

Loneliness, Self-Disclosure, and ICQ ("I Seek You") Use

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ABSTRACT

This study investigated the relationships between self-disclosure in ICQ ("I seek you") chat, level of loneliness, and ICQ usage. The Revised UCLA Loneliness Scale and the Revised Self-Disclosure Scale (RSDS) were administered to a multistaged stratified random sample of 576 college students. The results indicate that loneliness is not related to level of ICQ use, but inversely related to valence, accuracy, and the amount dimensions of self-disclosure in ICQ chat, and that ICQ usage is significantly related to control of depth and intent of disclosure. Specifically, it was found that the lonelier the student, the more dishonest, more negative, and the less revealing was the quality of the self-disclosure in their ICQ interaction. Conversely, appropriate, honest, positive, and accurate self-disclosure might lead to decreased loneliness when one feels understood, accepted, and cared about on ICQ. More important, as intimate relationships are based on high degrees of depth and intent of self-disclosure, heavy users of ICQ are usually open, personal, and consciously aware of what they are disclosing.

INTRODUCTION

RESEARCH HAS SHOWN that lonely people often have very negative self-appraisal of themselves and loneliness is an indication of a social deficit.¹ Lack of friendship and social ties suggests personal inadequacies. Lonely people may appear unattractive and be avoided by others. Social perceptions of lonely people are generally unfavorable.² The social stigma attached to loneliness in particular may make the lonely person more hesitant to approach others and to disclose his or her problem for fear of being rejected and derogated. Previous research has demonstrated that loneliness is associated with a low level of self-disclosure. Jourard³ suggested that a healthy, well-functioning person is relatively high as a self-discloser. Sermat and Smyth⁴ attributed

loneliness to a "lack of opportunity to talk about personally important, private matters with someone else. Self-disclosure, the sharing of personal information, is widely believed to be essential to the formation of close relationships.⁵ Russell et al.⁶ reported that lonely people often indicate that their relationships are superficial and that no one understands them well. The feeling of loneliness is the feeling of not being known and understood. People who are unwilling to reveal themselves face-to-face and who receive little personal information from others may find their relationship less satisfying and so be more prone to loneliness. In contrast, loneliness may hamper effective communication and thus inhibit self-disclosure.⁷

At the core of the experience of loneliness is lonely people's fear that others will reject them. The risk and vulnerability associated

with self-disclosure are real.⁸ Thus, the lonely are less likely to risk the kind of self-disclosure that can help interested others understand them. Sermat⁹ suggested that "one of the contributing factors to loneliness is the individual's unwillingness to enter into interpersonal situations that involve the risk of being rejected, embarrassed, or disappointed." Lonely people may be less willing or less able to take the face-to-face social risks that might lead to alleviation of the lonely feelings.

Today, a new technological development in computer-mediated communication (CMC) has the potential to allow people to enter into mediated interpersonal relationship without taking the face-to-face social risks. A popular web utility, ICQ ("I seek you") has become a favorite chat tool among youngsters. ICQ is able to locate friends online and alert you when they are available to chat. Like AOL's Instant Messenger and Microsoft's NetMeeting, ICQ logs you in to a central server whenever you connect to the Net and tells you when your pen pals are online. Unlike e-mail, you can use a chat tool to converse in real time, sending short messages that appear on the recipient's screen almost instantaneously. The program runs in the background, taking up minimal memory and Net resources. In mid-2000, there were approximately 74 million registered ICQ users around the world, with a high of 80,000 new subscriptions in 1 day.¹⁰ In some Asian cultures such as in Hong Kong, Singapore, and Taiwan, youngsters spend much of their spare time on ICQ, with 32% reporting that they chatted on ICQ on a daily basis. Over 18% chatted five to six times a week and 24% three to four times a week.¹¹ Previous studies have demonstrated that motivations for using ICQ include the joy of making friends on the Net, the ability to disguise identity, the intrigue of a non-face-to-face communication mode, the gratification of real time chat, and the diverse type of people you can chat with.^{11,12} With such diverse motivations, would lonely people turn to the world of the Internet, especially ICQ, to seek friendships or relationships? Youngsters believe that the Internet—reactive and interactive—offers companionship without the threat of human intimacy.¹³ Lonely youngsters can become part

of a community of other young people who are captivated by the Internet. In a certain sense, ICQ may be able to bring them out into the world of people and may make them feel less lonely.

Youngsters today are immersed in media.¹⁴ Their lives are dedicated to many of the emerging communication media—the Internet, video games, MP3, karaoke, stereo players, and conversing in ICQ. Despite the widespread use of the Internet among youngsters, a major question remains about whether lonely youngsters would seek friendship and affection in the cyber world by self-disclosing through ICQ. Would they be able or willing to take a less threatening social risk in a non-face-to-face computer-mediated environment? To help shed light on these questions, this study explores the relationship between self-disclosure and loneliness.

Theoretical framework

Loneliness. In this study, loneliness is considered the self-perceived state that a person's network of relationships is either smaller or less satisfying than desired.¹⁵ Used in most recent research, this definition was a basis for the popular UCLA Loneliness Scale.¹⁶ The cognitive aspect of this definition is the person's conclusion that he or she has fewer or less initial social relationships than desired or achieved. Loneliness includes the subjectivity of the experience, uneasy feelings and distress, and perceptions of deficiencies in one's social relations.^{17–20} Using this definition, loneliness is a negative and unpleasant experience that occurs when a person's network of social relations is deficient in some important way, either quantitatively or qualitatively.^{17,21} A broad definition of loneliness would be that it involves a sense of deprivation in one's social relationships.²² Loneliness has been found to be associated with more time spent alone, fewer dates, fewer close friends, and less time spent with close friends.^{16,23,24}

According to the attribution approach, Beck and Young²⁵ have distinguished three types of loneliness: (1) chronic loneliness, which evolves from social deficits continuing over a period of years and can no longer be attributed

to situation or environment; (2) situational loneliness, which usually results at the termination of a relationship; and (3) transient loneliness, which refers to the short duration of loneliness that most people experience periodically as a result of brief periods of minor social deficiency.²² One theoretical distinction between situational and chronic loneliness is that situationally lonely persons are likely to actively adjust to the environment (e.g., participating in religious groups, going to social events), whereas chronically lonely persons are likely to devalue social activities.^{21,26} Finn and Gorr²⁷ further explained that chronically lonely people probably limit the gratifications they seek and obtain from the media because of cynicism and depression that frame their social world. As a result, severely lonely people are more passive in their use of media and find that media do not compensate for social relations.²⁸

However, unlike traditional mass media, which are usually passive, ICQ provides a mediated, reactive and interactive, nonverbal communication environment. With this distinctive property, ICQ provides a unique opportunity for a non-face-to-face communication mode, which may lower the social risk of being embarrassed or disappointed. In chatting on ICQ, one can also disguise his or her own identity. Lonely people who are hesitant to approach others and to disclose his or her problem for fear of being rejected and derogated may choose to reveal their true identity at a later time. Therefore, understanding the loneliness effect and the unique capability of ICQ may provide insights into the problems faced by lonely people, such as difficulty in self-disclosure. Based on this theoretical perspective, we raised the following research question (RQ): RQ_1 —*Are there relationships between loneliness and ICQ use?*

Self-disclosure. The concept self-disclosure is loosely defined as what individuals verbally reveal about themselves to others, including thoughts, feelings, and experiences.²⁹ Wheelless and Grotz³⁰ conceptualized self-disclosure as “any message about the self that a person communicates to another.” In other words, self-disclosure is a way of showing others who

we are and what our needs are.⁸ Past research has suggested that loneliness would motivate people to increase their self-disclosure. For example, it was reported that the desire to escape loneliness generates the need to share feelings and thoughts with others.³¹ But loneliness in other situations might be paralyzing and could lead to feelings of hopelessness and futility, which would probably inhibit attempts to establish intimacy through self-disclosure.³² Therefore, loneliness and self-disclosure are not simply related in a unidirectional causal way. More likely, they influence each other or are part of the same package, such that loneliness and self-disclosure tend to co-occur with no particular causal relation.³³

In an early work, Jourard³⁴ believed that the important variable to consider when studying self-disclosure in relationship was the amount. Since that time, researchers have recognized the multi-dimensionality of self-disclosure and have expanded their focuses to (a) depth or intimacy; (b) honesty or accuracy; (c) amount that takes place; (d) valence; and (e) intentionality of the self-disclosure.^{30,35,36}

Wheelless and Grotz³⁰ reported a positive relationship between amount, depth, and honesty of self-disclosure with trust in a relationship. Healthy people tended to self-disclose more positive than negative information and to make more self-disclosure to their friends and spouses than their parents.³⁷ In the child-parent relationship, Barnes and Olson³⁸ reported that youths talk more to their fathers than to their mothers, especially when discussing problems and considering decisions. Results have also demonstrated that youths were more positive in their self-disclosure to their parents, yet tended to self-disclose with greater depth, breadth, and honesty with good friends.³⁵ These results support the importance of studying the various dimensions of self-disclosure especially in the context of a computer-mediated or non-face-to-face environment (e.g., ICQ), and their relationship to loneliness.

Recent research in CMC suggests that it might lead to unemotional or under-social communication.³⁹ Walther, et al.⁴⁰ demonstrated that CMC might create impersonality, hostility, and participation equality due to the “filter-

out-cues" effects. The lack of verbal elements and feedback cues often characterizes CMC as low in social presence in comparison to face-to-face communication. When social presence is low, conversations seem to be more impersonal. As a consequence, ICQ may be a less threatening medium to lonely people. Lonely people may prefer a nonverbal and low-in-social-presence medium for self-disclosure. Under these circumstances, will lonely people be attracted to ICQ in order to disclose more of their personal feelings with greater breadth and depth? What will the content of these disclosures be—will they be more positive, accurate, and intended? Based on this conceptualization, we ask the following: RQ2—*What is the relationship between the depth, amount, valence, accuracy, and intent dimensions of self-disclosure and (a) level of ICQ use and (b) loneliness?*

MATERIALS AND METHODS

Sampling

Study data were collected in a survey administered in class to a multi-stage stratified random sample of students at a large university in Hong Kong. As participation in this research was entirely voluntary, instructor permission was sought and alternate classes of similar sizes were used when instructors refused to take part. In the first stage, departments were randomly selected from a stratified list of 49 small, medium, and large departments in seven colleges. To be considered small, a department enrolls less than 100 students, a medium one enrolls 100–300, and a large one has more than 300 students. The stratification accounted for 14 small, 27 medium, and eight large departments. The second stage is to ensure a proportionate stratified sample from these 49 departments. Therefore, two large, six medium, and three small departments were randomly selected. From these 11 departments, classes were selected from a stratified list of large, medium, and small classes. A large class was defined as having 100 students or more, medium 31–99, and small with 30 or fewer students. As there were more medium classes in the university,

two large, 20 medium, and seven small classes were randomly selected to reflect the proper representation of the student population.

The final sample was 576, with 448 users of ICQ (77.8%) and 128 nonusers (22.2%). The completion rate was 62.7%. College students were chosen as the target sample in the study because access to the Internet and the likelihood of them chatting on ICQ is high. The majority of the participants were female (59%), ranging in age from 18 to 36 ($M = 20.34$, $SD = 1.49$) years. Most were freshmen (49.2%), followed by sophomores (30.7%), juniors (15.5%), seniors (1.5%), and graduate students 3.1%. The mean monthly household income was US\$2,597–3,246, with 61.2% living at home and 38.7% living in dormitories on campus. About 90.1% of the students owned their personal computers (of whom 91.7% also subscribed to various Internet services), and 83.9% owned cellular phones.

The questionnaire was written in English at the design stage and was translated to Chinese by a postgraduate student majoring in translation for fielding. A pretest suggested that some improvement to the wording was necessary to maintain the clarity and accuracy of the survey instrument.

Measurement

The research instrument includes questionnaire items that operationalize the following variables:

Loneliness. To measure loneliness, the Revised UCLA Loneliness Scale¹⁶ was used. Previous research has demonstrated its predictive validity.^{16,28,41,42} In this scale, respondents were asked to self-report how they experience the emotions concerning their interpersonal relationship expressed in the 20-item measure, using a four-point scale, with 1 meaning never, 2 meaning rarely, 3 meaning sometimes, and 4 meaning often. The mean of the scale was 37.9 ($SD = 7.7$), and its reliability was high, with alpha equal to 0.89. Similar to past studies,^{43,44} loneliness scores were trichotomized. To test the potential differences among the chronically, situationally, and nonlonely groups, respondents were cat-

egorized into their respective groups using an operationalization procedure adopted from Canary and Spitzberg.²¹ The rationale for this procedure was that respondents scoring one standard deviation above the measures of loneliness severity are more likely to be chronically (vs. situationally) lonely. Thus, chronically lonely people were defined as those who scored 1 standard deviation above the mean (i.e., above 37.9); situationally lonely scored above the average and below 1 standard deviation (i.e., with scores above 37.9 and below 45.6); and nonlonely persons scored below the average (i.e., below 37.9). As a result, 101 students were grouped as chronically lonely, 118 situationally lonely, and 124 as nonlonely.

Self-disclosure when chatting on ICQ. The Revised Self-Disclosure Scale was adopted and modified to assess messages about themselves that users of ICQ communicate to another.³⁰ Respondents were asked to mark a series of 31 self-disclosure items when chatting on ICQ on the degree to which these statements reflect how they communicate with other people in general. Factor analysis (Table 1) using Varimax rotations yielded the following five factors with eigenvalue greater than 1.0—control of depth, accuracy, amount, valence, and intent of disclosure—explaining 61.29% of the variance. The factors are consistent with the expectation derived from the theoretical assumption discussed above:

1. *Control of depth (eigenvalue = 4.84, explained 25.49% variance):* Seven items were used to measure how strongly respondents agree with the idea that they talk about themselves fairly long, disclose intimate and personal things, and fully reveal their feelings when chatting on ICQ. The five-point Likert scale response ranges from "strongly agree" to "strongly disagree." Factor analysis procedure successfully combined these items into a single factor, with a Cronbach's alpha of 0.80. The factor mean score was the lowest at 2.94, indicating that respondents, by large, did not freely reveal their intimate and personal secrets on ICQ.

2. *Accuracy (eigenvalue = 2.0, 15.27% variance):* Four measurement statements were used to gauge the degree of accuracy, sincerity, openness, and honesty about respondents' feelings, emotions, and experiences when chatting on ICQ (Cronbach's alpha = 0.74). This factor had the highest mean score of 3.44.
3. *Amount of disclosure (eigenvalue = 1.63, 8.6% variance):* Three items were used to assess responses on the amount of disclosure on themselves when they used ICQ. The mean score of this factor was the third highest of 3.25, and Cronbach's alpha was 0.75.
4. *Valence (eigenvalue = 1.16, 6.08% variance):* Three measurement items were used to reflect whether respondents would reveal more positive and desirable, or more negative and undesirable things when disclosing themselves on ICQ. The mean score for this factor was 3.25, with Cronbach's alpha equals 0.71.
5. *Intent of disclosure (eigenvalue = 1.11, 5.85% variance):* Two statements were used to gauge whether the respondents were aware of what they were self-disclosing. This factor had the second highest mean score of 3.3, but Cronbach's alpha was low at 0.59.

ICQ usage. Two measures were used to gauge the level of ICQ use. First, respondents were asked how many days in a typical week they use ICQ. The scale was "1" meaning "once or twice a week," "2" meaning "3–4 times a week," "3" meaning "5–6 times a week," and "4" meaning "every day." Second, respondents were also asked to report the amount of time they spend on ICQ on a typical session in number of hours and minutes.

Demographics. Traditional demographic variables were measured in this study, namely age, gender, household income, and residence (i.e., whether the respondent lives at home or in a dormitory on campus).

Data analysis

Aside from the factor analyses discussed above, Pearson's correlational coefficients were computed to examine the relationships between level of ICQ use (i.e., days per week and

TABLE 1. FACTOR LOADINGS (PRINCIPAL COMPONENTS, VARIMAX ROTATION) OF 19 SELF-DISCLOSURE ITEMS IN ICQ CHAT (N = 398)

	Mean	SD	Factors				
			1	2	3	4	5
Depth or intimacy							
1. I usually talk about myself on ICQ for fairly long periods of time.	2.77	0.82	0.72	0.13	-0.03	-0.17	0.10
2. I often disclose intimate, personal things about myself without hesitation.	2.64	0.94	0.72	0.13	-0.00	-0.03	-0.19
3. Once I get started, I intimately and fully reveal myself in my self-disclosures.	2.85	0.83	0.68	0.30	0.02	-0.13	-0.03
4. I do not often talk about myself on ICQ. (R)	3.31	0.90	0.63	0.18	0.33	0.09	0.17
5. I feel that I sometimes do not control my self-disclosure of personal or intimate things I tell about myself.	2.78	0.89	0.61	-0.02	-0.13	-0.23	-0.03
6. I often discuss my feelings about myself on ICQ.	3.21	0.80	0.57	0.44	0.25	-0.13	0.04
7. Once I get started, my self-disclosures last a long time.	3.02	0.88	0.46	0.25	0.24	-0.12	0.39
Accuracy							
8. My statements about my feelings, emotions, and experiences are always accurate self-perceptions.	3.47	0.81	0.16	0.82	0.07	-0.08	0.15
9. I am not always honest in my self-disclosures. (R)	3.51	0.81	0.15	0.82	0.17	-0.01	0.06
10. I always feel completely sincere when I reveal my own feelings and experiences.	3.57	0.81	0.26	0.73	0.16	-0.07	0.03
11. I intimately disclose who I really am, openly and fully.	3.22	0.96	0.37	0.41	0.08	0.27	-0.17
Amount (about self)							
12. My conversation lasts the least time on ICQ when I am discussing myself. (R)	3.22	0.81	0.12	0.03	0.84	0.06	-0.08
13. I often talk about myself on ICQ.	3.39	0.85	0.03	0.23	0.79	0.16	-0.08
14. My statements of my feelings are usually brief on ICQ.	3.15	0.84	-0.03	0.17	0.70	0.09	-0.17
Valence							
15. On the whole, my disclosures about myself are more negative than positive. (R)	3.34	0.74	-0.10	0.11	-0.05	0.80	-0.11
16. I often reveal more undesirable things about myself than desirable things. (R)	3.23	0.72	-0.10	-0.13	0.32	0.73	0.06
17. I usually disclose negative things about myself. (R)	3.17	0.77	-0.27	-0.15	0.13	0.70	-0.06
Intent							
18. When I express my personal feelings on ICQ, I am always aware what I am doing and saying.	3.22	0.88	-0.04	-0.03	-0.11	-0.01	0.83
19. When I am self-disclosing on ICQ, I am consciously aware of what I am revealing.	3.38	0.79	-0.01	0.17	-0.22	-0.08	0.77
Eigenvalue			4.84	2.90	1.63	1.16	1.11
Variance explained (%)			25.49	15.27	8.60	6.08	5.85
Cronbach's alpha			0.80	0.74	0.75	0.71	0.59

The scale used was 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

minutes per session in ICQ use) and all the independent variables, such as demographics, loneliness, and the five dimensions of self-disclosure in ICQ use. Next, an ANOVA procedure contrasted the potential differences among the non-lonely, situationally lonely, and chronically lonely groups across all dimensions of self-disclosure variables (Table 3).

RESULTS

Loneliness and ICQ use

Analyses of the relationship between loneliness and level of ICQ use are summarized in Table 2. On both days per week and minutes per session, it was found that level of ICQ use

TABLE 2. CORRELATIONAL ANALYSIS OF ICQ USE, LONELINESS, AND SELF-DISCLOSURE

	Level of ICQ use		Loneliness
	Frequency (days per week)	Length (minutes per session)	
Loneliness	-0.09	-0.05	
Demographics			
Gender (Female)	-0.11 ^b	-0.12 ^b	-0.16 ^c
Age	-0.07	-0.02	-0.04
Household income	0.02	-0.10 ^a	0.03
Residence (dorm)	0.14 ^c	0.23 ^d	-0.01
Self-disclosure in ICQ use			
Depth or intimacy	0.23 ^d	0.23 ^d	0.03
Amount	0.06	-0.01	-0.13 ^b
Valence	-0.05	0.07	-0.21 ^d
Accuracy	0.09	0.07	-0.16 ^c
Intent	0.18 ^c	0.08	-0.07

^a $p < 0.1$; ^b $p < 0.05$; ^c $p < 0.01$; ^d $p < 0.001$.
 $n = 377$ minimum.

was not significantly correlated to loneliness. This suggests that the feelings of loneliness did not increase or decrease with ICQ use. Likewise, in a mutually reciprocal relationship, the level of ICQ use did not affect significantly one's loneliness feeling. This result is inconsistent with an earlier Carnegie Mellon University study, which showed that cruising cyberspace can contribute to depression and loneliness.^{45,46} According to the study, connecting to the Net disconnects us from normal social interaction and affects our long-term relationships as these suitable relationships are replaced by online friendships, which tend

to be based on weaker ties. As a result, heavy users of the Internet who spend even a few hours a week online at home experience higher levels of depression and loneliness than if they had used the Internet less frequently. Past research also found that lonely people self-disclose less,^{44,47} are withdrawn and less intimate, and are often passive conversational partners.^{41,43}

Loneliness and self-disclosure

Results in Table 2 from correlational analyses indicated that both frequency of ICQ use in

TABLE 3. ANOVA COMPARING THE ATTRIBUTES BETWEEN THE NONLONELY, SITUATIONALLY LONELY, AND CHRONICALLY LONELY PERSONS IN SELF-DISCLOSURE IN ICQ CHAT^a

Dimensions in self-disclosure	Nonlonely	Situationally lonely,	Chronically lonely,	Contrast			Overall F, $p \leq$
	(G1) M	(G2) M	(G3) M	G1G2, $p \leq$	G2G3, $p \leq$	G1G3, $p \leq$	
Depth or intimacy	20.90	20.72	19.91	n.s.	n.s.	n.s.	n.s.
Amount	10.14	9.40	9.49	0.007	n.s.	0.031	0.004
Valence	10.02	9.37	9.85	0.011	n.s.	n.s.	0.011
Accuracy	14.17	13.18	13.24	n.s.	n.s.	0.005	0.000
Intent	6.65	6.52	6.67	n.s.	n.s.	n.s.	n.s.
<i>n</i>	114-124	113-118	93-101				

^aUCLA Loneliness Scale was used to categorize respondents into three groups with chronically lonely defined as those who scored 1 standard deviation above the mean (i.e., above 37.9); situationally lonely scored above the average and below 1 standard deviation (i.e., with scores above 37.9 and below 45.6); and nonlonely persons scored below the average (i.e., below 37.9).

n.s., not significant.

days per week ($r = 0.23, p < 0.001$) and length in minutes per session ($r = 0.23, p < 0.001$) were significantly correlated to the depth dimension of self-disclosure in their ICQ chat. These findings suggest that, the more often and longer in each session students use ICQ, the more likely students would intimately disclose their personal feelings when chatting on ICQ. Similarly, results also showed that intent of disclosure was significantly related to frequency of ICQ use in days per week ($r = 0.18, p < 0.01$) but unrelated to length in minutes per session. This indicates that heavy users of ICQ are consciously aware of what they are doing and saying despite the length of each session. No significant relationship was found between amount, valence, and accuracy dimensions of self-disclosure and level of ICQ use. Furthermore, as shown in Table 2, valence ($r = -0.21, p < 0.001$) is the strongest negative correlate of loneliness; accuracy ($r = -0.16, p < 0.01$) and amount ($r = -0.13, p < 0.05$) are also significant negative correlates. This suggests that lonely people tend to be more negative and less honest, and reveal their feelings less in their self-disclosures on ICQ. The size of all coefficients, though, shows that significant links between self-disclosure and loneliness are modest. No significant relationship was found between loneliness, and depth and intent dimensions of self-disclosure.

To further examine the relationship between the depth, amount, valence, accuracy, and intent dimensions of self-disclosure and loneliness, a series of one-way ANOVAs was conducted comparing the chronically, situationally, and nonlonely groups on the five dimensions of self-disclosure. Results in Table 3 showed that accuracy [$F(2, 448) = 7.84, \eta^2 = 0.000$], amount [$F(2, 488) = 5.54, \eta^2 = 0.004$], and valence [$F(2, 248) = 4.58, \eta^2 = 0.011$] were differentiated among the three groups. Specifically, the Bonferroni test revealed that chronically lonely people self-disclosed ($M = 13.24$) significantly less accurate information than the nonlonely ($M = 14.17$), but not significantly less than the situationally lonely ($M = 13.18$). Similarly, the amount of self-disclosure was significantly lower in the chronically lonely ($M = 9.49$) than in the nonlonely ($M = 10.14$), but insignificantly higher than in the situation-

ally lonely ($M = 9.40$). However, in examining the differences in the valence dimension (positive-negative nature) of the disclosure among the three groups, findings showed that only the situationally lonely students ($M = 9.37$) disclosed significantly less positive or undesirable things in their ICQ conversation than the nonlonely group ($M = 10.02$). But no significant difference was found when the chronically lonely and the nonlonely groups were compared. In sum, these findings largely suggest that lonely students are less honest, less sincere, less open, less accurate, and less positive in self-disclosing their feelings, emotions, and experiences than the nonlonely students when chatting on ICQ. Routine and heavy ICQ users are very much aware of the intimate disclosure of their personal feelings. No significant differences were found among the three groups in the control of depth and intent dimensions of self-disclosure.

CONCLUSION

The present investigation helps clarify our understanding of the relationship among levels of ICQ use, self-disclosure, and loneliness. Specifically, this research helps our understanding in three major ways.

First, loneliness is not related to level of ICQ use among university students. Although ICQ has the potential to allow lonely people to enter into mediated interpersonal relationships without taking face-to-face social risk, lonely students did not turn to ICQ for alleviation of their lonely feelings. Despite the unique characteristics of ICQ that enable students to disguise their identity and to chat with diverse type of people real time in a non-face-to-face communication mode, lonely people did not look upon ICQ as a safe channel to seek friendship. In fact, a recent study on loneliness and Internet use found that chronically lonely persons report less active use of the Internet than the situationally lonely and the nonlonely.⁴⁸ However, this study only focused on e-mailing and surfing the web. Past interpersonal communication research also found that loneliness was significantly and linearly related to a self-perceived lack of self-disclosure to opposite

sex friends.⁴³ Spitzberg and Canary⁴⁴ demonstrated that intense loneliness manifests itself in withdrawal and passivity in interpersonal communication and coping behavior.¹⁸ Finn and Gorr²⁷ found that severely lonely people are passive users who derive little gratifications from the media. Nevertheless, lonely people did not report less active use of ICQ than the situationally lonely and the nonlonely in this study. The insignificant relationship found between loneliness and ICQ use in this study is no surprise and can be explained by the fact that ICQ is a popular Internet activity for youngsters. To be fashionable, youngsters take time out to chat on ICQ as a daily routine to communicate with friends despite their loneliness state. ICQ use is so common that students often fire off messages to classmates and friends around the corner, or someone sitting only five rows apart in the same room, rather than share that information in person. Just like cellular phone, ICQ use is a common phenomenon among Hong Kong students and has become a way of life. As Wartella et al.¹⁴ explained, affordable home computing and a host of other digital games and formats have helped make the use of such interactive media a dominant activity of contemporary youth.

Second, loneliness is inversely related to valence, accuracy, and amount of self-disclosure. This means that students who are lonely would be less honest and disclose more negative/bad things about themselves on ICQ. But they do not disclose more information in general. Conversely, appropriate, honest, positive, and accurate self-disclosure might lead to decreased loneliness when one feels understood, accepted, and cared about on ICQ. The negative relationship between loneliness and valence and accuracy is an interesting one. In general, lonely people do not trust or like other persons.⁷ This lack of faith in the good will of others may be an important motive in failure to self-disclose positively and accurately. Moreover, lonely people's fear of rejection from others may lead them to conceal their feelings of dissatisfaction of others and avoid discussions about social matters. Furthermore, research has shown that lonely people often have very negative self-evaluations and continue to rate themselves negatively

and to expect negative ratings from others.¹ In addition, social perceptions of lonely persons are generally unfavorable.² The negative connotations and social consequences of being lonely may inhibit people from admitting that they are lonely and telling the truth. Therefore, understanding the social stigma effect provides insights into the problems faced by lonely people, such as revealing less and being negative and dishonest in their self-disclosure in ICQ. The explanation for why lonely people self-disclose less about themselves in ICQ is that the causal link between loneliness and self-disclosure amount is probably reciprocal in nature.⁷ People who are unwilling to reveal themselves and who receive little personal information from others may find their relationships less satisfying and so be more prone to loneliness. On the other hand, loneliness and social anxiety may hamper effective communication and thus inhibit willingness to self-disclose inner thoughts or personal feelings on ICQ. However, Stokes⁴⁶ argued that appropriate, intimate self-disclosure might lead to decreased loneliness provided the disclosure is followed by acceptance and understanding by the target person. This study supports previous studies that willingness to self-disclose has been implicated as a factor influencing relationship intimacy and, in turn, is related to the degree of reported loneliness.^{43,49} In all cases, less intimate disclosure to peers was associated with more reported loneliness.

Third, ICQ usage is significantly related to control of depth and intent dimensions of disclosure. This suggests that students who chat on ICQ regularly are those who are more open, intimate, personal, and consciously aware of what they are disclosing. This finding is worth noting because, according to the social penetration model, to build an intimate relationship with others one has to show a high degree of depth and intent of self-disclosure.⁵ This means that a successful person with whom to interact is not the one who only talks more or shows more feelings in the message, but the one who conscientiously knows what he or she is talking about. Furthermore, the lack of significance on the level of ICQ use and amount of disclosure is not surprising, as students talked most often on ICQ in diverse and mostly random

chats (73.7%) with no specific focus. The circumstances under which they most likely chat on ICQ were as follows: when they had nothing to do (40.3%), a habit (22.8%), when they were bored (18.2%), and when alerted by ICQ software (13.3%). Therefore, when students chat on ICQ, a significant amount of the discourse was not about themselves.

There are limitations to this study. One is that this study did not directly consider the original causal direction of the relationships among loneliness and self-disclosure and ICQ use; future longitudinal studies will be better equipped to answer this cause-and-effect issue. A second concern is that, by using ICQ, students are substituting a poorer quality social relationship for a better one—that is, substituting weak ties for strong ones. Many of these online relationships represent relatively weak ties with strangers and acquaintances. Future research should focus on the effects of prolonged use of ICQ on the social and psychological well-being of students. A third limitation is that the data were gathered from a sample of college students in Hong Kong. Applications or generalization of these results from this study to other population may not be justified. Furthermore, the relationship between loneliness and self-disclosure may be stronger for women than for men. Past research has indicated that intimate disclosure and friendship are more strongly associated for women than for men.^{34,50} In general, women, more than men, are trained to be social and emotional specialists for whom the expression of feelings and the sharing of confidences play a central role in close relationships. Future studies on loneliness and self-disclosure on ICQ should focus on gender differences and cross-national comparisons. Finally, it would be useful to examine the amount of time one spends on ICQ with respect to the context of use. ICQ use as merely the number of times per week ignores the reasons for use. The amount of time one spends with ICQ may change depending on its context. Content of conversation and purpose of use on ICQ could provide additional information explaining the relationships among loneliness, self-disclosure, and ICQ use. New research is needed to better understand the

role of new interactive media such as interactive games in lonely people's lives.

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