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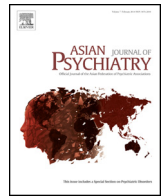
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E-mental health in ethnic minority: A comparison of youtube and talk-based educational workshops in dementia



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ABSTRACT

Background: Innovation in information and communication technology has been transforming health service delivery.

Methods: This study aims to compare YouTube against traditional talk-based workshops in delivering dementia knowledge to the Chinese-American population.

Results: Results reveal that E-mental health has enormous potential; however, for the older Chinese-American ethnic population, talk-based workshop is still more desired in delivering dementia education to targeted age groups.

Discussion: As YouTube has become a readily available and widely distributed media for prevention and psychoeducational efforts, this study demonstrates the utility of YouTube in delivering dementia knowledge. Nevertheless, viewer appeals need to be addressed by making the first few minutes engaging.

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1. Introduction

In the past decade, with the widespread application of information and communication technology in medicine, e-health has transformed health service delivery. E-health offers a new way to provide health related education via the Internet (Lal and Adair, 2014). Although no universal definition has been formulated, e-mental health is broadly recognized as “mental health services and information delivered or enhanced through the Internet and related technologies” (Christensen et al., 2002). Studies have shown the following advantages associated with e-mental health: improved accessibility, reduced costs, flexibility in terms of standardization and personalization, interactivity, and consumer engagement (Lal and Adair, 2014). These advantages of e-mental health provide unique solutions in addressing the gap between the existing need for mental health services and the limited resources and capacity to provide conventional treatment services (Hilty et al., 2016; Lal and Adair, 2014).

E-mental health services are found to be particularly promising for certain subpopulations, such as rural communities, individuals with financial or language barriers, and those who avoid treatment due to stigma (Alleman, 2002; Christensen and Hickie, 2010;

Tillfors et al., 2011). Tillfors et al. have demonstrated the effectiveness of using Internet-based guided self-help program in the treatment of high school students with social anxiety disorder (Tillfors et al., 2011). The anonymity that Internet-based programs afford may create great potential in delivering mental health services in ethnicity minorities, especially in those who suffer from language barriers and perceived cultural stigma about mental illnesses.

Chinese Americans, as one of the fastest growing ethnic groups in the United States, is known to receive less mental health services due to these factors (Ho and Woo, 2013). In addition, Chinese immigrants with a shorter duration of resident in the U.S. have a higher demand for language-specific educational materials (Diamond and Woo, 2014). Strategies to decrease stigma toward dementia are required for this ethnic population (Woo, 2015) (Woo and Mehta, 2016). Traditionally, talk-based educational workshops have been the most common form of mental health knowledge delivery in this population. Recently, researchers have started to explore other innovative methods, such as using a Chinese-speaking radio station (Woo, 2012) or a short film to modify Chinese American's dementia stigma (Zheng et al., 2016). Nevertheless, there has been very limited research on e-mental health utilization in this ethnic group, therefore the knowledge gap remains unfilled.

The process of e-mental health delivery to ethnic populations is facilitated by an accessible, well-known online platform. YouTube (94%), Facebook (75%), and Skype (45%) were identified in a study

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as three of the most commonly visited sites by young adults with a first episode of psychosis (Lal et al., 2015). YouTube disseminates information in the form of videos, rather than short text-based messages as employed by most Facebook and Skype users. With the goal of delivering mental health services to a greater audience, YouTube's video format certainly has advantages over others by allowing for simple uploading of recorded workshop content. In the current cross-sectional study, we measured the effect of e-mental health in Chinese Americans by comparing YouTube viewers and traditional talk-based workshop participants in dementia knowledge delivery.

2. Material and methods

2.1. YouTube

A board-certified psychiatrist was invited by a North American Chinese television station for an educational talk show, which covered topics centered on dementia background, management and prevention. The show was conducted entirely in Cantonese, a Chinese dialect that a majority of Chinese immigrants in Los Angeles use. The real-time recording was then uploaded to YouTube as two 25-min videos. Part one covers general dementia knowledge, including symptoms, staging, risk factors, etiology and different types of dementia such as Alzheimer's disease (https://www.youtube.com/watch?v=J8TMjPRWS_c). The second part focuses on dementia diagnosis and prevention, educating viewers the different types of mental exams, potential medical problems that can cause dementia, as well as the importance of healthy lifestyles (<https://www.youtube.com/watch?v=7gT49EwWx5Q>).

After a 17-month period, viewing data such as viewer gender, age, number of views, average viewing duration, number of "likes" and shares were collected from YouTube for analysis.

2.2. Talk-based workshop

The same psychiatrist hosted talk-based workshops at five different events during the YouTube data collection period. The content of the workshop was consistent with the YouTube talk show, with nearly identical main messages delivered in Cantonese. Participants at these 5 workshops provided their demographics such as gender and age during workshop registration, and these data were collected for statistical analysis. Institutional Review Board approval was obtained through the University of California, Los Angeles.

2.3. Statistical analysis

Data collected from YouTube viewing data and talk-based workshop participants' demographics were analyzed using chi-square test to compare categorical variables of gender and age. The symptomatology of dementia most commonly presents in individuals aged 65 or older (Alzheimer's Association, 2012), so we decided to choose individuals entering this age group, i.e. Chinese American aged 45 years or above, as target age group for delivering dementia knowledge.

3. Results

Over the 17-month period, YouTube videos collected a total of 2503 views, while 5 talk-based workshops had a total of 744 participants. Varying factors such as number of repetitive views had already been accounted for in the 2503 YouTube views.

YouTube as a platform reached out to significantly more male audiences than the workshops (51.70% vs. 31.05%, $df = 1$, $\chi^2 = 98.18$, $p < 0.00001$). While the majority (51.70%, $n = 1294$) of YouTube

viewers were male, the workshop participants were primarily females, consisting of 68.95% ($n = 513$) of all participants.

On the contrary, talk-based workshops were substantially more desired in reaching out to the targeted age group of participants aged 45 and above (72.2% vs. 46.6%, $df = 2$, $\chi^2 = 168.98$, $p < 0.00001$). Among the 744 workshop participants, 25.4% (189) were 65 years old or above, 46.8% (348) were between 45 and 64 years of age, and 27.8% (207) were 44 years old or younger. Therefore, 72.2% (537) of participants who attended the workshops fell within the target group of 45 years old or above. It was noted that 466 out of 2503 YouTube viewers were of unidentifiable age, thus only 2037 viewers were analyzed for age distribution. With 11.1% (226) viewers aged 65 and above, 35.5% (724) between 45 and 64 years of age, and 53.4% (1087) aged 44 or younger, YouTube viewers had only 46.6% (950) of dementia education target group.

We have also included the following descriptive data. Part one and Part two videos each averaged a 6-min view time, totaling 12 min, or 25%, of the 50-min TV talk show. When comparing factors representing viewer engagement, Part one and Part two videos did not show significant differences in number of "likes" or comments. However, part two video was shared 8 times compared to Part one, which only had 5 shares.

4. Discussion

YouTube as an e-mental health platform has enormous potential; however, for the Chinese-American population, talk-based educational workshops are more desired in delivering dementia education to a targeted age group. Dementia is a geriatric condition with onset later in an individual's life. Thus, dementia education is primarily delivered to an older adult population. Information technology innovations like social media websites or e-mental health platforms are new forums that have gained popularity in the past 15 years. It can be challenging for older adults to obtain computer access and locate appropriate e-mental health resources on YouTube or other Internet-based arenas. On the contrary, traditional talk-based workshops are a format that the elderly are more familiar with, thus provide easier access to dementia knowledge.

In addition to the many well-studied advantages of e-mental health such as reduced cost and improved accessibility, YouTube is found to reach out to females and males viewers more equally than workshops. Gender difference may no longer be a factor limiting access to resources. As long as access to technology is available, females and males are equally capable of locating the necessary services provided on e-mental health platforms. This is particularly important since mental illness like dementia does not favor one gender over the other. Equal access to service no doubt will facilitate better healthcare outcomes in the population.

As e-health based platforms like YouTube eventually become mainstream, viewer preferences should be addressed by making engaging material. More appealing content should yield higher viewership. Additionally, YouTube affords viewers more autonomy in choosing information. Viewers will be more prone to select content that is both appealing and relevant to their needs. Based on the descriptive data included in the current study, this is evidenced by a higher number of shares associated with Part two video (Dementia treatment and prevention) than Part one video (General information on Dementia). Viewers who searched for dementia related information on YouTube likely know of someone with this mental illness, thus treatment and preventions may be more of their interest to share with others (Zheng and Woo, 2016). Given the increased level of viewer autonomy in receiving information delivered via YouTube, it is crucial to catch their attention at the beginning of any educational videos to achieve the best efficacy.

Our study has several limitations. First, the advantages of workshops over YouTube for the targeted age groups may not hold true if applied to other mental disease. Mental illnesses, such as schizophrenia, that have an earlier onset and thus a younger targeted age group may benefit from YouTube programs more than the traditional workshop format. Future studies comparing e-mental health platforms and traditional workshops in delivering knowledge of different disease conditions are needed. Second, we only utilized YouTube as an example, while many other potential e-mental health platforms are available to the public. Other online social media, such as Twitter, has also demonstrated its use as a potential tool for multidirectional engagement (Robillard et al., 2013). Third, our sample size is relatively small, and thus may not be representative of all ethnic populations. A larger scale research is desired in the future. Fourth, the data from YouTube may not be as accurate as we expected, since 466 out of 2503 (18.6%) YouTube viewers were of unidentifiable age, thus only 2037 viewers were analyzed for age distribution. A better-controlled design would be beneficial for future studies.

Although Internet-based websites like YouTube may not be the most desired choice to deliver dementia education to the Chinese American ethnic group at this point, the potential of e-mental health is still very promising.

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