.

Grant KE, Compas BE, Stuhlmacher AF, Thurm, AE, McMahon, SD, Halpert, JA (2003). Stressors and child and adolescent psychopathology: moving from markers to mechanisms of risk. Psychological Bulletin of the American Psychological Association, Inc 129(3):447-466.

Greenwood S, Perrin A, Duggan M (2016). Social media update 2016: Facebook usage and engagement is on the rise, while adoption of other platforms holds steady. Pew Research Center. Retrieved from http://www.pewinternet.org/2016/11/11/social-media-update-2016/

Jindani F, Turner N, Khalsa SBS (2015). A yoga intervention for posttraumatic stress: a preliminary randomized control trial. Evidence-Based Complementary and Alternative Medicine, Article ID 351746, P8 http://dx.doi.org/10.1155/2015/351746

Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. Archives of General Psychiatry 62:593-602.

Kessler RC, Zhao S (1999). Overview of descriptive epidemiology of mental disorders. pp.127-150. in Handbook of the Sociology of Mental Health, edited by CS Aneshensel and JC Phelan. New York: Kluwer Academic/Plenum.

Kiecolt-Glaser J, Glaser R (2018). Stress and health research. Accessed from: http://pni.osumc.edu [10 April 2018]

Kietzmann JH, Hermkens K, McCarthy IP, Silvestre BS (2011). Social media? Get serious! Understanding the functional building blocks of social media. Business Horizons 54(3):241-251. doi: 10.1016/j.bushor.2011.01.005

Hampton K, Rainie L, Lu W, Shin I, Purcell K (2015). Social media and the cost of caring. Pew Research Center Internet and Technology. Retrieved from http://www.pewinternet.org/2015/01/15/social-media-and-stress/

Lazarus RS, Folkman S (1984). Stress, appraisal and coping. New York: Springer.

Lederman LC, Stewart LP (2005). Changing the culture of college drinking: a socially situated prevention campaign. Cresskill, NJ: Hampton Press.

Maher CA, Lewis LK, Ferrar K, Marshall S, Bourdeaudhuij I, Vandelanotte C (2014). Are health behavior change interventions that use online social networks effective? A systematic review. Journal of Medical and Internet Research 16(2):40. Published online 2014 Feb 14. DOI: 10.2196/jmir.2952

Mason JW (1975). A historical review of the stress field. Psychosomatic Medicine 30:576-607.

McCombs M (2014). Setting the agenda: mass media and public opinion. Cambridge: John Wiley.Sons.

McCombs ME, Shaw DL (1972). The agenda-setting function of mass media. The Public Opinion Quarterly 36(2):176-187.

Mirowsky J, Ross CE (2003). Education, social status, and health. New York: Aldine de Gruyter.

Oh HJ, Ozkaya E, LaRose R (2014). How does online social networking enhance life satisfaction? The relationships among online supportive interaction, affect, perceived social support, sense of community, and life satisfaction. Computers in Human Behavior 30:69-78.

Perkins HW, Berkowitz AD (1986). Perceiving the community norms of alcohol use among students: some research implications for campus alcohol education programming. I International Journal of Addictions 21:961-976.

Petersen AC, Kennedy RE, Sullivan P (1991). Coping with adolescence. In: M. E. Colten and S. Gore (Eds.), Adolescent Stress: Causes and Consequences New York: Aldine de Gruyter pp. 93-110.

Reinemann DHS, Swearer SM (2005). Depressive disorders. In Goldstein S, Reynolds CR (Eds). Handbook of Neurodevelopmental and Genetic Disorders in Adults. New York: Guilford Press.

Rozenblum R, Bates DW (2013). Patient-centred healthcare, social media and the internet: the perfect storm?" Retrieved from http://qualitysafety.bmj.com/ on April 5, 2017 - Published by group.bmj.com

Silva EC, Afonso J (2015). Social marketing for women's health campaigns. Journal of Public Administration and Policy Research 7(5):89-97. DOI: 10.5897/JPAPR2015.0310

Valkenburg PM, Peter J, Schouten AP (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. Cyber Psychology .Behaviour 9(5):584-590. https://doi.org/10.1089/cpb.2006.9.584

World Health Organization (WHO) (2016). Reported by Deidre McPhillips in U.S. among most depressed countries in the world mental health issues cut the most years off of life in Asia and the U.S. Retrieved from https://www.usnews.com/news/best-countries/articles/2016-09-14/the-10-most-depressed-countries

Xiang Z, Gretzel U (2010). Role of social media in online travel information search. Tourism Management 31(2):179-188. doi: 10.1016/j.tourman.2009.02.016

Zhang X (2013). Stress, coping, and depression in adolescents: a longitudinal analysis of data from national longitudinal study of adolescent health. College of Education and Human Sciences (CEHS). https://digitalcommons.unl.edu/cehsdiss/185/

Appendix 1. Quantitative content analysis of social media and interactivity.

S/N	Date	Content	Deliverable	Interactivity
Buzzfeed health				
1	Jan 26, 2017	29 Easy and fun ways to feel a little less stressed breathe in, breathe out	Article	Likes – 792 Reaction – 50 love Shares – 260 Comment – 67
2	Dec 30, 2016	The manufactured intimacy of online self-care. In stressful times, we turn to the internet to take care of us, but if the connection is one-sided, does it count?	Article	Likes – 15 Reaction – 2 wow Shares – 0 Comment – 2
3	Dec 25, 2016	We know what will calm your holiday stress right now. This is the season to be a bundle of anxiety	Article	Likes – 26 Reaction – 1 love Shares – 1 Comment – 3
4	Dec 17, 2016	People are stressed that this stress-tracking bracelet isn't working. After customer complaints about non-working and no-show Sona bracelets, wearable start-up Caeden says it is offering refunds and finally filling orders	Article	Likes – 17 Reaction – 3 laugh Shares – 0 Comment –2
5	Dec 12, 2016	20 people who are barely surviving finals week stress. "Why study for finals when you can focus all your time on praying you get hit by a car when you cross the street"	Article	Likes – 87 Reaction – 18 laugh, 3 love 2, sad 1, wow Shares – 11 Comment –11
6	Dec 11, 2016	20 people who are barely surviving finals week stress, "Why study for finals when you can focus all your time on praying you get hit by a car when you cross the street"	Article (repeated)	Likes – 957 Reaction – 134 laugh, 30 love, 4 sad Shares – 238 Comment –120
7	Jan 17, 2017	This woman beautifully opened up about her experience with post-partum depression. "Cheers to knowing that this too shall pass! And things will get better"	Article	Likes – 303 Reaction – 40 love, 4 sad, 1 angry Shares – 25 Comment –7
8	Dec 29, 2016	16 depressing AF science and health stories from 2016 Rising temps, medical failures, harassers, deniers…plus those poor giraffes :(	Article	Likes – 122 Reaction – 54 sad, 1 angry, 1 wow Shares – 43 Comment – 6
9	Dec 18, 2016	27 Tumblr posts you'll only get if you have depression "struggling with depression" seems to imply that I am bad at depression, when I am in fact very proficient at being depressed	Article	Likes – 2.3k Reaction – 204 love, 79 laugh, 36 sad, 1 angry Shares – 888 Comment –116

Appendix 1. Contd.

Glarms

10	Jan 11, 2017	Eat your way to a stress-free day! 5 ways to reduce anxiety with these stress-busting foods!	Video	Likes – 493 Reaction – 4 love Shares – 0 Comment – 4
11	Jan 6, 2017	Caterer? No. Stylist? No. A good make-up artist is the most important person on your wedding checklist. Our expert shows you how to pick the "Chosen One" and slam any make-up look! Pressure? What pressure? Here's some expert advice to ease the stress of all brides to be! #YouAreWelcome	Video	Likes – 230 Reaction –2 love. 1 wow Shares – 0 Comment –2
12	Dec 31, 2016	Are you stressed, moody and socially withdrawn without reason? Well, PMS could be the culprit! #LadyProblems	Video	Likes – 186 Reaction –3 love Shares – 66 Comment –2
13	Dec 22, 2016	'Stressed' spelled backwards is 'Desserts'. Coincidence? We think not. Cherry Garcia Ice Cream - No Churn	Video	Likes – 9.4 k Reaction – 444 love, 8 laughs, 280 wows, 1 sad, 1 angry Shares – 0 Comment –66
14	Dec 19, 2016	Should you really stress about the hair strands that you lose every day? Here's a quick insight on all your hair fall woes!	Video	Likes – 703 Reaction – 11 love, 2 laughs, 6 wows, 1 sad Shares – 202 Comment –30
15	Dec 13, 2016	Eat your way to a stress-free day! 5 ways to reduce anxiety with these stress-busting foods!	Video (repeated)	Likes – 416 Reaction – 6 love Shares – 0 Comment –2

Mom junction

16	Jan 17, 2017	Stress in pregnancy effects on baby - The reality stress in pregnancy effects on baby – reality	Article	Likes – 6.8k Reaction – 66 love, 133 sad, 14 wow. 3 laugh, 2 angry Shares – 645 Comment – 22
17	Jan 13, 2017	Stress during pregnancy - good or bad for your baby?	Article	Likes – 3.3k Reaction – 26 love 1 sad 16 wow Shares – 109 Comment –14
18	Jan 11, 2017	9 common signs of your baby is hungry. Feeding babies can stress out new moms	Article	Likes – 3.9k Reaction –53 love 12laugh 7 wow Shares – 142 Comment –11

Appendix 1. Contd.

19	Jan 3, 2017	3 reasons why breastfed babies grow up as healthy adults as health experts stress on factors	Article	Likes – 1.6 Reaction – 26 love Shares – 29 Comment –18
20	Dec 17, 2016	Stress in pregnancy effects on baby - The reality stress in pregnancy effects on baby – reality	Article (repeated)	Likes – 6.2k Reaction – 55 love, 122, sad 11, wow 7 laugh, 2 angry Shares – 459 Comment –23
21	Dec 14, 2016	Stress in pregnancy effects on baby- The reality stress in pregnancy effects on baby – reality	Article (repeated)	Likes – 3.4k Reaction –36 love, 122 sad, 24 wow, 4 sad, 1 laugh, 1 angry Shares – 135 Comment –27
22	Jan 6, 2017	Do antidepressants during pregnancy cause birth defects	Article	Likes – 2.3k Reaction –15 love, 3 sad, 30 wow, 4 sad, 3 angry Shares – 121 Comment – 0
POPxo				
23	Jan 9, 2017	Dear bride-to-be, if the hows and whats of wedding planning are stressing you out, we've got you covered. The ultimate guide. To plan your dream wedding like a *pro*!	Article	Likes – 41 Reaction – 1 love Shares – 0 Comment – 13
24	Jan 10, 2017	To give your skin the much-needed boost in between your wedding celebrations! 13 amazing face masks to hide all that pre wedding stress!	Article	Likes – 28 Reaction –1 sad Shares – 0 Comment –17
25	Jan 6, 2017	"The relationship was getting very stressful for both of us. A few months later, I got a call that changed my life.. "	Article	Likes – 120 Reaction – 7 sad , 3 angry, 1 love Shares – 0 Comment –17
26	Jan 2, 2017	Take a day off - Not for shopping or planning or trials – do this just to be with yourself.12 ways to de stress before the shaadi [wedding]	Article	Likes – 17 Reaction – 0 Shares – 0 Comment – 13
27	Dec 18, 2016	Wedding planning stress affecting your gorgeous hair? Worry no more! 10 ways to fight hair fall be your big day	Article	Likes – 82 Reaction – 0 Shares – 0 Comment – 1
Stylecraze health remedies				
28	Jan 28, 2017	Don't let the stress get the better of you!	Fact	Likes – 187 Reaction – 1 angry

Appendix 1. Contd.

				Shares – 12 Comment – 2
29	Jan 27, 2017	Did you know that squeezing releases some kind of energy, and also helps you relax?	Fact	Likes – 22
30	Jan 19, 2017	5 simple ways to control hair loss due to stress	Article	Likes – 67 Reaction – 0 Shares – 11 Comment – 1
31	Dec 24, 2016	10 Effective Home Remedies For #Baldness	Article	Likes – 110 Reaction – 1 love Shares – 38 Comment – 1
32	Dec 18, 2016	5 simple ways to control #HairLoss due to stress	Article	Likes – 87 Reaction – 1 love, 1 sad Shares – 25 Comment – 0
33	Dec 10, 2016	5 Simple Ways To Control #HairLoss Due To Stress	Article repeated with a different photograph	Likes –182 Reaction –1 love, 2 sad Shares – 83 Comment – 1
34	Jan 8, 2016	This Is Why You Suffer From #Obesity, Depression & Many Others	Article	Likes – 38 Reaction – 0 Shares – 35 Comment – 0
35	Dec 3, 2016	Visit the following link to know few additional #Tips on how to overcome depression.	Video	Likes – 112 Reaction – 0 Shares – 69 Comment – 2

Super healthy kids

36	Jan 23, 2017	Some great tips here! How do you make dining out with kids more enjoyable?	Article	Likes –26 Reaction – 1 laugh, 1 love Shares – 1 Comment – 5
37	Jan 17, 2017	If you love the idea of your kids being more independent in the kitchen, this one's for you. It's the last day for your kids to be enrolled in this online Kids Cooking Class! Teach your kids without stress	Picture	Likes – 45 Reaction – 1 wow. 2 love Shares – 14 Comment – 0

Appendix 1. Contd.

38	Jan 13, 2017	If you love the idea of your kids being more independent in the kitchen, this one's for you. It's the last day for your kids to be enrolled in this online Kids Cooking Class! Teach ur kinds without stress	Picture (repeated)	Likes – 129 Reaction – 4 love Shares – 68 Comment – 2
39	Dec 3, 2016	Ummm. prune pudding? I'm not too sure about that one! 5 depression era recipes that will quickly become family favourites while saving you money	Article	Likes –119 Reaction – 3 love Shares – 52 Comment – 4
Women's health				
40	Jan 29, 2017	We highly recommend bookmarking this: http://spr.ly/61808ryGC13 Realistic self-care tips that will keep you calm in stressful times.	Article	Likes – 983 Reaction – 54 love, 3 wow Shares – 440 Comment – 23
41	Jan 29, 2017	DJ Gray was a stress eater. Discover how she overhauled her diet and exercise routine, and went from 240 to 125 pounds: http://spr.ly/61838rHfN	Article	Likes – 443 Reaction – 14 love, 7 wow Shares – 41 Comment – 4
42	Jan 29, 2017	Including the one thing she can't start her day without: http://spr.ly/61848r8I6 Here's How Haylie Duff Makes Her Mornings Stress-FreeCelebs: Their hectic mornings are just like ours.	Article	Likes – 307 Reaction - 7 love, 1 wow Shares – 1 Comment – 0
43	Jan 28, 2017	Even stress sweat doesn't stand a chance: http://spr.ly/61808r HjI 7 tips that keep your pits smelling fresh all day long.	Article	Likes – 521 Reaction – 9 love, 2 wow, 7 laughs, 1 angry Shares – 121 Comment –14
44	Jan 27, 2017	One of them can even help fight stress. http://spr.ly/61898RABR	Article	Likes – 89 Reaction -- 2 love, 1 wow
45	Jan 16, 2017	Everyone overeats sometimes, but people who eat the most mindfully don't stress about it they know they can just bounce right back. http://spr.ly/61808uOvo	Article	Likes –434 Reaction – 4 love Shares – 35 Comment – 2
46	Jan 15, 2017	Learn the three tips that helped her lose over 40 percent of her weight. http://spr.ly/61898uDQP	Article	Likes – 626 Reaction – 3 love, 4 wow Shares – 42 Comment – 3
47	Jan 10, 2017	There are so many stress-busting benefits of orgasming: http://spr.ly/61858Pur9 via Bustle 7 sex position when u feel stressed.	Article	Likes – 3.6 k Reaction – 92 love. 21 wow. 59 laugh, 4 angry, 1 sad Shares – 467

Appendix 1. Contd.

				Comment – 109
48	Jan 6, 2017	It doesn't get easier than this: http://spr.ly/61848O5Gk via Bodybuilding.com simple weight loss ever without stress.	Article	Likes – 357 Reaction – 3 love Shares – 115 Comment –16
49	Dec 30, 2016	Just follow these steps for peace of mind. http://spr.ly/618183aZF exactly how running can help u get zen after a crazy – stressful day.	Article	Likes – 541 Reaction – 3 love, 3 laugh Shares – 24 Comment – 5
50	Dec 25, 2016	Yoga has forever changed this RHONJ star:	Video	Likes – 863 Reaction – 22 love, 3 wow, 2 angry Shares – 332 Comment – 22
51	Dec 1, 2016	Rough day eat this: 4 food items that help to relieve stress and shrink ur waistline	Article	Likes – 606 Reaction – 4 love Shares – 59 Comment – 0
52	Dec 13, 2016	New research explains: //www.womenshealthmag.com/beauty/itchy-skin-stress-connection	Article	Likes – 411 Reaction – 1 love 1 laugh, 1 wow Shares – 27 Comment – 13
3	Dec 12, 2016	Rough day eat this: 4 food that helps to relieve stress and shrink your waistline	Article (repeated)	Likes – 506 Reaction – 4 love Shares – 101 Comment – 1
54	Dec 9, 2016	It's ommm-azing. http://spr.ly/61838KZUW The HIIT Yoga workout will satisfy all ur calories blasting and de-stressing needs.	- -	Likes – 652 Reaction – 10 love, 3 wow, 1 laugh Shares – 91 Comment – 4
55	Jan 30, 2017	"I was trying to comprehend and understand that I wasn't evil, I wasn't lazy, I wasn't possessed, but that I have an illness." http://spr.ly/61828r HZa I was forced to have an exorcism to cure my depression.	Article	Likes – 168 Reaction – 3 love, 4 wow, 1 laugh, 9 sad, 1 angry Shares – 1 Comment – 6
56	Dec 22, 2016	"You aren't going to look like a supermodel afterward "The Other Side of Weight Loss No One Talks About Even though Erika Schnure lost almost 100 pounds, she still wasn't satisfied with her body. Read why she fell into depression after her weight-loss journey.	Article	Likes – 323 Reaction – 7 love, 1 wow, 1 angry Shares – 26 Comment – 9

Appendix 1. Contd.

57	Dec 20, 2016	Anxiety and depression, and brain health in general, are increasingly being linked to... http://spr.ly/61858M lBH via Rodale Wellness the Surprising Natural Remedy for Anxiety Stress is just one possible cause of your anxiety. This condition could have more to do with it than you think.	Article	Likes – 465 Reaction – 5 love, 3 wow Shares – 126 Comment – 18
58	Dec 20, 2016	Stomach issues. Nausea, heartburn, constipation, and diarrhea have all been linked to depression: http://spr.ly/61818MdUN via Prevention Magazine 7 physical signs of depression you might not expect.	Article	Likes – 408 Reaction – 1 love, 8 wow, 1 laugh, 20 sad Shares – 117 Comment –1 7
59	Dec 10, 2016	"I questioned everything." http://spr.ly/61848KlYp 5 women on what post-partum depression really feels like.	Article	Likes – 513 Reaction – 9 love, 2 wow,1 laugh 5, sad Shares – 35 Comment – 2
60	Dec 9, 2016	"There's a lot of misunderstanding." http://spr.ly/61868Knqq11 About Their Battles with Post-partum Depression Their message: If you've been affected, you are not alone. Celebrities open up.	Article	Likes – 462 Reaction – 3 love, 1 wow, 1 laugh Shares – 2 Comment – 4

Women's health and fitness summit

61	Dec 30, 2016	The way we train women is changing... Are YOU up to speed?	Journal	-
62	Dec 23, 2016	Confidant is a product that is designed to help with stress incontinence - this starter pack valued at $65 is today's #30prizesin30days	Picture Ad	-
63	Dec 9, 2016	This year's WHFS theme is #BRAVE	Picture	-
64	Dec 3, 2016	Tone your body, lift your spirits.	Article	Likes – 4.6k Shares – 1045 Comment – 20

Homeveda

65	Jan 4, 2017	Benefits of herbal bath salt: • Bath salts rejuvenate and enhance bath experience • Softens and detoxifies the skin • Combats stress, sore muscles, itching, insomnia and hypertension	Video	Likes – 25 Reaction – 1 love Shares – 12 Comment – 20
66	Dec 23, 2016	Reasons for dark circles: lack of sufficient sleep, aging, stress, lifestyle, un healthy diet plan (nutritional deficiency), dryness of skin under the eyes. Home Remedies for Dark Circle	Article	Likes – 9

Appendix 1. Contd.

		Food groups to consume in #depression	Likes – 23
67	Dec 18, 2016	- Omega 3 fatty acids: Helps in proper functioning of brain - Vitamin B: These are essential for the functioning of the nervous system and also act as 'anti-stress' nutrients - Fibre: It keeps blood sugar under control and prevents mood swings - Foods rich in tryptophan: Helps to elevate mood	Video	Share – 17
68	Dec 12, 2016	Food groups to consume in anorexia: - Liquids: Help restore appetite - Vitamin B complex: Releases energy from carbohydrates and combats stress - Proteins: Build muscle mass - Vitamin A and C: Boost immunity - Iron: Replenish red blood cells - Calcium: Builds bone mass	Video	Likes – 16

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Full Length Research Paper

Twitter and sports journalism in Germany: Application and networks during the Sochi 2014 Winter Olympics

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Professions in the communication realm are affected by Twitter's rapidity, agenda setting, and myriad utilization possibilities. This study addresses potentials of Twitter for journalists in the sport context and assessed journalists' Twitter activity, as well as journalists' Twitter networks and their change in the course of the 2014 Winter Olympics. The sample was composed of the accounts of 30 sports journalists who were accredited officially, and who reported their journalistic profession in their individual Twitter profile. Results indicated a considerably higher usage in the context of a major sports event, journalists favoring personal communication instead of retweeting or replying. Regarding percentages of tweets retweeted or favorited, users rated the journalists' tweets worthwhile above-average. Networks shifted towards the event itself as well as relevant national winter sports federations and athletes.

Key words: Sports journalism, Twitter, social media, networks, Olympic Games.

INTRODUCTION

The advent and popularity of social media has changed many aspects of professional and social life irrevocably. Even the sports system and sports journalism itself are included. One of the main consequences of the social media boom is the associated communication autonomy of sport, as media disappear as an intermediate target group and organizations can communicate as well as sportspeople having their own media channels directly to their reference groups (Burk et al., 2015). New platforms and technological innovations have changed the nature of traditional journalism (Sheffer and Schultz, 2010). In the information-gathering practice, competition is not just between journalists or media, but also with clubs, federations, and athletes who disseminate their news on their corporate websites or digital media channels

(Coombs and Osborne, 2012).

In particular, at major events with large public interest and a high number of reporters, the competitive pressure for (sports) journalists is heightened. On top of that, intermedia competition exists between print, radio, television, and online. According to Boyle (2006, 181), sport "offers a particular challenge for journalists in their need to both inform and entertain in an increasingly fast-paced news environment". Contacts and networks to athletes and sports organizations thus increase in relevance for the journalist's work, with the goal of establishing contact and proximity to the protagonists of the sport as well as possible (exclusively at best), which also applies to the need to obtain information. In addition to the conditions and pronounced competition among

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journalists at major sporting events, sports journalists face the challenge of optimally fulfilling their journalistic duty and thereby to increasingly make use of technical possibilities (Wigley and Meirick, 2008).

However, professional usage of social media by sports journalists in Germany still appears to be in its beginnings (Horky and Grimmer, 2014). In a recent study, German sport journalists assessed social media mostly as either relevant or extremely relevant for their work. The majority gathers information by following actors from the field of sports (87.5%). Nevertheless, they agreed with the statement that athletes' social media use has made it more and more difficult to provide news exclusively (Nölleke et al., 2017).

The use of Twitter by sports journalists is most of all important at reporting highlights like major sports events. Regarding the auto race, Daytona and Emmons (2013) mentioned, "specifically, journalists' Twitter use during a live sporting event is poised for study as technology and mobility have converged to allow for instant event sharing". In Germany, the 2010 Football World Cup in South Africa was the starting point for social media use of sports journalists (Horky and Grimmer, 2014).

In particular, the Olympic Winter Games can be called a major sports event for sports media all over the world (Markula, 2017), so this should be a good research object for this study. We strive to study this pioneering phase and investigate how Twitter is applied by German sports journalists during a major sports event. This paper analyzes, how accredited and on-site German sports journalists used Twitter in the context of the 2014 Winter Olympics in Sochi, which use Twitter communication served, and how journalists shaped their online networks. With examining their changing way of tweeting, retweeting, favorizing, or following as well as the development of Twitter networks in Sochi we want to demonstrate the importance of Twitter for German sports journalists and in particular the impact of a major sports events on journalistic Twitter usage.

LITERATURE REVIEW

Technological innovations and new platforms are changing the nature of traditional journalism, and information-gathering practices (Gibbs and Haynes, 2013; Sheffer and Schultz, 2010; Wilson and Supa, 2013). Digital technologies have fueled the flow of information. It is rapid, easy, and cheap as never before. The internet and social media, in particular, offer enriched possibilities to break news worldwide, drive traffic on platforms with targeted content, and develop new revenue streams (Coombs and Osborne, 2012).

Sports journalism has in many ways, according to Boyle (2013), "been one of the areas of journalism most profoundly affected by this change". Since more and more people turn to online for informational purposes, the

media sport market is dominated by instant news gathering, reporting, and dissemination. In particular, social media news circulation has picked up the pace (Grimmer, 2017; Hutchins and Rowe, 2010; Kian and Murray, 2014). Social media have accelerated the process of rolling news and make scoops immediately a common good (Boyle and Haynes, 2014; Haynes 2013).
Reed (2011) examined in a pilot study the ways of news gathering and the impact of social media on the professionalism of sports journalists by surveying three print media journalists. In particular, Twitter seemed to change the way of working of these sports journalists. Extending her study to seventy-seven print media journalists, Reed (2012) showed with this more detailed analysis that: "Twitter has been accepted as a 'normalized' medium", especially by young professional sports journalists.

In working with Twitter, there are differences between male and female sports journalists which had been demonstrated by Hull (2017) with the case of local broadcasters. Since social media have given athletes, clubs, federations, and events the chance to communicate directly with fans and publics, the influence of social media on the agenda setting progress is crucial in particular for communication professionals (Bowman and Cranmer, 2014; Boyle, 2006, 2012; Burk et al., 2015). Thus, competition in the battle for news is not just between journalists and between media, but nowadays includes sports shareholders and stakeholders that promote information on their respective (personal or corporate) websites or social network sites (Coombs and Osborne, 2012).

Journalists are forced to make accessible new functions and areas of online and social media use (Boyle, 2006). For instance, they use them as a source of news and as a distribution channel for information. Driven by these trends, journalists have less access today than they had decades ago (Suggs, 2015, 2016). Four out of five Chinese sports journalists, for instance, note that social media threaten traditional print media (Li et al., 2017). They reported gathering news as primary motivation for using social media. Only a small percentage of respondents noted a professional simplification based on more news sources and more available information than before the digital era (Li et al., 2017). Monitoring information on social network sites has increased professional pressure.

So far, online sources have not substituted offline sources, they rather serve as supplemental gimmick in the daily news sourcing process (Lecheler and Kruikemeier, 2016). To describe public relations information that are re-warmed by journalists and then conveyed in traditional media, Davies (2009) coined the expression "churnalism". Teams and athletes are more and more regulated by social media guidelines released by federations or clubs (Boyle and Haynes, 2014).

Driven by these trends, journalists have less access today than they had decades ago. While some journalists feel a closer relation with athletes due to private or personal information on social network sites, others acknowledge a more distant relation and social media threatening traditional media (Li et al., 2017). However, it was recently found that social media, which can also provide opportunities that support journalistic practice, are perceived as valuable tools by sports journalists. Indeed, they use social media as a supplement to their proven methods of news gathering and dissemination (Nölleke et al., 2017). The majority of sports journalists in Germany agrees that athletes' social media use has made it more difficult to provide news exclusively, yet 87.5 percent of these journalists gather information by following actors from the field of sports (Nölleke et al., 2017).

English (2016) compared the acceptance of Twitter by sports desks in Australia, India, and the United Kingdom. He combined a content analysis of more than 4100 print and online articles with 36 in-depth interviews. Only 183 print media stories contained some type of Twitter content. Twitter adoption has been most common in the UK sports reporting where 8.0% of all articles included Twitter material. It seemed "evident, that cultural and commercial aspects of the respective nations' media systems impact on rates of adoption" (English, 2016).

India's relatively low adoption is closely linked to the in general lower online and Twitter usage as well as the still existing power of its print industry. Most recently, English (2017) examined gatekeeping influences at individual and organisational levels. He combined in-depth interviews of 22 sports journalists with a content analysis of 2085 Twitter posts from sports journalists covering the Australia - India Test cricket series of 2014 to 2015.

English (2017) stated, that "there are both individual and organisational influences on the sports journalists in their gatekeeping choices and usage of social media". The specific role of Twitter for journalists working in foreign countries has been analyzed by Cozma and Chen (2013). They examined 89 foreign correspondents working for US media and demonstrated, that the correspondents most of all discussed current events in the countries where they were stationed (27%), the tweets focused on events happening elsewhere in the world (19%) and they promoted their own media outlet or disseminated breaking news (each 13%). 77% of the Twitter profiles introduced the correspondents as employees of their news organization. In average, the correspondents sent out 3.2 tweets per day, about 12% of tweets were retweets, about 18% replies to other users. Cozma and Chen (2013) concluded, that the foreign correspondents "used Twitter in a way similar to a wire service", but "many of the correspondents still do not treat Twitter as a professional or promotional tool".

Thus, journalists hesitate to use information retrieved from social media as direct and quoted sources in news reporting (Lecheler and Kruikemeier, 2016). Because online sources so far have not substituted offline sources, they rather serve as a supplemental gimmick in the daily news-sourcing process. Journalists still privilege elite sources (Jordaan, 2013; Paulussen and Harder, 2014). However, social media has relevance as inspiration for news stories. This leads to the establishment of partnerships and networks in sports journalism, mainly on Facebook and Twitter (Frederick et al., 2015; Schultz and Sheffer, 2010).

Sportswriters form networks for research and the distribution of topics, mainly due to increasing media competition. The importance of social networks for contact with athletes and sports organizations through using the example of Twitter has been tested several times in the United States (Sheffer and Schultz, 2010). Recently, social network analysis revealed relationships between sports journalists and athletes during certain periods around sporting events and identified clearly perceptible networks (Hambrick, 2012; Hambrick and Sanderson, 2013).Research Gap and Research

Questions

How far sports journalists are adapting to technological changes and applying social media in professional circumstances is important and relatively unexplored either (Li et al., 2017). Internationally renowned sports events guarantee worldwide attention and open up the chance for protagonists to reach large audiences. As a news channel, Twitter is particularly appropriate for communications professions such as public relations practitioners or journalists. Based on these considerations, we derived the following research questions:

RQ 1: Journalists' twitter application – How do sports journalists apply Twitter within the scope of a major sporting event?
RQ 2: Twitter networks – Do Twitter networks of sports journalists and sport representatives develop and how do they change within the scope of a major sporting event?

METHODOLOGY

Aside from the FIFA World Cup, the Olympic Games are the most important international sporting events (Dayan and Katz, 1992). According to official statistics, a total of about 13,000 journalists are meant to have been accredited for the 2014 Olympics in Sochi. That means a ratio of almost five journalists to every individual athlete. With 2,748 athletes from 89 countries in the 2014 Winter Games in Sochi, Russia takes fifth place for the most participants in the winter games (SR/Olympic Sports, 2014; Statista, 2015). The Winter Olympics took place in Sochi/Russia from 7 to 23 February 2014. The German Olympic Sports Confederation 'DOSB' had accredited n=134 sports journalists for the 2014 Winter Olympics in Russia. However, the final sample of this study contained solely
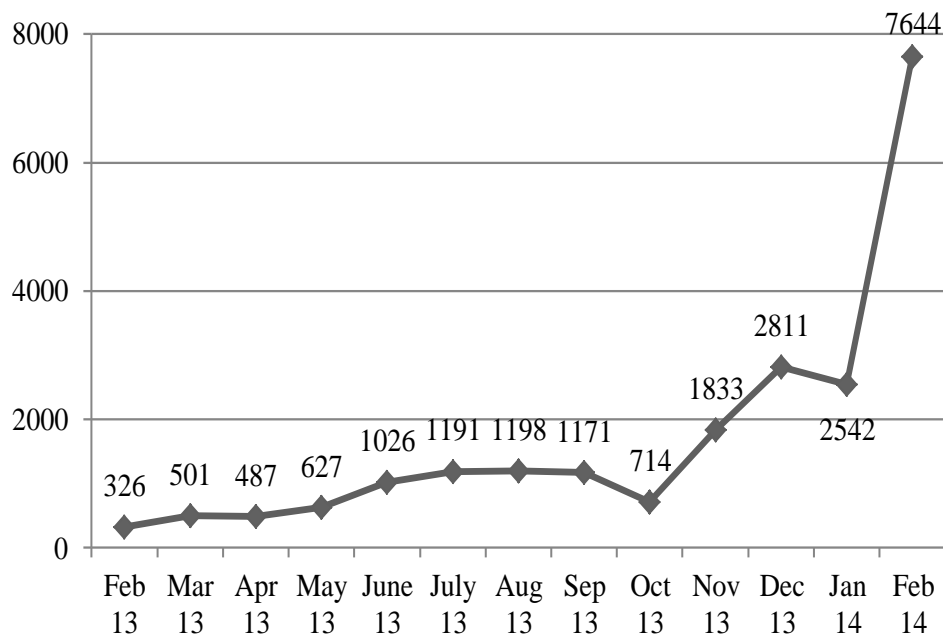
Figure 1. Sports journalists' Twitter activity during the Olympic Games and the pre-Olympic year.

sports journalists' accounts that reported their profession in their Twitter profile (31/23.1%). Because Twitonomy does not give out the data of protected profiles, the sample was limited to n=30. We focused on this particular group since these were undoubtedly sports journalists' Twitter profiles that utilized this media outlet consciously and in an official manner. Although this may not reflect the larger population of all sports journalists, it offers insights into the potential and activity of an intentional Twitter usage for professional purposes.   A combination of quantitative and qualitative content analysis was applied to address the derived research questions. The examination included one journalists and their Twitter activity, and two journalists' Twitter networks and their change in the course of the event.

Journalists' Twitter application

The analysis tool Twitonomy was applied in the context of the first research question. Buying premium access, necessary specifications were possible for capturing the desired research parameters. Twitonomy offers statistics for variables such as followers, tweets/retweets, mentions, links, answers, hashtags, favorites as well as software used for Twitter communication (iOS, Android etc.) for manually selected accounts. With this data, we can exactly demonstrate the different and changing way of Twitter usage by the sports journalists, the data was analyzed by a content analysis using statistical package for social sciences (SPSS). The period under examination ran from January 28 to February 24 (ten days ahead of the Winter Olympics until one day after the event) to include the sporting pre-coverage and at least the most important day of post-coverage with all final results and closing ceremony. To better understand, classify, and interpret quantitative date in terms of activity, interactivity, and usability during the initial examination period, reference periods were defined and examined to assess comparative values. The first one covers the same time span one year ahead of the Olympics (01/28/13-02/24/13), the second one captures data during the year leading up to the 2014 Winter Games

(01/28/13-01/27/14).

Twitter networks

To assess the meaning of networks within German sports journalism, the 30 selected sports journalist accounts were considered (accounts with unprotected Twitter profile and profession reported in its description). The analysis tool Mentionmapp illustrates visually the relational structure for each Twitter account by displaying its relations with other users and/or accounts on the basis of tweets, retweets as well as answers and hashtags. Visualizations were explored with a qualitative content analysis looking for changes within the illustrated networks. Here as well, the examination period comprises a full four-week-period (January 28 to February 24, 2014).

RESULTS

In the following section, the results are presented in relation to both research questions. Consequently, the display of results is structured according to activity, interactivity, usability, connectivity, and effectivity.

Twitter application by sports journalists

In terms of RQ1, it was examined how sports journalists applied Twitter during the Winter Olympics 2014. Additional data aside from this happening is indispensable to classify the event activity adequately. Hence, Figure 1 illustrates the number of tweets in the course of a year, starting in the pre-Olympic year from February 2013 till
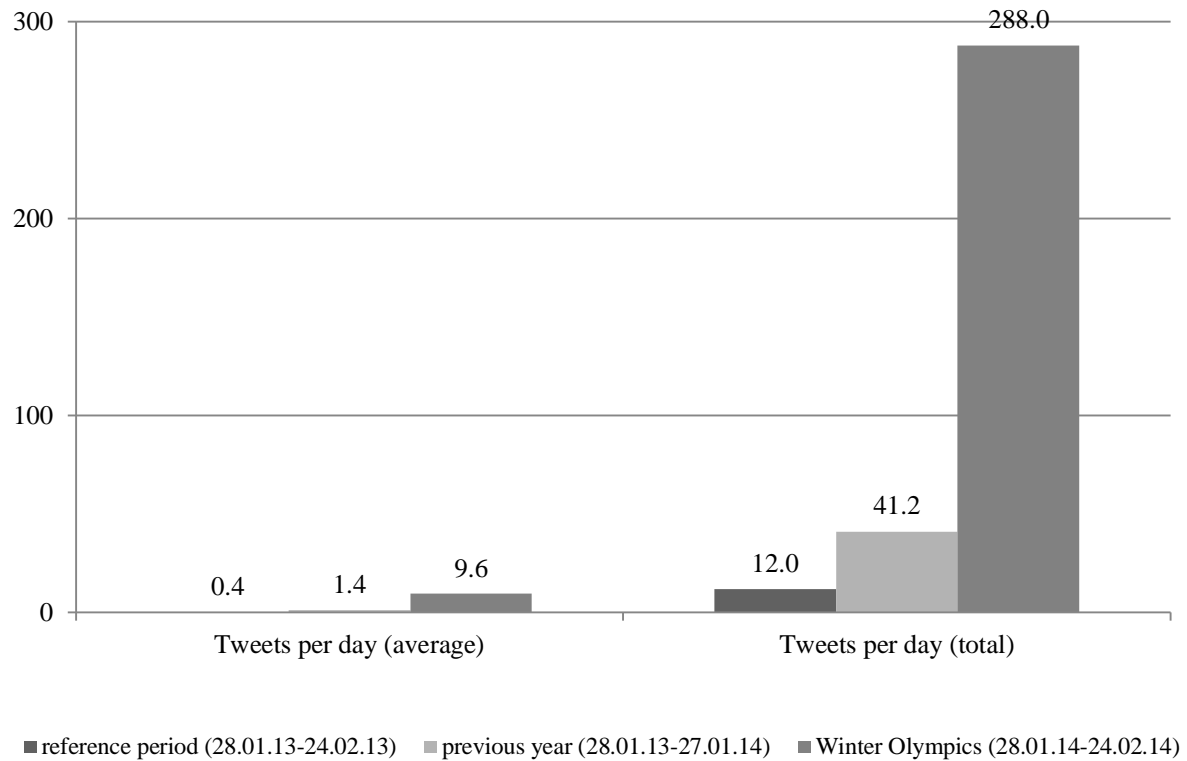
Figure 2. Tweets per day for single accounts and in total differentiated by investigation periods.

February 2014 (time of the Olympic Winter Games).

The figure documents that the Twitter activity of the 30 sampled sports journalists' accounts expanded over the year. While in February 2013, a total of only 326 tweets were transmitted, a total of 7,644 messages were communicated during the Olympic Games in February 2014. Accordingly, activity increased by more than 23 times. During the eleven months in between (from March 2013 to January 2014) about 1,300 tweets per month were sent on average.

Moving away from the historical data, the 30 analyzed profiles sent 8,065 tweets altogether in the period under investigation (01/28/14 to 02/24/14). During the twelve months before the Olympic Games, the number was 15,053, that is not quite twice as many (01/28/13 to 01/27/14), and in the comparison period in 2013 only 335 (01/28/13 to 02/24/13). Therefore, the average for a single journalist was 268.8 tweets during the Games compared with 11.2 in the same period in 2013 or 41.8 tweets per month in the year leading up to the Games. Taking into account the different time spans, two periods of about one month and the twelve months leading up to the Games, the following figure illustrates the activity in tweets per day – on the left arithmetically averaged for a single journalist and on the right aggregated for all 30 profiles (Figure 2).

While each of the journalists sent on average 1.4

tweets per day in the whole year preceding the Winter Olympics, during the Games in 2014 this value was 9.60. Accordingly, sports journalists sent nearly seven times as many tweets per day as in the preceding year and 24 times as many tweets per day as in the same period in 2013. Comparing replies and retweets as two interactive forms of communication; the greater use of replies is immediately striking. This is certainly due to the fact that – as the concept already reveals – replies are answers to tweets. Such conversations can develop certain dynamics and already a few (but controversial) chats can provide corresponding reply values immediately. On average every journalist sent approximately three replies per day in the 2014 Olympics period. In the preceding year ahead of the Winter Olympics replies played virtually no role. The same applies for retweets: In the course of one year, on average only every third sports journalist sent a retweet per day. In the period of the Winter Olympics, this relatively low value was at least six times higher. Thus, each of the 30 sports journalists in the sample transmitted on average 1.7 retweets per day during the Olympics (Figure 3).

For an assessment of the interaction rate, a consideration of the percentage share for tweets, retweets or replies of the messages communicated seems helpful. During the major sporting event, replies played an even more important role than retweets to start a conversation
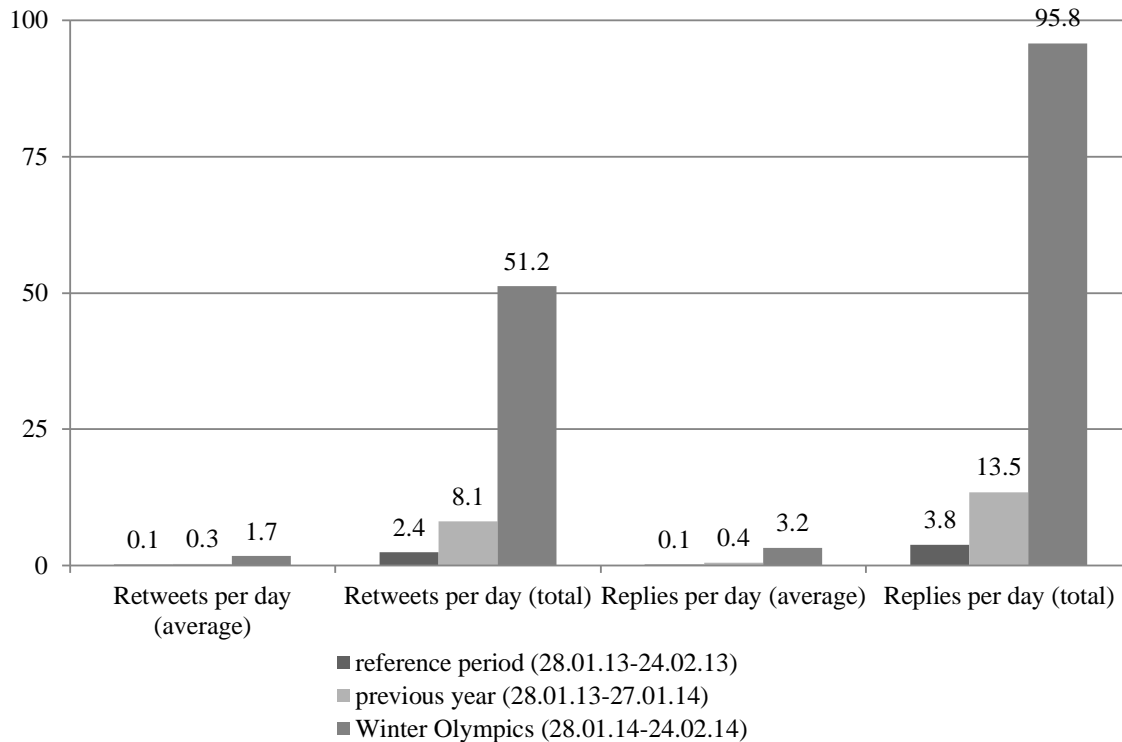
Figure 3. Retweets and replies per day differentiated by investigation period.

or discussion and not just retweet the same content. However, compared to the portion in the preceding year, the percentage of replies during the Winter Olympics shows only a marginal difference of 0.1% points. The discrepancy on the part of retweets is more obvious – the portion decreases from roughly 20% in the course of a year to less than 15% (Figure 4).

Beside retweets and replies, mentions are another indicator for interactivity. The data reveal that this type of communication was used often within the scope of the Winter Olympics. On average, each of the 30 journalists sent about 154 mentions during the major event in Sochi. Within the twelve months ahead of the Olympic Games, on average 295 mentions were integrated in tweets by every media representative. However, looking at the number of mentions per single tweet, marginal differences can be ascertained. Compared to the year ahead of the Games, the value is only 0.01 points higher for Sochi 2014. The small difference is not astonishing in this respect, because the restriction of 140 characters per tweet set by Twitter leaves hardly any elbowroom to insert many mentions in tweets.

Retweets and favoritisms provide information on the extent to which tweets are disseminated and recommended. During the Winter Olympics, 1,756 sports journalists' tweets were retweeted. In the 2013 reference period, retweets numbered just 58, and in the twelve months ahead of the Games 2,589 retweets. The number

of favorites draws a similar picture: In the Olympic period, 3,553 tweets were favored. During the year preceding the Winter Olympics it was 4,579 and in the same period of the previous year, similarly to the retweets, just 58. Because a distortion from the varying activity levels in the different investigation periods is apparent, a consideration of proportions is essential (Figure 5).

The portion of tweets retweeted seems relatively steady compared to the shares for tweets favorited. Between the reference period in 2013 and the preceding year there is hardly any difference. In contrast to these two periods of time, the percentage of tweets retweeted increases by more than four points in the Olympic period. On the other hand, the percentage of tweets favorited has developed constantly over time. After the preceding year value had already reached 30%, almost every second sports journalists' tweet was favorited during the Olympic period in 2014. This result is confirmed by the total number of retweets and favorites. The sports journalists' tweets that had been retweeted received 7,502 retweets altogether. A comparison with the corresponding number of the preceding year stresses the high value: 8,455 retweets in spite of a by far bigger dataset of twelve months. The number of favorites in the investigation period of the 2014 Winter Olympics is nearly on the same level as the number of favorites in the year leading up to the Games (11,656 vs. 12,115). Because of the divergent database (the number of tweets that could
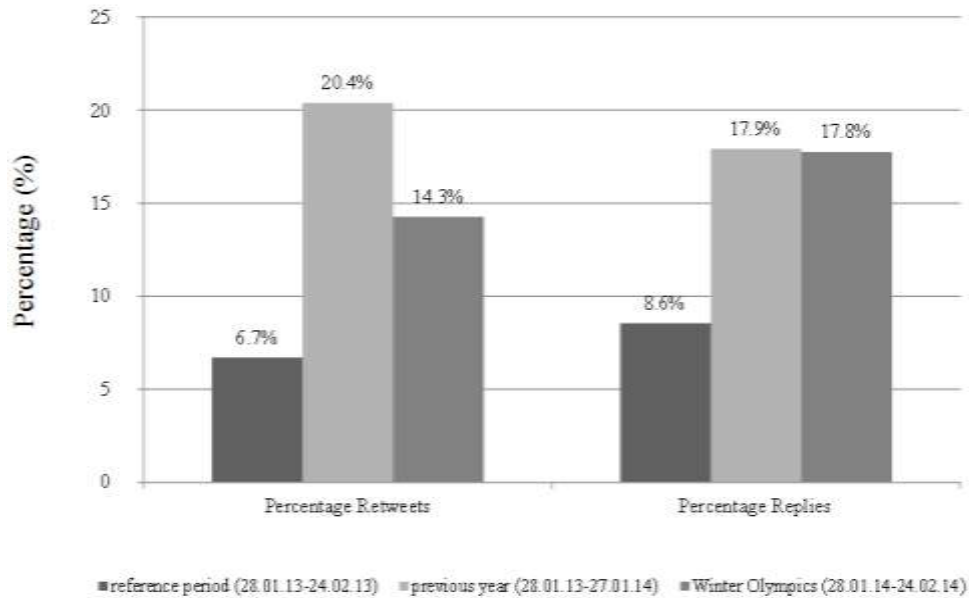
Figure 4. Percentage share for retweets and replies differentiated by investigation periods.
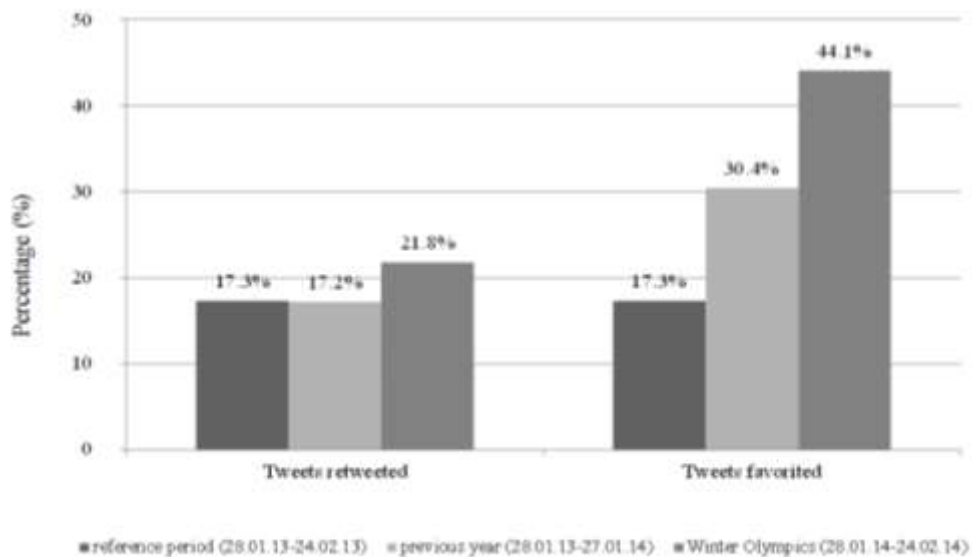
Figure. 5. Percentage share tweets retweeted and tweets favorited differentiated by investigation periods.

have been retweeted or favorited), relative values should be emphasized at this point as well (Figure 6).

After having found out that tweets are favorited rather than retweeted, it now turns out that interesting orrelevant tweets are more often retweeted than favorited: because the total number of retweets converges on a smaller number of tweets. This insight endures for all three investigation periods. Compared to the course of the preceding year, tweets that were retweeted and/or

favorited receive (almost) one additional retweet and/or favorite during the Olympic Winter Games.

Sports journalists' twitter networks

Twitter networks of the 30 journalists that reported their journalistic profession in their profile description was analyzed qualitatively looking on the accounts they are
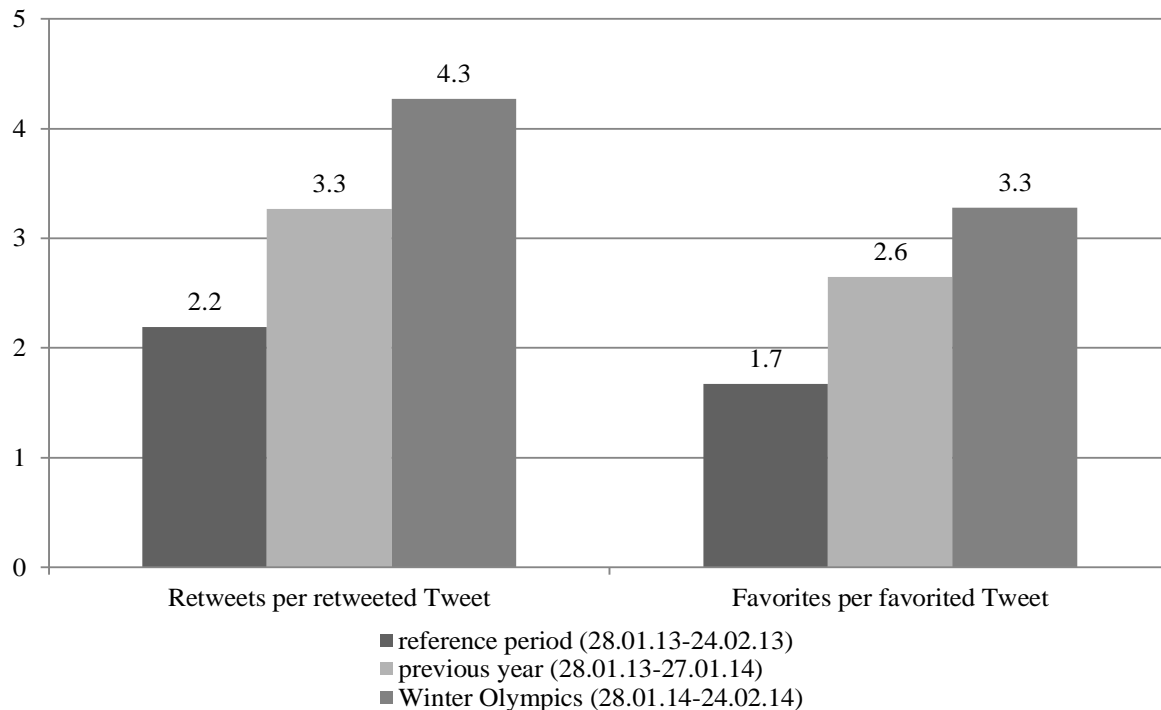
Figure 6. Retweets per retweeted tweet and favorites per favorited tweet differentiated by investigation periods.

strongly connected to and the hashtags used with a specific focus on changes within these networks during the investigation period. Sometimes more, sometimes less – but all in all uniformly recognizable ahead of the Winter Olympics – was an orientation towards the event itself, their own medium, colleagues and several sports celebrities (mostly from their own country).

The network of the journalist Mathias Müller illustrates these relations and connections exemplarily. It appears to be most representative for a common German sports journalist working at the Winter Olympics since Müller showed an ordinary Twitter use in terms of activity and interactivity. This is just one example for Twitter's use of German sports journalists, but should demonstrate a specific way of using Twitter networks. Müller was employed by the regional tabloid paper tz Munich in Germany which is distributed in Munich and surrounding regions (Mathias Müller/account: @muellerbloggt). Three days before the opening of the 2014 Winter Olympics connections with regard to several references were verifiable. For instance, strong relations existed with the German Olympic Sports Confederation (@DOSB), the German Skiing Association (@skiverband), the sports editorial department of the German TV station ZDF (@ZDFsport), the journalists Mirko Frank (@Mr_Frankynator) and Mirko Leihkamm (@kopfballer) as well as with the German field-hockey player Nina Hasselmann (@NinaFoxi). Müller posts themes regarding #lisicki (German tennis player Sabine Lisicki), #hotelsochi

(accommodation in the Sochi Olympic city) and #benemayr (German freestyle skier). The relations to hockey and tennis indicate that the network is not at all limited to winter sports. Connections to two colleagues and the national TV station illustrate distinct relations within the journalistic system (Figure 7).

Müller's Twitter network can be further differentiated during the investigation period. On the second survey day just three weeks later, the changes appear to be relatively extensive. Still apparent in the network are the connections to the German Olympic Sports Confederation (@DOSB) as well as the German Skiing Association (@skiverband). Around them a multi-faceted network had evolved with numerous grey boxes which stand for other accounts, primarily comprising journalism/ media and sports profiles. In addition, connections to the German skier Maria Höfl-Riesch (@Maria – concealed behind the grey field @JensHungermann), the German investigative journalist Daniel Drepper (@danieldrepper), the ARD correspondent at that time in Moscow (@InaRuck) as well as the Twitter account of Müller's medium tz Munich (@tz_online) had established (Figure 8).

A consideration of the hashtags shows that Müller, along with the German associations, organizations, and athletes, mostly used the German spelling when writing about the venue of the Winter Olympics (#sotschi). The English and international spelling, however, appears stranded at the bottom (#sochi). Other hashtags #gssner and #neureuther stand for the German cross-country

Figure 7. Twitter network of the German sports journalist Mathias Müller employed by tz Munich (retrieved February 4, 2014).

skier Miriam Gössner and the German downhill skier Felix Neureuther. All in all, a strong interaction with the event itself, his own medium and sports are detectable, while the network to colleagues of other media or to other media organizations became comparatively less important – while this could have gained importance on the basis of an overall more extensive Twitter usage during the Olympic Games as well.

DISCUSSION

Social media have accelerated the pace in information gathering and reporting. Digital media offer enriched possibilities to break news to an international audience, drive traffic on platforms, and develop innovative revenue streams (Coombs and Osborne, 2012). The rise of the internet allows professions in the communication realm to access more information at a lower investment of resources (Butler et al., 2013). Journalists have to cope

with more news sources and available information than ever before. Thus, monitoring information on social network sites has increased professional (journalistic) pressure. This holds true for Olympic Games as a worldwide media event, transmitted globally by media coverage. In the course of the digital revolution, (traditional) journalists have had to cope with digital media. Journalists are forced to make accessible new functions and areas of use. Their social media application and adaptation of technological changes in professional circumstances had been insufficiently studied to date.

Activity, Interactivity, and Usability

Examining the relationship between social media and sports journalism in the context of 2014 Winter Olympics, media practitioners' Twitter use can be differentiated in the three paradigms activity, interactivity, and usability. Results show an above-average use altogether for the

Figure 8. Twitter network of the German sports journalist Mathias Müller employed by tz Munich (retrieved February 25, 2014).

Twitter accounts of 30 sports journalists contained in the sample. Each journalist sent 270 tweets within the investigation period in February 2014 – 24 times more messages than in the reference period one year before. The data confirm the findings of former studies regarding the heterogeneity of Twitter usage by sports journalists (Schultz and Sheffer, 2010) and the outstanding importance of social media in the scope of major sporting events (Nölleke et al., 2017). Compared to the year leading up to the Winter Olympics, in which each journalist had a mean communication of 1.4 tweets per day, activity rose to 9.6 tweets per day during the Sochi Games – an increase of nearly six times.

In terms of interactivity, in comparison to the year preceding the Olympic Games, the percentage of replies remains steady with approximately 18%, the percentage of retweets is actually decreasing during the Olympics period (14.3% instead of 20.4%). Thus, it can be concluded there is a higher share of original content. This appears to be consistent because of the exclusivity of being one of just 134 accredited German journalists on the ground in Russia and the associated 'exclusive' local proximity to the Olympic event. Findings appear to be consistent with preceding studies which also identified an individual (entertainment and opinion based) Twitter use (Sheffer and Schultz, 2010). The value for mentions per tweet levels off at 0.4 – this appears logical because of the space restrictions of 140 characters per tweet – hence, space is limited for additional mentions.

For the assessment of usability, the retweets and favoritisms were considered. Compared to the reference period at the beginning of 2013 a distinct increase was recognizable in the event context. This points to a more interactive Twitter use by sports journalists. The percentage of tweets retweeted (21.8% instead of 17.2%) and the share of tweets favored (44.1% instead of 30.4%), as well as the retweets for tweets retweeted (4.3 instead of 3.3) or favorites per tweets favorited (3.3 instead of 2.6) are substantially higher in the Olympics period than during the twelve months leading up to the beginning of the Olympic Winter Games. These data demonstrated clearly a changing way of Twitter usage by

the accredited German sport journalists and with that the impact of social media on their work during major sports events. They publish, interact and commentate at least more than before the Olympic Winter Games. One can draw the conclusion that sports journalists have an above-average gratification and see an increased meaning and usability of tweets in the context of a major sporting event (Katz et al., 1973; Ruggiero, 2000). But it should be noted that tweets retweeted or favorited are not necessarily distinguished, newsworthy, journalistic or even 'objective'. Particularly amusing, linguistically funny, or creative tweets can be recommended.

Shift in online social networks

With regard to the development of online social networks, a light orientation towards the event itself, their own medium, colleagues, and athletes of different sports was detectable via nodes and connections ahead of the Olympics. During the investigation period, adjustments in favor of the event, relevant winter sports associations, the German Olympic Sports Confederation, as well as enhanced interconnections with German winter sports athletes – in particular top athletes and those with medal prospects – became visible. This seems understandable related to enhancing research options for sports journalists during the Olympic Games while interacting with the organizations as well as a way to get their stories noticed by these organizations to raise importance (Nölleke et al., 2017). In comparison, the 'journalistic network' to colleagues or media organizations lost its importance and changed its structure. The results are consistent with existing network analysis and sports journalists' network sociograms offer insights from another stakeholder group in the sports media complex (Hambrick, 2012; Hambrick and Sanderson, 2013; Jhally 1989). Within an increasingly competitive media landscape, networks with athletes and sports organizations are of growing importance (Sheffer and Schultz, 2010). Journalists establish personal networks for research or dissemination of their own work. Finally, the results demonstrate the worth of using Twitter by sports journalists during major sports events to get a higher reach, for strengthen their professional networks and promote themselves.

CONCLUSION

Social media have impacted the shape of existing communication. They disrupt former patterns of journalism, consumption, and practice. It was recently found that social media are perceived as valuable tools by sports journalists. These provide opportunities that support journalists' practice. Indeed, they use social media as a supplement to their proven methods of news

gathering and dissemination (Nölleke et al., 2017). In sports journalism research, social networks were analyzed by today in particular for Facebook and Twitter (Nölleke et al., 2017; Schultz and Sheffer, 2010). Within an increasingly competitive media landscape, networks with athletes and sports organizations are of growing importance for media practitioners (Sheffer and Schultz, 2010)

The purpose of the study at hand was to examine the Twitter use and its relevance for sports journalists in the realm of a major sporting event. Relevant data were assessed with the help of a tripartite content analysis. It focused (1) journalists and their Twitter activity, (2) journalistic topics and their resonance on Twitter, and (3) journalists' Twitter networks and their change during the Olympic event taking place in Sochi/Russia from 7-23 February 2014.

Data concerning sports journalists' Twitter usage attested a strong event-related impact in terms of communication activity. Compared to the share of retweets and replies in the year preceding the Olympic Winter Games, interactivity turned out to be 'relatively' lower. Most likely this can be traced back to a higher share of exclusive information, own opinion, and personal information as well as impressions related to the mega event. Perhaps that is why a higher usability and/or gratification can be ascertained for the journalists' tweets, evident in an increased share of tweets retweeted and favorited as well as more retweets per retweeted tweet and favorites per favorited tweet as usual.

Sports journalists indeed used and enlarged their Twitter network during the Olympic Games. Connections appeared related to the event, the media practitioners' own journalistic medium, and the sports field, while the network with colleagues of other media or media organizations became less important in the course of the event. The prior benefit of Twitter for the accredited sports journalists lies rather in the following sports accounts and the distribution of their own articles and reporting. Social media may affect the creation of news stories, but importance and traction is still conveyed via traditional media. In principle, interaction between journalists and their Twitter audience provides an opportunity to receive greater attention and reach for journalists' media coverage, to develop issues and content cooperatively with users, and, for example, to integrate arguments, thoughts, and views from readers into 'traditional' media coverage (crowdsourcing).

By the evolution of new media, existing media are forced to adjust orientation of content, verbalization, visualization, dramaturgy or related issues and to develop new forms of topic identification, storytelling and content distribution (Grimmer, 2017). In order to further offer additional value for readers, listeners, and viewers, existing media have to change their nature and journalistic practice (Boyle, 2012). Interaction and struggle between old and new media is addressed by the so-called media

life-cycle model (Lehman-Wilzig and Cohen-Avigdor, 2004).

LIMITATIONS

The explorative examination has an investigation period of four weeks and a sample of 30 sports journalists' Twitter accounts. Besides, the major sporting event some of the studied usage parameters such as activity, interactivity, usability, and connectivity appear to be different. In this respect, the presented data are valid only for the comparatively specific context of the 2014 Winter Olympics. In addition, the social and media attention focuses primarily on the event itself and subordinately on the huge number of sporting competitions. The introduced data have shown that Twitter was used more extensively in the investigation period than during the year preceding the event. Additional to the impact of the Olympic event itself, an adaptive effect may have influenced sports journalists' Twitter activity. In the recent past, people have increasingly recognized the potential of Twitter and have acquainted themselves with the use of the medium. Hence, a learning effect may have contributed to a more extensive and more interactive application of the medium. Finally, other external influences on the usage behavior on Twitter of German sports journalists are possible. For instance, the sporting success of athletes or the various sports disciplines covered by an accredited journalist may have had an impact on Twitter use of the sampled reporters.

FUTURE RESEARCH

Overcoming the limitations of the present study could lead to interesting and relevant follow-up research. A content-analytical coding of sports journalists' tweets and in particular communications among themselves seems to be a promising area to describe journalistic networks and more particularized forms of use. A content assessment would also permit a valuation of the quality of Twitter communication. Questioning the self-marketing function, it has to be asked to what extent sports journalists are able to bind existing users to their individual account and/or their own medium, and in addition to what extent other users can be engaged for individual profiles and/or their medium. Do journalists contribute to a more positive image and an improved reputation through their social media engagement? Lastly, international comparative studies on the research subject are valuable. In particular, in the English-speaking language area Twitter has become more mainstream than in Germany and is used more extensively (and presumably more variously). Thus, international examinations comparing social media use by different professional groups, and sports journalists in

particular, promise to make interesting starting points.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Bowman ND, Cranmer GA (2014). SocialMediaSport: The fan as a (mediated) participant in spectator sports. In Routledge Handbook of Sport and New Media. New York: Routledge pp. 213-224.

Boyle R (2006). Sports Journalism: Context and Issues. London: Sage.

Boyle R (2012). Social media sport? Journalism, public relations and sport. In We Love to Hate Each Other: Mediated Football Fan Culture. Gothenburg: Nordicom pp. 45-62.

Boyle R (2013). Reflections on Communication and Sport: On Journalism and Digital Culture. Communication and Sport 1(1/2):88-99.

Boyle R, Haynes R (2014). Sport, public relations and social media. In Routledge Handbook of Sport and New Media. New York: Routledge. pp. 133-142.

Burk V, Grimmer CG, Pawlowski T (2015). Same, Same – but Different!' On Consumers' Use of Corporate PR Media in Sports. Journal of Sport Management 30(4):353-368.

Butler B, Zimmerman MH, Hutton S (2013). Turning the page with newspapers: Influence of the Internet on sports coverage. In Routledge Handbook of Sport Communication London: Routledge pp. 219-227.

Coombs DS, Osborne A (2012). Sports Journalists and England's Barclays Premier League: A Case Study Examining Reporters' Takes on Modern Football. International Journal of Sport Communication 5(3):413-425.

Cozma R, Chen K-J (2013). WHAT'S IN A TWEET? Foreign correspondents' use of social media. Journalism Practice 7(1):33-46.

Davies N (2009). Flat Earth News: An Award-winning Reporter Exposes Falsehood, Distortion and Propaganda in the Global Media. London: Vintage.

Dayan D, Katz E (1992). Media Events. The Live Broadcasting of History. Cambridge and London: Harvard University Press.

Emmons B, Butler S (2013). Institutional constraints and changing routines: Sports journalists tweet the Daytona 500. Journal of Sports Media 8(1):163-187.

English P (2016). Twitter's diffusion in sports journalism: Role models, laggards and followers of the social media innovation. New Media and Society 18(3):484-501.

English P (2017). Social media boundaries in sports journalism: individual and organisational gatekeeping in India and Australia. Asian Journal of Communication 27(5):480-496.

Frederick EL, Burch LM, Blaszka M (2015). A Shift in Set: Examining the Presence of Agenda Setting on Twitter during the 2012 London Olympics. Communication and Sport 3(3):312-333.

Gibbs C, Haynes R (2013). A Phenomenological Investigation into How Twitter has Changed the Nature of Sport Media Relations. International Journal of Sport Communication 6(4):394-408.

Grimmer CG (2017). Pressure on Printed Press. How soccer clubs determine journalism in the German Bundesliga. Digital Journalism 5(5):607-635.

Hambrick ME (2012). Six Degrees of Information: Using Social Network Analysis to Explore the Spread of Information Within Sport Social Networks. International Journal of Sport Communication 5(1):16-34.

Hambrick ME, Sanderson J (2013). Gaining Primacy in the Digital Network: Using Social Network Analysis to Examine Sports Journalists' Coverage of the Penn State Football Scandal via Twitter. Journal of Sports Media 8(1):1-18.

Haynes R (2013). Sports Journalists, Social Networks, and Strategic Communications Management in the UK. In Crossmediale Kommunikation und Verwertung von Sportveranstaltungen. Aachen: Meyer & Meyer pp. 46-58.

Horky T, Grimmer CG (2014). The FIFA World Cup 2010 in the German Media: Presentation and Construction of a Large Sports Event. In African Football, Identity Politics and Global Media Narratives. The Legacy of the FIFA 2010 World Cup. Basingstoke: Palgrave Macmillan pp. 207-230.

Hull K (2017). An Examination of Women's Sports Coverage on the Twitter Accounts of Local Television Sports Broadcasters. Communication.Sport 5(4):471-491.

Hutchins B, Rowe D (2010). Reconfiguring Media Sport for the Online World: An Inquiry Into 'Sports News and Digital Media'. International Journal of Communication 3(4):696-718.

Jhally S (1989). Cultural studies and the sports/media complex. In: L.A. Wenner (Ed.), Media, Sports, & Society. London: Sage pp. 70-97.

Jordaan M (2013). Poke me, I'm a Journalist: The Impact of Facebook and Twitter on Newsroom Routines and Cultures at two South African Weeklies. Ecquid Novi: African Journalism Studies 34(1):21-35.

Katz E, Blumler JG, Gurevitch M (1973). Uses and Gratifications Research. The Public Opinion Quarterly 37(4):509-523.

Kian EM, Murray R (2014). Curmudgeons but Yet Adapters: Impact of Web 2.0 and Twitter on Newspaper Sports Journalists' Jobs, Responsibilities, and Routines. #ISOJ Journal 4(1):61-77.

Lecheler S, Kruikemeier S (2016). Re-evaluating journalistic routines in a digital age: A review of research on the use of online sources. New Media Society 18(1):156-171.

Lehman-Wilzig S, Cohen-Avigdor N (2004). The natural life cycle of new media evolution. Inter-media struggle for survival in the internet age. New Media and Society 6(6):707-730.

Li B, Stokowski S, Dittmore SW, Scott OKM (2017). For Better or for Worse: The Impact of Social Media on Chinese Sports Journalists. Communication & Sport 5(3):311–330.

Markula P (2017). Twenty-two Olympic Winters: the media and the (non-)making of the Games. In: L.A. Wenner, A.C. Billings (Eds.), Sport, Media, and Mega-Events. London/New York: Routledge pp. 69-84.

Nölleke D, Grimmer CG, Horky T (2017). News Sources and Follow-up Communication. Facets of Complementarity between Sports Journalism and Social Media. Journalism Practice 11(4):509-526.

Paulussen S, Harder RA (2014). Social Media References in Newspapers: Facebook, Twitter and YouTube as Sources in Newspaper Journalism. Journalism Practice 8(5):542-551.

Reed S (2011). Sports journalists' use of social media and its effects on professionalism. Journal of Sports Media 6(2):43-64.

Reed S (2013). American sports writer's social media use and its influence on professionalism. Journalism Practice 7(5):555-571.

Ruggiero TE (2000). Uses and gratifications theory in the 21st century. Mass Communication and Society 3(1):3-37.

Schultz B, Sheffer ML (2010). An Exploratory Study of How Twitter Is Affecting Sports Journalism. International Journal of Sport Communication 3(2):226-239.

Sheffer ML, Schultz B (2010). Paradigm shift or passing fad? Twitter and Sports Journalism. International Journal of Sport Communication 3(4):472-484.

SR/Olympic Sports (2014, July 13). 2014 Sochi Winter Games. Retrieved from http://www.sports-reference.com/olympics/winter/2014/

Statista (2015, July 13). Entwicklung der Anzahl der Teilnehmer bei Olympischen Winterspielen von 1924 bis 2014. Retrieved from http://de.statista.com/statistik/daten/studie/75505/umfrage/anzahl-der-teilnehmer-der-olympischen-winterspiele-seit-dem-jahr-1924/

Suggs DW (2015). Valuing the Media: Access and Autonomy as Functions of Legitimacy for Journalists. International Journal of Sport Communication 8(1):46-67.

Suggs W (2016). Tensions in the Press Box: Understanding Relationships Among Sports Media and Source Organizations. Communication. Sport 4(3):261-281.

Wigley S, Meirick PC (2008). Interactive Media and Sports Journalists: The Impact of Interactive Media on Sports Journalists. Journal of Sports Media 3(1):1-25.

Wilson D, Supa DW (2013). Examining Modern Media Relations: An Exploratory Study of the Effect of Twitter on the Public Relations-Journalist Relationship. Public Relations Journal 7(3):1-20.

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