Article

Psychosocial Effects of Self-Disclosure Among Chinese International Students in Japan: Focusing on Disclosure Media and Its Targets

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ABSTRACT

This study examined the effects of four types of self-disclosure on the life satisfaction of Chinese international students studying in Japan. Using an online survey, the study found that offline self-disclosure predicted life satisfaction both directly and indirectly, mediated by received social support and perceived social support, while the direct effect of online self-disclosure was not significant. All four types of self-disclosures predicted received social support, while the social support obtained from host nationals online did not affect perceived support. The analysis also revealed that the paths were moderated by the length of residence in Japan. Only online self-disclosure positively and directly predicted life satisfaction for newcomers, while only offline self-disclosure did for those who had stayed longer. Offline received social support was perceived as helpful for both groups, while that of online predicted perceived social support only for newcomers. Theoretical implications and limitations were discussed.

Keywords: Chinese international students, face-to-face, life satisfaction, self-disclosure, SNS, social support

In today's Japan, there are more than 121,800 international students from China, comprising 43.6% of total international students (Japan Student Services Organization, 2020), the greatest of any national group. This large number has garnered the attention of scholars, and much research on their well-being have been conducted (Guo et al., 2014; Miller et al., 2019). Despite the cultural

proximity between Chinese and Japanese, Chinese students' well-being was even poorer than Western students (Ozeki et al. 2006). With the advent of the internet, students from China, or any country for that matter, can now rely on the internet to allow them access to home interpersonal networks, while living overseas, so their chances of suffering from cultural uprooting (English & Worlton, 2017) have been greatly mitigated. Likewise, the internet affords ample opportunities for forming relationships with hosts.

This study probes into the benefits of self-disclosure on SNS toward the well-being of Chinese international students in Japan. Past studies have demonstrated the significant role of self-disclosure in not only helping international students adjust to a new country, but for developing intercultural friendships (Chen, 1993; Kudo & Simkin, 2003), reducing prejudice held by the hosts (Imai & Imai, 2019), and mitigating the adverse effects of meta-stereotype in the acculturation context (Imai, 2017).

Self-disclosure has both intrapersonal and interpersonal benefits. Research on self-disclosure has found that expressing one's problems and negative feelings publicly can help to relieve stress, hence improving mental health (Karsay et al., 2019; Zhang, 2017). Also, by disclosing troubles to their friends, people can receive both immediate (Ruppel et al., 2016; Trepte et al., 2017) and long-term social support (Lee et al., 2019; Li et al., 2020).

Self-disclosure's effect in the online context is still up to debate. According to social presence theory, the low presence online channels reduce worry about negative evaluations during disclosure (Nguyen et al., 2012), but media richness theory proclaims that offline communication is a richer medium that could decrease ambiguity and allow for more accurate and precise communication (Allen & Griffeth, 1997), being more effective for relationship development (Walther & Parks, 2002).

Furthermore, benefits derived from self-disclosure are also highly dependent on the disclosure target. Associating with co-nationals strengthens the sojourners' cultural identification, offering an assuring atmosphere for self-disclosure, while mingling with the hosts helps them reduce their uncertainty in the new cultural environment, and allow them to achieve better cross-cultural adjustment (Shu et al., 2020).

Given the above arguments, we aim to construct a more inclusive model specific to the situation of international students. In our study, we refer to international students as those studying at overseas educational institutions while engaging in social and cultural activities in the host country (Imai & Imai, 2019). Specifically, the purpose of this study is to examine: whether and how online and offline self-disclosure with home and host country targets (a) directly and indirectly predicts life satisfaction, mediated by received and perceived social support; and (b) whether these effects are consistent across lengths of residence in the host country.

LITERATURE REVIEW

Self-disclosure and well-being

Self-disclosure has been conceptualized as what people voluntarily and intentionally reveal about themselves to others, including thoughts, feelings, and experiences (Derlega et al., 1993). Existing literature shows that self-disclosure can bring intrapersonal benefit to individuals, in particular, stress-buffering effect (Derlega et al., 1993). Venting negative feelings can generate a sense of relief and unburdening, referred to as the "cathartic effect" (Stiles, 1987), likened with exposure (or flooding) therapy (Kloss & Lisman, 2002), in which expressing thoughts and feelings regarding an upsetting event serves to release stress.

According to Knop et al. (2016), individuals' disclosure is shaped by two contextual factors: the discloser's audience and the communication channel used for self-disclosure. Co-nationals enable them to use their native language in a common cultural background, which may create a safe and reassuring atmosphere when disclosing. On the other hand, disclosing to host people could allow one to gain knowledge and experience about the host culture, hence reducing uncertainty (Gudykunst, 2005; Rui & Wang, 2015).

Either online or offline self-disclosure has some unique advantages in obtaining intrapersonal benefit. According to social presence theory, one's presence depends on the verbal, nonverbal, and contextual cues in that medium (Short et al., 1976). The low social presence of online media could reduce people's worries about being judged (Hooi & Cho, 2014). On the other hand, past research has shown that people tend to value the intimacy and immediacy in offline medium, and prefer disclosing face-to-face (Rogers et al., 2009).

Self-disclosure and social support

Zhou (2014) defined social support as the network of social resources that an individual perceives, which is rooted in mutual assistance, guidance, and validation about life experiences and decision. Social support could be further categorized into three types: instrumental, emotional, and informational support, which refers to their quality to be perceived available (Friedman & Silver, 2007). Past literature has distinguished between the perception and the actual quality of social support and noted the former one is the most important factor in predicting quality of life (Gidron & Ronson, 2008; Li et al., 2015), which are both included and noted as 'perceived' and 'received' social support in this study.

An important venue for obtaining social support is through self-disclosure. Trepte et al. (2017) summarized two methods for achieving this. The first way is the immediate response of providing support corresponding to people's self-disclosure. According to Derlega et al. (1993), "self-disclosure is a vehicle for obtaining social support that might not be available if other people did not know about one's difficulties" (p.111). Another way refers to the long-term social benefit associated with self-disclosure. To this effect, social penetration theory (Altman & Taylor, 1973) claims that self-disclosure is crucial for initiating

supportive relationships and promoting intimacy, since disclosure develop their relationships, allowing the likelihood of obtaining the needed social support. Both perspectives have been fortified with substantial evidence (e.g., Li et al., 2020; Park, 2018; Trepte et al., 2017).

Recent studies have already shown that interpersonal benefit of self-disclosure on a social networking site (Ko & Kuo, 2009; Trepte et al., 2013; Zhang, 2017; Utz, 2015). One advantage of online media is their broadcasting affordance, allowing an efficient means of attaining social support (Vitak & Ellison, 2012). Further, the "connected presence" triggered by instantaneous and multimodal online connections could also foster relationship development (Cui, 2015). On the other hand, according to media richness theory, the face-to-face situation is considered the richest media, which is optimal for clarifying the support needs, acquiring social support during disclosure (Lewandowski et al., 2011), and developing intimate relationships (Li et al., 2020).

On the other hand, discrepancy in self-disclosure patterns across cultures might lead to misunderstandings that could potentially sabotage disclosing experience and impede obtaining social support. Bauer et al. (2018) indicated that beliefs pertaining to disclosure leads to various culturally specific patterns of self-disclosure. For example, the topics raised in conversations with Japanese people were limited, and the depth of their self-disclosure was also restrained (Kasahara, 2011). However, it may not necessarily imply that people from different cultures are entirely insensitive toward help seeking signals or unwilling to offer support.

Social support and well-being

According to the stress-support matching hypothesis, the substantial assistance provided by others will reduce stress only if it matches the demand (Cohen & McKay, 1984). Zhang (2017) further argues that received social support could transform into perceived social support by offering people a feeling of being supported.

Scholars have shown that online social support may be more accessible and more immediate (Hampton et al., 2011). For example, Chen and Yang (2015) confirmed the effectiveness of online supportive messages of helping mainland Chinese international students adjust to the Singaporean culture. In contrast, it has also been said that social support received online might not be as valuable as that obtained offline, as it tends to be lacking in expression, and associated with perceptions of increased hostility and delayed feedback (Wright et al.,2003).

For international students, social support from distant and local co-nationals reduces their homesickness and disorientation during the adjusting period and helps them maintain their home cultural identity (Hendrickson et al., 2011; Ng et al., 2014). However, it is likely that co-nationals' lack of or biased knowledge about the host country could nullify the benefits of their social support. In contrast, host nationals could help international students develop cultural knowledge and adjust to the host society (Wilson et al., 2013).

In addition, international students may benefit from having a mental perception that adequate support will be available to them when needed, as it can help reduce the negative impact of stressors (Cohen & Wills, 1985). This is in line

with the stress-buffering model, which suggests that people with more social support tend to fare better in the face of stressful events (Uchino, 2004; Zhang, 2017). In fact, research by Hefner and Eisenberg (2009) has shown that university students with lower perceived social support are more likely to experience mental health problems.

This study proposed a model that is inspired by Huang (2016)'s work, which hypothesized that self-disclosure on SNS would positively affect online social well-being both direct and indirectly through social support. Although there are some concerns about the direct impact of self-disclosure on wellbeing (e.g., Zhang, 2017), this approach has been widely adopted, backed by empirical evidence (Kysnes et al., 2022; Luo & Hancock, 2020). We contributed to this paradigm by incorporating the medium and targets of self-disclosure and social support, which could be relevant for international students.
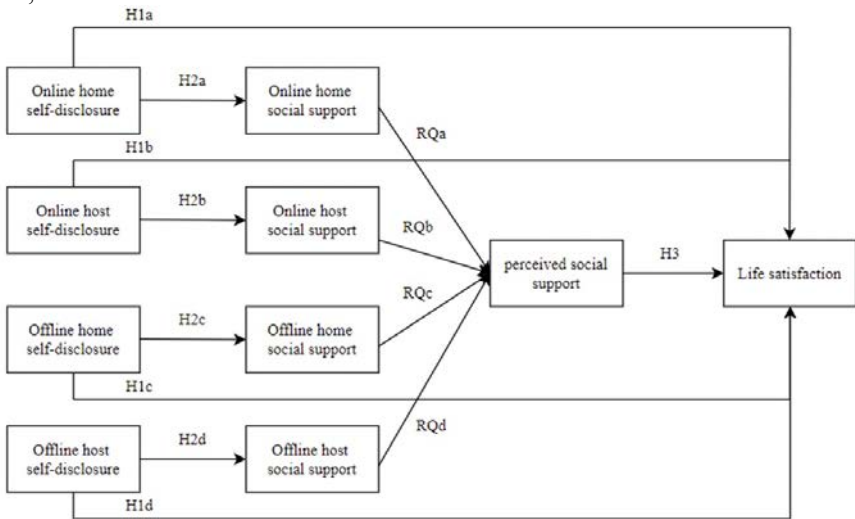

Figure 1: The hypothetical model

Moderation role of length of residence in Japan

This study argued that previously mentioned relationships may vary with the length of residence in the host country. For instance, by social presence theory, since online media contains low social presence compared to offline, it could help mitigate anxiety towards communicating with hosts during the initial phase of the sojourn (Gudykunst, 2005). However, for long-term sojourners, communicating and only receiving online social support could lead to psychological alienation (Hofhuis et al., 2019).

Regarding disclosure targets, past studies have indicated that international students tend to interact with co-nationals initially, and gradually develop networks of other internationals and host people (Schartner, 2014). Therefore, we expect that online medium with home target at the initial acculturation phase is

beneficial, while offline medium with host target becomes more so at a later phase.

Hypotheses

The following hypotheses and research questions were proposed:

H_1:   a) Online home, b) online host, c) offline home, and d) offline host self-disclosure has direct positive effects on life satisfaction.

H_2:   a) Online home, b) online host, c) offline home, and d) offline host self-disclosure has a positive effect on corresponding received social support.

H_3:   Perceived social support has a positive effect on life satisfaction.

H_4:   The effect of self-disclosure to life satisfaction will be mediated by received and perceived social support.

H_5:   The positive effects of a) online home, b) online host, c) offline home, and d) offline host self-disclosure on life satisfaction will differ in magnitude with length of sojourn.

H_6:   The positive effects of a) online home, b) online host, c) offline home, and d) offline host received social support on perceived social support will differ in magnitude with length of sojourn.

RQ: How are: a) online home, b) online host, c) offline home, and d) offline host received social support associated with perceived social support?

METHOD

Participants and sampling

The participants were Chinese international students studying at different universities in Japan. A total of 206 responses were collected via WeChat groups and snowball sampling of the researcher's personal networks. After omitting those who failed to respond to more than 50% (n = 7) of the items, 199 samples were included in the data analysis, including 80 men, 119 women, with an average age of 25.3 years (SD=3.77). As incentive for responding, participants were entered into a raffle to win one of 20 Amazon gift cards worth JP¥2000. This study had been approved by the institutional review board of Nagoya University.

Measures

All measures were adapted from existing scales, and some items were altered to suit the purpose of this study, that is, sampling Chinese students in Japan. The entire questionnaire had been translated into Chinese. In order to secure accuracy of the translations, measurements had been forward and backward translated by two bilinguals proficient in both Chinese and English.

In this study, self-disclosure and received social support are categorized into four types using composite scores: online home, online host, offline home, offline host. Online home type indicates interactions that happened entirely online with Chinese people. On the other hand, online host type represents self-disclosure and social support associated with Japanese and non-Chinese internationals in Japan. One thing worth notice is that this does not necessarily represent contrast between platforms. For example, when one discloses on Instagram, if his/her followers contains both Japanese and Chinese people, he/she would be engaging in both online home and online host self-disclosure at the same time. In addition, offline home type means interaction that occurs face-to-face with Chinese in Japan. Furthermore, offline host type means it with Japanese and non-Chinese internationals. Such categorization method is adopted from a recent study (Li & Peng, 2019).

Self-disclosure

Participants were asked to select two SNSs that they self-disclose most frequently on, from WeChat, Weibo, Q.Q., Little Red Book, LINE, Twitter, Facebook, and Instagram, which are the top popular social media in China and Japan, respectively. They could also fill out other SNSs if they did not find the platform they often participate in on the list, or they could choose one SNS if they only share on one platform. To capture the multidimensional nature of self-disclosure, we used Zhang's (2017) version of Wheeless and Grotz's (1976) General Disclosiveness Scale (GSD). Participants were first asked to read "Recalling your experience in Japan using the first/second SNS that you have filled in" and responded to items such as "my conversation lasts a long time when I am discussing myself on this SNS" based on a 5-point Likert scale from 1 = strongly disagree to 5 = strongly agree. This scale demonstrated adequate internal consistency (α = .801).

Then, participants were asked to assign percentages to the five groups of the extent of self-disclosure targeting them on each social media: (1) Chinese outside of Japan, (2) local Chinese, (3) Japanese, (4) non-Chinese internationals, and (5) general public disclosure. Percentages must total 100 and same for the following percentage assigning procedures. Participants were then asked the audience composition to their public disclosure and assign percentages to (1) Chinese outside of Japan, (2) local Chinese, (3) Japanese, (4) non-Chinese internationals for each platform. Percentage of Chinese outside of Japan and local Chinese were combined as the online home source; percentage of Japanese and non-Chinese internationals were summed as online host source. Self-disclosure was then

multiplied by the percentage directly targeting and publicly exposing toward home/host source. The scores obtained for two platforms were summed and divided by 2 to calculate Online home/host self-disclosure.

The same items were modified to measure offline self-disclosure. After reading "Recalling your experience with face-to-face interaction in Japan (not online)", participants were asked to answer to items like "My conversation lasts a long time when I am discussing myself face-to-face" ($\alpha = .786$). Participants were asked to assign percentages to (1) local Chinese, (2) Japanese, (3) non-Chinese internationals of the extent of self-disclosure targeting them in face-to-face context. The percentage of local Chinese was counted as offline home source. The percentage of Japanese and non-Chinese internationals were summed as offline host source. Offline home/host self-disclosure was calculated by offline-self-disclosure multiplying the percentage targeting offline home/host sources.

Received social support

Four items adapted from Li et al. (2015) to measure Online received social support on two SNSs they reported on, using 5-point Likert scales (1 = never to 5 = all the time). Participants were asked to read 'Based on your experience in Japan of using the first/second social media you filled in' and respond to items included "encouragement from someone on this social media to feel better about yourself" ($\alpha = .819$). Participants were then asked to distribute the percentages to (1) Chinese outside of Japan, (2) local Chinese, (3) Japanese, (4) non-Chinese internationals, according to the amount of social support received from them. The received social support was then multiplied by percentage targeting online home/host sources. The score obtained for each SNS were summed together and divided by 2 in order to calculate the score for Online home/host social support.

Offline received social support was measured by adopting the same items ($\alpha = .885$). After reading "Based on your experience face-to-face interaction in Japan (not online)", participants were asked to respond to items such as "encouragement from someone (not on the Internet) to feel better about yourself". Participants were asked the percentage of this kind of social support from (1) local Chinese, (2) non-Chinese internationals (3) host nationals. Offline home/host social support was calculated by offline received social support multiplied by the percentage targeting offline home/host sources.

Perceived social support

Ten items were adopted from Social Provisions Scale (SPS-10; Caron, 1996), using a 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree). Example items included, "There are people I can depend on to help me if I really need it" ($\alpha = .908$).

Life satisfaction

Four items were adopted from the Satisfaction with Life Scale (Pavot & Diener, 1993), using 5-point Likert-type scales from 1= strongly disagree to 5 = strongly agree. Example items included "The conditions of my life in Japan are excellent" (α = .849).

Length of residence in Japan

Participants was asked how long they have lived in Japan in months.

Other possible controlled variables

Gender, age, education level (undergraduate / graduate / doctor student/ others), and Japanese proficiency (1 = beginner, 10 = native speaker) were asked. Finally, self-esteem was measured by the short form of RSES (Tambs & Røysamb, 2014) using 5-point Likert-type scales from 1= strongly disagree to 5 = strongly agree. Example items included, "I take a positive attitude toward myself" (α = .842).

RESULTS

Demographics

Among the 199 participants, 80 (40.2%) were men, 119 (59.8%) were women, consisting of 22 undergraduate students (11.1%), 107 graduate students (53.8%), 37 PhD students (18.6%), and 10 non-degree students (5%). Among the eight listed SNSs, WeChat (82.9%), Weibo (42.2%), and Instagram (15.5%) were identified by the greatest number of participants as their top two SNSs for disclosing self-related information overall. Means, standard deviations, and correlations of all relevant variables are presented in Table 1.

Table 1: Zero-order correlations means and standard

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	1													
2. Length of residency in Japan	-.44**	1												
3. Japanese language proficiency	.03	.35**	1											
4. Self-esteem	-.06	-.07	.06	1										
5. Online home self-disclosure	-.04	-.03	-.19**	.07	1									
6. Online host self-disclosure	.06	.05	.21**	.01	-.69**	1								
7. Offline home self-disclosure	.05	.02	-.15*	.04	.25**	-.26**	1							
8. Offline host self-disclosure	-.04	-.06	.15*	.04	-.11	.33**	-.75**	1						
9. Online home social support	-.15*	-.12	-.27**	.09	.62**	-.63**	.22**	-.15*	1					
10. Online host social support	.10	.07	.18**	.06	-.59**	.83**	-.27**	.38**	-.66**	1				
11. Offline home social support	-.05	-.10	-.08	.15*	.12	-.24**	.55**	-.38**	.28**	-.27**	1			
12. Offline host social support	.10	.11	.12	-.01	-.14	.34**	-.46**	.64**	-.14	.41**	-.64**	1		
13. Perceived social support	.08	.02	-.04	-.04	.16*	-.02	.12	.21**	.25**	-.01	.20**	.25**	1	
14. Life satisfaction	.02	-.06	.00	.10	.04	.11	.02	.23**	.03	.13	-.05	.37**	.44**	1
M	25.30	32.90	6.14	3.25	2.70	.45	2.22	1.05	2.76	.38	2.34	1.08	3.90	3.15
SD	3.77	30.51	1.74	.39	.73	.60	.78	.78	.77	.58	.97	.94	.64	.80

Note. *$p < .05$, **$p < .01$

Hypothesis testing

The baseline model is presented in Figure 2. A path analysis was first conducted using structural equation modeling (SEM) by AMOS 23 to measure the direct and indirect effects of self-disclosure on life satisfaction. The model fit the data well, based on critical goodness-of-fit indices ($\chi 2(15) = 24.25$, $p = .061$, GFI= .976, AGFI = .916, CFI = .992, RMSEA = .056). Overall, the variables included in the model explained 22.5% of the variance in life satisfaction, and 32.7% of the variance in perceived social support. Paths from age, gender, length of residence in Japan, Japanese language proficiency, and self-esteem to life satisfaction were removed for their having insignificant regression weights. Non-significant paths in the original proposed model are shown in dotted lines. Covariances are omitted from the figure for ease of interpretation.
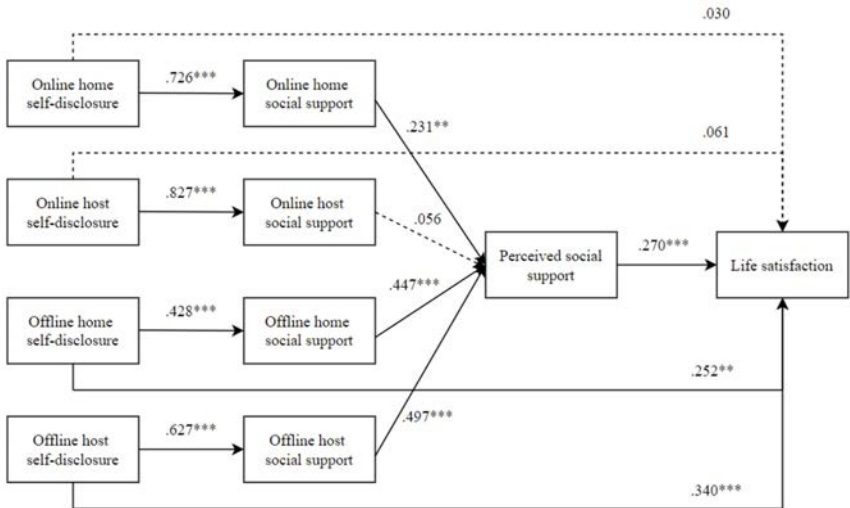

Figure 2: Path analysis results of the research model (Base model)

According to the results, self-disclosure targeted toward online Chinese as well as hosts did not predict higher life satisfaction, hence H1a and H1b were rejected. On the other hand, offline self-disclosure to both home ($\beta = -.252$, $p < .01$) and host sources ($\beta = -.340$, $p < .001$) significantly predicted life satisfaction, supporting H1c and H1d.

All self-disclosure significantly predicted corresponding received social support: online home self-disclosure ($\beta = .726$, $p < .001$), online host self-disclosure ($\beta = .827$, $p < .001$), offline home self-disclosure ($\beta = .428$, $p < .001$) and offline host self-disclosure ($\beta = .627$, $p < .001$), supporting H2a, H2b, H2c, H2d.

As for RQa,c,d, our results indicated that online home social support ($\beta = .231$, $p < .01$), offline home social support ($\beta = .447$, $p < .001$), and offline host

social support ($\beta = .497, p < .001$) significantly predicted perceived social support. Regarding RQb, online host social support failed to significantly predict perceived social support. Moreover, perceived social support significantly predicted life satisfaction, supporting H3 ($\beta = .270, p < .001$).

Using a 95% bootstrap confidence interval based on 5000 bootstrap samples, the indirect effect of online home self-disclosure on perceived social support (effect estimate = .168, 95% CI [.018, .452]) and life satisfaction (effect estimate = .045, 95% CI [.004, .158]) were all above zero. However, the indirect route via online host self-disclosure did not have a mediation effect toward neither perceived social support (95% CI [−.099, .198]) nor life satisfaction (95% CI [−.025, .066]) as the confidence interval included zero. In contrast, the indirect effect of offline home self-disclosure on perceived social support (effect estimate = .192, 95% CI [.105, .306]) and life satisfaction (effect estimate = .052, 95% CI [.019, .102]) were significant. Similarly, the 95% bootstrap confidence interval for the indirect effect of offline host self-disclosure on perceived social support (effect estimate = .312, 95% CI [.181, .454]) and life satisfaction (effect estimate = .084, 95% CI [.030, .170]) were also entirely above zero. These results indicated that the effect of online home, offline home, and offline host self-disclosure on life satisfaction was first mediated by corresponding received social support, and then by perceived social support. Hence H4 is partially supported.

Moderation effect of length of stay in Japan

A multigroup simultaneous SEM analysis was performed to test the modeling fit for two different groups, according to their residence time in Japan: less than two years (N = 97) and more than two years (N = 102).

The goodness of fit showed better fit for the > 2 years group ($\chi 2$ (15) = 17.84, $p = .271$; GFI = .969; AGFI= .885; CFI = .995; RMSEA = .043), than the < 2 years group ($\chi 2$ (15) = 26.85, $p = .030$; GFI = .948; AGFI= .810; CFI = .979; RMSEA = .091). For the former, the model accounted for 32.2% variance of perceived social support and 22% of life satisfaction. For the latter, the model accounted for 35.5% variance of perceived social support and 28.4% of life satisfaction.

Table 2 presents the non-standardized structural parameters for each group with the critical ratios (C.R.) obtained for the differences. There were significant positive relationships between online home (.34) and host self-disclosure (.35) to life satisfaction among those who lived in Japan less than two years, but negative relationships for online home (−.16) and host self-disclosure (−.11) among people who lived more than two years, partially supporting H5a, b. On the other hand, while Chinese students who lived less than two years showed a negative relationship between offline home (−.04) and host self-disclosure (−.03) to life satisfaction, a positive relationship was found (.54 for offline home and .67 for host self-disclosure) for the other group, showing partial support for H5c, d. Further, online home (.49) and host social support (.30) predicted perceived social support for those who lived less than two years but not for the long-term residents (.002 for home source, −.14 for host source), showing partial support for H6a, b.

On the other hand, although the difference of the offline home and host social support between these two groups were not significant, the effect size being $p < 0.05$ for the less than 2 years group, but $p < 0.001$ for the more than 2 years group. The CR are also near significant. Hence H6c, d is partially supported.

Table 2: Results of multigroup analysis

Model relationships	Hypothesis	<= 2 years	> 2 years	CR
1. Online home SD → Life satisfaction	H1a	.34*	-.16	-2.77**
2. Online host SD → Life satisfaction	H1b	.35*	-.11	-2.30*
3. Offline home SD → Life satisfaction	H1c	-.04	.54**	2.32*
4. Offline host SD → Life satisfaction	H1d	-.03	.67***	2.68**
5. Online home SD → Online home SS	H2a	1.00*	.53*	-1.18
6. Online host SD → Online host SS	H2b	.84***	.81***	-1.49
7. Offline home SD → Offline home SS	H2c	.33**	.54***	1.30
8. Offline host SD → Offline host SS	H2d	.60***	.67***	1.22
9. Online home SS → Perceived SS	RQa	.49***	.002	-2.85**
10. Online host SS → Perceived SS	RQb	.30*	-.14	-2.56*
11. Offline home SS → Perceived SS	RQc	.29*	.61***	1.61
12. Offline host SS → Perceived SS	RQd	.26*	.71***	1.85
13. Perceived social support → Life satisfaction	H3	.41***	.17	-1.58

Note. SD, self-disclosure. SS, social support
CR, critical ratio for the differences between parameters.
$t = 1.96$ for $p < 0.05$ and $t = 2.58$ for $p < 0.01$. *$p < .05$, **$p < .01$, ***$p < .001$

DISCUSSION

Examination of the base model

This study specifically compared four types of self-disclosure and revealed that offline self-disclosure, both direct and indirect, predict life satisfaction, mediated by received social support and perceived social support. However, the direct effect of online self-disclosure to life satisfaction was insignificant, which contradicted the results of some previous studies (e.g., Huang, 2016; Zhang 2017). One possible explanation is that online self-disclosure could lead to social skills deficits, and disconnectedness from the face-to-face social circles (McEwan, 2011), whereas self-disclosing offline could be considered a sign of fulfilling social tasks in the new environment, leading to opposite psychological consequences (Edelmann, 1985). Furthermore, it is significant to note that offline self-disclosure with both home and host recipients predicted life satisfaction, supporting the value of the secure and comforting environment provided by co-nationals for disclosing as well as the chance to lessen uncertainty surrounding the host people (Cao et al., 2018).

This study further demonstrated that self-disclosure could help international students obtain both online and offline social support, which provides backing for social penetration theory, and the immediate effect of self-disclosure, echoing findings of several recent studies (e.g., Li et al., 2015, Zhang 2017). In addition, this finding also suggests that regardless of the difference in self-disclosure

norms, host people are responsive and willing to offer social support just as home people are.

Although both online and offline received social support from co-nationals predicted perceived social support, the received social support from host sources fostered perceived social support only when it was offline. This result first confirmed that the seemingly superficial interactions like getting "likes" or online messaging are also welcomed by Chinese international students, reinforcing the findings from past studies (Valkenburg et al., 2006, Zhang 2017). In line with Hofhuis et al. (2019), social support obtained from home sources were perceived as more helpful than host. Common cultural background of co-nationals reduces homesickness and fosters adjustment (Ng et al., 2014; Shu et al., 2020). As for social support from host sources, it could be that for international students, their required support from Japanese people is mainly instrumental and academic (Tanaka et al., 1994), which may be better attained offline.

Results of this study showed that perceived social support facilitated life satisfaction. Such a conclusion supports the theory that individuals who perceive a higher degree of social support would be subjugated to less harmful consequences, and experience fewer mental problems (Cohen & Wills, 1985; Hefner & Eisenberg, 2009).

Moderation role of length of stay in Japan

Multigroup analysis showed that length of residence first moderated the self-disclosure-life satisfaction linkage, suggesting the benefit of disclosing via online channels among newcomers. Moreover, the moderation effect observed between received-perceived social support linkage indicates that while online social support is helpful for newcomers, it may not be so instrumental for the more veteran sojourners.

Such result is in consistency with social compensation hypothesis (Valkenburg et al., 2005). Due to their inadequacy in language and cultural skills, newcomers tend to struggle to build fulfilling relationships offline. As a result, they may decide that it is best for them to disclose online to their current connections and rely on their support. On the other hand, this result could also be explained by social presence theory, that communicating online conveys less social presence, hence less anxiety is felt (Nguyen et al., 2012), creating a safer and more suitable channel for new arrivals. Face-to-face contact in this unfamiliar host country may be overwhelming at first (Ye, 2006). In contrast, as their stay progresses, they may become more comfortable in self-disclosing within high presence situations. Additionally, they require offline engagement and support because it is fundamentally more effective (for instance, asking a sick person whether they're okay as opposed to actually transporting them to the hospital) (Dolin & Booth-Butterfield, 1993). In the long run, offline interactions boost life happiness, whereas online interactions lower it among international students (Billedo et al., 2019). As a result, for those with longer residences, the value of online self-disclosure and social support decreased.

On the other hand, the moderation effect of length of residence was not confirmed between targets, suggesting that the importance of home and host sources were equal, which contradicts existing studies (e.g., Ye, 2006). According to the Schartner's (2014) longitudinal study, international students' network composition dramatically changed before five months, but remained stable after that. Since we set two years as the criteria for distinguishing newcomers from long-term residents, the network composition may already have had become stable given the relatively wide range in time. Hence it is possible that this categorization failed to capture the very first phase when interaction with co-nationals is significantly important than with host nationals.

Theoretical and Practical Contributions

This research has several contributions to the growing literature of self-disclosure and improve life quality of international students. First, by specifying self-disclosure and social support by targets and medium, we added to the understanding of the underlying mechanisms toward social support attainment, and extended upon previous studies that focused only on the general effect of self-disclosure in acculturation context (e.g., Kudo & Simkin, 2003; Imai & Imai, 2019). Secondly, this study expands on the existing intercultural literature that focused on general use (i.e., frequency, intensity, network size…etc.) of SNS by investigating self-disclosure, while we looked at its specific uses. Third, because international students may share similarities with other overseas sojourners groups, our findings can provide new insight to self-disclosure among other categories of sojourners such as immigrants.

Practically speaking, this study indicated the significance of adopting online channels for self-disclosing, and the effectiveness of online social support, particularly for newly arrived international students. The findings of this study could be applied in orientation programs for newly arrived international students, providing them with information and guidance regarding predominant SNS platforms in the host nation, and how they should disclose toward the hosts. It is also crucial for the university to facilitate face-to-face opportunities to mingle with both co-nationals and host nationals, so that they can establish their local social support network at later stage.

Limitations and future directions

First, this study used a convenience sample, which might lead to results that are not well generalized. However, such a problem seems inevitable when tapping into hard-to-reach populations, such as international students. Second, this research also relied on self-report data, which lends itself to recall bias. Allocating the percentage of these abstract constructs to different targets could further aggravate this problem. Third, since this study only collected cross-sectional data, causal inferences can only be implied. It also limits the possibility of distinguishing whether the social support received is from the immediate 'I need help' signal, or the network maintained by self-disclosure in the long term. Future

research should employ a longitudinal design, and include variables that reflect the relationship of targets. Fourth, more intricate measures of self-disclosure and social support were sacrificed for the sake of reducing cognitive fatigue, limiting the scope of our study. Our survey was not sensitive to subtle differences across targets (e.g., whether a certain type of self-disclosure is more intimate and honest compared to others). Fifth, we concede some sampling issues, as the gender ratio was relatively skewed (40.2% participants were men), while statistics show that 55.4% of the entire international student population in Japan are men (Japan Student Services Organization, 2020). Despite this imbalance, gender was not a significant predictor of life satisfaction, hence it was excluded from the model. Nonetheless, it has been accepted that women are more satisfied with their lives than men globally (Joshanloo and Jovanović, 2019). Lastly, we only collected 199 samples, which was projected to be the minimum acceptable requirement for performing structural equation modeling (200 samples) and multigroup analysis (100 samples for each group) (Kline, 2005). Future studies should collect larger samples to achieve more adequate statistical power.

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