

UC Berkeley

UC Berkeley Previously Published Works

Title

Dropping in, Helping Out: Social Support and Weak Ties on Traditional Medicine Social Networking Sites

Permalink

<https://escholarship.org/uc/item/8sc9539t>

Journal

Howard Journal of Communications, 32(3)

ISSN

1064-6175

Author

Nguyen, Dang

Publication Date

2021-05-27

DOI

10.1080/10646175.2021.1878478

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed



Dropping in, Helping Out: Social Support and Weak Ties on Traditional Medicine Social Networking Sites

Dang Nguyen

To cite this article: Dang Nguyen (2021): Dropping in, Helping Out: Social Support and Weak Ties on Traditional Medicine Social Networking Sites, Howard Journal of Communications

To link to this article: <https://doi.org/10.1080/10646175.2021.1878478>



View supplementary material [↗](#)



Published online: 03 Feb 2021.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)



Dropping in, Helping Out: Social Support and Weak Ties on Traditional Medicine Social Networking Sites

Dang Nguyen

School of Historical and Philosophical Studies, University of Melbourne, Parkville, VIC, Australia

ABSTRACT

This exploratory study analyses the network mechanisms with which Vietnamese traditional medical knowledge propagates on Facebook and explores patterns of social support provided by weak ties on these sites. The study employs a mixed-method multiple case study approach. Social network analysis is conducted on a sample of 6,293 original posts and 23,333 associated comments on two Vietnamese traditional medicine sites on Facebook, over three years. Content analysis is performed on a subsample of 2,570 comments made by nodes with a degree of one, together with 1,543 associated original posts. Findings indicate that weak ties are much more prevalent among discourse communities where communicative exchanges lie outside existing regulatory frameworks concerning traditional medicine. An overwhelming majority of these weak ties provide mostly informational support, while other forms of support such as emotional, esteem, network, or tangible are much less prevalent. This study suggests that weak ties play an important role in providing action-facilitating support, particularly within discourse networks that are outside of the current Vietnamese regulatory frameworks on traditional medicine. Community detection techniques performed on the dataset also show that discourse communities within networks containing more weak ties are harder to break than those containing fewer weak ties.

KEYWORDS

Content analysis; non-biomedical modalities; social media; social network analysis; social support; traditional medicine; Vietnam; weak ties

Introduction

The coexistence of diverse medical traditions in healthcare systems and everyday therapeutic practices around the world is well recognized in academic literature (Lambert, 2018; Steel et al., 2012; Wahlberg, 2012). The global triumph of biomedicine as a unifying yet plural system, together with the scientific enterprise that propels it, has not completely replaced non-biomedical practices (Laird & Barnes, 2017; Nguyen 2019). Although there is disagreement as to how prevalent non-biomedical practices are in different contexts (James et al., 2018), there has been sustained scholarly interest in the integration, amalgamation, hybridization, and borrowing that continue to exist between scientific and nonscientific approaches to therapy (Lambert, 2012; Leslie & Young, 1992; Minocha, 1980; Scheid, 2002). Patients combine various techniques from different

CONTACT Dang Nguyen  dang.nguyen@student.unimelb.edu.au  School of Historical and Philosophical Studies, University of Melbourne, Parkville, VIC 3010, Australia.

 Supplemental data for this article is available online at [here](#).

© 2021 Taylor & Francis Group, LLC

medical traditions, scientific and otherwise, in their treatment and therapeutic repertoire (Broom et al., 2009; Frawley et al., 2015; Pashigian, 2012; Zhang, 2007).

Social networking sites have emerged as popular platforms for decentralized exchange of information, including health information. Much of the literature on informational aspects of digital health focuses on a range of digital health-related resources to laypeople and opportunities for professional-to-professional communication (Lupton, 2017). Online health information resources could provide a range of valuable social support – among which informational support is only one dimension (Coulson & Greenwood, 2012; Hether et al., 2016). Even weak ties that exist in a large network could bring about various forms of support, including access to different viewpoints, reduced communication risk, objective feedback from others, and reduced role obligations (Wright et al., 2010).

Using social network analysis and content analysis, this paper examines the propagation of non-biomedical knowledge on Facebook – the largest social media platform in Vietnam. Vietnam is also Facebook’s seventh-largest market (We Are Social, 2019). This paper provides a network map of user interaction on two Vietnamese traditional medicine social networking sites, as well as examining the patterns of support that the weakest ties – defined as participants who only engage in one interaction within their subnetworks – provide. The next section outlines some background to the Vietnamese health context and surveys relevant literatures on social support and network theory.

Background and literature review

The Vietnam context

Traditional medicine (*y dược cổ truyền*) in Vietnam is regulated by the Ministry of Health. According to Ministry of Health statistics, about 92.7 per cent of public hospitals in Vietnam has a traditional medicine division (Hai Chau, 2017). Despite a high level of integration to mainstream biomedical practices, the rate of treatment with traditional medicine in Vietnamese public hospitals varies along a rural-urban divide. Treatment with traditional medicine in public hospitals, either exclusively or in combination with biomedicine, rises progressively from 4.1 per cent at the central level to 11.7 per cent at the provincial level, 13.4 per cent at the district level, and 28.5 per cent at the commune level (Hai Chau, 2017). These statistics, however, do not include visits to private practice and treatment through informal practices. Circular 05/2015/TT-BYT, issued by the Ministry of Health in 2015, recognizes 349 Vietnamese medicinal herbs – the prescription of which is eligible for coverage under the national health insurance program. In recent years there has been a steady decrease in national health insurance spending on traditional medicine. From 2016 to 2018, government spending on insurance for traditional medicine drops from 11.2 per cent to 8.9 per cent of total public healthcare insurance spending, at around USD150 million (Ministry of Health, 2019). Of this 8.9 per cent, 6.7 per cent is spent on pharmaceutical traditional medicine – compared to 2.2 per cent spent on raw herbal ingredients (Ministry of Health, 2019). In its 2019 report, the Vietnamese Ministry of Health attributed this decline to the bureaucratic complications associated with filing insurance claims for traditional medicine, as

well as inconsistencies in interpretations of insurance coverage across different administrative levels (Ministry of Health, 2019).

In Vietnam, around 19 per cent of families report spending more than 10 per cent of their income on health services – a level the WHO considers to be an unreasonable financial hardship (WHO, 2018). As of 2014, the total health expenditure in Vietnam is 7.1 per cent of gross domestic product (GDP), of which 46 per cent is private spending mainly in the form of out-of-pocket (OOP) payment (WHO, 2018). In the face of constant fiscal deficits and high ratio of public debt since 2008, the Vietnamese government has instituted ‘hospital autonomisation’ as a strategy to reduce, and progressively remove, state subsidy for healthcare services (Vo & Lofgren, 2018). According to the World Bank’s 2017 Vietnam Public Expenditure Review, around 2.5 per cent of Vietnamese households (about two million people), are pushed into poverty each year as a consequence of OOP expenditure on healthcare (World Bank, 2017). In Vietnam, OOP expenditure often includes bribes to doctors, nurses and hospital staff in hope of exchange for better care (Vuong, 2015). Risk of destitution as a result of a curative hospital stay is particularly high among economically disadvantaged patients without residency in large cities, estimated at 70 per cent (Vuong, 2015). Compounding the problem, fifty-eight per cent of seriously ill low-income patients in Vietnam who face higher healthcare costs have been found to quit their treatment (Vuong, 2015).

Under these circumstances, high-risk patients often resort to consumption of traditional and folk medicine at home or seek out informal treatments from unregistered healers, usually through referrals of friends or religious authorities, such as local Buddhist temples. Religious institutions such as Buddhist temples have long acted as cultural transmitters in the Vietnamese context (Vuong et al., 2020). Even though it is not clear whether resorting to traditional medicine would always result in lower cost of treatment compared to exclusive use of biomedicine, traditional medicine remains a popular alternative and/or complementary option in the way Vietnamese manage their experience of health and illness. In Vietnam, heavily subsidized internet access has allowed people to perform increasingly significant parts of their everyday lives online, which as a by-product generates a large amount of standardized and structured data. Little is known about the content being exchanged on these networks, their network characteristics, and the nature of social support that people request and receive on these sites. Although commonplace, use of folk medicine and other unregulated non-biomedical modalities is still largely stigmatized in Vietnam by popular media (Nguyen, 2018; Tran, 2018). Examples of folk medicine in the Vietnamese context include a wide variety of *thuốc gia truyền* (literally “family transmission medicine”), a body of practice where medical recipes are kept within Vietnamese “medical families” or sold to patients through local networks. Research has shown, however, that perceived stigma is one of the key motivators for people to seek social support on online communities (Tanis, 2008; Wright & Rains, 2013).

Social support on social media: multiple dimensions, multiple outcomes

Social support is an umbrella term that generally involves providing assistance to others (Burleson & MacGeorge, 2002). Social support is typically discussed in terms of how

individuals receive support from others, perceive the support resources available to them, and how this support might affect health outcomes (Hether et al., 2016; Rising et al., 2017; Wright, 2016). There are four main predictors of participation in online health support groups: limited access to adequate support within traditional social networks, living with health-related stigma, perceived similarity or credibility of support provider, and convenience and other features of computer-mediated communication (Wright, 2016). The tremendous growth in online health group and community activity over the past two decades is often linked to the multidimensional social support that participants exchange on these sites (Rains & Wright, 2016).

One important theoretical framework in the study of social support in online support groups and communities is the Optimal Matching Model (Cutrona & Russell, 1990; Cutrona & Suhr, 1992). This model emphasizes the importance of matching specific types of support – action-facilitating support (informational or tangible) or nurturant support (emotional, esteem, or network) – with dimensions of a stressor – such as desirability, controllability, life domain, and duration of consequences. Action-facilitating support fosters behavior designed to mitigate a stressor while nurturant support helps individuals cope with the emotional consequences of a stressor. An optimal match occurs when, for example, emotional support is sought and perceived to have been received – which could lead to positive health-related outcomes. Perceived emotional support is positively associated with health self-efficacy and negatively associated with perceived stress (Oh et al., 2014). Women who receive emotional support messages, for example, are also more likely to give emotional support to others (Kim et al., 2012); emotional expression is also positively associated with positive reframing and inversely associated with self-blame (Kim et al., 2011, 2012). Overbenefiting in informational support while underbenefiting in emotional and esteem support, however, could be hurtful – which correlates with negative relational consequences and reduces esteem improvement (McLaren & High, 2019).

Social support is also important as a coping resource for those living with illness and who feel stigmatized because of the issues they face, including the nature of their illness, socioeconomic class, and access to healthcare (Faith et al., 2016; Wright & Rains, 2013). Self-stigma, which refers to perceptions that one is socially unacceptable as a result of some flaw or characteristic, is associated with less favorable attitudes toward treatment and willingness to seek support, as well as diminished levels of self-esteem and self-efficacy (Wright, 2016). Online support groups and communities are particularly valuable for those facing stigma, as these sites provide access to support via weak ties (Tanis, 2008; Wright & Rains, 2013). People who provide support to others on health-related social networking sites also sought out more information from other sources, such as their friends and other online resources; this means that highly supportive community members may act as information bridges, seeking information from other sources and relaying it back to the online community (Hether et al., 2014).

The strength of weak ties: bridging communities, bringing new perspectives

The weak tie hypothesis states that the strength of weak ties lies in their capacity to bridge otherwise fragmented, closely-knit clumps of social structure in a network

(Granovetter, 1973). While strong ties enable more effective engagement with information within the network, the absence of weak ties means that these networks risk becoming isolated. Nodes and communities with few weak ties are disadvantaged within a network structure as they tend to be deprived of information from distant parts of the network. In the context of health support groups and communities, participants have a greater likelihood of finding an expert in a particular area of health issues through weak ties than strong ties (Wright, 2016). Weak ties also tend to be perceived as more helpful when an individual is coping with an issue that requires new information or skills – things they cannot access via strong ties such as friends and families (Goldsmith & Albrecht, 2011). Weak ties are less emotionally attached to each other; they are, therefore, perceived to be more objective in their feedback while also showing more empathy and less judgment if they are sharing the same problem (Wright & Miller, 2010). Weak ties act as an acceptable bridge between a sense of personal agency and the need for external support, as reciprocal exchange allows for the construct of moral acceptability (Rogers et al., 2014).

Wright (2016) conducted a systematic review of research on communication in health-related online social support groups and communities and found that few studies have measured the actual strength of ties among participants within online support group or community. Additionally, little research has combined the Optimal Matching Model with concepts from the weak tie hypothesis to understand the nature of support provided by weak ties, particularly with regards to shared health concerns or reduced judgment (Wright, 2016). Networks with a rigorous structure allow for social support to be successfully fostered. At the same time, the prevalence of weak ties in a network might bring about much sought after social support. Informed by these disparate literatures on health social support, network theory, and traditional medicine, this study asks the following questions:

RQ1: What are the network characteristics of Vietnamese traditional medicine groups on Facebook?

RQ2: What social support is being exchanged among weak ties on Vietnamese traditional medicine groups on Facebook?

Methods

This study was reviewed and approved by the Human Ethics Sub-Committees (HESC) at The University of Melbourne (Ethics ID: 1852471). Informed consent was not sought because participants were engaged in a public discussion and no personally identifiable information was collected.

Sample

This research employs a multiple case study approach by examining two public Facebook sites that focus on Vietnamese traditional medicine. A sampling frame of 1900 Facebook sites that focused on Vietnamese traditional medicine was identified through a keyword search using Facebook's built-in search engine. Of these sites, two public Vietnamese traditional medicine sites were selected for analysis based on their

popularity (measured in number of active members), level of member engagement (measured in number of posts per week), and privacy nature (closed, secret, or public site). These sites are numbered as Site 1 and Site 2, respectively. Both sites are public sites with over 30,000 active members and a robust interaction frequency of approximately 300 posts per month. The sample included a total of 6,923 original posts and 23,333 associated comments, collected from the two sites over three years (with a cutoff date of 25 March 2019). The cutoff date is the same for both sites, whose start dates are within months of each other, so that data collection can provide a complete snapshot of each page's trajectory. The body of data gathered in the 3 years up until the cutoff date was sufficiently robust for meaningful analysis. Data were collected with a purpose-built web scraper. The scraper utilizes the Puppeteer library developed by Google to collect publicly available data via the Chrome web browser. The scraper collected all text content on original posts and their associated comments. Social network analysis was performed on this sample. Following this quantitative analysis, a sub-sample of 2,570 comments and 1,543 associated original posts was retrieved for content analysis. This sub-sample contains comments that are made by nodes with a degree of one – which represent Facebook users who only make one comment on either an original post or a post comment across four subnetworks. These nodes represent the weakest ties in their respective subnetworks.

Social network analysis methodology

Social network data were collected from the main sample. A list of 386 keywords was created using the appendix from Circular 05/2015/TT-BYT (see Background), which includes comprehensive variations and specifications of officially recognized traditional medicines. These variations and specifications were included in the Circular appendix. This keyword list includes more granular keywords that capture the nuances of everyday use in Vietnam. For example, *hà thủ ô đở* (tuber fleecflower) and *hà thủ ô đở chế* (processed tuber fleecflower) were considered two separate keywords. Posts and associated comments that return at least one keyword match are collected to represent discourse that exists in accordance with government regulation of traditional medicine (subset 1). The rest of the sample with no keyword match is labeled subset 2, which represents discourse that exists beyond government purview. Given the sample size of 30,000+ units of analysis, this quantitative data scan helps establish preliminary parameters around the nature of discourse on these sites.

Network structure was assessed with network size (number of nodes and edges in the network), average path length (the average number of steps along the shortest paths for all possible pairs of network nodes), and betweenness centrality (the number of times a node acts as a bridge along the shortest path between two other nodes). Network modularity was calculated using the Louvain method (Blondel et al., 2008). Modularity is a measure used to quantify the quality of a given division of a network into different communities (Li & Schurmann, 2011). The Louvain algorithm is one of the fastest and most effective modularity-based algorithms to detect community in large networks (Orman et al., 2011). Communities, or clusters, are interesting to the study of complex networks because it gives us an indication of the network's structural cohesion.

Content analysis methodology

Content analysis coding scheme and a coding manual were developed based on Hether et al. (2016, p. 5)'s coding scheme for support seeking messages on social networking sites. Hether et al. (2016)'s coding scheme was developed based on the Optimal Matching Model literature. Five dimensions of social support were coded: informational; emotional; esteem; network; and tangible. Support-seeking and support-provision are also coded separately. Please refer to [Table 1](#) for the social support coding scheme for support-seeking comments and posts with examples from the dataset. A similar scheme, though not included here, was also used for support-provision posts and comments.

These instruments were pilot-tested through two rounds of consensus coding, where two research assistants independently coded a subsample of posts and comments before meeting to discuss the pilot results. Discrepancies were identified, refined, and resolved by comparing how each coder interpreted and applied the coding scheme. Every effort was made to be consistent with earlier research and retain the validity of the social support taxonomy.

Interrater reliability was assessed on an independent sample of 10 per cent of the posts after pilot testing. Two coders shared the same tertiary education background and were bilingual in English and Vietnamese. Reliability was computed with simple percentage agreement and Cohen's kappa κ (Cohen, 1960, 1968). While simple percentage agreement is directly interpretable, it does not account for the possibility of agreement occurring by chance and is therefore considered too liberal as a measure for interrater reliability (Lombard et al., 2002). Cohen's kappa κ is a robust interrater and intrarater reliability statistic that accounts for chance agreement, and is widely used in social sciences (Neuendorf, 2017). Both indices are reported here. For the seeking and providing of each dimension of support, reliability was as follows: (1) informational support, 100% and $\kappa = 1.00$; (2) emotional support, 95.24% and $\kappa = 0.972$ ($p = 0$); (3) esteem support, 100% and $\kappa = 1.00$; (4) relationship support, 100% and $\kappa = 1.00$; and (5) tangible support, 100% and $\kappa = 1.00$ in each reliability sample.

Results

Social network analysis results

Network scan results

The automated keyword scan divides the sample into two subsets (see [Figure 1](#)). Subset 1 contains 1,299 posts and 12,240 associated comments that have at least one keyword match. This subset is further divided into sub-network A (matches within site 1) and sub-network C (matches within site 2). Subset 2 contains 5,624 posts and 12,200 comments with no keyword match. This subset is further divided into sub-network B (non-matches within site 1) and sub-network D (non-matches within site 2). These results show that a slight majority of information being exchanged on traditional medicine sites does not include the current language used by government regulation. Of the 386 keywords used to scan the sample, Site 1 returns 197 matches while Site 2 returns 159 matches. These matches represent roughly half of the official terminologies used by the Vietnamese government to regulate traditional medicine.

Table 1. Coding scheme for social support dimensions, adapted from Hether et al. (2016).

Dimension	Description	Examples
Informational support	Requests for knowledge or information about a specific issue or situation.	• Suggestions/advice: Someone to offer ideas and suggest actions (e.g. "How should I incorporate traditional medicine into my Western medical regimen?"). • Referrals: Referral to another source of information, such as a website or book (but excluding a person/network connection) (e.g. "Where can I find family recipes for centella?"). • Situation appraisal: Someone to reassess or redefine the situation (e.g. "Isn't Okinawan spinach supposed to be softer-looking?"). • Teaching: Someone to explain the facts, or news about a situation or about the skills needed to deal with the situation (e.g. "What can Chinese mugwort cure?").
Emotional support	Problem is framed in terms of emotion and participant is seeking some kind of emotional feedback or understanding. The focus of the message will typically be about feelings, not information.	• Affection: Includes "virtual" physical contact such as sending hugs, using emoticons and Facebook 'stickers'. Generally this kind of support is provided, without being asked for (e.g. ☺). • Sympathy: Someone to feel sorrow or regret for the support-seeker's situation (e.g. "I have hemorrhoids and because it's a sensitive condition I am embarrassed to talk about it"). • Understanding/empathy: Someone to understand the situation, often through personal experience (e.g. "Does anyone here also have these small dots on their arms??!!"). • Encouragement: Someone to provide the recipient with hope and confidence (e.g. "Wish me luck so I could keep trying to control this condition"). • Prayers: Someone to pray with/for another member (e.g. "Nam Myōhō Renge Kyō, please pray for me so I could overcome my sickness").
Esteem support	Refers to regard for one's skills, abilities, and intrinsic value. It is distinguished from emotional support because it focuses on a person's self-perceptions rather than their emotions about something else.	• Validation: Someone to express agreement with the support-seeker's perspective on the situation (e.g. "I've been using cassia grandis plant to cure constipation, is this the correct way?"). • Relief of blame: Someone to alleviate the support-seeker's feelings of guilt about the situation (e.g. "I've been eating so much spicy food lately, this has caused an acne outbreak on my face. Does anyone also eat a lot of spicy food? Is it bad for you?"). • Compliment (coded in the provision of support only): Saying positive things about a support-seeker (e.g. "That's the right way to stop diarrhea, just keep using the plant for a few more days").
Network support	Attempts to create structural connections with other individuals or groups	• Access: Someone to provide access to new companions, including access to another support group (e.g. "Can someone please point me to authentic soapnut sellers?"). • Friendship: An explicit request to make friends and participate in the group. Also includes any exchange of personal email addresses or requests/offers to talk at a later date or in a private conversation (e.g. "I just joined this group, thanks admins for accepting my request. I look forward to knowing all of you"). • Physical presence: Someone looking to meet other women in same geographic location (e.g. "I'm living in Can Tho and looking for a good doctor of eastern medicine"). • Companions: Someone who needs to be reminded of the availability of existing companions with whom they can talk to about a problem (e.g. "I have this

(continued)

Table 1. Continued.

Dimension	Description	Examples
Tangible support	Requests for physical aid	problem but I don't know how to share it. Could someone talk to me?" • Loan: A request to lend the support-seeker something including money. (e.g. "Does anyone have <i>dien chan</i> tools that I can borrow for two weeks? I live in Rach Gia" • Gift: A request to give the support-seeker something, including money. (e.g. "Does someone have lotus roots that they can spare? It's for urgent use") • Direct task: A request to perform a task directly for the support-seeker (e.g. "I want to buy some false ginseng for my stomachache, please send me a direct message if you're selling").

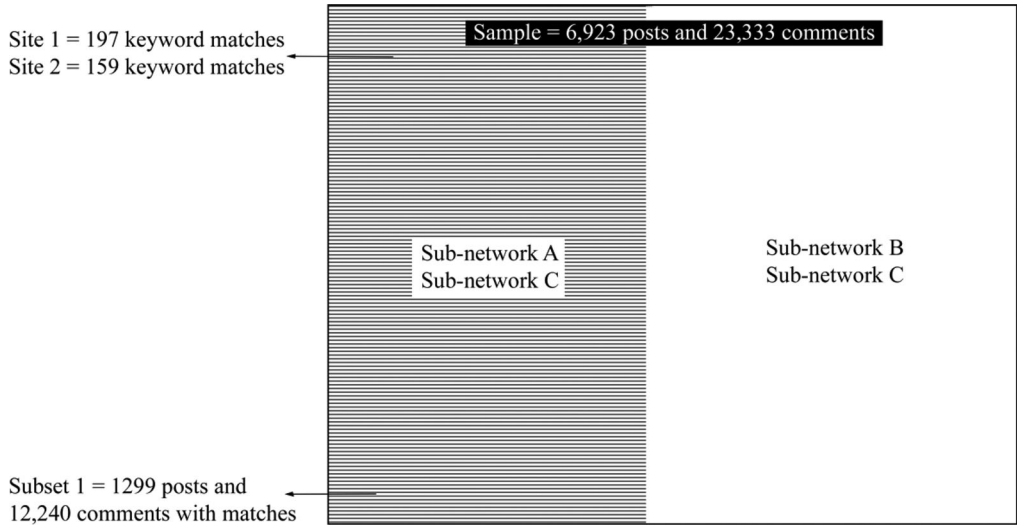


Figure 1. Results of keyword scan.

From these results, we could see that the current language used in regulation does not sufficiently overlap with the language used by everyday Vietnamese. This could partly be explained by the formal (usually Sino-Vietnamese) language used in Vietnamese legal documents, which differs from the highly variable everyday terms used for the same or similar medical ingredients across different geographical areas in Vietnam. Twenty keywords with the highest number of matches in original posts and associated comments across both sites are reported in Table 2, together with their regulated treatment and recognized effects.

While six of the top twenty herbal plants have recognized effects that are congruent with the biomedical philosophy to the body (laxative, hemostasis, anti-inflammatory, diuretics, aphrodisiac), the medicinal property of a majority of these plants can only be understood in the context of local cosmos. Concepts such as ‘heat’, ‘wind’, ‘energy’, and ‘blood’ have very specific meanings in Vietnamese traditional medicine, with influences from Chinese traditional medicine (Monnais et al., 2012). ‘Cold wind’, for example, is believed to cause fever, headaches and general aches, while ‘damp wind’ is believed to be

Table 2. Top twenty keyword matches.

Keyword	Original post count	Comment count	Traditional medicine treatment/effect	Group number ^a
"Mật ong" (Honey)	67	188	Laxative	XXI
"Cam thảo" (Chinese liquorice)	42	55	Vital energy	XXVIII
			Clears heat and removes toxicity	VII
"Ngải cứu" (Mugwort)	32	42	Hemostasis	XVIII
"Tam thất" (Panax pseudoginseng)	26	46	Hemostasis	XVIII
"Đâu" (Mulberry)	25	63	Nourishing blood	XXV
"Đinh lăng" (Ming aralia)	22	43	Vital energy	XXVIII
"Lá lót" (Piper lolot)	22	48	Anti-inflammatory	III
"Đậu đen" (Catjang)	19	34	Dispels wind-heat	II
"Xạ đen" (Celastrus hindsii)	17	37	Clears heat and removes toxicity	VII
"Diệp cá" (Fish mint)	16	35	Clears heat and removes toxicity	VII
"Mã đề" (Broadleaf plantain)	16	31	Diuretics	XIX
"Trinh nữ" (Shameplant)	15	34	Anti-inflammatory	III
"Bà kích" (Indian mulberry)	12	17	Aphrodisiac	XXVII
"Bồ kết" (Honey locust)	11	29	Regain consciousness	XV
"Cỏ xước" (Chaff-flower)	10	16	Activates blood	XXVII
"Cà gai leo" (Solanum)	8	21	Anti-inflammatory	III
"Rau má" (Centella)	8	23	Clears heat and evil wind	IX
"Trầu không" (Betel)	6	30	Dispels wind-cold	I
"Trâm" (Weeping paperbark)	5	22	Dispels wind-cold	I
"Cải trời" (Bitter lettuce)	5	21	Clears heat and dispels wind-heat	VIII

^aAccording to Circular 05/2015/TT-BYT classification.

Table 3. Report of global network measures.

Subnetwork	Number of node	Number of edge	Average path length	Network modularity	Number of community
A	3785	7722	4.44	0.59	21
B	1657	1739	7.39	0.89	142
C	2111	3086	5.13	0.71	32
D	1793	2132	7.53	0.83	41

the reason for fatigue, nausea, or diarrhea (Dashtdar et al., 2016). ‘Blood deficiency’ also carries highly specific meanings; according to Vietnamese traditional medicine, similar to Chinese traditional medicine, failure to ‘nourish’ blood might lead to ‘blood statis’, which is believed to cause limb stiffness and pain (Dashtdar et al., 2016). These contextually contingent narratives of health and illness seem to dominate the discourse being exchanged in the current sample. This suggests that, instead of simply offering commensurable traditional equivalents to their biomedical counterparts, medical knowledges of the kind being propagated among the online groups studied here also carry with them worldviews and beliefs that have been displaced by the scientific biomedical enterprise. The online propagation of these knowledges could translate to a new techno-social life of marginalized systems of cultural belief, which warrants further investigation in future studies.

Formal network measures

Four subnetworks are identified as a result of the keyword scan, labeled A–D. Table 3 summarizes the formal network measures assessed.

Despite accounting for roughly 46 per cent of all posts within the sample, subnetworks A and C are more densely populated than subnetworks B and D – with significantly higher numbers of node and edge. Within these subnetworks, there are not only more network interactions but also more actors involved in these interactions. The

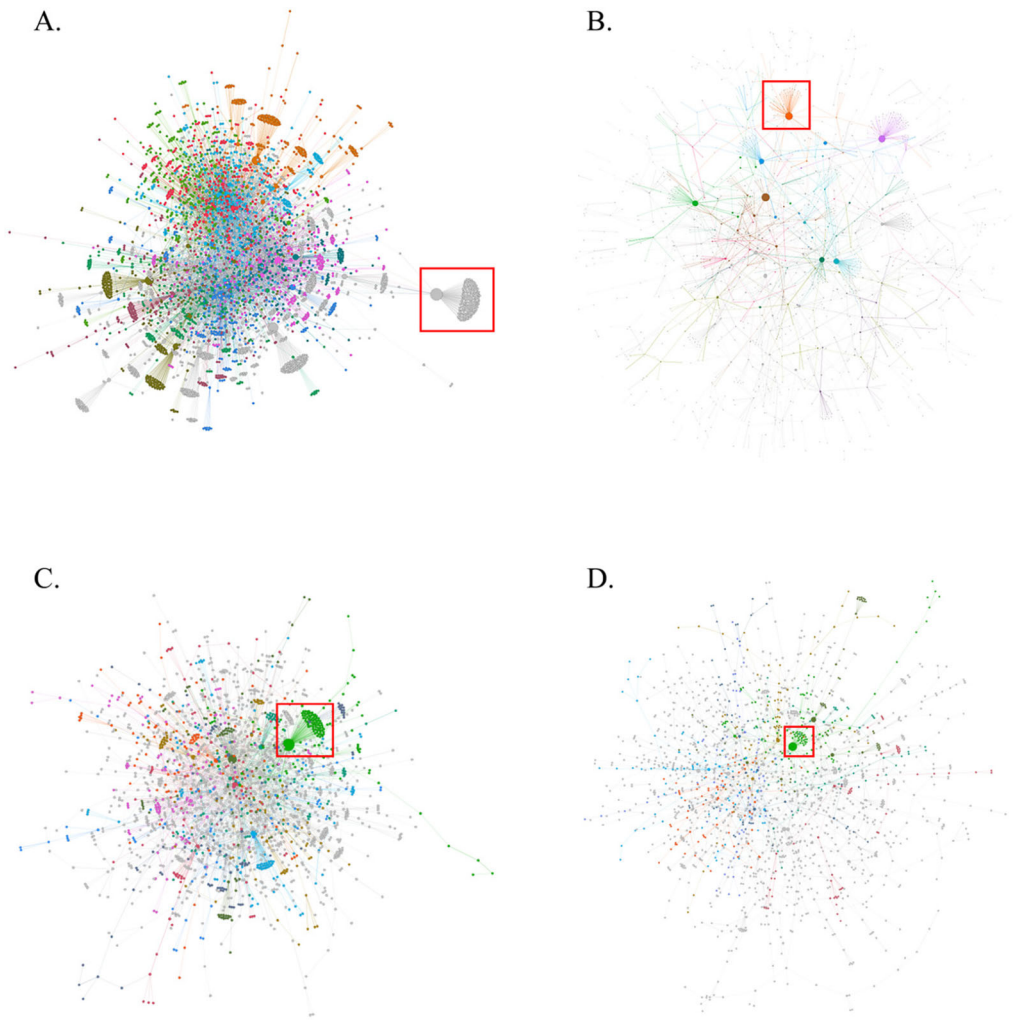


Figure 2. Social network graphs of four sub-networks across two sites.

average path lengths between two nodes in subnetworks A and C are also shorter than those in subnetworks B and D – this means that information these subnetworks reaches more people in a shorter time period. Network detection using the Louvain method with a resolution of 1.0 across all four subnetworks show that more communities are found within subnetworks B and D; this is particularly pronounced between A and B, where the number of communities detected in B is more than six times that detected in A. Subnetworks B and D also have higher modularity; this means that the connections within these subnetwork communities are much denser than those outside of these communities. Communities found within subnetworks B and D are harder to break than those found in subnetworks A and C.

A visualization of these subnetworks is provided in [Figure 2](#). Due to the high number of communities detected, only the ten largest communities are represented in color. The size of each node represents betweenness centrality. Fan-like subgraphs such as those boxed in red in [Figure 2](#) represent nodes that act as a hub of other nodes with a degree

of one. Nodes with a degree of one are connected to only one other node within the network. In the current context, nodes with a degree of one represent Facebook users who only ever respond to one original post or post comment and who, other than that interaction, have no other engagement in their subnetworks. These ‘transient users’ are well-recognized in literature as a key characteristic of Facebook sociality (Smith & Graham, 2019). These nodes can be said to have the weakest ties to their subnetworks; they also usually interact with the same nodes that have among the highest betweenness centrality. Subnetworks B and D have a higher percentage of nodes and edges of this nature. Specifically, around 20 per cent of subnetworks B and C is made up of single degree nodes. Only 0.3 per cent and around three per cent of subnetworks A and D are single degree nodes, respectively.

The prevalence of weak ties in subnetworks B and D warrants further examination. Within these subnetworks, no mention of any keywords was found. These subnetworks also have a high number of dispersed communities detected; this means that individuals engaging in social support in these subnetworks organize themselves in multiple, much less rigorous discourse communities. Previous literature, however, has indicated that weak ties can provide significant benefits to their networks. The next section reports on the social support provided by weak ties in these subnetworks.

Content analysis results

Overall, support provision (63.2%) is more prevalent than support seeking activity among weak ties. Informational support is the most prominent form of support sought and provided across two sampled sites and among all four subnetworks, followed by emotional support, tangible support, network support, and esteem support (see Figure 3). This overall ranking is also consistent with previous research into social support on health-related social networking sites (see Discussion). Within informational support, teaching and suggestion/advice constitute the overwhelming majority of all support seeking and provision across all subnetworks, followed by referrals and situation appraisal. Affection and empathy are the most prominent types of emotional support, while gifting and direct tasks are the most common tangible support provided and sought among weak ties in the sampled sites. Network support involves only two dimensions, namely access and physical presence support, while esteem support involves validation and compliments.

Discussion

Within subnetworks whose discourses lie outside of the current Vietnamese regulatory frameworks for traditional medicine, more and stronger communities of discourse are found compared to subnetworks whose discourses utilize the language used in current Vietnamese regulations. Significantly higher number of weak ties are also found in these subnetworks; these weak ties provide a range of social support to users within the sites sampled – most dominantly information support. This could be a cause for concern, considering how the veracity of the informational support provided is not currently recognized or regulated on a governmental level. Given that nurturant forms of support

Social support types among weak ties

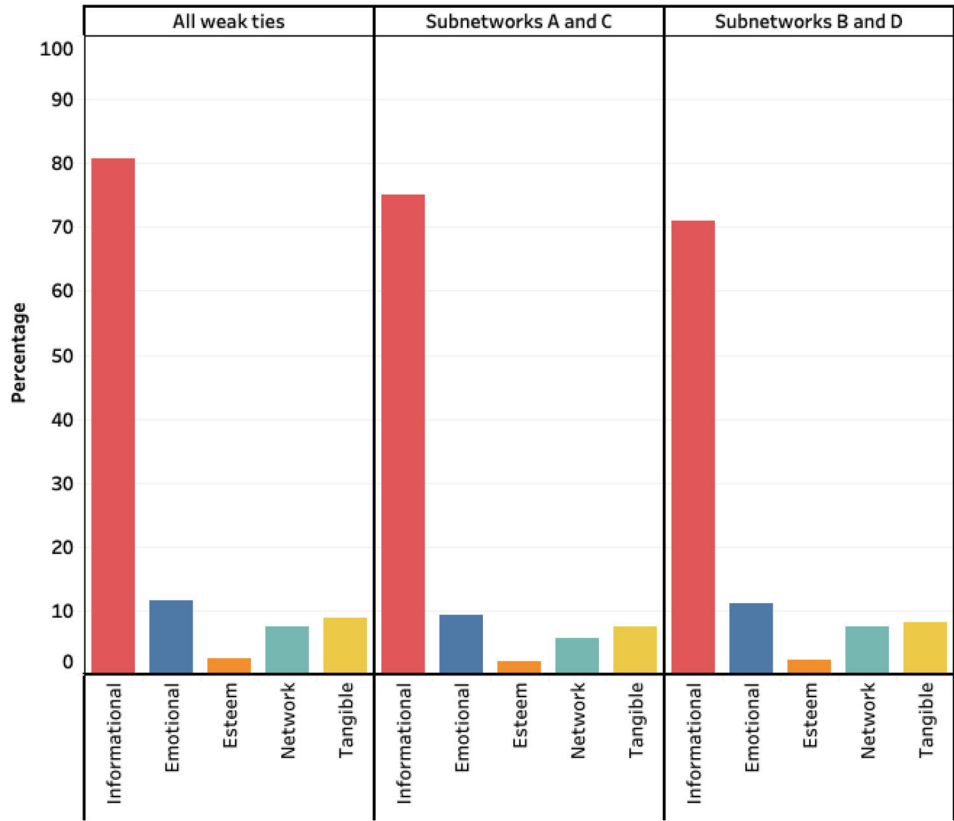


Figure 3. Social support types among weak ties.

are much less prevalent, the impact that online support and knowledge sharing groups have on their participants could be well beyond that of a moral nature. The prevalence of weak ties among discourses outside of existing regulatory frameworks can be indicative of a network dynamic that corresponds with the double stigma of firstly seeking and giving online support for health conditions in non-biomedical knowledge settings, and secondly of participating in non-biomedical knowledge discourses that are not officially recognized. Both stigmas are well documented in the context of Vietnam (Nguyen, 2018; Tran, 2018); while the documentation and regulation of traditional medicine in Vietnam is substantial, the prevalence of unregulated folk medicine remains extensive (Thompson, 2017). This further highlights the complex coexistence of biomedical and non-biomedical modalities as the latter continue to evolve and carve out alternative discourse spaces for their survival. Weak ties have minimal communication risks and role obligations while being perceived as offering unique viewpoints that are more objective (Wright, 2016). All these peculiar dynamics could lead to a mechanism where participants with little investment in maintaining sustained contribution to network discourse propagate unverified (and unverifiable) information with little burden for potential consequences.

While the prevalence of informational support found here is consistent with previous research into other health-related social networking sites such as psychosis support group (Chang, 2009) or prenatal sites (Hether et al., 2016), the prevalence of tangible support is a novel finding. Chang (2009) and Hether et al. (2016), for example, found no evidence of tangible support sought or provided in their studies in Taiwan and the US, while tangible support is a significant dimension of support in Vietnamese traditional medicine sites. This could be explained by the long history of traditional medicine in Vietnam as an informal and sometimes philanthropic healthcare activity, wherein people volunteer raw medical ingredients that they have in their possession as a way to help others. By the same measure, people who are in need of these materials also seek out those who grow, hunt, or collect these medicinal plants to obtain them either for free or for a price. These activities seem to be emigrating online, where the same offline, community-bound activities are being facilitated over social networking sites; ‘communities’ that exist online, however, have a much larger reach and scale, and might not be as bounded by geographical and sociocultural borders.

The prevalence of tangible support, together with the dominance of informational support on traditional medicine sites, also account for a unique dynamic – they are both action-facilitating forms of support, which tend to foster behaviors that help mitigate health stressors rather than coping with the consequences of these stressors. While the overall ranking of each social support dimension is consistent with that previous studies have found (Coulson & Greenwood, 2012; Gray, 2013; Hether et al., 2016; Loane & D’Alessandro, 2013), the proportion of emotional support compared to tangible support found here is much lower than in previous studies. This means that there seems to be more significant tangible support within traditional medicine networks in Vietnam compared to other health-related networks on social media. Particularly, the tangible support sought and volunteered with the sample comes mostly in the form of gift-giving and gift-seeking (asking for/giving out raw herbs and raw medicinal plants). These acts of tangible support are common in the Vietnamese context outside of and before social media at the neighborhood and village level; that they are now happening via the mediation of social media, which is less bounded by geography, could signal a significant change in the way support communities are being formed. This warrants further research into whether any change in scale facilitated by social media also leads to potential changes in the quantity and quality of health support network in Vietnam. Considering these findings against the context of Vietnam, where the healthcare system is becoming less and less affordable as the government progressively removes state subsidy for healthcare services – coupled with rising OOP healthcare expenditure – it seems to be the case that Vietnamese people are turning to social media to seek alternative courses of action in order to mitigate these trends. This turn to social media should be understood as a continuation of existing cultural practices concerning the management of health and illness among Vietnamese which predate social media, rather than a new set of practice brought about by digital technologies.

The dominance of contextually contingent beliefs about health and illness in Vietnam, inferred from the most frequently occurring names of herbal plant in the dataset, is also an important finding. This is pointing to the persistence of culturally grounded beliefs and knowledges, which have found digital expressions through social

media. Although this study looked specifically at textual expressions of these knowledges, multimedia forms of expression such as image, prerecorded video, live streaming video, and synchronous watching of prerecorded video also constitute an important part of this digital knowledge ecology. Future research should turn their attention to how changing forms and expressions of knowledge could potentially alter its substance and sociality. While limited by the sites sampled, the analysis presented here provides an empirically driven account of online propagation of traditional knowledges and the types of support they facilitate. The goal was not to exhaust all possible social media content, but rather to provide a rigorous analysis and suggest future directions in an under-researched topic that could have important implications in different disciplines. Future research into networks of knowledge propagation on social media could further mobilize digital methods such as natural language processing techniques to study the topics of discourse among these online communities in a more systematic fashion.

Conclusion

This study explored the network dynamics of Vietnamese traditional medicine sites on Facebook, and the nature of social support provided by weak ties on these sites. The findings presented here confirmed the prevalence of informational and emotional support on health-related social networking sites, as well as highlighting the importance of weak ties in facilitating various dimensions of social support. Instead of assuming that weak ties provide transient and therefore unimportant support, this paper examined the nature of support that weak ties provide while outlining directions for future research into the changing nature of sociality in the network society. The prevalence of weak ties among discourse networks that fall outside of the current regulatory language used by the Vietnamese government also suggests that more extensive monitoring and modeling of online discourse on traditional medicine is necessary in order to inform effective and knowledge-based policymaking. The prevalence of action-facilitating support among these weak ties, in addition to emotional support, also suggest that policymakers and healthcare providers in Vietnam in particular need to pay more attention to the way people navigate changing healthcare systems in the absence of robust and reliable information infrastructures.

Acknowledgments

The author prepared part of this paper as a 2019–2020 Fox International Fellow at The Whitney and Betty MacMillan Center for International and Area Studies at Yale University. The author would like to thank Gia Dang for his assistance in data collection and processing, Tam Nguyen for her assistance in coding the data and preparing the manuscript, and Thi Nguyen for her assistance in coding the data.

References

- Blondel, V. D., Guillaume, J. L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, 2008(10), P10008. <https://doi.org/10.1088/1742-5468/2008/10/P10008>

- Broom, A., Doron, A., & Tovey, P. (2009). The inequalities of medical pluralism: hierarchies of health, the politics of tradition and the economies of care in Indian oncology. *Social Science & Medicine* (1982), 69(5), 698–706. <https://doi.org/10.1016/j.socscimed.2009.07.002>
- Burleson, B. R., & MacGeorge, E. L. (2002). Supportive communication. In M. L. Knapp & J. A. Daly (Eds.), *Handbook of interpersonal communication* (Vol. 3, pp. 374–424).
- Chang, H. J. (2009). Online supportive interactions: Using a network approach to examine communication patterns within a psychosis social support group in Taiwan. *Journal of the American Society for Information Science and Technology*, 60(7), 1504–1517. <https://doi.org/10.1002/asi.21070>
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, 20(1), 37–46. <https://doi.org/10.1177/001316446002000104>
- Cohen, J. (1968). Weighted kappa: Nominal scale agreement with provision for scaled disagreement or partial credit. *Psychological Bulletin*, 70(4), 213–220. <https://doi.org/10.1037/h0026256>
- Coulson, N. S., & Greenwood, N. (2012). Families affected by childhood cancer: An analysis of the provision of social support within online support groups. *Child: Care, Health and Development*, 38(6), 870–877. <https://doi.org/10.1111/j.1365-2214.2011.01316.x>
- Cutrona, C. E., & Russell, D. W. (1990). Type of social support and specific stress: Toward a theory of optimal matching. In B. R. Sarason, I. G. Sarason, & G. R. Pierce (Eds.), *Wiley series on personality processes. Social support: An interactional view* (pp. 319–366). John Wiley & Sons.
- Cutrona, C. E., & Suhr, J. A. (1992). Controllability of stressful events and satisfaction with spouse support behaviors. *Communication Research*, 19(2), 154–174. <https://doi.org/10.1177/009365092019002002>
- Dashtdar, M., Dashtdar, M. R., Dashtdar, B., Kardi, K., & Khabaz Shirazi, M. (2016). The concept of wind in traditional Chinese medicine. *Journal of Pharmacopuncture*, 19(4), 293–302. <https://doi.org/10.3831/KPI.2016.19.030>
- Faith, J., Thorburn, S., & Sinky, T. H. (2016). Exploring healthcare experiences among online interactive weight loss forum users. *Computers in Human Behavior*, 57, 326–333. <https://doi.org/10.1016/j.chb.2015.12.048>
- Frawley, J., Adams, J., Steel, A., Broom, A., Gallois, C., & Sibbritt, D. (2015). Women's use and self-prescription of herbal medicine during pregnancy: An examination of 1,835 pregnant women. *Women's Health Issues: Official Publication of the Jacobs Institute of Women's Health*, 25(4), 396–402. <https://doi.org/10.1016/j.whi.2015.03.001>
- Goldsmith, D. J., & Albrecht, T. L. (2011). Social support, social networks, and health. In T. L. Thompson, R. Parrott, & J. F. Nussbaum (Eds.), *The Routledge handbook of health communication* (pp. 335–348). Routledge. <https://doi.org/10.4324/9780203846063.ch21>
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360–1380. <https://doi.org/10.1086/225469>
- Gray, J. (2013). Feeding On the web: Online social support in the breastfeeding context. *Communication Research Reports*, 30(1), 1–11. <https://doi.org/10.1080/08824096.2012.746219>
- Hai Chau. (2017). Increasing the number of patients receiving traditional medicine treatments in public hospitals. *People's Police Newspaper*. <http://cand.com.vn/y-te/Tang-ty-le-kham-chua-benh-bang-y-hoc-co-truyen-430413/>
- Hether, H. J., Murphy, S. T., & Valente, T. W. (2014). It's better to give than to receive: The role of social support, trust, and participation on health-related social networking sites. *Journal of Health Communication*, 19(12), 1424–1439. <https://doi.org/10.1080/10810730.2014.894596>
- Hether, H. J., Murphy, S. T., & Valente, T. W. (2016). A social network analysis of supportive interactions on prenatal sites. *Digital Health*, 2, 1–12. <https://doi.org/10.1177/2055207616628700>
- James, P. B., Wardle, J., Steel, A., & Adams, J. (2018). Traditional, complementary and alternative medicine use in Sub-Saharan Africa: a systematic review. *BMJ Global Health*, 3(5), e000895. <https://doi.org/10.1136/bmjgh-2018-000895>
- Kim, E., Han, J. Y., Moon, T. J., Shaw, B., Shah, D. V., McTavish, F., & Gustafson, D. H. (2012). The process and effects of supportive message expression and reception in online breast cancer support groups. *Psycho-Oncology*, 21(5), 531–540. <https://doi.org/10.1002/pon.1942>

- Kim, E., Han, J. Y., Shah, D., Shaw, B., McTavish, F., Gustafson, D. H., & Fan, D. (2011). Predictors of supportive message expression and reception in an interactive cancer communication system. *Journal of Health Communication*, 16(10), 1106–1121. <https://doi.org/10.1080/10810730.2011.571337>
- Laird, L. D., & Barnes, L. L. (2017). Religion and healing. In S. R. Quah (Ed.), *International encyclopedia of public health* (pp. 286–290). Academic Press.
- Lambert, H. (2012). Medical pluralism and medical marginality: Bone doctors and the selective legitimization of therapeutic expertise in India. *Social Science & Medicine* (1982), 74(7), 1029–1036. <https://doi.org/10.1016/j.socscimed.2011.12.024>
- Lambert, H. (2018). Indian therapeutic hierarchies and the politics of recognition. *Asian Medicine*, 13(1–2), 115–133. <https://doi.org/10.1163/15734218-12341410>
- Leslie, C. & Young, A. (Eds.). (1992). *Paths to Asian medical knowledge*. University of California Press.
- Li, W., & Schurmann, D. (2011). Modular community detection in networks. *Proceedings of the Twenty-Second International Joint Conference on Artificial Intelligence* (pp. 1366–1371). Barcelona, Spain. <https://doi.org/10.5591/978-1-57735-516-8/IJCAI11-231>
- Loane, S. S., & D'alessandro, S. (2013). Communication that changes lives: Social support within an online health community for ALS. *Communication Quarterly*, 61(2), 236–251.
- Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human Communication Research*, 28(4), 587–604. <https://doi.org/10.1111/j.1468-2958.2002.tb00826.x>
- Lupton, D. (2017). *Digital health: Critical and cross-disciplinary perspectives*. Routledge.
- McLaren, R. M., & High, A. C. (2019). The effect of under-and over-benefited support gaps on hurt feelings, esteem, and relationships. *Communication Research*, 46(6), 785–810. <https://doi.org/10.1177/0093650215605155>
- Ministry of Health. (2019). 2019 Report: Assessment of the implementation of Circular 05/2015/TT-BYT. Prepared by the Medical Insurance Unit, Ministry of Health.
- Minocha, A. A. (1980). Medical pluralism and health services in India. *Social Science & Medicine. Part B: Medical Anthropology*, 14(4), 217–223. [https://doi.org/10.1016/0160-7987\(80\)90047-2](https://doi.org/10.1016/0160-7987(80)90047-2)
- Monnais, L., Thompson, C. M., & Wahlberg, A. (Eds.). (2012). *Southern medicine for southern people: Vietnamese medicine in the making*. Cambridge Scholars Publishing.
- Neuendorf, K. A. (2017). *The content analysis guidebook*. SAGE.
- Nguyen, D. (2019). Mapping knowledge domains of non-biomedical modalities: A large-scale co-word analysis of literature 1987–2017. *Social Science & Medicine* (1982), 233, 1–12. <https://doi.org/10.1016/j.socscimed.2019.05.044>
- Nguyen, L. (2018). ‘Unverified Eastern medicine is lethal’, *An Ninh Thủ Đô*. <https://anninhthudo.vn/doi-song/nguy-co-chet-nguoi-vi-dung-thuoc-dong-y-khong-ro-nguon-goc/789431.antd>
- Oh, H. J., Ozkaya, E., & LaRose, R. (2014). How does online social networking enhance life satisfaction? The relationships among online supportive interaction, affect, perceived social support, sense of community, and life satisfaction. *Computers in Human Behavior*, 30, 69–78. <https://doi.org/10.1016/j.chb.2013.07.053>
- Orman, G. K., Labatut, V., & Cherifi, H. (2011). Qualitative comparison of community detection algorithms. In *International conference on digital information and communication technology and its applications* (pp. 265–279). Springer.
- Pashigian, M. (2012). East, west, north, south: Medical pluralism and “suitable” medicine for infertility in contemporary Vietnam. *Southern medicine for southern people: Vietnamese medicine in the making* (pp. 203–226). Cambridge Scholars Publishing.
- Rains, S. A., & Wright, K. B. (2016). Social support and computer-mediated communication: A state-of-the-art review and agenda for future research. *Annals of the International Communication Association*, 40(1), 175–211. <https://doi.org/10.1080/23808985.2015.11735260>
- Rising, C. J., Bol, N., Burke-Garcia, A., Rains, S., & Wright, K. B. (2017). Perceived stress in online prostate cancer community participants: Examining relationships with stigmatization, social support network preference, and social support seeking. *Journal of Health Communication*, 22(6), 469–476. <https://doi.org/10.1080/10810730.2017.1304471>

- Rogers, A., Brooks, H., Vassilev, I., Kennedy, A., Blickem, C., & Reeves, D. (2014). Why less may be more: A mixed methods study of the work and relatedness of 'weak ties' in supporting long-term condition self-management. *Implementation Science: IS*, 9(1), 19. <https://doi.org/10.1186/1748-5908-9-19>
- Scheid, V. (2002). *Chinese medicine in contemporary China: Plurality and synthesis*. Duke University Press. <https://doi.org/10.1215/9780822383710>
- Smith, N., & Graham, T. (2019). Mapping the anti-vaccination movement on Facebook. *Information, Communication & Society*, 22(9), 1310–1327.
- Steel, A., Adams, J., Sibbritt, D., Broom, A., Gallois, C., & Frawley, J. (2012). Utilisation of complementary and alternative medicine (CAM) practitioners within maternity care provision: Results from a nationally representative cohort study of 1,835 pregnant women. *BMC Pregnancy and Childbirth*, 12(1), 146. <https://doi.org/10.1186/1471-2393-12-146>
- Tanis, M. (2008). Health-related on-line forums: What's the big attraction? *Journal of Health Communication*, 13(7), 698–714. <https://doi.org/10.1080/10810730802415316>
- Thompson, C. M. (2017). The implications of gia truyền: Family transmission texts, medical authors, and social class within the healing community in Vietnam. *South East Asia Research*, 25(1), 34–46. <https://doi.org/10.1177/0967828X17690045>
- Tran, K. (2018). 'Dubious Eastern medicine puts many in danger'. *Lao Động*. <https://laodong.vn/suc-khoe/dung-thuoc-dong-y-khong-ro-nguon-goc-nhieu-nguoi-gap-hoa-613105.ldo>
- Vo, M. T. H., & Lofgren, K. (2018). An institutional analysis of the fiscal autonomy of public hospitals in Vietnam. *Asia and the Pacific Policy Studies*, 6(1), 90–107. <https://doi.org/10.1002/app5.268>
- Vuong, Q. H. (2015). Be rich or don't be sick: Estimating Vietnamese patients' risk of falling into destitution. *SpringerPlus*, 4(1), 529. <https://doi.org/10.1186/s40064-015-1279-x>
- Vuong, Q.-H., Ho, M.-T., Nguyen, H.-K. T., Vuong, T.-T., Tran, T., Hoang, K.-L., Vu, T.-H., Hoang, P.-H., Nguyen, M.-H., Ho, M.-T., & La, V.-P. (2020). On how religions could accidentally incite lies and violence: Folktales as a cultural transmitter. *Palgrave Communications*, 6(1), 1–13. <https://doi.org/10.1057/s41599-020-0442-3>
- Wahlberg, A. (2012). A revolutionary movement to bring traditional medicine back to the grassroots level: On the biopolitization of herbal medicine in Vietnam. In L. Monnaie-Rousselot and H. J. Cook (Eds.), *Global Movements, Local Concerns: Medicine and Health in Southeast Asia* (pp. 207–225).
- We Are Social. (2019). Digital 2019: Q3 global digital statshot. *DataReportal*. <https://datareportal.com/reports/digital-2019-q3-global-digital-statshot>
- WHO. (2018). *WHO calls for action to achieve health for all in Viet Nam*. <http://www.wpro.who.int/vietnam/mediacentre/releases/2018/WorldHealthDay2018/en/>
- World Bank. (2017). Vietnam public expenditure review: Fiscal policies towards sustainability, efficiency, and equity. <http://documents.worldbank.org/curated/en/156711508765460281/Summary-Report-published-2017>
- Wright, K. (2016). Social networks, interpersonal social support, and health outcomes: A health communication perspective. *Frontiers in Communication*, 1, 10. <https://doi.org/10.3389/fcomm.2016.00010>
- Wright, K. B., & Miller, C. H. (2010). A measure of weak-tie/strong-tie support network preference. *Communication Monographs*, 77(4), 500–517. <https://doi.org/10.1080/03637751.2010.502538>
- Wright, K. B., & Rains, S. A. (2013). Weak-tie support network preference, health-related stigma, and health outcomes in computer-mediated support groups. *Journal of Applied Communication Research*, 41(3), 309–324. <https://doi.org/10.1080/00909882.2013.792435>
- Wright, K. B., Rains, S., & Banas, J. (2010). Weak-tie support network preference and perceived life stress among participants in health-related, computer-mediated support groups. *Journal of Computer-Mediated Communication*, 15(4), 606–624. <https://doi.org/10.1111/j.1083-6101.2009.01505.x>
- Zhang, E. Y. (2007). Switching between traditional Chinese medicine and viagra: Cosmopolitanism and medical pluralism today. *Medical Anthropology*, 26(1), 53–96. <https://doi.org/10.1080/01459740601184448>