

How the media cover mental illnesses: a review

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90

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Abstract

Purpose – Mental illness has become an important public health issue in society, and media are the most common sources of information about mental illnesses. Thus, it is important to review research on mental illnesses and media. The purpose of this paper is to provide a narrative review of studies on mental illnesses in the media and identifies important research gaps.

Design/methodology/approach – A combination of searching key databases and examining reference lists of selected articles was used to identify relevant articles. In total, 41 empirical studies published in the last 12 years were reviewed.

Findings – The review found that substantial research had been done to investigate media portrayals of mental illnesses and the effects of such portrayals might have on the public. Media still portray mental illnesses negatively in general, which contributes to the ongoing mental illness stigmatization. Nonetheless, discussions of mental illnesses in direct-to-consumer advertisements and social media tend to be more objective and informative. These objective portrayals could help improve mental health literacy and reduce stigma. More importantly, media can also reduce the stigma if used strategically. Research has found that entertainment-education programs and web-based media have strong potential in reducing mental illness stigma. Recommendations for future research are also discussed.

Practical implications – Findings can guide future efforts to use media to educate the public about mental illnesses and reduce mental illness stigma.

Originality/value – This study reviews the most recent research on mental illnesses in the media and provides important references on the media representation of mental illnesses, media effects of such representation, and using media to reduce stigma.

Keywords Media, Mental illness, Health, Stigma, Mental health promotion

Paper type Literature review

Introduction

Mental illnesses are common across the world. According to World Health Organization, depression affects 350 million people; bipolar affective disorder affects about 60 million people; and schizophrenia affects about 21 million people worldwide. However, between 76 and 85 percent of people with mental illness in low- and middle-income countries and between 35 and 50 percent of people with mental illness in high-income countries receive no treatment (World Health Organization, 2015). It is argued that mental illness stigma is the major reason to keep people from seeking help (Corrigan and Kleinlein, 2005). Moreover, mental illness stigma also contributes to robbing important life opportunities from people with mental illness, such as obtaining and keeping suitable employment and finding housing. At the societal level, mental illness stigma perpetuates fears about becoming mentally ill, ill-equips people to interact appropriately and successfully with people with mental illness, and robs the society of important human resources (Corrigan and Lundin, 2001). A survey supported by the Robert Wood Johnson Foundation (DYG, Inc., 1990) indicated that mass media are the most common sources of public information about mental illness. Similarly, Reavley *et al.* (2010) found television was the most popular source, followed by brochures and internet. Thus, it is important to investigate the relationship between the mass media and mental illness.

Much research has been done in this area. According to a systematic review of published research on images of mental illness in the mass media conducted by Stout *et al.* (2004), existing



empirical research in this area can be divided into three categories: media portrayals of mental illness, media effects of such portrayals, and how media could be used to reduce stigma toward mental illness. In addition to empirical studies, there is also a large body of research that reviews studies on mass media images of mental illness, including both systematic reviews (e.g. Stout *et al.*, 2004) and reviews of portrayals of mental illness in a specific type of media, such as television (Oostdyk, 2008) or on media targeted at a specific audience, such as children (Wahl, 2003).

Mass media, as important vehicles of information, plays a significant role in contributing to the stigmatization of mental illness (Stout *et al.*, 2004; Wahl, 1992). Thus, this research area deserves continued attention to investigate how media portrays people with mental illness, what effects they have on the public, and how to use media to reduce stigma effectively. The goal of the current paper is to conduct a narrative review (Green *et al.*, 2006) of empirical studies published in the past 12 years to answer the above three questions. Moreover, it also aims to identify the existing research gaps and limitations, and provide recommendations for the future research. The media types examined in the current review include non-fiction news media, fictional media, direct-to-consumer (DTC) advertising, and social media. Before reviewing each empirical study, previous literature reviews on mass media images of mental illness are summarized.

Previous literature reviews

In Wahl's (1992) seminal article, he reviewed more than four decades of published studies that address the frequency, accuracy, and impact of mass media portrayals of mental illness. The author found that depictions of mental illness were common in the mass media and not confined to any single medium. Moreover, media portrayals of mental illness were consistently inaccurate and unfavorable; people with mental illness were labeled as inadequate, unlikable, and dangerous. There were relatively few studies on the impact of media depictions of mental illness. However, the published studies indicated that media portrayals of mental illness influenced people's knowledge and attitudes toward mental illness and that negative depictions could have an unfavorable impact on people's attitudes toward people with mental illness.

More than a decade later, Stout *et al.* (2004) found similar results. However, the researchers claimed the nature and scope of the study of mental illness had changed since Wahl's (1992) review. They conducted a review of 34 empirical studies examining media, stigma, and mental illness published between 1990 and 2003. The authors looked at three aspects: representations of mental illness in the media; evidence of effects of mass media; and mental illness stigma, and using media as a tool for change. The authors found more research focusing on images of mental illness in print media, including newspaper and popular magazines; this differed from Wahl's (1992) study, where television was claimed as the most studied medium. Stout *et al.*'s (2004) review further found that while newspaper articles covering mental illness more often framed the topic negatively than positively, it is important to note that the researchers identified a decrease in the number of references toward the dangerousness of people with mental illness in newspaper coverage of mental illness. Moreover, magazine articles are fairly accurate whereas television programs and films still distort the image of mental illness and of mental health professionals.

In line with Wahl's (1992) study, Stout *et al.* (2004) claimed that how mental illness is defined and identified was different across studies, which may result in less meaningful assessments and comparisons. In addition, Stout *et al.* (2004) pointed out that little was known about how mental illness may be represented in media other than newspapers or televisions, such as the internet or messages through direct-to-audience (DTC) advertising or public service announcements. Regarding media effects, Stout *et al.* (2004) found media could affect public knowledge and attitudes toward mental illness. Consistent with Wahl's (1992) findings, Stout *et al.* (2004) found the media contributed to the perpetuation of mental illness stigma. Stout *et al.* (2004) claimed few studies had examined directly how

media might be used to reduce stigma. The authors recommended that more experimental research is needed to examine how different media channels (e.g. TV and newspapers) and genres (e.g. TV news programs, TV drama or televised films) distinctly impact audiences and under which circumstances, before considering how media might be used to reduce mental illness stigma.

Moreover, Klin and Lemish (2008) reviewed about 100 books and articles on mental disorders stigma in the media published between 1985 and 2005. This review has a good deal of overlap with the previous reviews (Stout *et al.*, 2004; Wahl, 1992), which resulted in many similar results. Klin and Lemish (2008) found that not only the image of people with mental disorders was distorted, but also the image of mental health professionals, the causes, and treatments of mental disorders was distorted. Additionally, these distorted images could contribute to the perpetuations of mental illness stigma. Consistent with Stout *et al.* (2004), Klin and Lemish (2008) argued that more research was needed to examine new media images of mental disorders. The authors also pointed out that there was a lack of research examining the media image of mental illness-related policies and drugs.

In sum, the above three reviews examined and analyzed studies of media image of mental illness mainly in the second half of the twentieth century. Their findings were consistent in some aspects, though there were some differences due to, for example, the development of media and prevalence of mental illness. However, these reviews did not include research published in the past decade, which will be the subject of the current review. Consistent with the body of research, this paper addresses the following three questions: how do media portray mental illness? What are the effects of media depictions of mental illness on the general public? How could the media be used to reduce mental illness stigma?

Methods

The current paper is a narrative review of literature on how the media cover mental illness. According to Green *et al.* (2006), narrative reviews are defined as “comprehensive narrative syntheses of previously published information” (p. 103). This type of review is suitable for the scope of the current study because it not only provides a general picture of how the media cover mental illness, but also identifies the existing research gaps and limitations in this area.

Because existing reviews do not cover at all or only cover a small number of the most recently published studies on mental illness and media, this paper summarizes and analyzes research published in the last 12 years, between 2003 and 2015. The year 2003 was chosen to start the search is also because Stout *et al.*'s (2004) review included articles published between 1990 and 2003. Following Green *et al.*'s (2006) suggestion, EBSCO and PsycINFO databases were used to identify relevant studies based on their use in previous literature reviews (Stout *et al.*, 2004). Keywords included mental illness, mental disorders, mental health, psychiatric disorders, stigma, media, newspaper, magazines, television, films, advertising, internet, social media, Facebook, and Twitter. This produced a research corpus that included reviews, news items or editorials, and empirical studies. Only empirical research (i.e. content analysis, semiotic analysis, surveys, interviews, and experiments) examining media and mental illness written in English was selected and analyzed in this paper. Additionally, reference lists of selected sources were reviewed and additional empirical research that did not appear in the database was added. For example, a relevant paper might not have been indexed in the above two databases, therefore a review of reference lists could help identify potential articles. This study removed replications of similar studies done by same authors or replications of studies with identical results due to limited space. This created a final sample of 41 references. The studies are summarized in Table I.

Authors	Publication year	Country	Main method	Sample size	Media type	Mental illness type	Resume of study
Angermeyer <i>et al.</i>	2005	Germany	Survey	5,025	TV and newspapers	Schizophrenia	The more people watched TV, the more they desired social distance from people with schizophrenia, while no such evident association emerged between newspaper consumption and the desire for social distance
An	2008	USA	Telephone interviews	300	DTC advertisements	Depression	People with higher recall for antidepressant DTC advertisements were more likely to have a higher estimation of the prevalence of depression than those with lower recall
An <i>et al.</i>	2009	USA	Survey	285	DTC advertisements	Depression	Exposure to antidepressant advertising helped build viewers' belief that depression was treatable, but it may also prompt those with mild symptoms to seek a quick but potentially inadequate medical solution while ignoring other treatment options
Arney and Weitz	2012	USA	Content analysis	320	DTC advertisements	Depression	Depression was portrayed as a female disorder
Bie and Tang	2015	China	Content analysis	795	Newspapers	Autism	Although autism has received increased media attention, it is attributed as a family problem. In addition, people with autism are not given much voice
Boke <i>et al.</i>	2007	Turkey	Content analysis	878	Newspapers	Schizophrenia	44.1 percent of the analyzed texts used the word schizophrenia in a metaphorical way
Carpiniello <i>et al.</i>	2007	Italy	Content analysis	2,279	Newspapers	Mental illness in general	A significantly higher percentage of stigmatizing language was used when the violent acts were attributed to people with mental illness
Cavazos-Rehg <i>et al.</i>	2016	USA	Content analysis	2,000	Social media	Depression	The most common theme of depression-related tweets was being supportive or helpful, closely followed by disclosing symptoms or feelings of depression
Corrigan <i>et al.</i>	2005	USA	Content analysis	3,353	Newspapers	Mental illness in general	Recovery about mental illness was beginning to be discussed in the media and more stories focused on biological or environmental causes instead of personal or parental blame
Corrigan <i>et al.</i>	2013	USA	Experiment	151	Newspapers	Mental illness in general	Stories about recovery resulted in reduced stigma and greater acceptance for people with mental illness;

(continued)

Table I.
Summary of the reviewed studies

Table I.

Authors	Publication year	Country	Main method	Sample size	Media type	Mental illness type	Resume of study
Diefenbach and West	2007	USA	Content analysis and telephone interviews	84 hours of television programs and 419 survey participants	Television news	Mental illness in general	however, stories about dysfunctional public mental health systems led to increased stigma and decreased accepting toward people with mental illness The television news image of people with mental illness was negative and violent. Moreover, people who watched television news were less willing to live next to someone with mental illness and that people believed that television portrayals of mental illness had greater effects on others than themselves
Duckworth <i>et al.</i>	2003	USA	Content analysis	1,740	Newspapers	Schizophrenia	28 percent of the analyzed newspaper articles that mentioned schizophrenia used the illness metaphorically compared to only 1 percent of articles that mentioned cancer
Fennell and Boyd	2014	USA	Content analysis	35	Films	OCD	Although the media image of OCD reinforced some common negative stereotypes of mental illness, the media also portrayed people with OCD as relatively intelligent and functional
Finkelstein <i>et al.</i>	2008	USA	Experiment	193	Web-based programs	Mental illness in general	A computer-mediated anti-stigma program was more effective in changing people's attitudes toward psychiatric patients than printed materials
Francis <i>et al.</i>	2005	Australia	Content analysis	1,123	Non-fiction news media	Depression and other mental illness	There was a relatively low level of media coverage of crimes associated with mental illness in Australia. In addition, depression was most frequently portrayed in media
Grow <i>et al.</i>	2006	USA	Semiotic analysis	27	DTC advertisements	Depression	Biochemical framing dominated the framing of depression. Additionally, depression was portrayed more common among females
Guidry <i>et al.</i>	2016	USA	Content analysis	783	Social media	Depression	Depression-related pins had high response levels and more than half of the pins referred depression as a severe disorder. Moreover, 10 percent of pins mentioned suicide or suicidal thoughts and 6.9 percent mentioned self-harm

(continued)

Authors	Publication year	Country	Main method	Sample size	Media type	Mental illness type	Resume of study
Haverhals and Lang	2004	USA	Experiment	81	DTC advertisements	Depression	Viewers perceived mental illness to be more treatable as they watched more psychotropic DTC advertisements
Hoffner and Cohen	2012	USA	Survey	142	TV dramas	OCD	<i>Monk</i> had positive psychological effects on fans that were dealing with mental illness
Hoffner <i>et al.</i>	2015	USA	Survey	198	TV, print, and online news	Mental illness in general	People perceived others were more influenced by the news when they had more prior experience with mental illness, which was further related with behavioral outcomes
Holman	2011	USA	Content analysis	202	Mainstream press and popular magazines	PPD	Magazines produced more balanced coverage than newspapers on postpartum depression (PPD)
Holton <i>et al.</i>	2014	USA and UK	Content analysis	473	Newspapers	Autism	More than two-thirds of the newspaper articles about autism contained stigmatizing cues and more than half employed loss frames
Joseph <i>et al.</i>	2015	USA	Content analysis	1,838	Twitter	Schizophrenia	Compared to diabetes, schizophrenia was used more sarcastic, medically inappropriate, and non-medically in Twitter. In particular, the tweets were more negative when they referred schizophrenia as medically inappropriate and non-medically. Moreover, compared to the noun “schizophrenia,” the adjective “schizophrenic” was used more negatively
Kimmerle and Cress	2013	Germany	Survey and experiment	77 and 39	Films	Schizophrenia and OCD	The more people watched TV, the less knowledge they had about schizophrenia and OCD. Moreover, people who watched a fictional film acquired less knowledge and had more negative emotional reactions toward schizophrenia than those who watched a documentary film
Kim and Stout	2010	USA	Experiment	113	Interactive web-based media	Schizophrenia	Interactive media had a significant positive influence on processing information related to mental illness and attitudes toward mental illness

(continued)

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Authors	Publication year	Country	Main method	Sample size	Media type	Mental illness type	Resume of study
Lawson and Fouts	2004	USA	Content analysis	34	Films	Mental illness in general	A high percentage of films referred to mental illness with stigmatizing words being labeled. Additionally, most of the characters with mental illness served as the objects of amusement and mock
McGinty <i>et al.</i>	2013	USA	Experiment	1,797	Newspapers	SMI	Stories about mass shootings by people with serious mental illness (SMI) led to more negative attitudes toward people with SMI and greater support for gun restrictions for people with SMI
McGinty <i>et al.</i>	2014	USA	Content analysis	364	Newspapers, magazines, and televisions	SMI	Gun violence was often related with SMI in mass shootings. Most coverage was event-focused and attributed the cause of gun violence as “dangerous people” rather than “dangerous weapons.”
McKeever	2013	USA	Content analysis	302	Newspapers	Autism	A large proportion of newspaper articles about autism quoted medical experts and provided more solutions than causes
Moreno <i>et al.</i>	2011	USA	Content analysis	200	Facebook	Depression	College students like to disclose depressive symptoms on Facebook. In particular, those who received responses to their posts were more likely to discuss depression on public profiles
Parrott and Parrott	2015	USA	Content analysis	983	TV dramas	Mental illness in general	People with mental illness were more likely to commit crimes and violence, and to be victimized by crimes than the remaining population
Pavelko and Myrick	2015	USA	Experiment	574	Twitter	OCD	The use of the hashtag “#OCD” in Twitter did not result in greater social distance from people with OCD, but did decrease the liking of the tweets. Female participants and those with personal experience with OCD and/or mental illness showed less social distance with people with OCD
Penn <i>et al.</i>	2003	USA	Experiment	163	Films	Schizophrenia	Documentary films about schizophrenia had an advantage in reducing stigma than fictional films despite identical information in both types of films

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Authors	Publication year	Country	Main method	Sample size	Media type	Mental illness type	Resume of study
Ray and Hinmant	2009	USA	Content analysis	234	Magazines	ADD and ADHD	The tone of the magazine articles about ADD and ADHD was informative and slightly more sympathetic, which could help normalize the disorder
Ritterfield and Jin	2006	USA	Experiment	165	Films	Schizophrenia	Watching an educational movie can increase people's knowledge acquisition about schizophrenia. Moreover, stigma reduction could be achieved by watching both the movie and a value added component trailer
Siegel	2014	USA	Content analysis	11	Films	OCD	People with OCD were portrayed more positively in films, though depictions of violence were still frequently employed. Moreover, the depictions of how stigma affects people with OCD were relatively few
Slopen <i>et al.</i>	2007	USA	Content analysis	3,383	Newspapers	Mental illness in general	Newspapers stories focusing on children contained less stigmatizing terminology than those focusing on adults
Wang and Liu	2015a	China	Content analysis	8,261	Social media	Depression	Influential users tended to generate more supportive or helpful posts than stigmatizing posts in Chinese social media sites
Wang and Liu	2015b	China	Content analysis	8,261	Social media	Depression	Posts about recovery and treatment of depression reduced stigmatization and support at the same time. Moreover, context under which depression was discussed mattered
Whitley <i>et al.</i>	2015	Canada	Content analysis	1,168	Newspapers	Mental illness in general and schizophrenia	Articles about men with mental illness were more stigmatizing than those about women with mental illness. Moreover, articles focusing on individuals were more stigmatizing than articles about mental illness in general
Zhang <i>et al.</i>	2015	China	Content analysis	527	Newspapers	Depression	Newspaper coverage of depression used more thematic than episode framing and placed more problem solving responsibilities to the society

Table I.

Representations of mental illness in the media

In general, media content of mental illness continues the themes identified in previous research. Dangerousness is still widely attributed to people with mental illness and there are many negative depictions reflecting stigma.

Representations of general mental illness in non-fiction news media

Non-fiction news media, such as newspapers, magazines, and television programs are still the major source of information for the general public. Examining how mental illnesses are portrayed in news thus continues to be of vital interest.

Consistent with previous findings (Klin and Lemish, 2008; Stout *et al.*, 2004; Wahl, 1992), mental illnesses are often associated with crimes and violence and still depicted negatively. A content analysis of articles relating to homicides, suicides, and other violent acts in four main Italian newspapers found that approximately 40 percent of all deeds were attributed to people with mental illness. Among these articles, a significantly higher percent of stigmatizing languages was used when these violent acts were attributed to a person with mental illness (Carpiniello *et al.*, 2007). Findings from McGinty *et al.*'s (2014) study on news coverage of serious mental illness (SMI) and gun violence in the USA further emphasized the strong association between mental illness and violence. The results indicated that gun violence was often related with SMI in mass shootings and most stories attributed the cause of gun violence as "dangerous people" rather than "dangerous weapons." Similarly, Corrigan *et al.*'s (2005) study found almost 40 percent of newspaper stories portrayed mental illness as dangerous and violent, and the stories often appeared in the front section.

Although negative portrayals of mental illness still account for a large portion of the research findings, researchers also found the number of such stories is decreasing. Corrigan *et al.*'s (2005) study revealed recovery about mental illness and advocacy action was beginning to be discussed in the media, and more stories focused on biological or environmental causes instead of personal or parental blame. The researchers claimed that this finding was good news because previous research suggested people tended to view people with mental illness as more responsible for their condition than those with other health disorders (Corrigan *et al.*, 2000). Additionally, Francis *et al.* (2005) suggested that there was a relatively low level of media coverage of crime associated with mental illness in Australia. The authors argued this finding corresponded to the relevant guidelines for media reporting of mental illness in Australia, which stated that mental illness did not equate with violence. However, they also found depression was most frequently portrayed in media, and the coverage of certain types of mental illness did not correlate with the actual rates of mental illness in the Australian population. Their findings indicate that general guidelines for media professionals do have some effects on balanced reporting mental health issues, but they are not influential enough to change the trend of inaccurate and unfavorable depictions of mental illness.

Age and gender differences in the depiction of mental illness. There is also age and gender differences in the media image of mental illness. For example, one study content analyzed US newspaper coverage of mental illness among children and adults and found articles focusing on children contained less stigmatizing terminology. They also found that articles featuring stories on children were more likely to provide accurate information about mental illness than did stories on adults (Slopen *et al.*, 2007). The researchers concluded that articles about children with mental illness incorporated more elements of responsible journalism, while articles about adults tended to use a greater degree of stigmatizing terminology. In another study, Whitley *et al.* (2015) compared generic and gendered representations of mental illness in Canadian newspapers. The authors found that articles about men with mental illness were more stigmatizing than those about women with mental illness. Moreover, articles focusing on individuals were more stigmatizing than those focusing on

mental illness in general. The authors suggested that journalists should be cautious of biases when reporting on mental illness-related issues.

Portrayals of specific types of mental illness in non-fiction media. Possibly as a response to Stout *et al.*'s (2004) call for more precise research, recent studies have started to look at the image of a specific type of mental illness in non-fiction media. For example, Holton *et al.* (2014) found more than two-thirds of the news stories about autism contained stigmatizing cues; more than half of the sample employed loss frames, which attribute negative outcomes to having autism. They argued that the presence of stigmatizing cues and the use of loss frames could create a threatening space for autism. McKeever's (2013) study found a large proportion of articles on autism sampled from *The New York Times* and *The Washington Post* provided more solutions for autism than causes and more often used medical experts as the news sources, which could help normalize this disorder. Similarly, Bie and Tang's (2015) study on Chinese newspaper coverage of autism suggested autism received increased media attention. Their findings indicated that autism was framed as a family problem and people with autism were not given much voice unless they had special talents. Another content analysis of Chinese newspaper coverage of depression indicated that the news articles used more thematic than episode framing and tended to place problem solving responsibilities society than on individuals (Zhang *et al.*, 2015).

Research on magazines has also focused on specific mental illness. Ray and Hinnant (2009) conducted a content analysis of articles from popular magazines about attention deficit disorder and attention deficit hyperactivity disorder, and found the tone of these articles to be informative and slightly more sympathetic in human-interest stories, which helped normalize the disorder. In a similar study, Holman (2011) analyzed postpartum disorders from American mainstream press and popular magazines, and the results indicated that magazines produced more balanced coverage than newspapers. Holman (2011) attributed this finding a result of the more flexible and longer time allocated, and more specialized and focused coverage, compared to newspapers.

Metaphorical use of the term schizophrenia. Researchers found schizophrenia had often been used metaphorically to reflect journalists' desire to express an opinion more strongly. For example, Boke *et al.* (2007) analyzed national newspapers in Turkey to explore the meaning attributed to the word schizophrenia. The researchers found 44.1 percent of the analyzed texts used the word schizophrenia in a metaphorical way. The result is consistent with findings in US newspapers; 28 percent of analyzed articles that mentioned schizophrenia used the illness metaphorically compared to only 1 percent of articles that mentioned cancer (Duckworth *et al.*, 2003). The researchers claimed that such inaccurate use of schizophrenia could contribute to the ongoing stigma.

Representations of mental illness in fictional media

Portrayals of general mental illness in fictional media. As with news media, the image of mental illness in fictional media is negative. Lawson and Fouts (2004) analyzed Disney animated films and found a high percentage of films referred to mental illness with stigmatizing words being labeled. Additionally, most of the characters with mental illness served as the objects of amusement and mock. The researchers expressed their concerns that these negative portrayals might influence children's attitudes and behaviors toward people with mental illness. Consistent with findings from news coverage of crime and mental illness, an analysis of crime dramas showed that people with mental illness were more likely to commit crimes and violence than the remaining characters. Meanwhile, they were more likely to be victimized by crime than the general population (Parrott and Parrott, 2015). Similar findings were also reported in Diefenbach and West's (2007) study that characters with mental illness were ten

times more likely to commit violent crimes than characters without mental disorders. These findings again showed media perpetuated stereotypes and stigmatization of mental illness.

Portrayals of specific types of mental illness in fictional media. Studies examining obsessive-compulsive disorder (OCD) in fictional media revealed a rather more positive picture than for mental illness in general. Fennell and Boyd (2014) content analyzed fictional media representations of OCD from 1970s to 2000s. The data indicated that though the media image of OCD reinforced some common negative stereotypes of mental illness, the media also portrayed people with OCD as relatively intelligent and functional. Siegel (2014) carried out a similar study by examining films that contain one character with OCD. The results indicated that people with OCD were often portrayed positively, though depictions of violence were still frequently employed. The depictions of how stigma affects people with OCD were relatively few. The authors suggested that understanding of media images of certain types of mental disorder was needed to better combat mental illness stigma.

Representations of mental illness in DTC advertisements

Besides studies focusing on news reporting, magazine articles or films, a few recent studies have examined how mental illness, especially depression, is presented in DTC advertisements. This is a new area of study since Stout *et al.* (2004) asserted that little was known about how mental illness might be represented and its effects via messages delivered through DTC advertising in their review.

Framing depression as an illness that predominantly affects females. Through a semiotic analysis of print advertisements of antidepressants that appeared in *Reader's Digest* and *Time*, Grow *et al.* (2006) argued that gender played a role in framing of depression within antidepressants DTC advertisements, where depression was presented as more common among females. Framing depression as a problem that predominately affects women can perpetuate over-diagnosing female patients while under-diagnosing male patients. In addition, they also concluded that biochemical framing dominates the framing of depression, which "marginalizes the psycho-social causes for depression" (p. 178). Consistent with Grow *et al.*'s (2006) findings, Arney and Weitz (2012) contended that gender bias existed in DTC advertisements of antidepressants. A content analysis of magazines indicated antidepressants DTC advertisements in popular magazines portrayed depression as a predominantly female disorder and alerted men that they would benefit if their female partners sought treatment while suggesting women to seek such treatment for the sake of their loved ones.

Representations of mental illness in social network sites (SNS)

With the rise of social media use, researchers began to examine the discussions of mental illness in SNS, which also corresponded to Klin and Lemish's (2008) and Stout *et al.*'s (2004) call for more research on the new media.

Providing support for people with depression through SNS. A study on depression-related tweets found most tweets expressed help or support to people with depression, followed by tweets about disclosing feelings of depression (Cavazos-Rehg *et al.*, 2016). The similar finding was also obtained in a study examining Sina Weibo, a popular microblogging platform in China, where the authors found influential Weibo users tended to generate more supportive or helpful posts than stigmatizing posts (Wang and Liu, 2015a). Posts that presented recovery or treatment information were more likely to be supportive.

Revealing depressive symptoms and suicidal thoughts through SNS. People often discuss stress, depressive symptoms, and self-harm or suicidal thoughts in SNS. Cavazos-Rehg *et al.*'s (2016) study revealed that two-thirds of the tweets disclosed one or more symptoms of

depression, including tweets mentioning self-harm and/or suicide. A study on Pinterest found 10 percent of pins mentioned suicide or suicidal thoughts and 6.9 percent mentioned self-harm (Guidry *et al.*, 2016). College undergraduates often discuss depressive symptoms on Facebook and those who receive responses to their posts are more likely to discuss depression on public profiles (Moreno *et al.*, 2011). These findings suggest that mental health professionals might use SNS to tailor mental health prevention messages strategically and to identify people at risk for mental illness.

Misuse of the term schizophrenia in SNS. There is one study examining the use and misuse of the term schizophrenia in Twitter (Joseph *et al.*, 2015). The results indicated compared to diabetes, the term schizophrenia was used more sarcastically and inappropriately. The noun “schizophrenia,” was used negatively less often than the adjective “schizophrenic.” Their findings were consistent with previous studies on metaphorical use of the term schizophrenia (Boke *et al.*, 2007; Duckworth *et al.*, 2003), suggesting that the misuse of the term schizophrenia is quite common across different types of media.

Conclusions

The studies reviewed so far indicate that media still contribute to the mental illness stigma. There is an age and gender disparity in news stories, where reporting of children/women’s mental illness is more objective and balanced than reporting of adults/men’s mental illness. The misuse of the term schizophrenia in the media perpetuates stigma. However, media professionals are making progress in balancing reporting, especially in magazines. The representation of presenting a specific type of mental health problem, such as OCD, tends to be less negative and stigmatizing than the media representation of mental illness in general.

DTC advertising is a new vehicle to present images of mental illness since the Food and Drug Administration relaxed regulations on broadcast DTC advertising in 1997 in the USA. DTC advertisements tend to frame depression as more a result of biochemical rather than psycho-social causes, and represent depression as more common among women.

There is an emerging research area focusing on the representation of mental illness in SNS since Stout *et al.*’s (2004) review. Findings from these studies indicate that most online posts on depression tend to provide helpful or supportive information. People often discuss the symptoms of depression and some even reveal their self-harm or suicidal intents.

The effects of media representations of mental illness

Media effects literature supports the view that media have strong power in influencing public’s attitudes and behaviors. Cultivation theory, for example, suggests that the more TV people watch, the more they perceive the world as it is described in the TV (Gerbner, 1969). Research suggests that the more TV people watched, the more social distance they wanted to keep from and less willing to live near with people with mental illness (Angermeyer *et al.*, 2005; Diefenbach and West, 2007). How the media frame people with mental illness impacts the way the public think about them. For example, research on SNS found discussing depression in a crime context increased stigmatizing attitudes, whereas decreased stigmatization in a health context (Wang and Liu, 2015b).

This section reviews research on the effects of media representations of mental illness and investigates how media perpetuate mental illness stigma. Over the past 12 years, media effects studies mainly focused on the impact of depictions of mental illness in newspapers, televisions, DTC advertisements, and SNS.

Effects of the newspapers and television

Social stigmatizing attitudes and knowledge toward mental illness. Research on effects of newspapers and televisions mainly focus on social stigma around mental illness.

Corrigan *et al.* (2013) found newspaper stories about recovery resulted in reduced stigma and greater acceptance of people with mental illness; however, stories about dysfunctional public mental health systems led to increased stigma and decreased acceptance of people with mental illness. Another study tested the effects of news stories about mass shootings by people with SMI found that such stories led to more negative attitudes toward people with SMI and greater support for gun restrictions for people with SMI (McGinty *et al.*, 2013). The more often people watched TV, the less knowledge they had about schizophrenia and OCD (Kimmerle and Cress, 2013).

Social distance toward people with mental illness. Angermeyer *et al.* (2005) found that the more people watched TV, the more they desired social distance from people with schizophrenia, while no such evident association emerged between newspaper consumption and the desire for social distance. Possible reasons include that moving images might have a stronger effect than the written words and that TV messages are more strongly targeted at audience's emotions than newspaper articles. Similarly, research by Diefenbach and West (2007) indicated that people who watched television news were less willing to live next to someone with mental illness. Their results also suggested that the media depictions of people with mental illness as violent criminals could affect people's beliefs about their levels of safety if mental health services were moved into their community.

Perceived media influence on self and others. Diefenbach and West (2007) found people believed that television portrayals of mental illness had greater effects on others than themselves. Similar findings were also reported in Hoffner *et al.*'s (2015) study, which found that the third-person perception was more salient if people had more prior personal experience with mental illness.

Effects of DTC advertisements

Perceived prevalence of mental illness. An (2008) found that people with higher recall for DTC advertisements for antidepressants were more likely to have a higher estimation of prevalence of depression than those with lower recall. The results indicate that people use DTC advertisements for antidepressants as a basis to judge the prevalence of depression when they lack accurate information.

Perceptions of treatment. DTC advertisements for antidepressants can be a positive vehicle in informing the public that depression is treatable, however, they may also generate concerns that people might only seek antidepressant while ignoring other treatment options. Haverhals and Lang's (2004) study suggested that viewers perceived mental illness to be more treatable as they watched more DTC advertisements for psychotropic medication. Women consistently had less stigmatizing attitudes toward mental illness than males, and also hold more positive attitudes toward DTC advertisements and treatability of mental illness.

Similar findings were reported in An *et al.*'s (2009) research on DTC advertisements for antidepressants and young adults' beliefs about depression. For young people who have no prior personal experience with depression, the exposure to advertising for antidepressant drugs may increase their perceived desirability of treating depression with drugs. This helps build viewers' belief that depression is treatable, but it generates concerns that DTC advertising exposure could also prompt those with mild symptoms to seek a quick but potentially inadequate medical solution while ignoring other ways of treatment, such as counseling.

Effects of SNS

Online responses toward depression-related posts. Only limited research has been conducted to investigate the effects of mental illness discussions in SNS. Using the same data with

their previous study on the image of mental illness in SNS (Wang and Liu, 2015a), Wang and Liu (2015b) further analyzed the impact of depression-related posts on their followers. The study found that the valence, the attributed causes of depression, and the contexts used in the original posts could lead to different response posts. More specifically, negative original posts elicited more negative response posts. Posts that attributed the cause of depression to the environment or genetics reinforced stigma. Discussing depression in the context of crime could promote stigma, whereas the use of health context could increase support among the followers.

Effects of use of disorder hashtag in Twitter. Pavelko and Myrick (2015) investigated the use of the hashtag “#OCD” in Twitter and found this trivial use of the term OCD did not result in greater social distance with people with OCD as hypothesized, but did decrease the liking of the tweets. Women and those with experience with OCD and/or mental illnesses showed less social distance with people with OCD.

Conclusions

Research on media effects suggests that media images of mental illness can influence the public’s knowledge and attitudes toward mental illness. Specifically, negative representations contribute to negative and rejecting attitudes toward people with mental illness and to mental health services. People believe such portrayals have a greater effect on others rather than themselves; this is true even for those with high prior experience with mental illness. However, DTC advertisements for antidepressants can have positive influence on informing the public that depression is not something scary and it can be treated. As a personalized media, SNS play a double-edge sword role, which can be used to either promote or reduce mental illness stigma, depending on the contents and contexts.

Using media to reduce stigma

As suggested by Stout *et al.* (2004), two aspects should be taken into consideration to understand how media could be used as a tool to reduce stigma are: the message itself, and the role played by those who produce media. There are some scholars calling on media professionals to stop producing inaccurate representations of mental illness and to focus more on balanced reporting (e.g. Dietrich *et al.*, 2006). However, it is not realistic for media professionals to merely stop reporting such stories if they meet important news values. Although the immediate effects of newspaper intervention are positive, resulting more and longer positive news stories about mental illness, the increase in negative news is still larger than the increase of positive news after the intervention (Stuart, 2003). Thus, the question is what strategies health communicators could employ to reduce mental illness stigma. This section reviews studies on using entertainment educational programs and web-based media to reduce stigma.

Using entertainment-education (E-E) programs to reduce stigma

An E-E program is “one educational scene, episode, or storyline embedded in an otherwise purely entertainment program” (Moyer-Gusé and Nabi, 2010, p. 27). Research has shown that E-E programs have the ability to create awareness and influence behavior across various health issues, such as promoting safe sex (Collins *et al.*, 2004) and preventing HIV (Schouten *et al.*, 2014). In the past decade, researchers have investigated how E-E programs can be used to reduce mental illness stigma.

Hoffner and Cohen (2012) explored the influence of the famous television series, *Monk*, on audience’s attitudes toward OCD. *Monk* tells the story of Adrian Monk, a gifted detective who has OCD. This series depicted OCD in a positive way and has been awarded for helping reduce mental illness stigma. An online survey on eight *Monk* fan message boards

suggested *Monk* had positive psychological effects for fans that were dealing with mental illness. By relating *Monk* to themselves, they had a higher self-esteem and were more likely to seek treatment. Moreover, Ritterfeld and Jin (2006) tested E-E strategy and found that educational movies could have effect on increasing people's knowledge acquisition about schizophrenia. When combined with a value added component trailer, which was designed to provide factual information about schizophrenia, stigma reduction could be achieved. In addition, participants were more convinced if the trailer was communicated by a professional expert rather than a person reporting his or her own experience and if the trailer was viewed after the movie.

Documentary films can also be effective in representing a relatively accurate image of mental illness. Penn *et al.*'s (2003) study provided partial support for the hypothesis that watching a documentary that portrays individuals with schizophrenia could reduce stigma. Viewers showed more benign attributions about schizophrenia, but did not change their general attitudes toward schizophrenia or increase the willingness to interact with those with schizophrenia. Kimmerle and Cress's (2013) study found similar advantages of documentaries compared to fictional films. Specifically, the researchers found people who watched a documentary acquired more knowledge and had less negative emotional reactions toward schizophrenia than those who watched fictional movies.

Using web-based media to reduce stigma

With the increasing popularity of the internet, research has investigated the role of web-based media in stigma reduction. Kim and Stout (2010) found that interactive web-based media had a significant positive influence on processing information related to mental illness and attitudes toward mental illness. The anti-stigma messages communicated through interactive media can be more effective than traditional media since the interactivity motivates users to exert cognitive efforts to process such messages. In another study, Finkelstein *et al.* (2008) compared the effects of computer-assisted anti-stigma interventions and anti-stigma printed materials, and found that a computer-mediated anti-stigma program was more effective in changing people's attitudes toward psychiatric patients. The change in the level of stigma remained significant six months after the intervention.

Conclusions

This section of reviews suggests that media could be a useful tool to reduce stigma toward mental illness if used strategically. Calling for media professionals to stop producing negative portrayals of mental illness is not enough. Media professionals should be asked to think carefully about the message strategies, for example, they could put a value added trailer at the end of film that depicts persons with mental illness. Using E-E programs that portray accurate and likable characters with mental illness could also help reduce mental illness stigma. Web-based media have strong potential to help reduce mental illness stigma because interactive media motivate audience to put more cognitive efforts to process anti-stigma messages. The wide use of social media suggests it is a promising way to reduce mental illness stigma.

Summary and future research recommendations

Over the past decade, a large body of research has investigated the media representation of mental illness, media effects of such representation, and using media to reduce stigma. Consistent with previous reviews (Stout *et al.*, 2004; Wahl, 1992; Klin and Lemish, 2008), media still tend to depict mental illness negatively. Recent studies in DTC advertisements and social media found these types of media had a more objective portrayal of mental illness

(Grow *et al.*, 2006; Wang and Liu, 2015a). Although negative media portrayals could promote mental illness stigma, recent researchers have found that DTC advertisements and social media could have a positive influence on society in improving mental health literacy and reducing stigma (An, 2008; Wang and Liu, 2015b). Particularly, E-E programs and web-based media have strong potential in reducing mental illness stigma, if used properly (Hoffner and Cohen, 2012; Kim and Stout, 2010). Though these studies yield valuable findings, they are not without limitations.

First, as Wahl's (1992) and Stout *et al.*'s (2004) found, the focus of what is meant by mental illness is not consistent across the literature. This lack of consistency makes it difficult to compare findings across studies. Therefore, future research should define their focus carefully.

Second, most research focuses on national news media but few studies include local newspaper and television. However, local news media have important impacts on the communities. Research has shown that local newspapers' stories are more straightforward and focus more on the facts of an event while the reporting in the national media is more interpretative (Pew Project for Excellence in Journalism, 1998). Local journalists are more likely to elaborate on how something works, but national newspapers tend to look at the big picture. This difference in reporting style could result in different representations of mental illness in national vs local papers. Future research could examine and compare the images of mental illness in both national and local papers.

Third, although some research analyzed in this paper dealt with mental illness in new media and DTC advertisements, most of the research focuses on depression. Future research should examine how other types of mental illness, such as autism, are depicted through these media and what effects they have. Especially social media, which, on the one hand, afford mental health advocacy groups the opportunity to disseminate more accurate information about mental illness because they do not relay on journalistic gatekeepers compared to traditional media; on the other hand, social media can motivate users to exert more cognitive efforts to process anti-stigma messages due to its interactivity. Thus, additional research should focus on social media and provide possible guides for stigma reduction.

Additionally, there is virtually no research examining mental health messages via video games, although previous studies have shown that well-designed health video games could lead to positive outcomes, such as knowledge acquisition, attitude, and/or behavior change (Oakley, 1995; Read *et al.*, 2006). In particular, the interactivity-based feature and a variety of audience groups, make the video games more promising to promote mental illness information and stigma reduction. Future research could explore the role of video games in mental illness stigma reduction context.

Finally, for research that employed experiments, most of them use students as participants. This is convenient for researchers to conduct the experiments, but the result cannot be generalized to a larger population. Moreover, the experiments observe only short-term effects, and are limited to measuring attitudes rather than observing long-term effects such as behaviors. Thus, future research should expand to a wider range of media, employ more generalizable samples and examine long-term effects.

Limitations

The goal of this paper is to review studies on mental illness in the media and identify important research gaps. However, this review is not without limitations. This paper only reviews articles written in English, excluding books, book chapters, and empirical studies written in other languages. Moreover, this paper does not include research on examining how mental health caregivers and services are represented and its effects on the public and people with mental illness. Additionally, the method employed in this paper is a narrative review, which could provide a general picture of the media image of mental illness and

identify the existing research gaps and limitations. Nonetheless, this method can fall short in being objective and systematic. In order to avoid biases, this paper strictly follows Green *et al.*'s (2006) suggestions on how to conduct a narrative review as objective as possible. By performing preliminary literature search, identifying the scope of the research, and synthesizing the evidence, the current narrative review can be a valuable contribution to the literature. Future studies could conduct a systematic review to give a more objective and quantified summary of this research area.

Conclusions

Collectively, media still contribute to the mental illness stigma, which has serious consequences for people with mental illness. However, media can also reduce stigma if used strategically. The current study provides a better understanding of media depictions of mental illness and its effects, which is needed to understand and analyze the mechanisms that create, reinforce as well as reduce mental illness stigma. Findings from these studies can guide future efforts to use media to educate the public about mental illness and reduce stigma. For example, mental health campaign planners could use SNS to identify people who might be at risk for mental illness and tailor the messages strategically. They could also use E-E programs to provide the public with mediated contact with people with mental illness, which can be a promising tool to influence people's attitudes and beliefs about mental illness.

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