Original Research

Effects of a Nonviolent Communication Program on Nursing Students

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Abstract
Communication skills are important in life, especially in a clinical setting. The NVC (non-violent communication) model facilitates communication skills in schools, hospitals, and other environments. The objective of this study was to investigate the effect of NVC in fostering the communication skills of nursing students. The study included a total of 117 participants, including a test group of 62 nursing students and a control group of 55 students. Eight sessions of data collection and program adaptation were conducted between September and December 2016. The data were analyzed using t-tests, Chi-squared tests, and analysis of covariance (ANCOVA) using SPSS version 24.0. Following the intervention, the primary and secondary levels of anger were lower, whereas empathy and the communication efficacy were higher in the test group than the control group. This study demonstrated that an NVC program can improve the affective aspects of communication skills of nursing students.

Keywords
anger, communication, empathy, nonviolent communication, self-efficacy, self-esteem

Introduction

Relationships between patients, medical personnel, and nurses, and between nurses themselves play a key role in a hospital environment, where nursing students are employed after completing their college course. Communication skills are essential in order to maintain collaborative relationships within the hospitals (San-Martin et al., 2017). The importance of communication is emphasized in nursing science curricula. Despite training in communication skills, nurses still experience substantial difficulty with communication professionally (McCaffrey et al., 2012). Inefficient communication among healthcare team members is likely to negatively affect patient care and collaborative efforts between different teams (Museux et al., 2016).

Empathy is the ability to understand patients’ feelings and the circumstances for effective communication. It positively affects nurses’ relationships with patients and cooperation at work. In addition, nurses are able to communicate and manage conflicts more effectively (Nosek et al., 2014). Communication training facilitates emotional empathy and problem-solving by improving self-esteem and anger management (Lee & Kim, 2010). Communication skills also affect personal advancement in interpersonal relationships. Communication skills are fundamental to effective interaction with humans and such skills can be enhanced by education or training (Curtis et al., 2013).

The nonviolent communication (NVC) model originated in the civil rights movement led by Rosenberg (2005), which evolved as communication training in order to change the dynamics of dysfunctional human relationships in schools and hospitals. NVC training fosters clarity, trust, and openness (Cox & Dannahy, 2005) and represents a useful personal management tool for members in various environments, such as elementary and middle schools, universities, offices, military establishments, and immigrants (Marlow et al., 2012; Nosek & Durán, 2017; Wacker & Dziobek, 2016). NVC may be used, not only to express oneself but also to understand others (Nosek et al., 2014).

Studies reported that the NVC program was effective in improving empathy (K. H. Kim et al., 2017; San-Martin et al., 2017), role clarification, patient-centered communication (Museux et al., 2016), and communication self-efficacy, as well as decreasing the level of stress experienced (C. S. Kim et al., 2016) in multidisciplinary areas simultaneously. The findings indicated that NVC was effective in promoting

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empathy; managing criticism, anger, rejection, and emotional pain; and controlling dynamic human relationships (Nosek & Durán, 2017). Thus, it is necessary to conduct studies analyzing the role of NVC as one of the key communication tools for nursing students. A few previous studies reported the effect of communication on nursing students (C. S. Kim et al., 2016; Nosek et al., 2014). Different tactics of the NVC for nursing students were employed role play adopting nursing setting (C. S. Kim et al., 2016) and skill training in the various setting (Nosek et al., 2014). Our study (conducted once a week for 8 weeks) analyzed the differences in communication and interpersonal relationship skills in the various situations, and highlighted the affective aspects among nursing students before and after the implementation of the NVC program.

The NVC program used in this study assisted a group of nursing students to improve their communication and interpersonal skills. As part of this study, the behavioral changes of students who participated in the NVC program were analyzed compared with non-participating students. The results of this NVC-based program are expected to contribute to the development of various skills to enhance the communication skills and interpersonal relationships of nursing students.

The purpose of this study was to investigate the role of NVC program in de-escalating primary and secondary anger and effectively enhancing the interpersonal relationships, empathy, self-esteem, and communication skills. The study tested the following hypotheses: (H1) The NVC program decreases primary and secondary anger; (H2) the NVC program increases interpersonal relationships; (H3) the NVC program increases empathy; (H4) the NVC program increases self-esteem; and (H5) the NVC program increases communication efficacy.

Method

Study Design and Sample

The researchers used a non-equivalent control group with a pre- and post-test design. The NVC program was adapted to nursing students for analyzing its impact on rage control (primary and secondary anger), interpersonal relationships, empathy, self-esteem, and communication efficacy. Convenience sampling was used to select 62 nursing baccalaureate students living in J City and 55 students resident in A City, South Korea. Two universities with nursing departments were located in J and A cities, which have similar populations and socio-cultural backgrounds. The study included a total of 117 student participants: 62 in the case group and 55 in the control group. No participants withdrew from the study. The sample size was determined using G*Power program 3.5.1. Each of the two groups was assigned 21 students based on a significance of .05 and a statistical power of .80 based on an independent t-test of the two groups using a one-tailed test. The two universities have similar educational curriculum and students at the Junior and Senior levels. The inclusion criteria were (a) students in university grades 3 and 4, (b) with literacy in Korean language, and (c) those who provided written, informed consent to participate in the study. The exclusion criteria were students (a) diagnosed with current psychological diseases or disorders and (b) trained in a NVC program before.

Data collection and program adaptation were conducted between September (pre-test) and December (post-test) 2016. The Institutional Review Board of the Committee on Research Ethics in Schools approved the study (JJIRB-16071-HR-2016-0701). Researchers who were certified registered nurses and professors at these two universities collected questionnaires from the students in the classroom at the beginning and the end of second semester in 2016. The researchers introduced their qualifications and the study purpose, content, method, time required, and data storage and Discard Protocols. The researchers explained the NVC program to the 62 students in the case group. The two groups studied the same subjects involving communication, however, the NVC was used in the case group only. The participants were informed that their data will remain confidential and that they were free to withdraw from the study at any time. The questionnaire required 10 to 15 minutes to complete and the participants were compensated with stationary gifts.

Procedure

This study procedure consisted of program development, preliminary program adaptation, and program adaptation. The study procedure was as follows:

1. The NVC program was conducted between April and June 2016. A literature review was conducted to extract the contents of the NVC program. The CINAHL, PsychINFO, Pubmed, and RISS databases were searched using the keywords “non-violent communication” to retrieve articles from journals published between 1990 and 2016. The database and bibliographic searches yielded 31 studies. About 10 articles were in English and 21 were in Korean. To establish content validity, a committee composed of two nursing professors and two head nurses who worked in a psychiatric hospital collaboratively assessed the scale. This program consisted of communication skill training and interpersonal relationship empowerment through NVC group activities. The program was conducted in eight sessions of 2 hours per week. The NVC program was conducted through lectures, role play, demonstration, group activities, group discussions, and question-and-answer moments for 8 weeks. The content of NVC program covered empathy, appreciation, observing emotion, expressing feelings, conscious of desires, asking favors, healthy expression, and expressing gratitude (Table 1).

2. The preliminary program involved 10 students in the psychiatric class of J University between June and
July 2016. The researcher had a 12-year career in the psychiatric ward with a doctoral degree in psychiatry and underwent academic training in NVC.

3) A pre-questionnaire survey was administered for pre-data collection involving both the case and control groups in September 2016.

4) The NVC program was administered to 62 students in the case group at J University from September to December 2016. In the control group, 55 students studied general communication at D University at the same time as the case group. The NVC program was performed as part of the communication course, which is a 2-hour curriculum.

5) Post-data collection was conducted using a pre-questionnaire survey in the case and control groups concurrently in December 2016, immediately after the NVC program. None of the students dropped out or were excluded from the study.

**Measures**

**Primary Anger**

Primary anger is defined as a negative affection accompanying psychological discomfort under provocation. Primary anger thoughts were measured using Seo and Kwon’s (2005) Primary Anger Thought Scale (PATS). The PATS is comprised of 20 items, including “sensitivity about other’s unfair and selfish behavior (11 items)” and “disappointment from significant others (9 items).” It includes 20 items rated on a 5-point Likert scale ranging from 1 point (very disagreeable) to 5 points (very agreeable). The total scores ranged from 20 to 100. Cronbach’s alpha internal consistency was .90 in the original study and .89 in this study.

**Secondary Anger**

Secondary anger refers to impulsive behavior and psychological response reflecting personal coping methods after a primary anger event and was measured using the Secondary Anger Thought Scale (SATS; Seo & Kwon, 2005). The SATS is comprised of 34 items, including “blame for others (19 items),” “helplessness (7 items),” and “rage control (8 items).” The items are rated on a 5-point Likert scale ranging from 1 point (very disagreeable) to 5 points (very agreeable). The total scores ranged from 34 to 170. Cronbach’s alpha, which is a measure of internal consistency, was .69 in the original study and .73 in this study.

**Interpersonal Relationships**

Interpersonal relationships are defined as the development of competent relationships with others. Interpersonal relationships were measured using Moon’s (1980) relationship change scale. The scale includes 11 items rated on a 5-point Likert scale ranging from 1 point (very disagreeable) to 5 points (very agreeable). The total scores ranged from 11 to 55. Cronbach’s alpha, which is a measure of internal consistency, was .85 in the original study and .84 in this study.

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**Table 1. Nonviolent Communication Training Program.**

| Session | Themes | Contents | Time (hours) | Methods |
|---------|--------|----------|--------------|---------|
| Week 1  | Orientation | Small group composition (greeting and self-introduction) | 2 | Lecture |
|         |         | Sharing rules and methods necessary for practice meetings | | Discussion |
|         |         | Weekly schedule announcement | | Q & A |
| Week 2  | Empathy | NVC training | 2 | Lecture |
|         |         | Learn about empathy-hindering conversation | | Role play |
|         |         | Conversation under the current pattern | | Q & A |
| Week 3  | Observation | Learn about “observing as is” | 2 | Lecture |
|         |         | Practice “observing as is” by the team | | Group discussion |
| Week 4  | Feeling | Learn about “perceiving and expressing feelings” | 2 | Lecture |
|         |         | Practice “perceiving and expressing feelings” by the team | | Demonstration & practice |
| Week 5  | Consciousness | Learn about “being conscious of desires and taking responsibility for own feelings” | 2 | Lecture |
|         |         | Practice “being conscious of desires and taking responsibility for own feelings” by the team | | Role play |
|         |         | Demonstration & practice |
| Week 6  | Asking | Learn about “asking favors to enrich life” | 2 | Lecture |
|         |         | Practice “asking favors to enrich life” by the team | | Role play |
| Week 7  | Expression | Learn about “healthy expression of anger” | 2 | Lecture |
|         |         | Practice “healthy expression of anger” by team | | Role play |
| Week 8  | Gratitude | Learn about “expressing gratitude with NVC” | 2 | Group discussion |
|         |         | Practice “expressing gratitude with NVC” by the team | | Presentation |
|         |         | Conclusion of the NVC program | | Q & A |
|         |         | Presentation of thoughts | |         |
Likert scale ranging from 1 point (very dissatisfied) to 5 points (very satisfied). The total scores ranged from 11 to 55. Cronbach’s alpha was .89 in the original report and .90 in this study.

**Empathy**

Empathy refers to understanding another’s intention, predicting another’s behavior, and experiencing another’s affection. Empathy was measured using B. K. Chung and Kim’s (2006) Korean version of the Empathy Quotient (EQ) developed by Baron-Cohen and Wheelwright (2004). The scale includes 40 items that are rated on a 5-point Likert scale ranging from 1 (very dissatisfied) to 4 (very satisfied). The total scores ranged from 40 to 160. Cronbach’s alpha was .82 in the original research and .91 in this study.

**Self-Esteem**

Self-esteem is defined as the feeling, belief, and appraisal by oneself and self-experience learned between family members consciously and unconsciously. Self-esteem was measured using Lee and Kim’s (2010) Korean version of the self-image scale developed by Rosenberg (1965). The scale includes 10 items that are rated on a 5-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied). The total scores ranged from 10 to 50. Cronbach’s alpha was .82 in the original research and .93 in this study.

**Communication Efficacy**

Communication efficacy refers to competency in construction and action based on intended communication. Communication efficacy was measured using H. S. Chung’s (2010) Korean version of communication efficacy scale developed by Ayres (2005). The scale is comprised of 10 items rated on a 7-point Likert scale ranging from 1 (very dissatisfied) to 4 (very satisfied). The total scores ranged from 10 to 70. Cronbach’s alpha was .92 in the original study and .95 in this study.

**Data Analysis**

The participant’s demographic characteristics were analyzed using numbers, percentages, means, and standard deviations. The homogeneity between the two groups was analyzed using $t$-tests and Chi-squared tests. Differences in the degree of primary anger, secondary anger, interpersonal relationships, empathy, self-esteem, and communication efficacy were analyzed using independent $t$-tests. The effect of the NVC program was analyzed using analysis of covariance (ANCOVA) via the Statistical Package for the Social Sciences 24 (SPSS Inc., Chicago, IL, USA).

**Results**

**Demographic Characteristics and Homogeneity**

Most subjects were female (case: 77.4%; control: 85.5%) and aged 23 to 25 years (case: 69.3%; control: 70.9%). All variables showed homogeneity in terms of age ($\chi^2=4.60$, $p=.204$), gender ($\chi^2=.92$, $p=.339$), number of friends ($t=-2.23$, $p=.208$), frequency of daily face-to-face communications ($t=1.44$, $p=.152$), frequency of daily communications via telephone ($t=1.02$, $p=.308$), frequency of daily communications via social network services ($t=0.74$, $p=.459$), the total communication frequency per week ($t=2.20$, $p=.093$), primary anger ($t=-0.94$, $p=.348$), secondary anger ($t=-1.24$, $p=.217$), interpersonal relationships ($t=-1.87$, $p=.065$), empathy ($t=-1.66$, $p=.100$), self-esteem ($t=0.22$, $p=.823$), and communication efficacy ($t=-0.62$, $p=.536$; Table 2).

**Program Effects on Nonviolent Communication**

Primary anger decreased from 59.13 ($SD=15.58$) to 56.22 ($SD=16.70$) in the case group, with a significant difference between the two groups ($F=4.196$, $p=.043$). Secondary anger decreased from 83.06 ($SD=22.92$) to 78.49 ($SD=20.80$) in the case group, with a significant difference between the two groups ($F=6.203$, $p=.015$). Thus, the hypothesis #1 was supported. Empathy was increased from 79.84 ($SD=7.83$) to 100.39 ($SD=8.76$) in the case group, with a significant difference between the two groups. Thus, hypothesis #2 was supported. Communication efficacy was increased from 46.80 ($SD=11.03$) to 53.50 ($SD=9.53$) in the case group, with a significant difference between the two groups. Thus, hypothesis #5 was supported. Interpersonal relationship and self-esteem showed no statistically significant differences between the pre- and post-scores. Therefore, hypotheses #2 and #4 were not supported (Table 3).

**Discussion**

The primary objective of this study was to provide a basis for the development of communication programs using NVC to enhance nursing students’ communication skills and interpersonal relationships. The findings indicated that nursing students’ anger control, empathy, and communication efficacy were significantly improved after the NVC program was implemented.

Nosek et al. (2014) reported that empathy improved significantly in the experimental group of baccalaureate nursing students after the implementation of the NVC program. Although the subjects in the study conducted by Marlow et al. (2012) were ordinary adults and not nursing students, the authors reported that NVC intervention improved empathy in the experimental group. Similarly, in a study of medical students performed by K. H. Kim et al. (2017), students’ empathy was improved following the NVC program.
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The NVC program enhanced empathy in most previous studies (K. H. Kim et al., 2017; Nosek & Durán, 2017; San-Martin et al., 2017; Wacker & Dziobek, 2016). However, a few exceptions were found, probably due to differences in the specific programs, although they were all generally based on the main concepts of NVC. If program implementation was directly related to earning credits, the pressure may have hindered students from obtaining the expected enhancement in empathy. Therefore, in the future, it might be more effective to present the NVC program as part of a course that is unrelated to earning credits, rather than as a formal curriculum, after ensuring adequate learning motivation of the nursing students.

Since communication between a caregiver and a patient affects the patient’s experience, as well as the nursing outcome (Ammentorp et al., 2007), empathy, that is, sympathizing with another person’s inner experience including subjective feelings or psychological conditions (i.e., “you go through it personally”) needs to be developed (Jung, 2014). Many experts (Jung, 2014; K. H. Kim et al., 2017; Nosek et al., 2014) have reported that empathy is effective in improving the communication skills of nursing students.

In this study, differences in the levels of primary and secondary anger were significantly decreased in the case group. The NVC program resolves the conflicts and distress

| Table 2. Analysis of Homogeneity Between the Experimental and Control Groups (n = 117). |
|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Characteristics                        | Exp. (n=62) | Cont. (n=55) | t/χ² | p-Value |
|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Age (years) | n (%)/ M (SD) | n (%)/ M (SD) | t/χ² | p-Value |
| 20–22 | 7 (11.3) | 11 (0.3) | 4.60 | .204 |
| 23–25 | 43 (69.3) | 39 (70.9) | | |
| 26–28 | 10 (16.1) | 2 (3.6) | | |
| 30– | 2 (0.3) | 1 (0.2) | | |
| Gender | n (%) | n (%) | t/χ² | p-Value |
| Male | 14 (22.6) | 8 (14.5) | 0.92 | .339 |
| Female | 48 (77.4) | 47 (85.5) | | |
| Number of friends | 2.64 (0.94) | 2.52 (0.94) | -2.23 | .208 |
| Communication | | | | |
| Face-to-face | 0.27 (0.44) | 0.40 (0.49) | 1.44 | .152 |
| Phone call | 0.12 (0.33) | 0.20 (0.40) | 1.02 | .308 |
| Social network services | 0.74 (0.40) | 0.80 (0.44) | 0.74 | .459 |
| Frequency of communications per week | 1.14 (0.47) | 1.40 (0.76) | 2.20 | .093 |
| Educational needs | 16.25 (3.90) | 14.87 (4.04) | -1.88 | .063 |
| Primary anger | 59.13 (15.58) | 56.29 (16.79) | -0.94 | .348 |
| Secondary anger | 83.06 (22.92) | 78.03 (20.65) | -1.24 | .217 |
| Interpersonal relationships | 41.53 (4.75) | 39.09 (8.74) | -1.87 | .065 |
| Empathy | 97.84 (7.83) | 93.94 (14.63) | -1.66 | .100 |
| Self esteem | 31.16 (4.20) | 31.36 (5.47) | 0.22 | .823 |
| Communication efficacy | 46.80 (11.03) | 45.30 (14.53) | -0.62 | .536 |

Note. Exp = experimental group; Cont = control group.

| Table 3. Effects of Intervention on Experimental versus Control Group (n = 117). |
|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Characteristics                        | Exp. (n=62) | Cont. (n=55) | F | p Value |
|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Primary anger | n (%)/ M (SD) | n (%)/ M (SD) | F | p Value |
| Pre-test | 59.13 (15.58) | 56.29 (16.79) | 4.196 | .043 |
| Post-test | 56.22 (16.70) | 61.45 (14.26) | | |
| Secondary anger | 83.06 (22.92) | 78.03 (20.65) | 6.203 | .015 |
| Pre-test | 78.49 (20.80) | 83.91 (21.55) | | |
| Post-test | 83.06 (22.92) | 78.03 (20.65) | 6.203 | .015 |
| Interpersonal relationships | 41.53 (4.73) | 39.09 (8.74) | 1.095 | .297 |
| Pre-test | 40.95 (5.69) | 39.73 (8.76) | | |
| Post-test | 41.53 (4.73) | 39.09 (8.74) | 1.095 | .297 |
| Empathy | 97.84 (7.83) | 93.94 (14.63) | 2.575 | .010 |
| Pre-test | 97.84 (7.83) | 93.94 (14.63) | 2.575 | .010 |
| Post-test | 100.39 (8.90) | 94.47 (15.35) | | |
| Self-esteem | 31.16 (4.20) | 31.36 (5.47) | 1.012 | .316 |
| Pre-test | 31.16 (4.20) | 31.36 (5.47) | 1.012 | .316 |
| Post-test | 32.30 (4.12) | 31.44 (5.38) | | |
| Communication efficacy | 46.80 (11.03) | 45.30 (14.53) | 8.978 | .003 |
| Pre-test | 46.80 (11.03) | 45.30 (14.53) | 8.978 | .003 |
| Post-test | 53.50 (9.13) | 46.55 (15.10) | | |

Note. Exp = experimental group; Cont = control group.

*F score refers to analysis of covariance with pre-test scores as covariate.
associated with human relationships via reflection from a distance and understanding others’ emotions (Nosek & Durán, 2017; Wacker & Dziobek, 2016). Delinquent and violent participants acquired insight into their emotional states and changed more calmly by not judging another person (Nosek & Durán, 2017). In these scenarios, the significant effects of NVC in this study were mediated via de-escalation of primary and secondary anger.

In this study, the level of communication efficacy was significantly higher in the experimental group than in the control group. This result was consistent with the findings of C. S. Kim et al. (2016) that reported improvement in self-efficacy and communication skills of the experimental group following the implementation of an NVC program for clinical nurses. Interpersonal relationship and self-esteem scores before and after the experiment were not significantly different in this study. The lack of significant improvement in self-esteem was corroborated by another study that quantified the effect of a communication program among medical students (K. H. Kim et al., 2017). Curtis et al. (2013) also reported no significant differences in the quality of communication skills among nurse practitioners trained in NVC simulation. Therefore, a future study should focus on interpersonal communication skills and self-esteem via reinforcement of NVC training program.

Since education using the NVC model has been shown to facilitate positive self-evaluation by nurses to acquire a positive perspective in problem-solving (C. S. Kim et al., 2016), the advantage of NVC programs for nursing science students must be demonstrated. However, long-term training related to communication education needs to be conducted in steps. As pointed out by K. H. Kim et al. (2017), the NVC program should be adapted to trainees depending on their level, and conducted in multiple sessions over a long term to ensure the effectiveness of the intervention. Although communication self-efficacy is closely related to interpersonal skills and empathy, few studies have explored the effect of an NVC program in this regard (Nosek & Durán, 2017). Thus, the findings need to be corroborated by further studies demonstrating the effects of the NVC program.

Conclusion
The NVC program improved rage control, fostered empathy, and enhanced communication efficacy in an experimental group of nursing students. The results of study could be used for basic evidence of nursing curriculum regarding communication subjects and empowerment communication skills between health care professionals in the nursing setting. Therefore, it is hoped that future studies will adopt an NVC program develop further diversified communication programs to foster communication and interpersonal skills among baccalaureate nursing students.

The study limitations relate to the selection of participants from baccalaureate nursing students resident in only two cities and cultural centers of Korea. Further, the research team developed its own program in the absence of a standardized NVC program in Korea. Therefore, future studies are needed to evaluate this program under more diverse conditions. Multiple and diverse NVC programs should be designed and implemented in the future and a standardized NVC program should be administered to baccalaureate nursing students.

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Ethical Approval
This study is approved by institutional review board of Jeonju University (jjIRB-160701-HR-2016-0804).

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