Attitudes toward privacy in social network and moral development of nursing students

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Abstract

Objective: To compare attitudes toward privacy in with social network sites (SNSs) and moral development between undergraduates nursing and advertising students.

Methods: Cross-sectional study conducted with 324 nursing students and 209 advertising students selected by convenience sampling method in two universities in South Korea. Data were collected by means of a questionnaire with Likert type responses, and analyzed descriptive and analytical statistics using SPSS.

Results: The most posted subject and the most regretted post on their SNS was "pictures of myself". There was no difference in attitudes toward privacy in SNSs and moral development between nursing and advertising students. Most of students were observed in stage 3, a conventional level of moral development. At stage 4 and 5-6 in moral development, the percentages of 4th academic year of college and male students were high.

Conclusion: Attitude toward privacy in SNS and moral development of nursing students need to be promoted from conventional to postconventional level.

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Introduction

The rapid growth of social network sites (SNSs) in recent years indicates that SNSs are now a mainstream communications technology for many people. SNS usage is particularly high, 72% among undergraduate students.[1] In Korea, 69.3% of undergraduate students and 48.7% of teens regularly go online to interact with their peers using SNS.[2] Therefore, SNS forms an important part of college students' lives.

However, SNS act as a double-edged sword on college students' social life.[3] In other word, although SNS may convenient by activating the exchange of information, it also makes new problems. The current research takes a step forward to combine the high technology devices and SNS together to analyze college students' habits of social networking, which shows that utilizing high technology devices enhances the features of online virtual social networking system and increases the risk of addiction and privacy problems as well. Many SNS users have pronounced privacy concerns and are afraid that their privacy might be violated online.[4]

Nurses are also using SNS to share information professionally with colleagues.[5] However, there are some accidents about nurses posting photos or information about patients. Nursing departments across the United States have had several instances where millennial-age nursing students in Associate Degree Nursing programs have been expelled because of behavior that violated patient's confidentiality, privacy, and the Health Insurance Portability Accountability Act (HIPAA). Examples of inappropriate activity while using social media include nurses taking pictures of patient health records for homework, posting patients' pictures on Facebook, and posting patient information or comments on Facebook. Because of this public trust, and the nurse–patient relationship, nurses have an ethical duty to do, or cause, no harm to patients.[6] These problems are ethically and legally bound to maintain their patient's privacy from the professional view.

The health care professionals has long-standing professional ethical standard such as Nightingale Pledge to protect the privacy and security of the patient's information. A recent Gallup poll in 2014 suggests that nursing is one of the most trusted professions.[7] Therefore, privacy is a major issue within the world of social networking, and it appears as a topic. However, there is little empirical investigation documenting that there are many ethical issues that need to be considered when dealing with SNS privacy in nursing.[8]

From a business viewpoint, SNSs is a useful online marketing tool because SNSs can collect personal information and can search specific target group. The marketing activities using SNS as an advertising tool promote word-of-mouth marketing. SNSs enable customers to communicate and collaborate with businesses and other customers without regard to geography in a dynamic, interconnected environment. Accordingly, SNSs can be used to influence buying decisions. The use of SNSs is deemed advantageous for product launch as it performs two roles in the promotions mix.[9] Hence, advertising students may think that the use of SNS for commercial purpose is necessary to our society and may be a more generous attitude toward SNS privacy. However, there is no research about the differences of attitudes toward SNS privacy according to academic major among undergraduate students.

The consciousness of privacy has been developed with child's moral development. Accordingly, individual perceptions of privacy are influenced by the moral development stage of the individual.[4] Furthermore, moral development and decision-making ability is an essential trait in professional nurse. Kohlberg identified the cognitive process how children develop their morality and established his theory of moral development. Kohlberg's theory of moral development has been applied to ethical decision making to understand the moral reasoning process within a professional context.[10] Kohlberg proposed that a person develops moral thinking through three different levels of moral reasoning each with two stages: preconventional (stag-

es 1 and 2), conventional (stages 3 and 4), and postconventional (stages 5 and 6). It implies that people conceptualize moral issues are based on their understanding of relations between social justice and individual rights.[10]

However, there were little studies investigating SNS privacy concerns and moral development stages in nursing students. Furthermore, there was no research on the difference in moral development between nursing student considering ethical emphasis and other major students. Therefore, we examine difference regarding attitudes toward privacy in SNSs use and moral development between nursing and advertising students in Korea in this study.

Methods

Design and Sample
A cross-sectional descriptive study was used for this study. The participants were recruited via convenience sampling from two universities in Korea. Selection criteria for participants required that they be nursing or advertising undergraduate students; user of SNS; and willing to participate. There were no exclusion criteria. As calculated with a two-tailed t test based on a probability of $\alpha=0.05$, a medium effect size of 0.2, and a power level of $1-\beta=0.8$ according to the G*power 3.1.2 program, a minimum sample size of 394 participants was required. A total of 571 students were enrolled in the study, but 38 questionnaires were subsequently discarded as they were incomplete. Hence, 533 completed questionnaires (324 nursing students and 209 advertising students) were analyzed.

Instruments

Attitudes toward privacy in SNS
Attitudes toward privacy in SNS was measured with six items on a 7-point Likert scale developed by Smith.[12] This scale asks to consider six statements (e.g., "I do not care who sees the informa-

tion available on SNS") related to privacy of social network websites. A higher score indicates a higher degree of discreet attitudes toward privacy in SNS. In this study, the reliability of this instrument demonstrated high internal consistency as Cronbach's alpha = 0.92.

Moral development
Moral development was measured with Moral Development Scale for Professionals (MDSP) developed based on Kohlberg's theory by Söderhamn et al.[11] Moral development in Kohlberg's theory is specifically focuses on how people make moral judgments. The MDSP has three factors-stage 3 (2 items), stage 4 (4 items), and stages 5 and 6 (6 items)- according to moral developmental stage. The instrument is a 12-item 5-point Likert scale, which yields a total sum between 12 and 60. A higher score among stages indicates a status of moral development. Söderhamn et al.,[11] reported that the reliability of the MDSP was Cronbach's alpha =0.67. In this study, the reliability of this scale was identified as Cronbach's alpha = 0.85.

Data collection
This cross-sectional survey was conducted after approval from the administrators of two universities that are located in Cheongju City, South Korea. Written permission was obtained from participants. The participants were informed of the study's aims and procedures so that they could decide if they were willing to participate. After the students agreed to participate verbally, the researcher gave them the confidential questionnaire. The participants completed the questionnaires for 10 minutes in the classroom and then returned them to the collecting box. Data were treated with confidentiality, and the same ethical principles that guide clinical research were applied as well as the intentions of the Declaration of Helsinki.

Statistical analysis
The collected data were analyzed with the IBM SPSS Statistics Win 19.0 program (IBM Co., Armonk, NY, USA). The standard deviation and

mean of the degree of the participants' attitudes toward privacy in SNS and moral development were calculated, and the differences between nursing students and advertising students were analyzed using a t-test. In addition, attitudes toward privacy in SNS and moral development according to demographical characteristics were analyzed using t-test and ANOVA. All p values of less than 0.05 were considered significant.

Results

The mean age of the participants was 20.51 years (SD = 1.74) in nursing students and 21.64 years (SD = 1.71) in advertising students. As shown in table 1, female students in nursing (87.7%) were higher than those of advertising (57.9%) department significantly (χ^2=61.66, p=0.000). Use duration of SNSs between two groups was differences significantly (χ^2=11.32, p=0.023). 13~36 months in the duration of SNS usage was 172 (53.1%) in nursing students and 122 (58.4%) in advertising students. Frequency of account check of "at least once a day" was 257 (79.8%) in the nursing students and 182 (86.3%) in the advertising students.

The most posted subject on their SNS was "pictures of myself" in both nursing (mean 4.74) and advertising (mean 5.11) students, and the differences between the two groups are significant statistically (t = 2.33, p = 0.020). The most regretted post was "pictures of myself" in both students, and the mean score of 2.55 of nursing students was significantly lower than that (mean 2.84) of advertising students (t = 1.98, p = 0.047).

The mean score of attitudes toward privacy in SNS between nursing (mean 3.97) and advertising (mean 4.06) students was not significantly different as shown in table 2. In moral development, almost students are at stage 3 in nursing students (80.2%) and advertising (80.9%) was presented and had no significant difference between two groups.

The mean score of attitudes toward privacy in SNS between male (mean 4.00) and female

Table 1. Demographic Characteristics and Usage of SNS between Nursing and Advertising Students (n=533)

Characteristics / Variables	Nursing students (n=324) n(%)	Advertising students (n=209) n(%)	χ^2(p-value)
Gender			61.66(0.000)*
Male	40(12.3)	88(42.1)	
Female	284(87.7)	121(57.9)	
Academic year			1.18(0.756)
Freshmen	82(25.3)	51(24.4))	
Sophomore	88(27.2)	51(24.4)	
Junior	84(25.9)	54(25.8)	
Senior	70(21.6)	53(25.4)	
Use duration of SNS			11.32(0.023)*
Less than 3 months	25(7.7)	10(4.8)	
4 ~ 12 months	57(17.6)	21(10.0)	
13 ~ 36 months	172(53.1)	122(58.4)	
More than 37 months	70(21.6)	56(26.8)	
Use frequency of SNS			5.94(0.203)
At least once a day	257(79.8)	182(86.3)	
Once a week	22(6.2)	9(5.2)	
Once for 2~3 weeks	7(2.2)	4(1.9)	
Once a month	6(1.9)	3(1.4)	
Once several months	32(9.9)	11(5.2)	
Mean (SD)			t (p-value)
Subjects posted to SNS			
Pictures of myself	4.74(1.83)	5.11(1.71)	2.33(0.020)*
Information about my class homework, exam, and group work	2.80(1.56)	2.92(1.41)	0.91(0.374)
Information about celebrities or sport star	2.28(1.62)	2.45(1.61)	1.19(0.232)
Information about travel or hobby	3.78(1.98)	4.11(1.85)	1.72(0.084)
Religious view	1.52(1.03)	1.45(0.85)	0.92(0.355)
Regretted post to SNS			
Pictures of myself	2.55(1.61)	2.84(1.69)	1.98(0.047)*
Information about my class homework, exam, and group work	2.13(1.35)	2.12(1.19)	0.13(0.898)
Information about celebrities or sport star	1.78(1.22)	1.98(1.31)	1.82(0.069)
Information about travel or hobby	1.79(1.13)	1.88(1.17)	0.89(0.373)
Religious view	1.68(1.12)	1.76(1.25)	0.08(0.424)

*p-value < 05

(mean 4.01) students was not significantly different. The differences of moral development according to gender are significant statistically (χ^2=7.988, p=0.018). At stage 4 and 5-6 in moral development, the percentages of male students was higher than those of female students. There were significant differences in moral development according to academic years (χ^2=15.757, p=0.015). The higher the academic years, the statistically significant increases in the percentage of students in the stage 5-6.

Table 2. Attitudes toward Privacy in SNS and Moral Development (n=533)

| Attitudes toward privacy in SNS | Mean(SD) | t or F (p-value) | Moral development | | | χ²(p-value) |
			Stage 3	Stage 4 n(%)	Stage 5-6	
Major		0.963(0.336)				1.975(0.372)
Nursing (n=324)	3.97(1.18)		260(80.2)	33(10.2)	31(9.6)	
Advertising (n=209)	4.06(0.90)		169(80.9)	15(7.2)	25(12.0)	
Gender		0.138(0.891)				7.988(0.018)*
Male (n=128)	4.00(1.09)		92(71.9)	17(13.3)	19(14.8)	
Female (n=405)	4.01(1.08)		337(83.2)	31(7.7)	37(9.1)	
Academic years		1.871(0.134)	109(82.0)			15.757(0.015)*
Freshmen (n=133)	3.85(0.95)			17(12.8)	7(5.2)	
Sophomore (n=139)	4.15(1.28)			5(3.6)	14(10.1)	
Junior (n=138)	4.01(0.99)		108(78.2)	15(10.9)	15(10.9)	
Senior (n=123)	4.01(1.05)		92(74.8)	11(8.9)	20(16.3)	

*p-value <.05

Discussion

This study was undertaken to investigate nursing and advertising students' use of social media, attitude toward privacy on SNS, and moral development. In this study, 79.8% of nursing and 86.3% of advertising students took SNS check "at least once a day." This result reflects that social networking forms an important part of most college students' lives as indicated in previous studies.[8] Recently, SNSs may enhance an individual's mood state because positive self-presentation make him/her pleasurable.[11] Therefore, the people who use SNSs think that SNSs make them fun and it is an easy leisure activity.

In addition, the most posted subject and the most regretted subject on SNSs was "pictures of myself" in nursing and advertising students. This finding shows that "pictures of myself" is caused often provoking privacy invasion. Interestingly, a previous study demonstrated that people in the Western culture used the conversation and opinion sharing with their friends, whereas people in the Confucian culture such as Koreans and Chinese used SNS to maintain offline relationship.[12,13] In this study, the participants shared mainly "pictures of myself" with their friends, who already have established relationships to seek social support from or via SNS. However, when they upload more personal and sensitive information, consequently invasion of privacy may be occurred. These results are in line with characteristic of people at Kohlberg's stage 3, which focuses on fulfilling the interests and expectations of others, on gaining their approval.[4]

In this study, the mean score of attitudes toward privacy in SNS between nursing (mean 3.97) and advertising (mean 4.06) students is lower compared with those of American (mean 5.0), Chinese (mean 4.8), and Indian (mean 4.6) young people,[14] although the instrument has no same scale but similar 7-Likert scale.

This finding means lower attitudes toward privacy in SNSs may provoke privacy behavior because privacy concerns were indirectly associated with privacy behaviors.[4] However, attitude toward privacy concerns in SNS of advertising students was similar with nursing students. In healthcare environment, the moral sensitivity toward privacy of the patient should be increased.[15] Therefore, attitude toward privacy on SNS of nursing students should be promoted through nursing education because privacy is a basic human need and recognized as one of the important concepts in nursing and health-care ethics. In specific, the main concern, such as posting the clinical laboratory results and photograph of the patients, should be protected during clinical practicum.[6] Then, a large amount of personal information regarding patients, employer, and professional peers may be diffused easily through SNS. However, the trend toward social networking use among healthcare professionals is inevitable. The professional ethics are not static, but are influenced by several changes during any given era.[16] Therefore, the nurse association should revise the Code of Ethics for Nurses to include principles of social networking.

In this study, moral development of nursing and advertising students was mostly located at stage 3 (conventional level). At stage 3, moral development

is focused on living up to social expectations and roles, the "good boy good girl" orientation. People at Stage 3 desire to conform to the social expectations of close family, friends, and associates, gaining the approval of significant others and avoiding hurting people's feelings.[17] Therefore, when the nursing students were faced with ethical dilemmas, they tended to use conventions, such as relational ethics.[16] Furthermore, the participants in this study belong to Confucius' moral system, which was based upon the empathy and understanding of others, rather than the divinely ordained rules.[18] The people at postconventional level hold universal ethical principle and pursue universal rightness and justice. At post-conventional level, people differentiate their self-esteem from the rules and expectations of others and define personal values in terms of self-chosen principles. Kohlberg perceives progression to the post-conventional level as ideal.[17] Accordingly, there is a need to attain post-conventional level, which seems to be an essential requisite to become an ethically competent nurse who pursues patients' well-being beyond norms.[19] Therefore, specific learning strategies should be developed to promote moral development in nursing baccalaureate program because college students may raise moral development by taking diverse classes in which the professors deliberately question the unexamined assumptions of their childhoods and adolescences. In addition, shared and discussed at a global level through viewers' comments using YouTube can promote moral values and moral development.[20]

The study presented significant differences of moral development according to academic years; this finding is line with other longitudinal research that 998 college students shape usually their moral values by integrating the values of professionalism during 4 years of the undergraduate program.[21] The college years, especially the first-year, significantly affect moral development in young adults. From nursing perspective, moral sensitivity of nursing students increases after their qualifications as nurses because nursing students are still in the process of developing moral reasoning.[15] It reflects that most nurses gained in their healthcare environment through

ethical consideration, so they tended to grow moral development. Accordingly, future research might be needed to conduct a longitudinal study to discover moral developmental changes of nursing students from entrance to graduation of a university.

The study also showed a significant difference in moral development between male and female students. According to Bouhnik and Mor,[22] female students typically score at stage 3, with its focus on interpersonal feelings, whereas male students more commonly score at stage 4, which reflects more abstract conceptions of social organization. At stage 4, the moral decisions reflect a sense of duty to obey laws and the avoidance of behavior that might weaken the social order. It can be explained that for male students, moral interactions take place primarily at the political and legal level emphasizing in the laws and social contracts. Kohlberg stated that women tend to get stuck at level 3, focusing on details of how to maintain relationships and promote the welfare of family and friends. Men are likely to move on to the abstract principles, and thus have less concern with the particulars of who is involve.[10] However, Kohlberg's model of cognitive moral development has been criticized for its andocentric focus, cultural bias, and inadequate attention to emotion and intuition.[17]

This study may have some limitations that should be considered in interpreting its findings; one limitation is that this study was performed in two universities in Korea, which belongs to Confucian culture. Hence, cultural background may influence on these findings. Therefore, it is suggested to conduct the research on the use of SNSs and moral development of nursing students in other countries for better support and conceptualization at a global level.

Conclusion

This study demonstrated the attitude toward privacy in SNSs and moral development of nursing students are not higher than those of advertising students. Their moral development was located at stage 3, a conventional level. There is a need to develop

the strategies to promote attitude toward privacy and moral development to postconventional stage among nursing students because nurses should use patient information with confidentiality.

Collaborations

Kim Byoung-Hee and An Gyeong-Ju have contributed significantly to complete this manuscript. Professor Kim designed the study and conducted the statistical analysis of the data. Professor An contributed to study design and development of questionnaire items, interpretation of findings, critically reviewed the manuscript and approved the final version. All authors are in agreement with the content of the manuscript.

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