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“I Have AIDS”: Content Analysis of Postings in HIV/AIDS Support Group on a Chinese Microblog

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Abstract

With the widespread growth and adoption of new technologies, online platforms such as social network sites (SNSs) have become a channel for health information. Online groups have been set up for communication and interaction, among which many are for people with chronic illnesses, including people with HIV/AIDS (PHA). In the study of online communication behavior, the social information processing theory (SIPT) predicted people will develop deeper interpersonal relationships in online groups over time (Walther, 1996). However, the author argued that CMC content should be examined more closely to get a dynamic picture of how people interaction and how groups develop over time. Thus this paper attempted to refine SIPT by enriching the framework with detailed components, and used directed content analysis to categorize messages posted on the *PHA Support Group* on Sina Weibo, a China-based microblog. The results showed that the percentage of socio-emotional messages saw an increase of almost 1/3 over time, taking over informational messages as the major content in all online postings. Medical related informational messages surpassed non-medical related informational messages as time went by. Intimacy relationship messages saw drastic increase in the two time periods. This study refined SIPT by providing increased granularity of its categorization scheme to examine group communication more closely.

Keywords: informational content, online support group, people living with HIV/AIDS, socio-emotional content.

1. Introduction

As a chronic illness, HIV/AIDS requires lifelong changes and interventions in many aspects of one's life, especially in terms of physical health, psychological functioning, and social relations (Swendeman, Ingram, & Rotheram-Borus, 2009). To cope with their illness, seek and share health information, many people with HIV/AIDS (PHA) actively participate in social groups, especially online virtual groups (Rao et al., 2012). With the increasing popularity of SNSs, online social groups on SNSs have been widely used. Over time, these virtual groups have not only become a meeting place for communication among individuals, but also increasingly, a major resource for health information. More specifically, individuals living with conditions which are considered embarrassing or stigmatizing often regard online support groups as a safer environment in which to discuss sensitive issues (Buchanan & Coulson, 2007). Moreover, patients organize themselves in groups, not only to access health information, but also, to express the emotional aspects of being sick (Colineau & Paris, 2010). Therefore, SNSs are able to provide new possibilities for enhancing the delivery of health messages.

Much research has been conducted on the virtual groups for chronic illness (e.g., De la Torre-Diez, Diaz-Pernas, & Anton-Rodriguez, 2012; Mo & Coulson, 2008). Some of the studies have focused on creating typologies of groups, by analyzing the content of the messages. For example, De la Torre-Diez, Diaz-Pernas, and Anton-Rodriguez (2012) studied 171 colorectal cancer groups (with 36,335 members), 216 breast cancer groups (with 7,765,483 members), and 527 diabetes groups (with 564,023 members) on Facebook and Twitter in 2011. Using content analysis, they identified five main types of groups, namely, fund collecting groups (to collect money to fund free mammography services), awareness groups (to educate people about these diseases), support groups (to meet the information and emotional needs of survivors or those affected by the disease, e.g., their relatives and caregivers), prevention groups (to raise prominence of a website, sometimes by selling products or services), and disease-fighting groups (created to promote research that fights the disease).

Online support groups, among others, have received much research attention, and an abundance of literature has explored their effectiveness, especially the positive effects in mitigating the psychosocial

impact of dealing with disruptive events and critical diseases such as breast cancer, HIV/AIDS, and depression (Vilhauer, 2009). In addition, because online communication differs remarkably from traditional face-to-face (FtF) communication, such as the unique features of anonymity and asynchronicity, scholars have explored interpersonal relationships and group dynamics formed in such groups. Among these, one interesting theory, Walther's (1996) Social Information Processing Theory (SIPT) is used as the theoretical foundations of this paper. Briefly, SIPT argues that even without nonverbal cues, people are able to develop close relationships online. In fact, when given sufficient time, online relationships can develop to an even deeper level than that possible in FtF interactions (Walther, 1996).

From the theoretical viewpoint, SIPT only examines online group dynamics under the two broad categories of task-oriented content and emotion-oriented content (Walther, 1996). However, these two general categories deserve closer examination to better understand the content of online group communication. Specifically, each category could be broken down into more detailed components, and the relative composition studied to see whether it changes over time as the online group interaction evolves. For example, under the category of positive emotional messages, positive messages posted on online support groups could take many different forms, such as network support (to introduce new social contacts), tangible support (to provide financial and material aid), emotional support (to provide comfort and companionship), and esteem support (to tell others that they are accepted and valued).

From the methodological viewpoint, as one objective of social research is to study the character of human behavior in natural setting, and not merely from what the respondents say in interviews about what they do elsewhere (Genzuk, 2003), this paper will use an unobtrusive method to generate findings by analyzing PHA's postings online, and thus conducts the research from the perspective of PHA. Such a method is also closer to the naturalistic paradigm. While surveys and interviews focus on individual perspective without social context, this paper will take into consideration of group dynamics in a social setting. Directed content analysis method will be used to create a more suitable coding frame based on components in Interaction Process Analysis (IPA) from Bales (1950) and Social Support Behavior Code (SSBC) categorization system from Suhr, Cutrona, Krebs and Jansen (2011).

Thus after carefully reviewing extant literature, it could be gleaned that researchers have separately studied different aspects of online support group communication, such as positive socio-emotional content of social support, or negative socio-emotional content of stigmatization, without considering the change of group dynamics as suggested by SIPT. However, SIPT only offered broad categorization in the lack of detailed components, namely, positive emotional content, negative emotional content, and informational content. Therefore, this paper attempts to bridge the gap between the two lines of research, by synthesizing them into a new coding frame which is more granular and comprehensive, and use that to examine the *PHA Support Group* communication dynamics. The coding frame will also draw from IPA (Bales, 1950) and SSBC (Suhr, Cutrona, Krebs, & Jansen, 2011) as they enable a detailed study of the group interaction process. The two specific research objectives are proposed below:

1. To study the changes in the composition of socio-emotional content in the *PHA Support Group* over time; and
2. To study the changes in the composition of informational content in the *PHA Support Group* over time.

2. Literature Review

This research draws mainly upon Walther's (1996) Social Information Processing Theory (SIPT). Therefore, the first part of this section will offer detailed explanation of SIPT, while the remaining will review some other studies that focused on positive and negative emotional communications in CMC.

2.1. Social Information Processing Theory (SIPT)

Prior to Walther, many researchers pointed out the "leanness" of CMC for different reasons. Some of these researchers claimed CMC too lean for task-related communication, while others regarded CMC too lean for social communication. Walther (1996) tried to reconcile two lines of research by arguing that the leanness (or impersonality) has been attributed to a lack of nonverbal cues (leading to reduced social presence) and reduced interactivity (leading to reduced immediacy). Additionally, scholars claimed that "friendly" or "intimate" interactions could only be achieved through FtF interactions. However, Walther pointed out two things: (1) there are occasions in which less friendly communication is desirable; and (2) there are occasions in which the interpersonal aspects of CMC interactions are equal or surpass those in FtF interactions. As a result, Walther proposed the SIPT as an explanation to understand CMC. Here is a brief summary of his theory.

First of all, SIPT assumes that all communicators are motivated to develop social relationships. In CMC, this formation of simple impressions is achieved by sending textual information. At the same time, communicators also test their assumptions about others using knowledge-generating activities. So over time, interpersonal knowledge about the other communicators is refined, and this manifests itself in "warmer" relational communication among CMC users. In addition, because less social information per message is exchanged in CMC, the rate of social information exchanged is slower than that in FtF communication. As a result, interpersonal impressions on CMC would develop at a slower pace than that in FtF. However the final amount of social information exchanged would be the same in both FtF and CMC. This means that when given time, CMC can be used to develop rich interpersonal relationships.

Walther (1996) postulated that what affects our perceptions about CMC is the way such research had been conducted. He stated that CMC experiments on groups tended to be one-time-only, and time-limited. The time intervals provided for in the experiments are simply too short for the participants to manage their task concerns, let alone the relational ones. In addition, the participants were assembled for a one-off experiment, and had no expectation that they would ever meet again. The anticipation of future interactions motivates communicators to enact more relationally positive communication. Interpersonal communication on CMC is shaped by whether or not participants expect on-going interaction. Walther (1996) noted that some CMC groups outperformed FtF groups interpersonally. He called such communication hyperpersonal communication. Drawing upon existing theories, he explained how, in the absence of social presence, such intimate interpersonal communication could have come about.

So put simply, Walther (1996) proposed that given enough time, CMC was rich enough to form social relationships, just as well as FtF communication is. To test his theory, Walther collected empirical data, and the results supported his claim. The study found that the informational communication content would give way to emotional content as trust was formed via CMC, and positive emotional communication would surpass negative emotional communication. He offered a unique insight into CMC research by taking time into consideration; therefore, this paper will use Walther's SIPT as overarching structure of the coding frame and research discourse.

2.2. Positive Emotional Communication

In addition to the evolution of relational communication in CMC groups, scholars also examined the nature of relational communication via CMC, such as the co-existence of positive and negative

behaviors in CMC. Suler (2004) observed that people sometimes act out or self-disclose more intensely online than they normally would in person, and he named this phenomenon “online disinhibition effect”, which includes benign disinhibition and toxic disinhibition. Benign disinhibition happens when people reveal very personal things about themselves, or display unusual acts of kindness. Using expletives, hate language and threats, or visiting pornographic sites is referred to as toxic disinhibition.

Identical to what Suler (1996) identified as benign behaviors, many scholars have researched on the positive behaviors in online support groups, especially in how people provide social support to other group members. For example, Suhr, Cutrona, Krebs and Jansen (2011) developed the Social Support Behavior Code (SSBC) to assess the social support provided in a dyadic interaction when one member of the dyad (the discloser) relates a personal problem to the other member (the listener). The number of times the listener provides the following forms of social support is counted: 1) emotional support (e.g., by expressing empathy or care); 2) esteem support (e.g., by expressing confidence in the ability of the discloser to solve the problem); 3) information support (e.g., by providing information on how to cope with the problem); 4) tangible support (e.g., by offering assistance to help solve the problem); and 5) negative behaviors (e.g., by refusing to help). The SSBC allows the researcher to study how different forms of support are communicated.

Although SSBC was initially designed for an offline laboratory setting, it has been used to study online social support as well. Borrowing from the coding frame, Mo and Coulson (2008) analyzed the content of an online HIV/AIDS support group bulletin board with members mostly from the United States, Europe and Australia. Sampling 85 threads (1,138 messages) out of a total of 342 (5,230 messages) posted in June 2006, they coded the content of the messages, which includes information support, emotional support, esteem support, network support and tangible support. Of the five support categories, communication that provided information support dominated with 44.51% of the postings, and emotional support constituted 35.24% of the postings, followed by esteem support (8.88%) and network support (6.88%). Unsurprisingly, tangible assistance was least common, constituting a mere 0.96%. Therefore, this coding frame is validated to be applicable to online environment.

2.3. Negative Emotional Communication

Besides positive social support, HIV/AIDS also brings along emotional distress. The United Nations Secretary General, Ban Ki-moon (2008) stated that stigma and discrimination is the main reason why HIV/AIDS continues to wreak havoc in societies around the world. It is no surprise then, that another category of research is the content analysis to understand the stigma that HIV/AIDS patients suffer. Zhuang and Bresnahan (2012) studied the messages posted on the top three online communities in China, namely, *Tianya*, *Sina*, and *163* from April 2001 to July 2009, and found 2,197 threads that mentioned AIDS. Sampling the first thread out of every eight threads, they coded 275 threads (101 from *Tianya*, 80 from *163*, and 94 from *Sina*) for five stigma themes, which include labeling (e.g., describing HIV/AIDS as a death sentence), negative attribution (e.g., describing a PHA has a commercial sex worker), separating (e.g., stating that normal people should stay away from PHA), status loss (e.g., stating that PHA are a family burden), and responsibility (e.g., stating that PHA made wrong decisions for their lifestyles). The results showed that labeling (52.7%) and negative attribution (45.8%) are the two most prevalent forms of stigma. Zhuang and Bresnahan (2012) argued that while online forums provided a safe environment to discuss sensitive issues, the dissociative anonymity that the Internet provides (Suler, 2004) allows people to express their opinions without inhibition, some of which could be insulting and abusive, and ultimately hurtful to PHA. An additional problem of online forums is that it distributes inaccurate information about HIV/AIDS and PHA. Thus, they suggested that rules of civility be established to guide participation in such forums.

3. Research Method

3.1. Data Collection

In China, PHA started an online support group on Sina Weibo (<http://t.sina.com/>) (the leading Chinese micro-blogging service provider) in January 2011, which is the first PHA support group on Sina Weibo. They named it *Ai Zi Bing Gan Ran Zhe Jiao Liu Lun Tan* (艾滋病感染者交流论坛), which literally translates to *PHA Support Group*. Started on January 18th, 2011 by a PHA who has survived for 20 years since diagnosis, the *PHA Support Group* has attracted 1,355 registered members within the 85 weeks it has been in existence, till data collection on September 14th, 2012. It is a closed group and membership is required before one can view and post messages. All the messages posted in the group are available to every group member. The founder functions as a moderator in the group, according to him, this group is to provide a place where PHA could exchange health information, make new friends, and release emotional pressures. As with Sina Weibo, members are limited to posting 140-character messages, with commenting, archiving, and searching features provided. The administrators and the founder of the group have the right to deregister members who fail to abide by the norms of the community.

To avoid interfering with the group's discursive dynamic, I used a python based web-crawler to pull out all publicly available data from the *PHA Support Group*, including posted messages, usernames, and time of posting. To examine the changes in message content over time, the dataset was divided into four 10-week time periods, and this study will compare messages from the first 10 weeks of the group's existence, and last 10 weeks of the data collection period (Sproull & Kiesler, 1986), following SIPT's suggestion that longer time should be given, for group members to interact and develop social relationship (Walther, 1994). The final population for this study excluded: 1) commercial advertisements, 2) posts with only emoticons, interjections, or a single hyperlink. Hence, the total number of messages in this study comprises $n = 1,277$ messages from the first 10 weeks, and $n = 966$ messages from the last 10 weeks. Figure 1 plots the distribution of messages in this group across time.

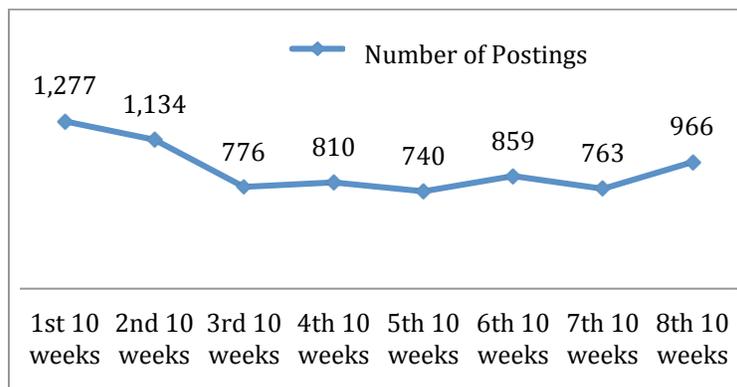


Figure 1. Total Number of Postings across Eight Time Periods

Though data is accessible to everyone in Sina Weibo, there have been concerns about SNSs being exploited as research tools (Zimmer, 2010). Given the difficulty of requesting for online consent forms from everyone (Bruckman, 2004), confidentiality and careful data management were emphasized to protect user privacy in this study. All text messages were paraphrased to avoid being identified or matched with specific users, and the example messages used in the coding frame were translated from Chinese into English, to avoid traceability.

3.2. Coding Frame

Drawing from SSBC (Suhr, Cutrona, Krebs, & Jansen, 2011), this paper proposed a holistic framework to understand SIPT. Specifically, IPA consists of 12 different types of behaviors under two interactional situations as basis for further categorization, which are *task-oriented interactions* and *socio-emotional interactions* (Bales, 1950), and these two categories have been tested valid in CMC environment (e.g., Peña & Hancock, 2006), and it is identical to what Walther (1996) employed in SIPT. Suhr, Cutrona, Krebs and Jansen (2011) summarized five common types of social interactions in communication, including emotional support, esteem support, information support, tangible support, and negative behaviors, among which *emotional support*, *esteem support* and *tangible support* are used as components in positive socio-emotional interactions, in addition to another component of *network support*. The category of *negative socio-emotional messages* was derived from detailed examination of the data, as there is no established typology currently. The final coding frame and selected examples are listed in Table 1.

Socio-emotional messages

Compared with traditional offline communication, online support groups have some unique advantages such as reduced stigmatization and increased openness due to anonymity, easier accessibility and availability that minimizes barriers of time and location, and greater ability to manage interactions (Walther & Boyd, 2002). Besides, online communication provides some sheltering effects, thus people may feel more comfortable sharing intimate information such as their illness (Tidwell & Walther, 2002). Therefore, two categories of the overall coding frame were directly borrowed from the IPA categories, i.e., *positive socio-emotional messages* and *negative socio-emotional messages*.

Informational messages

Directed content analysis method (Hsieh & Shannon, 2005) was used to code the messages posted on the online support group. As this support group is meant for and started by PHA, one of the major functions is to facilitate the exchange of medically related information. Dervin (1992, p. 63) defines information as something “created at the specific moment in time-space by one or more humans”, and as something that could help people make sense of the situation they are in and deal with the challenges they face. PHA have to manage the issues of making critical decisions and reducing uncertainty, such as whether to seek treatment, select treatments, whether to change treatments, etc. Therefore, a new category was created and named *medical related informational messages*. Another common type of content on social media is mundane and banal sharing (Goh, Ang, Chua, & Lee, 2009), and it is categorized as *non-medical informational messages*. This corresponds to the information required to perform Corbin and Strauss’ (1985) illness work and everyday life work respectively.

Intimacy relationship messages

Another noteworthy component is those postings that aim to look for lifelong partners. Normally such messages contain dense emotions (e.g., loneliness, optimism, attitudes towards life). This is an original category in this coding frame, as such messages account for a prominent proportion, especially in the later stages of the online group. Thus such messages were coded under socio-emotional messages, namely *intimacy relationship messages*.

Coding Frame	Examples	
General – pleasantries, jokes	“Good morning, everyone!”; “Hi everyone, I am new here”; “You are welcome”; “Haha”	
Esteem support	“You are so brave!”, “You’ve done so much for PHA in China, you are our idol.”	
Network support	“This is a QQ group for people from Fujian, you could go there and know some friends”	
Emotional support	“Everything will be all right soon”; “Cheer up, we’ve all been there.”	
Tangible support	“We are donating money for PHA who needs treatment, please contact us at XXXX”; “I live in Beijing, and I could offer you accommodation if you come to Beijing.”	
Socio-emotional Messages	Complaint	“Why doesn’t the nurse perfect their skills before injection on people?”
	Negative Emotions	“This life is so miserable; I don’t want to live anymore.”
	Criticism	“The government agencies are misusing the donation for PHA!”
	Intimacy Relationships	“I am 21, male, looking for true love. Please contact me if you are interested.”
Medical Related	Medical question and answers	“Are there any side effect of taking NNRTI?”; “It is time to take medicine as your CD4 level is so low now.”
	Non-medical Related	“I had steamboat today.”; “I love the song by Fay Wong.”; “The weather in Hainan today is very pleasant.”

Table 1. Coding Frame and Selected Examples

3.3. Coding procedure

In addition to the careful data management, two more methods were used to ensure the validity and reliability of this study: iterative coding by the author, and the use of additional coders (Lincoln & Guba, 1985). The first author, who was trained with qualitative research methods, conducted close message reading and iterative data coding over two months, and every message was reviewed four times, in order to ensure the consistency and trustworthiness of results (Savolainen, 2011). In addition, to avoid personal bias and misunderstanding of the data, another coder was recruited to code 10% ($n = 224$) of the messages independently, after being given instructions and training. Next, inter-rater reliability was calculated, yielding a kappa value of 0.86, showing high consistency and intercoder reliability (Cohen, 1960). Thereafter, the two coders discussed those messages with divergent opinions, and consensus was reached eventually for each of those messages.

3.4. Data Analysis

All the postings and comments harvested by the web-crawler from the *PHA Support Group* were written into an Excel file. Each posting or comment was placed into separate cells. The unit of analysis was an individual message posted on the *PHA Support Group*, and every message was placed into one of eleven mutually exclusive content categories (see Table 1). As the unit of analysis is a single message that the member generated, the messages were coded deductively by identifying the major issues discussed, into different categories. Although the 140-character messages in Chinese that Sina Weibo allows conveys more information than a similar 140-character message in English, each message was only coded under a single category – the category in the coding frame that best represents its contents. Take this message as an example, “I still remember the day when I got the result. I felt so empty inside. But now, two years have passed. HIV helped me see life more clearly, and now I am very thankful for the people in my life. So you will be OK soon, this phase will pass very quickly.” Although the message contains pessimistic emotional content, it expresses positive emotional support for those who are newly diagnosed, so it was coded as “emotional support”. Repeated and careful reading of each message ensured the consistency and comprehensiveness in understanding the content. Finally, descriptive statistics was used to present the results.

4. Results

In two years’ time, the PHA Support Group expanded from the initial 200 members, to over a thousand. However, because of the effective administration of the group, it mainly comprises PHA, with a few doctors and volunteers. The members kept their behaviors in check, and supported each other. The group has also evolved progressively towards a more closely-knit social group, and deeper interpersonal relationships were formed among members.

Overall, a total of 1,277 messages from the first 10 weeks and 966 messages from the last 10 weeks were coded. A one-sample chi-square test was conducted to assess whether the number of messages was different at the two different time periods of the PHA Support Group. The results of the test were significant, $\chi^2(10, n = 2,243) = 422.18, p < .001$. Since the number of messages between the two time periods was shown to be significantly different, further descriptive analysis was necessary.

Table 2 presents the frequency and percentage of each category and component in descending order, comparing the first 10 weeks and last 10 weeks of the *PHA Support Group*. The most noteworthy change is in the total number of messages, which plunged 24% from 1,277 in the first 10 weeks to 966 in the last 10 weeks. Two sets of one-sample chi-square tests were conducted to assess firstly, whether the number of Medical Related Messages was different from that of Non-medical Related Message, secondly,

whether the number of Positive Socio-emotional Messages was different from that of Negative Socio-emotional Messages. Results showed significant difference for both tests. $\chi^2(1, n = 1,268) = 162.80, p < .001$, and $\chi^2(7, n = 800) = 52.88, p < .001$. Further analysis is presented in the following:

- The frequency of *Socio-emotional Messages* (from 37.67% to 51.14%) exceeded that of *Informational Messages* (from 62.33% to 48.86%) to become the major category over time.
- The percentage of *Medical Related Messages* surpassed *Non-medical Related Messages* over time. Specifically, in the first 10 weeks, the percentage of Non-medical Related Messages (41.43%) was significantly greater than the percentage of Medical Related Messages (20.91%). The situation was reversed in the last 10 weeks with 14.39% and 34.47%.
- The percentage of *Positive Socio-emotional Messages* is dominant during both time periods. Although there is a moderate increase in the percentage of negative socio-emotional messages from 7.91% to 8.59%, positive socio-emotional messages were still more frequently posted (29.13% to 25.26%), occurring over three times more frequently than negative socio-emotional messages.
- The occurrence of *Emotional Support Messages* is most frequent in Positive Socio-emotional Messages. Among different components in positive socio-emotional messages, emotional support messages are more frequently posted than other types, accounting for almost one third of total positive socio-emotional messages (10.81% out of 29.13%, and 11.08% out of 25.26%), while there is not much difference in the changes in the other components between the two time periods.
- The percentage of *Intimacy Relationship Messages* saw a drastic increase from 0.63% to 17.29% during the two time periods.

Coding Frame		First 10 Weeks		Last 10 Weeks		
		<i>f</i>	%	<i>f</i>	%	
Informational Messages	Medical	267	20.91	333	34.47	
	Non-medical	529	41.43	139	14.39	
	Total	796	62.33	472	48.86	
Socio-emotional Messages	Positive	Emotional support	138	10.81	107	11.08
		General – pleasantries, jokes	127	9.95	41	4.24
		Network support	46	3.60	35	3.62
		Esteem support	57	4.46	32	3.31
		Tangible support	4	0.31	29	3.00%
	Total	372	29.13	244	25.26	
	Negative	Pessimism	43	3.37	39	4.04
		Criticism	54	4.23	42	4.35
		Complaint	4	0.31	2	0.21
		Total	101	7.91	83	8.59
Intimacy Relationships	8	0.63	167	17.29		
Total	481	37.67	494	51.14		
Total		1277	100	966	100	

Table 2. Frequency and percentage of each component

5. Discussion

5.1. Overview

The large drop of 24% in the total number of messages between the two time periods is astonishing, especially when the number of registered members increased from 200 initially, to over a thousand in the last few weeks. A closer examination of the posts answers this question. As predicted by SIPT, over time, closer and deeper interpersonal relationships are formed among group members. The *PHA Support Group* provided an initial place where people “met” for the first time, but as closer and more personal relationships were established over time, some people started providing their QQ number (a popular instant online chatting tool in China) and phone numbers to engage in one-to-one chatting. This could have reduced the number of messages they posted on the *PHA Support Group*. In addition, people also started groups or forums that only served people from the same geographic location (e.g., *PHA Support Group for Cantonese*), as they are more homogeneous in culture and dialect group, which makes it easier to organize activities and FtF meetings. Therefore, this finding indicates that the eventual formation of interpersonal relationships were common, as the number of messages that contained such intention of more personal communication increased from 0.01% (11/1277) to 0.06% (54/966). This result also resonates with Parks and Floyd’s (1996) research on how people make friends in cyberspace,

where nearly two thirds (60.7%) of their participants reported forming personal relationship with people they met in Internet newsgroups. When this happened, the number of messages in the *PHA Support Group* dropped as people switched to a more personal chatting tool like QQ, or phone conversations, where they could even choose to do audio-chatting or video-chatting, or even FtF meetings. This lends support to the SIPT's claim that the formation of deep social relationships through online group communication over time is possible.

Overall, the composition of group communication dynamics evolved as SIPT predicted -- emotional content will surpass informational content over time when deeper interpersonal relationships are formed online, as in this group, the percentage of socio-emotional messages saw an increase of almost 1/3 from 36.67% to 51.14% over time, taking over informational messages (dropping from 62.33% to 48.86%) as the major content in all online postings. When the group was started, large amounts of informational messages were posted because PHA needed to manage the situations of making critical decisions such as when and where to seek treatment, whether to change treatments, etc. Online support groups could function as a source of information as group members tended to be people who had suffered from the same disease, and they were more likely to provide practical, and experience-based information, rather than highly technical and textbook information from authoritative websites or books. As a chronic illness, because of the difference in physio-biological conditions, working environment, living standards, etc, the course of HIV progression and effectiveness of medication vary considerably among individuals, so the online group allowed people to ask context specific questions and get customized answers. Overtime, people started to post more socio-emotional messages than informational messages, indicating the stronger intention to establish social relationships. Additionally, many group members exchanged personal contact information such as QQ, mobile phones, and they expressed the wish for FtF meetings and offline activities, where deeper and closer social relationships could be created. Among those messages that exchanged such information in order to seek intimate relationships, the number of messages increased from 0.86% (11/1277) to 5.59% (54/966).

5.2. Socio-emotional Component

At one end of the spectrum of Suler's (2004) online disinhibition effect are the benign behaviors when people show kindness and provide support for each other. Although there is a slight increase in negative socio-emotional messages, the number of positive socio-emotional messages were more than three times that of negative ones (29.13%/7.91%, 25.26%/8.59%). Group members were willing to lend a hand, and provide intangible and tangible support to each other. There might be different motivations for doing so, but this group developed cultural practices over time by encouraging and giving credit to those people who post positive and supportive messages. This enabled the group to develop in a healthy direction. As Kuhlthau (2004) noted, socio-emotional reactions, no matter positive or negative, should not be dismissed as they may influence how group members ask and share information (Kuhlthau, 2004). Reissman (1990) outlined five reasons why helping is beneficial to the helper. First, the helper has his self-esteem boosted simply because he is in a position to help. Second, the helper plays a proactive role, and feels less dependent on others. Third, the helper feels useful and increases his status. Fourth, the helper feels empowered as helping gives him a sense of being in control. Finally, helpers accept help themselves more easily. Their motivation to help others causes them to be more open to learning so that they can play the role of helper more effectively. Reissman refers to this phenomenon as the "helper therapy principle".

Messages that provide tangible support were minimal in both time periods, accounting for 0.31% and 0.21% of all messages. This is consistent with results from other similar studies, where messages offering tangible support are also rarely exchanged (Coursaris & Liu, 2009; Mo & Coulson, 2008). While none give explanations for the low occurrence, some possible reasons are provided here. First of all,

tangible support is unlikely to be offered in a public online environment for fear of inviting more requests for help. Providing tangible support probably requires meeting up FtF, which is only possible when deeper personal relationships have been formed. This means that it is more likely that tangible support be offered through QQ. A more immediate factor is the demographics of PHA group in China, with most PHA being drug users, sex workers, gays, rural population groups, and former plasma donors (Gill, Huang, & Lu, 2007). These groups of people tended to be socio-economic disadvantaged. Thus, they were not able to provide any tangible assistance to others as they were not well off themselves. In addition, as HIV/AIDS requires long-term self-care, such as medication, treatment, dietary restrictions, PHA also need money to manage illness and treatment-related symptoms. These are probably the reasons why the percentage of messages offering tangible support in online support groups is minimal.

On the other end of Suler's (2004) online disinhibition spectrum are toxic behaviors when people use expletives and hate language to express anger and negativity. However, contrary to conventional stereotype that PHA are negative and even cynical because of the social stigma and discrimination they receive, and people are free to verbalize as a result of anonymity, there was only a small amount of negative emotional messages (7.91% and 8.59%). This could be explained by the particular culture and norms of conduct developed in the group over time. Another phenomenon that might have been at work was the anticipation of future interaction (Walther, 1996). The expectation that the PHA will be interacting on the forum over an extended period of time prevented them from exhibiting negative behavior. Over time, some group members developed a good reputation by being attentive and supportive to others in the group, while others acquired a bad reputation because of their constant negativity in postings. This agrees with SIPT, which posits that people essentially want to develop social relationships. In the online environment, this is especially difficult as the amount of social cues is limited, with audio and video cues often completely missing. Group members test the waters of the group by sending simple impressions of themselves through text messages. They also test their assumptions about others over time using knowledge-generating strategies. It is through these means that the group members develop their online reputation, good or bad.

The most remarkable increase between the two periods occurs in the messages that aimed to seek intimate partners, from 0.63% to 17.27%. This shows that not only are there more people looking for lifelong partners, but also more responses to such postings. One possible explanation to the proliferation of such messages is due to the specific nature of such postings. They are highly emotional, and people could only start to discuss such topics after the online group is tested to be "safe", where people will not be laughed at or frowned upon by the community. This explanation also echoes with findings from Rao et al. (2012) that PHA who reported a higher level of social support had a steady lifelong partner. It could be inferred that having a lifelong partner is of great significance in the life of a PHA, as it serves as a source of positive emotional support, which would in turn contributes to their overall quality of life and longevity. Such messages could be divided into two kinds, some are by those PHA who are optimistic (e.g., "I have been diagnosed for over a year, and now I am more thankful and appreciative of what I have in life. I want to find my true love so that we could spend the rest of lives together. My phone number is 123456789, please contact me if you are interested"), and the others are by those PHA who are pessimistic about life (e.g., "It is raining in Shanghai now. I am so distressed by the high living cost and loneliness. I want a lifelong partner; would someone come to accompany me?")

6. Implications

This study has both practical and theoretical implications. Theoretically, this study refined Walther's (1996) SIPT by breaking down the socio-emotional messages and informational messages into their component categories. The expanded coding frame allows researchers to conceptualize and abstract various types of messages in online social support groups, and further, to examine online messages at a

more granular level, providing a more comprehensive understanding of different interactions online. Moreover, this refinement is applicable not only to PHA support groups, but likely also to other illness-related interactions via CMC, such as Blog, Twitter, and Facebook. The rich contextual data could help confirm and validate research results from self-reported surveys, which is especially important for the study of stigmatized diseases.

This paper also has strong practical implications. From a practical standpoint, this exploratory study contributes to our understanding of the interactive relations in online support groups for PHA, in the context of a Chinese social media platform. Understanding the importance of such knowledge will inform the development of more responsive and effective intervention strategies at interpersonal, local, and community levels. More specifically, the results showed that medical related information messages accounted for a large proportion of postings, which reflected people's concerns with medical information. This concern with medical information arises out of their need for information to make critical decisions on medication and treatments, and since different people might develop different symptoms due to differences in physiology, living standards, working environment, etc., group members could offer customized responses to their questions.

Conclusions

This paper refined SIPT by breaking down two broad categories of informational messages and socio-emotional messages into more detailed components, and it is supportive of SIPT. The field of application is an online forum for a chronic illness, and this guided the subdivision of the messages. The informational messages were subdivided into medical and non-medical related messages. As these patients need social support, SSBC was used as a basis for dividing the socio-emotional messages. Another new category of intimacy relationship messages was included in the coding frame.

Applying this coding frame to examine the group communication dynamics of the *PHA Support Group* lends further support to what SIPT predicted. Socio-emotional messages exceeded informational messages over time as people expressed stronger intention to establish social relationships. Besides, emotional messages were the largest category under positive socio-emotional messages, and this was followed by pleasantries, network support, esteem support and tangible support. The negative socio-emotional messages were found to belong to three categories, namely, pessimism, criticism, and complaint. Lastly, the data suggested that finding a life partner is important for many PHA, and a category, "Intimacy Relationships" was added. In terms of the percentage of messages, "Intimacy Relationships" had the largest increase between the two periods studied. A detailed look at the messages also supports SIPT in that group members moved to more personal chatting tools as interpersonal relationships are formed.

It has to be noted, however, that this refinement and new coding frame have so far only been tested in one PHA support group, and future research could test it in other support groups for other chronic illness, or on other types of social media such as in blogs and forums. In addition, as one problem with using content analysis to analyze people's postings online, there is no way of knowing whether people are interacting with each other using different communication tools such as over phone or FtF. Thus, interviews could be conducted to elicit answers to such questions that could not be observed online.

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