**Digitalized social support in the healthcare environment: Effects of the types and sources of social support on psychological well-being**

**Abstract**

The positive benefits of social support within healthcare communities are well documented. However, with the increasing number of online healthcare communities, digitalized social support requires further scrutiny. Additionally, it remains unclear which type of social support contributes most to a support seeker’s psychological well-being and happiness. Drawing on the theory of social support, this research investigates the interactional effect of the social support types and sources of social support on one’s well-being and happiness in the digitalized healthcare environment. Employing two experiments involving an online healthcare community of Chinese parents of children with Autism Spectrum Disorder (ASD), this research also examines the mediating effect of social relationship coping efficacy. The findings suggest that emotional support in the digital environment results in a higher level of well-being and happiness than informational support offers, and such significant differences are due to individual variations in social relationship coping efficacy. Further, counterintuitive to the received wisdom, emotional support from community members results in higher well-being and happiness than such support from close family members. The study has important implications for healthcare community managers and close family members by encouraging emotional support that leads to increased well-being and happiness.

**Keywords:** social support, emotional support, informational support, social relationship coping efficacy, well-being, happiness, community

**1. Introduction**

With the increasing transformation of the healthcare sector through digitalization, there has been an exponential growth in healthcare-related support websites, online healthcare communities, and social media chatter. One of the major motivations behind why people engage with this digitalized healthcare environment is social support (Hajli, 2014; Park et al., 2009). Social support includes the process of providing or exchanging resources with other people in difficult times (Lin et al., 2013; Uchino, 2006). While most face-to-face social support is geographically constrained, the digitalized environment fosters global healthcare communities that offer access to more diverse information and support to their members facing similar health challenges (Cline and Haynes, 2001). In turn, the online healthcare communities provide an integrative social support environment where members can exchange information, and access help to manage stress caused by illness.

Social support is indeed crucial in helping support seekers to cope with depression and stress, and to improve overall well-being (Melrose et al., 2015; Reeves, 2000). For instance, recent statistics show that autism has become more common in China and that one in every 100 children in China has autism (Spectrum, 2019). Parents of children with autism spectrum disorder (hereafter ASD) often face numerous challenges, including finding appropriate treatment and educational programs, and struggle financially to pay for the services (Whitman, 2004). In such situations, the role of social support is pivotal. Social support is categorized into two main types: emotional support and informational support (Hajli, 2014; Hobfoll and Stokes, 1988). Although the positive benefits of social support on well-being are widely recognized, research in the face-to-face environment shows a differing influence of support type on support seekers’ psychological well-being (French et al., 2018; Haber et al., 2007). Moreover, little is known about this differential influence in the digitalized healthcare community environment. Without knowing what the most appropriate type of support is for a support seeker, digitalized healthcare communities may not be able to offer optimal social support, which is their *raison d'être*. This study, thus, addresses an important research gap by examining the differential influences of social support types on the psychological well-being of the support seekers in the digitalized healthcare environment.

 Prior research on face-to-face social support argues that the sources of support matter in the perceived effectiveness of the received support (Ekas et al., 2010). In the healthcare community context, family and friends are identified as the primary sources of emotional support (Gariepy et al., 2016; Rose, 1990). Further, results on the comparative effects of the source of support paint an inconclusive picture (French et al., 2018). For instance, some researchers argue that emotional support from family members is often perceived as more effective than such support from community members (Ekas et al., 2010; Watson et al., 2019). On the other hand, Hsu et al., (2020) show family members to be less helpful in a number of social support conditions. In addition, a vast quantity of social support literature stems from the Anglo-Saxon world and does not take into account the cultural notions of support. For instance, researchers show that people of Asian origin demonstrate differential preference in terms of the source of support compared to their Western counterparts (Taylor et al., 2007; Wang and Lau, 2015). By focusing on digital social support in the Chinese digitalized healthcare environment, we provide further cultural driven evidence regarding the preferred source of support.

We further posit that the differential effects of the type of support on well-being and happiness will be mediated by an individual’s social relationship coping efficacy which captures the level of confidence to engage in behaviors that can maintain or enhance close social relationships in the context of illness (Merluzzi et al., 2019). In view of the above-identified research gaps in the digitalized healthcare community environment, this study aims to answer the following questions:

RQ1: What type of support (i.e. emotional vs. informational) is more effective in improving well-being and happiness in the digitalized healthcare environment?

RQ2: Does an individual’s’ social relationship coping efficacy mediate the effects of social support types on one’s well-being and happiness in the digitalized healthcare environment?

RQ3: Do sources of support moderate the relationship between the types of social support and one's well-being and happiness in the digitalized healthcare environment?

Figure 1 represents our conceptual framework. To address the research questions, we first review the literature on social support, well-being, and happiness and articulate research hypotheses. Following that, we present two experimental studies that examine these relationships. Finally, we discuss both theoretical contributions and practical implications, describe our research limitations, and propose future research directions.

INSERT FIGURE 1 HERE

**2. Literature review and research hypotheses**

*2.1 Social support*

Healthcare communities in the digital world have attracted increasing attention from scholars. For many individuals, the digital environment has become one of the main health information sources and, most importantly, a source of support and community building (Hajli, 2014; Josefsson, 2005; Manaszewiczet al., 2002; Tsai et al., 2012). While there is still no consensus on the definition of what constitutes social support (Uchino, 2006), researchers do agree that it involves social interactions or relationships that provide individuals with actual assistance or with a feeling of attachment to a person or group that is perceived as caring or loving (Hobfoll and Stokes, 1988). This reflection and future research on social support (for a review see French et al., 2018) show that there are two distinct types – emotional support (i.e. caring and love) and informational support (i.e. advice, solutions) (Semmeret al., 2008). Emotional support seems to facilitate social interactions and companionship, whereas informational support tends to provide direct guidance, advice, and tangible support. In other words, emotional support aims to help the support seeker to feel loved, accepted, or understood, whereas informational support is about offering direct advice and helping support seekers to enhance their sense of competence (Cutrona and Suhr, 1994; Hajli, 2014; Horowitzet al., 2001). Receiving social support is one of the main motivations for engaging with online social networking sites (Parket al., 2009). In a similar vein, Hampton et al*.* (2011) also argue that in contrast to general Internet users, social networking site users are looking for emotional support and companionship. Social support tends to improve both social welfare and health outcomes for members of digitalized healthcare communities (Eysenbach et al., 2004). Hence, the effectiveness of social support has become central to our understanding of well-being for healthcare community members.

 Social support is effective when it matches the needs of the receivers (Carpenteret al., 2010). Prior research suggests that individual personality traits may reflect one’s needs and subsequently determine the effectiveness of social support. For example, openness to experience and extraversion are associated with the feelings of belonging and affiliation that emerge from social networks (Grieve and Kemp, 2015). Furthermore, some scholars report the phenomenon of “social overload” in the digital environment, causing negative consequences such as low satisfaction, low usage, and psychological exhaustion (Maieret al., 2015). Although social support can be exchanged and received across varying digitalized platforms, different types of social support may be sought and received depending on the nature of the platform norms as well as the network audience (Hayes et al., 2016). Thus, social support is not a unidimensional construct (Krämer et al., 2014), and the effectiveness of social support may differ depending on the type of support that is provided to members of the community and most importantly, provided to meet theneeds of the members.

*2.2 Benefits of social support: well-being and happiness*

Peer-to-peer support through digital communities plays a central role in meeting one’s emotional needs (Eysenbachet al., 2004), and improving one’s well-being (Melrose et al., 2015; Reeves, 2000). Well-being often captures one’s cognitive and affective evaluation of life (Diener, 2009). The benefits of social support on mental health and affective well-being have long been recognized by members of healthcare communities. For example, mothers of children with ASD who received higher levels of social support reported fewer marital problems and a lower level of depression-related symptoms (Dunnet al., 2001). Researchers have also reported positive effects of social support on the affective aspects of well-being such as happiness (Pinquart and Sörensen, 2000). Individuals who received social support exhibited increased positive affect and less negative affect compared to those that did not (Liuet al., 2016). Supportive relationships developed within the digitalized healthcare community can help comfort its members, reduce depressive feelings, and help them cope with stress (Rosenfield and Wenzel, 1997; Silvermanet al., 2000). Therefore, this research focuses on the affective aspect of well-being.

 Nevertheless, despite the benefits of social support (Kimet al., 2010; Leahy‐Warren et al., 2012; Oh et al., 2014), some researchers focus on the perceived social support as a global generic measure (Kaul and Lakey, 2003; Oh et al., 2014), while others differentiate emotional support from informational support (Schroevers et al., 2010). Some individuals are more motivated than others to build intimacy and enhance social relationships with others (Oh et al., 2014). One of the most important ways to achieve the social desires for group membership and belonging is through social interactions with others within the community (Arlow, 1955). The rise of technology has made such a process much easier, and both emotional support and informational support enhance the establishment of relationships and ties (Hajli, 2014; Tsaiet al., 2012; Wellman and Wortley, 1990).

 A rich debate exists regarding the importance of different types of social support. In online communities, people may receive information in the form of conversation, reviews, and advice, and such information-sharing activities tend to generate complementary consequences (Park et al., 2007). Furthermore, researchers show that emotional support offered in online communities encouraged cancer survivors to find positive meaning in their life (Schroevers et al., 2010). A number of researchers argue that emotional support is more likely than informational support to protect individuals from depression and result in higher emotional well-being (Gonzaleset al., 2016; Wallace, 2005). Furthermore, studies observe that emotional support, in comparison to information support, tends to reduce one’s negative emotions associated with the illness or a distressing situation directly (Gariepy et al., 2016) and enhance life satisfaction (Oh et al., 2014). People who join digital healthcare communities are often experiencing varying levels and types of stresses caused by either their illness or illness in a close relative. Based on the above debate, we propose that:

*H1(a): In the digitalized healthcare community environment, emotional support will have a greater impact on one’s well-being than informational support.*

*H1(b): In the digitalized healthcare community environment, emotional support will have a greater impact on one’s happiness than informational support.*

*2.3 Social relationship coping efficacy*

Extant research shows the influence of social support on well-being and other relevant outcomes (see French et al., 2018 for a review). However, relatively few studies have examined the mechanisms through which social support operates to improve positive life outcomes such as psychological well-being and happiness (Gao et al., 2013). Based on the self-efficacy theory (Bandura, 1986), we argue that the effects of social support on positive life outcomes are channeled through social relationship coping efficacy. Self-efficacy theory (Bandura, 1986) contends that people regularly believe in their capabilities to perform actions necessary for specific goal attainments. Self-efficacy reflects confidence in the ability to exert control over one's motivation, behavior, and social environment. However, the level of self-efficacy differs from individual to individual.

 In the context of social support, Carpenter et al., (2010) posit that the positive effect of social support could be jeopardized when the support provided does not match one's needs and goal attainments. Thus, it is crucial to understand individual needs when evaluating the effectiveness of a certain type of social support. Based on the self-efficacy theory, Merluzziet al., (2019) claim that individuals may differ in their ability to “engage in behaviors that can maintain or enhance close social relationships in the context of illness” (p.85). The authors further argue that social relationship coping efficacy is a critical construct that should be considered when reflecting on the effects of social support. Extending this novel construct, we postulate that social relationship coping efficacy is a mechanism that explains why emotional support has a greater impact than informational support on well-being and happiness for digitalized health community members.

Through the lens of social relationship coping efficacy, we argue that the online community members differ in their abilities to deal with social relationships embedded in the digitalized environment. For instance, individuals joining digitalized healthcare communities would engage with such communities as they are distressed and looking for emotional support that will help them cope with the anxieties they are facing in their personal lives. In such situations, they will be significantly more interested in establishing, maintaining, and enhancing social relationships with other members. On the other hand, those individuals who are seeking more informational support regarding a particular illness or other health ailments may not feel as strong a need to build social relationships. Hence, we argue that when emotional support is provided by other members, the support seekers will engage in behaviors that maintain and enhance social relationships with other members of the digitalized healthcare community.

Self-efficacy theory further supports the notion that when people engage with specific goal attainment behavior, the amount of energy expended toward goal achievement and the likelihood of attaining particular levels of a behavioral performance increase (Bandura, 1986). Based on this notion, we further posit that when support seekers further engage in enhancing and maintaining social relationships with other members of the digitalized healthcare community, the increased engagement will have a positive influence on their overall psychological well-being and happiness. Thus, the following hypotheses are proposed:

*H2: In the digitalized healthcare environment, social relationship coping efficacy will mediate the relationship between social support types and well-being (H2a) and happiness (H2b).*

*2.4 Sources of social support*

In digitalized healthcare communities, members may receive both emotional and informational support from different sources including other community members or their family members. Support from a family member is often perceived as more effective in influencing one's well-being and happiness than that provided by community members (Watson et al., 2019). For example, many cancer patients rely heavily on family support networks and appreciate both emotional and informational support from family members (Snyder and Pearse, 2010). Research in the Western context has shown that family members are often associated with increased life satisfaction and psychological well-being (Chen and Feeley, 2014; Ekas et al., 2010). In particular, people from Canada and Latin America with a high level of support from family members report a lower level of depression (Bélanger et al., 2016). Family support plays a pivotal role in reducing depression and increasing well-being (Min and Wong, 2015).

 East Asians, however, may not necessarily demonstrate a similar preference for social support from family members. For instance, Wang and Lau (2015) argue that disclosing a need for support can be perceived by East Asians as a revealing personal weakness. They further suggest that East Asians may be more motivated to save face with close relatives than Westerners. Additionally, Hsu et al., (2020) suggest that emotional support from family members carries less value for Chinese Americans when compared with European Americans. Emotional support is portrayed as distressing, and unnecessary to maintain family relationships (Li et al., 2015). Information asymmetry and lack of collective interests in the health topic (e.g., autism) are likely to make it difficult to appreciate the genuine empathy of family members. Thus, it is reasonable to believe that emotional support from family members may not necessarily be welcomed by members from East Asian cultures.

 Furthermore, parents of children with ASD can often articulate and share their feelings and experiences with other parents within the community. The phenomenon of I-sharing is when “one’s subjective experience overlaps with that of at least one other person” (Pinel et al., 2006, p. 2). An important path toward developing an interpersonal bond is through shared subjective experiences (e.g., grief, fear, and endless hours of sitting) which can foster feelings of connection and familial feelings (Tyler, 2002). Such feelings can happen among those who have no objective information about one another in the digitalized healthcare environment. Sharing similar experiences tends to allow people to temporarily eliminate feelings of being alone in real life, and helps them feel connected (Pinel et al., 2006). Additionally, Johnson and Lowe (2015) suggest that learning is an important motivator for online engagement. The currency, accuracy, and diversity of the information help the learning process of individuals (Dholakia et al., 2004). Parents of children with ASD may perceive other parents are in similar situations and more knowledgeable than their close relatives. Therefore, it is expected that social support from community members who are perceived to be facing similar situations will generate a more positive impact on one's well-being and happiness than when it is provided by family members. We thus argue for the moderating role of the source of social support on the relationship between the types of social support and well-being as well as happiness. Therefore, we hypothesize that:

*H3: In the digitalized healthcare environment, emotional support from community members will result in a higher level of well-being (H3a) and happiness (H3b) than when it is provided by family members.*

*H4: In the digitalized healthcare environment, informational support from community members will result in a higher level of well-being (H4a) and happiness (H4b) than when it is provided by family members.*

**3.Overview of the studies**

Two experiments were conducted to understand the effects of social support types on well-being and happiness. Study 1 examined whether emotional support is more effective than informational support and explored the mediating effect of social relationship coping efficacy. Building on this, Study 2 further explored the moderating effect of the sources of social support.

**4. Study 1**

Study 1 has two aims. The first is to examine the distinctive roles that emotional support and informational support play in influencing well-being and happiness. Specifically, we expect that emotional support will result in a higher level of well-being and happiness than informational support. The second aim is to explore the mediating role of social relationship coping efficacy on the relationship between social support and well-being in the digitalized healthcare environment.

*4.1 Participants*

Participants for this study were recruited from two WeChat groups of one of the largest Autism communities in China through group messages with an open invitation. The invitation was sent by the group moderators to the members. A total of 93 parents of children with ASD participated in the study (86% female, Mage = 37.2, SDage= 5.95). Participants were randomly allocated to one of the three experimental conditions – control, emotional support, and informational support.

*4.2 Procedure*

Once a participant clicked on the invite link, they were taken to the Qualtrics platform where the necessary consent information was provided. They were informed that the study was about their memory capacity to avoid social desirability bias. They were also informed that they will have to remember the text shown to them and answer related questions. All participants were instructed to read the following description before they were allocated to one of the three conditions: “*Your child has recently been diagnosed with autism spectrum disorders (ASD) and you have announced it on your WeChat.".*

 To develop the experimental stimuli, the team (which comprised multi-national and multi-cultural researchers) relied on the actual support statements offered on a variety of autism community digital forums. The team examined more than 100 different support statements and identified 10 fitting statements reflecting either emotional or informational support. These support statements were then scrutinized and, from these, emotional support and informational support descriptions were adapted to ensure a high degree of realism. In each of the support conditions, the participants were informed that “*an Autism community member has written the following private message to them in response to their post on WeChat*”. For the emotional support condition, the support scenario read: “*I understand your feelings of anger, helplessness, and even despair. The diagnosis report of autism hit you hard and I deeply feel the pain. Other than listening to you and hugging you, you need to deal with these emotions as quickly as possible. I know that autism is a disaster for a family – we all thought that way at the beginning. However, in the process of accepting and training your child, you will realize that you are also unknowingly changing your perspective of life. Your new perspective tells you that autism is not a disaster, it is a special arrangement for your family and a meaningful alert. You are giving your child enduring love, and your child returned the same to you. Both you and your child are bonding together. Autism will not destroy your child, instead, autism will stimulate deep love and encourage you to live a different life. If you love each other, and parents are committed to being open-minded and self-learn, autism will neither ruin the life of your child nor will it ruin your lives*”. The informational support scenario reads: “*It is good that you have let us know what is happening. If you have difficulties in understanding what Autism spectrum disorders (ASD) are, you can ask someone in the community. I strongly recommend you book an appointment with the specialist team in your local clinic. If you need support with psychosocial interventions, you can visit Elin's (specialist school) webpage (http://www.elimautism.org/article-26-1.html). I hope you find this of some use*”. The control condition did not show any information.

Next, we measured the well-being using the WHO-5 well-being index (World Health Organization: Regional Office for Europe, 1998) on a 7-point Likert-type scale (α = .92) with exemplar items such as “I have felt cheerful and in good spirits” and “I have felt calm and relaxed”. Hill and Argyle’s (2002) Oxford Happiness Questionnaire was measured using four items on a 7-point Likert-type scale (α = .87). Exemplar items are, “I feel optimistic about the future” and “I feel I have so much to look forward to”. Furthermore, the participants also answered 10 questions about the social relationship coping efficacy (α = .83) on a 7-point scale with strongly disagree and strongly agree as anchors (Merluzziet al., 2019). To ensure the emotional stimuli and informational stimuli were indeed perceived as emotional and informational respectively, participants were asked to record to what extent the message was highly emotional and informational. Finally, the participants answered a series of demographic questions (i.e. age, gender, number of diagnosing years, nationality, and marital status). In the end, participants were debriefed about the actual motive of the study and thanked.

To avoid any common method bias, all measurements were randomized. The original questionnaire was written in English; it was then translated into Chinese by two English-to-Chinese bilinguals and then back-translated into English by a Chinese-to-English bilingual to minimize any loss of meaning. The original and the back-translated versions were checked by another bi-lingual expert who found the translation to be highly satisfactory. All measurement items are included in the Appendix.

*4.3 Results*

Manipulation checks results revealed that the message in the emotional support condition (Memotional=5.91, SDemotional=1.06) was indeed perceived as more emotional than in the informational condition (Minformational=4.76; SDinformational=1.17), and the control condition (Mcontrol=4.71, SDcontrol=1.34; F(2, 90)=10.6, p<0.01). As the word counts were different for control, emotional, and informational support conditions, we checked whether information overload had any manipulation effects. None of the three experimental conditions differs in its degree of information overload with (Memotional=4.44 and Minformational=4.32, Mcontrol=4.32, p>0.05).

Following manipulation checks, we tested H1 using ANOVA. The results revealed a significant main effect of social support types on well-being in the digitalized healthcare environment, with emotional support (Memotional=4.79, SDemotional=0.94) resulting in higher levels of well-being than informational support (M=informational=3.80, SDinformational=0.87) and the control condition (Mcontrol=4.21, SDcontrol=1.23; F (2, 90) =6.91, p<0.01). Furthermore, there is also a significant main effect of social support types on the level of happiness, with emotional support (Memotional=4.54, SDemotional=1.40) resulting in a higher level of happiness than informational support (Minformational=3.72, SDinformational=1.44) and the control condition (Mcontrol=4.16, SDcontrol=1.39; F (2, 90) =2.49, p<0.05).

 To determine whether social relationship coping efficacy drives the differences between emotional support and informational support on well-being in the digitalized healthcare environment, we conducted a mediation analysis using Model 4 in the SPSS PROCESS Macro (Hayes, 2017). The social support types (0=control, 1=emotional, 2=informational) is the independent variable (X), the well-being is the dependent variable (Y), and social relationship coping efficacy is the mediator (M). Table 1 shows the direct and indirect effects of social support types on well-being. The results show that the difference in social relationship coping efficacy between emotional support and informational support is significant (β = -0.48, p<0.05). The difference between emotional support and informational support on well-being is also significant (β = -0.72, p<0.05). Additionally, social relationship coping efficacy also positively influences well-being (β = 0.58, p<0.01). More importantly, the bootstrapping technique for conditional indirect effects indicates mediation, as the 95% confidence interval (CI) for social relationship coping efficacy does not include zero when we consider the difference between emotional support and informational support (β = -0.27, CI [-0.59 -0.05]). Thus, H2a is supported.

INSERT TABLE 1 HERE

 Additionally, we also performed the SPSS PROCESS macro (Hayes, 2017) model 4 for happiness. Table 2 shows the direct and indirect effects of social support types on happiness in the digitalized health environment. The results reveal a significant difference between emotional and informational support on efficacy (β = - 0.48, p<0.01), and happiness (β = -0.82, p<0.01). Furthermore, social relationship coping efficacy also positively influences happiness (β = 0.81, p<0.01). More importantly, the bootstrapping technique for conditional indirect effects indicates mediation, as the 95% confidence interval (CI) for social relationship coping efficacy does not include zero when the difference between emotional support and informational support (β = -0.39, CI [-0.78 -0.10]) is considered. Thus, H2b is also supported.

INSERT TABLE 2 HERE

**5. Study 2**

Study 1 demonstrated the significantly greater influence of emotional support on well-being and happiness as well as the mediating role of the social relationship coping efficacy. Study 2 offers a robustness check for Study 1 and extends it significantly by investigating the moderating role of the sources of support.

*5.1 Participants and design*

A total of 292 parents of children with ASD in China participated in the study (87.7% female; Mage=36.3, SDage=5.91). All participants were recruited from two different WeChat groups of Elin (one of the largest autism communities in China). Thus, this involved a different group than the earlier study. We employed a 2 (social support types: emotional vs. informational) x 2 (sources of support: close family member vs. community member) between-subjects design.

*5.2 Procedure*

Study 2 participants were given similar instructions to those in Study 1. All participants were instructed to read the following scenario: *"Your child has recently been diagnosed with autism spectrum disorders (ASD) and you announced it on your WeChat*”. After reading the instruction, participants in the community member source condition were told that a community member has written a private message to them, whereas participants in the close family member source condition were told that a close family member has written a private message to them.

Each participant was randomly assigned to one of the four experimental conditions: 1=emotional support + close family member; 2=emotional support + community member; 3=informational support + close family member; and 4=informational + community member. We followed Ray and Veluscek (2018) to create descriptions for emotional support and informational support. For emotional support, participants read the following description: *“I understand your feelings of anger, helplessness, and even despair. The diagnosis report of autism hit you hard and I deeply feel the pain. I hope you know that I and others are feeling for you and are here to support you. Let me know if there is anything you need or if you just need to talk through your thoughts and feelings”.* The informational support description was adapted from Kim and Niederdeppe (2016). To illustrate, the informational support description read: *“Autism spectrum disorders (ASD) is a common health concern for parents. However, like other parents, you may overestimate the challenges faced by children with ASD. Based on the recent data, more than 1% of families in China have a child diagnosed with autism. Most children, tend to live independently following appropriate psychosocial interventions. Here is a list of advice: Engage with behavior treatment and attend parent skills training programs”.*

The WHO-5 well-being index (World Health Organization: Regional Office for Europe, 1998) was used to measure the well-being (α = 0.84) condition. Furthermore, participants also reported their answers on Hill and Argyle’s (2002) Oxford Happiness Scale (α = 0.86) and the 10-item social relationship coping efficacy scale of (Merluzzi et al., 2019 (α = 0.86). To ensure that the emotional stimuli and informational stimuli were indeed perceived as emotional and informational respectively, participants were asked to record to what extent they perceived that the message was highly emotional and informational. Finally, all participants answered a series of demographic questions (i.e. age, gender, number of diagnosing years, nationality, and marital status). In the end, participants were debriefed and thanked.

*5.3 Results*

Manipulation checks were carried out to ensure that the messages were indeed perceived as emotional or informational. Emotional support was perceived as significantly more emotional than the informational support (F (1, 291) = 21.03, Memotional=5.20, SDemotional=1.01; Minformational=4.60, SDinformational=1.19, p<0.01). Information support was perceived as more informational than the emotional support (F (1,291) = 5.05, Minformational=4.96, SDinformational=1.13, Memotional=4.63, SDemotional=1.33, p<0.05). Both emotional and information conditions do not differ in their degree of information overload (Memotional=4.02 and Minformational=4.24, p>0.05).

ANOVA was employed to re-examine H1 for robustness checks. ANOVA results suggest that emotional support results in higher levels of well-being than informational support has (Memotional=4.69, SDemotional=1.07; Minformational=4.07, SDinformational=1.09; F (1,291) =24.15, p<0.05). Similar results were also obtained for happiness; that is, emotional support has a greater impact on happiness than informational support has (Memotional=4.37, SDemotional=1.28; Minformational=4.04, SDinformational=1.20; F (1,291) = 5.07, p<0.05). Thus, Study 2 findings provide robust support to H1 and confirm that emotional support results in a higher level of well-being and happiness.

Study 2 findings also provide further support to H2. SPSS PROCESS Macro model 4 was used to examine the mediating effect of social relationship coping efficacy on the relationship between social support types and well-being. The results revealed a significant total effect of social support on well-being (β = -0.65, p<0.01), and a significant direct effect of social support on well-being (β = -0.53, p<0.01). More importantly, the bootstrapping technique for conditional indirect effects indicates mediation, as the 95% confidence interval (CI) for social relationship coping efficacy does not include zero when we consider the difference between emotional support and informational support (β = -0.11, CI [-0.22 -0.02]).

Similarly, Study 2 findings reveal that social relationship coping efficacy also mediates the relationship between social support types and happiness. The results revealed a significant total effect of social support types on happiness, (β = -0.33, p<0.05). More importantly, the bootstrapping technique for conditional indirect effects indicates mediation, as the 95% confidence interval (CI) for social relationship coping efficacy does not include zero when we consider the difference between emotional support and informational support (β = -0.15, CI [-0.28 -0.02]). Thus, Study 2 findings provide robust support to H2 and confirm that social relationship coping efficacy mediates the relationship between social support types (a) and happiness (b).

We then move on to examine H3, and the results showed a significant direct impact of support sources (community vs. family members) on one’s well-being (F (1, 291) =7.43, p<0.05 with Mcommunity=4.54, SDcommunity=1.06; Mfamily=4.19, SDfamily=1.17), respectively. Further analysis suggested that the emotional support provided by a community member has a greater effect on well-being than that provided by family members F (1, 149) = 5.04, p<0.0, with Mcommunity=4.88, SDcommunity=0.93, and Mfamily=4.49, SDfamily=1.20), respectively. Furthermore, informational support provided by community members and family members on well-being is marginally significant (F (1,141) = 3.58, p=0.06, Mcommunity=4.20, SDcommunity=1.07 and Mfamily=3.86, SDfamily=1.05), respectively. The results are plotted in Fig. 2.

INSERT FIGURE 2 HERE

 Additionally, the results also reveal a significant main effect of sources of social support on happiness (F (1,291) = 7.43, p<0.01) as illustrated in Fig. 3. Both emotional support and informational support provided by community members (Mcommunity=4.39, SDcommunity=1.28) generated a higher level of happiness than such support from close family members (Mfamily=3.99, SDfamily=1.19). Further analysis suggested that emotional support provided by community members (Mcommunity=4.56, SDcommunity=1.24) results in higher happiness than that provided by close relatives (Mfamily=4.15, SDfamily=1.30; F (1,149) = 3.81, p<0.05). Similarly, informational support provided by the community members (Mcommunity=4.22, SDcommunity=1.30) has a greater impact on one’s level of happiness than the same support provided by close family members (F (1, 141) = 3.93, p<0.05) (Mfamily=3.82, SDfamily=1.20).

INSERT FIGURE 3 HERE

**6. General discussion**

 The rapid growth of digitalized healthcare communities has resulted in interesting opportunities for social support. These communities offer a supportive platform for those who experience substantial health-related challenges in real-life. Parents of children with ASD are an example of this group who may need support to deal with the challenges associated with raising a child with ASD. Many of these parents join relevant digitalized healthcare community forums and seek support from other members. The social support from others is generally categorized as either emotional or informational (Ballantine and Stephenson, 2011; Coulsonet al., 2007). Grounded in social support theory (Gottlieb and Bergen, 2010; Shumaker and Brownell, 1984), this research extends earlier social support literature by demonstrating the interactive effects of different social support types and support sources on parents’ well-being and happiness in the digitalized health environment. Building on the self-efficacy theory (Bandura, 1986), the research further highlights an important mediating role played by social relationship coping efficacy (Merluzziet al., 2019). In doing so, our research findings offer insightful theoretical and practical implications.

*6.1 Implications for theory*

A major finding and contribution of our study relates to the distinctive role of both emotional support and informational support within the digitalized healthcare environment comprised of parents of children with ASD. The last decade has attracted much debate over which social support type best improves well-being and happiness (Carpenteret al., 2010; Hayeset al., 2016) with some researchers demonstrating the influence of emotional support (Johnson and Lowe, 2015; Shensaet al., 2016) and others showing the greater influence of informational support (Friedman and King, 1994; Malecki and Demaray, 2003). We find the significantly higher influence of emotional support in influencing one’s level of well-being and happiness among parents of children with ASD. This is particularly important regarding the context of the digitalized healthcare environment. Furthermore, while a large majority of social support research asks participants to recall their past experiences of social support (Ballantine and Stephenson, 2011; Hajli, 2014; Tsaiet al., 2012), our research manipulated both emotional support and informational support – this allowed us to identify the causal effect of emotional and informational type of support on well-being and happiness. The causality is established in two separate experiments offering robust support to the primacy of emotional support in influencing well-being and happiness in the digitalized healthcare environment.

 Another notable finding of this study demonstrates that the effect of social support on well-being and happiness is channeled through social relationship coping efficacy. We find that the significant differences between emotional and informational support on well-being and happiness are due to the individual differences in their abilities to cope with the social relationships within the online community. Building on the self-efficacy theory (Merluzziet al., 2019), we offer a clear route for attracting greater engagement from individual members within the digitalized healthcare environment. Offering emotional supports triggers greater levels of social relationship coping efficacy which in turn leads to enhanced well-being and happiness for the support seeker.

 Importantly, this paper also highlights the crucial and interactive role of sources of social support. Contradicting research carried out in Western markets (Bélangeret al., 2016; Min and Wong, 2015) that supports the pivotal role played by family members, our findings instead suggest that emotional support from community members in East Asia has a much greater impact than such support from family members on one's well-being and happiness. Drawing from the theory of I-sharing (Pinelet al., 2006), we argue that East Asians particularly look for shared experiences when developing interpersonal bonds. In the case of parents of children with ASD in China, they prefer the support they receive from other parents who share similar experiences rather than the support they receive from their family members. These shared experiences allow parents to feel connected, which leads to greater levels of well-being and happiness.

*6.2 Practical implications*

Managers of digitalized social support communities are grappling with how to offer appropriate social support. Thus, which type of social support (emotional vs. informational) contributes more towards the support seeker's well-being and level of happiness is an important issue. In addition, who should provide support and how to increase community interactions remain key challenges within digitalized social support communities. Our research offers actionable guidance to digitalized healthcare community members, community moderators, and managers coping with these challenges.

 When managers of online healthcare communities in East Asia aim to improve their members' well-being and increase their feelings of happiness, they should consider nudging other members towards providing emotional support rather than informational support. This emotional support, in turn, will lead to greater engagement with the community from the support seekers and enhance the social relationships among members as a result. The enhanced social relationships will then create a more supportive social eco-system which will lead to increased well-being and happiness for community members. We recommend to digitalized healthcare community managers that they focus on building a caring community through emotional engagement with support seekers. Furthermore, to achieve greater success, health community managers and moderators should organize regular activities to develop a feeling of attachment to the group. For example, parents of the autism community can be advised particularly on emotional coping mechanisms that lead to reduced stress and anxiety and, by implication, increase the overall well-being and happiness. Another actionable insight is to encourage community members to discuss challenges associated with dealing with health ailments. For instance, asking parents of children with ASD to discuss the actual challenges they face in raising a child will be extremely helpful for other members and the community at large. Emphasizing the shared experiences and challenges will enhance the interpersonal bond between members and this in turn will lead to greater well-being and happiness.

 Furthermore, our findings provide noteworthy suggestions to the family members of those East Asian parents with children who have ASD. The results show that family members should encourage the parents to actively engage in an online autism community where they can receive both emotional and informational support. More importantly, when family members are expected to offer some support to the parents of a child with ASD, they should avoid offering information on diagnosis, appropriate treatment or education programs, or advice on how to raise a child with ASD. They may instead consider offering some emotional support which would help the parents believe that the whole family is caring, loving, and supportive.

*6.3 Limitations and future directions*

This paper offers valuable insights into the distinctive roles that both emotional support and informational support play in one's well-being and happiness in a digitalized healthcare community environment. However, there are still questions that remain unanswered. First, our study focused on only one health condition – ASD. Future research should examine the effects of emotional support and informational support in other healthcare-related online communities – e.g., a cancer community. Second, although social relationship coping efficacy mediates the relationship between social support types and well-being and happiness, it remains unknown whether other individual variables may also explain why some members prefer emotional support more than others do. Third, most of our participants are female which reflects the demographic nature of the community in China. Future research may investigate whether the socio-demographics of the parents and the child play a role in the potency of social support types. Last, although we identified the important role of the sources of support, future research may investigate the potential conditions in which informational support is more important than emotional support. Overall, our study demonstrated important interactive effects of social support types and social support sources and highlighted the underpinning mechanism of social relationship coping efficacy that leads to greater well-being and happiness for support seekers in the digitalized healthcare environment. We hope that our study will ignite further research in this important area of research.

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**Tables**

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| --- |
| **Table 1** Direct and indirect effects of social support types on well-being |
| *Direct effects* | β |  SE |
| Social support types Well-being | -0.72\*\* | 0.27 |
| Social support types Social relationship coping efficacySocial relationship Well-beingcoping efficacy | -0.48\*\*0.58\*\* | 0.17  0.16 |
| *Indirect effects of social relationship coping efficacy on well-being* |
| Bootstrapping (95%) CI |
| Hypothesis | Mediator | β | SE | LLCI | ULCI |
| H2a | Social relationshipcoping efficacy | -0.27\*\* | 0.14 | -0.59 | -0.05 |
| *Notes:* SE, Standard error; LLCI, lower level (2.5 per cent) confidence interval; ULCI, upper level (2.5 per cent) confidence interval. \* p < 0.05, \*\* p < 0.01. |

|  |
| --- |
| **Table 2**Direct and indirect effects of social support types on happiness |
| *Direct effects* | β |  SE |
| Social support types Happiness | -0.82\* | 0.37 |
| Social support types Social relationship coping efficacySocial relationship Happinesscoping efficacy | -0.48\*\*0.81\*\* | 0.17  0.22 |
| *Indirect effects of social relationship coping efficacy on happiness* |
| Bootstrapping (95%) CI |
| Hypothesis | Mediator | β | SE | LLCI | ULCI |
| H2b | Social relationshipcoping efficacy | -0.39\*\* | 0.18 | -0.78 | -0.10 |
| *Notes:* SE, Standard error; LLCI, lower level (2.5 per cent) confidence interval; ULCI, upper level (2.5 per cent) confidence interval. \* p < 0.05, \*\* p < 0.01. |

**Figures**

Social relationship coping efficacy

Social support types

(emotional vs. informational)

Psychological wellbeing

Happiness

Sources of support

**Fig. 1.** Research model.

**Fig. 2**. Interaction effect of support types and sources of support on well-being.

**Fig. 3**. Interaction effect of support types and sources of support on happiness.

**Appendix**

|  |
| --- |
| Measurement items  |
| WHO-5 Wellbeing (World Health Organization: Regional Office for Europe, 1998) (α$=0.924)$* I have felt cheerful in good spirits.
* I have felt calm and relaxed.
 |
| Oxford Happiness Questionnaire (Hills and Argyle, 2002) (α$=0.885)$* I am not particularly optimistic about the future.
* I feel optimistic about the future.
* I feel I have so much to look forward to.
* I feel that the future is overflowing with hope and promise.
 |
| Social Relationship coping efficacy (Merluzzi et al., 2019) (α$=0.829)$How good are you at the following?* Doing your part to maintain close relationships.
* Managing stress in my relationships.
* Coping with stress in close relationships.
* Doing your part to help family members accept/understand your diagnosis of events.
* Coping with the ways disorders may affect your personal relationships.
* Adjusting to the ways that disorders affect your family.
* Managing conflicts with those closest to you.
* Doing your part to help your friends accept/understand your diagnosis.
* Asking for help when you need it.
* Seeking emotional support from others.
 |