Assessing Mental Comfort Effect in Social Media Interaction

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Abstract

In response to the plethora of the application of social media in health, in particular mental detection, there is a need to deepen our understanding about the association between social media and mental comfort, as well as the role of social capital. The paper aim to fulfil the objective by establishing thee distinguish approaches: taking network perspective, applying population survey, and drawing on ERGM.

SMSociety'22 Extended Abstract

Title:

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Keywords: social media, mental comfort, psychological status, social capital, exponential random graph model (ERGM)

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Background:

With the prevalence of internet-based communication and smart phones, social media become vital platforms for social interaction. It is recognized that social media in terms of their capacity in building social capital are important sources of support and comfort to those who suffer from negative emotion, psychological disorder, and mental illness (Cheng et al. 2017; Ellison, Steinfield, and Lampe 2007). Recently, social media have been further found to be a suitable platform for detecting mental illness at its early stage (Eichstaedt et al. 2018; Ricard et al. 2018).

The reason why social media can meet psychological needs and carry out mental comfort is that social media can expand opportunities for interpersonal communication, provide social support and a sense of belonging and happiness, in other words, promoting the accumulation of social capital. Social capital refers to the resources embedded in social networks that promote coordination, cooperation and reciprocity in people's social contacts (Coleman 1988; Lin, Cook, and Burt 2001). It is generally denoted that the social capital constructed by social media is conducive to improving people's satisfaction and happiness in offline life, so as to meet people's psychological needs and be able to comfort patients suffering with mental disorders (Chen and Li 2017; Ellison, Steinfield, and Lampe 2007; Zhang et al. 2020).

Objective(s):

In response to the plethora of the application of social media in health, in particular mental detection, there is a need to deepen our understanding about the association between social media and mental comfort, as well as the role of social capital. The paper aims to fulfil the objective by establishing thee distinguish approaches. Firstly, this paper portrays on- and off-social media interactions based on informants' multiple types of social media uses and their offline social contacts, which render an better account for the patterns of social contacts. Secondly, the information of the two networks derived from a population survey offers an opportunity for empirically testifying the local status regarding the research issues. Thirdly, the advanced exponential random graph model (ERGM) is applied to differentiate the factors that constitute the on- and off-social media interactions (Handcock et al. 2020). Consequently, four hypotheses and one research question are formulated:

H1 Social media interaction is positively correlated with social capital accumulation.

H2: Mediated by social capital, social media interaction is positively associated with mental comfort seeking.

H3: Social media's mental comfort effect outperforms that of off-social-media interaction.

H4: People with negative psychological symptoms also seek solace through social media.

RQ1: Can social media substitute offline social interaction, forming a comprehensive platform for different mental comfort seekers?

Method:

This paper is based on the data from Taiwan Communication Survey (Chang 2020) and applies exponential random graph model (ERGM) (Handcock et al. 2020) to identify the differences between interactions on and off social media, when participants possess different psychological status and social capital. In recent years, the application of "bipartite networks" are advocated to use general survey data, in which the randomly sampled respondents are treated as "egos" and some interrelated variables are seen as "alters" in a network (Crossley et al. 2015). In this study, bipartite networks are constructed by recording different patterns of links between respondents and their contact channels (sharing, posting, viewing other's information and posts) or contact objects (including family members, friends, colleagues/classmates, and acquaintance), to better represent interactions on and off social media. Taking the on- and off-social-media interaction networks as dependent variables, the paper firstly assesses the role of social capital and secondly evaluates the present of individuals with different psychological needs and mental symptoms.

Results:

The results of analysis are displayed in Table 1 and 2. According to Model 1 in Table 1, it is clear that when individuals construct social links in social media, they likely possess a high degree of bonding and bridging social capital, which is in line with the hypothesis of relevant literature so far. The close relationship between social media usage and social capital accumulation is also reflected in the positive coefficients found in egos' self-fulfillment, size of contact, and is not affected by economic satisfaction and institutional distrust (blaming SM for generating fake news). The results of M2 in Table 1 were very similar to those of M1, indicating social capital can also be cultivated by off-social-media interactions. Table 1 indicates that the statements of H1 hold true and further exploration is needed

By controlling the effects of social capital that have been confirmed in Table 1, Table 2 tests the relations between (off-) social media interactions and mental comfort seeking. The Model 3 and 4 in Table 2 indicate that H2 and H3 can be established, that is, the social capital promoted by social media does have mental comfort effect, and its effect is better than that of non-social-media interaction. The M3 assessment also suggests that the social capital derived from social media is not only conducive to maintaining positive relational interactions, but also attracts

people suffering loneliness, weariness, and family alienation to participate social media interactions, which therefore confirm H4.

Model 4 in Table 2 shows that non-social-media interaction is clearly related to people with depression tendencies. The finding suggests that social media communication cannot satisfy or respond to all types of psychological and mental symptoms, which answers RQ1 of the paper. More diverse forms of health care are needed for mental comfort and support. For patients with depression, general contacts and companionship other than the way via social media are still important, and the "face-to-face" care environment must be continuously improved.

Table 1、ERGM assessment on the association between social capital and social media interaction

	M1: SM interaction	M2: non-SM interaction
Link (constant)	0.210(0.312)	0.882(0.310)**
Sex (female)	0.227(0.069)**	-0.082(0.067)
Education	-0.003(0.006)	0.022(0.007)***
Age	-0.052(0.003) ***	-0.060(0.003)***
Self-fulfillment	0.191(0.045) ***	0.126(0.045)**
Bonding social capital	0.121(0.047) *	0.127(0.045)**
Bridging social capital	0.241(0.047) ***	0.221(0.044)***
Size of social contact	0.014(0.002) ***	0.004(0.001)**
Caring Politics	0.060(0.031)	0.034(0.0315)
Non partisanship	-0.401(0.075) ***	-0.168(0.076)*
Blaming SM for generating fake news	0.068(0.067)	-0.021(0.066)
Economic Satisfaction	0.025(0.017)	-0.015(0.017)
Coincidence(1)	0.008(0.095)	2.337(0.098)***
	AIC: 5908	*AIC: 4910*
	BIC: 5993	*BIC: 4995*

Note: *p < .05, ** p < .01, *** p < .001; SM = social media

Table 2、ERGM on the association between mental comfort seeking and social media interaction

	M3: SM interaction	M4: non-SM interaction
Link (constant)	-1.773(0.449)***	-0.666(0.433)
Sex (female)	0.062(0.065)	-0.176(0.067)**
Education	0.005(0.006)	0.027(0.006) ***
Age	-0.046(0.003)***	-0.056(0.003)***
Sense of will-being	0.209(0.070)**	0.0877(0.070)
Sense of loneliness	0.122(0.049) *	0.105(0.049)*
Family satisfaction	-0.049(0.025)*	0.012(0.025)
Human relationship	0.100(0.025)***	0.120(0.025)***
Weariness indication	0.160(0.046)***	0.031(0.047)
Depression indication	0.018(0.029)	0.097(0.032)**
Social anxiety	0.070(0.038)	0.068(0.040)
Bonding social capital	0.165(0.0476)***	0.124(0.048)**
Bridging social capital	0.275(0.0426)***	0.228(0.044)***
Economic Satisfaction	0.0185(0.0209)	-0.041(0.022)
Coincidence(1)	0.0611(0.092)	2.366(0.098)***
	AIC: 6036	*AIC: 4899*
	BIC: 6182	*BIC: 4997*

Note: *p < .05, ** p < .01, *** p < .001; SM = social media

The results suggest a close association between psychological satisfaction and social media interaction which constitutes a richer ground for cultivating social capital and offering mental comfort compared to that of off-social-media contacts. This study also found that while social media interaction is able to soothe the users with negative mental symptoms, people with depression are particularly resort to the off-social-media interaction. It concluded that although mental comfort by means of social capital in social media interaction is promising, this should not lead to overlook the limitations of social media in mental support, and the continuous improvement of face-to-face support system for people suffering from depression is needed.

Future Work:

To increase the robustness of the inferential models, cross-panel data are planned to be applied for the further investigation, at which stochastic actor-oriented model (SAOM) is employed (Snijders, van de Bunt, and Steglich 2010).

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