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# Factors Associated with Nurse Self-Leadership: A Cross-Sectional Study of Nurses Working at Public Health Centers and Primary Healthcare Posts

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**Purpose:** This study aimed to analyze the factors influencing self-leadership among public health nurses as they implement health promotion projects in public health centers and primary healthcare posts.
**Methods:** The study sampled 120 public health nurses from 22 public health centers and their associated primary healthcare posts in J province. Data were collected from October 11 through October 25, 2022.
**Results:** Employment at a primary healthcare post instead of a public health center (β=. 23, $p$=.012), was significantly associated with self-leadership in model 1 (adjusted $R^2$=.17, F=4.56, $p$<.001). Furthermore, communicative competence (β=. 48, $p$<.001) and nursing professionalism (β=.26, $p$=.001) were significantly associated with self-leadership in model 2 (adjusted $R^2$=.51, F=14.77, $p$<.001).
**Conclusion:** Open and self-directed work environments, along with opportunities for education and training, are necessary to enhance communicative competence and nursing professionalism. These improvements may, in turn, strengthen self-leadership among nurses, facilitating the implementation of health promotion projects within public health institutions.

**Keywords:** Communication; Leadership; Public Health Nurses; Professionalism; Public health nursing

## Introduction

### Background

Public health centers are public institutions in charge of operating health promotion projects in local communities, and mainly perform the roles of the management, coordination and linkage of health promotion projects [1], and primary healthcare posts provide primary healthcare services and implement health promotion projects in medically underserved areas [2]. Nurses working at public health institutions, such as public health nurses and community health practitioners, are obligated to achieve performance indicators as the key practitioners of the integrated health promotion projects of healthcare institutions in the community [2,3]. Nurses at public health institutions, as operators of health promotion projects, have been reported to increase satisfaction by improving the perceived effectiveness of the overall programs among community residents [4]. In addition, to operate health promotion programs, public health nurses should be equipped with professional competencies required to understand the characteristics and needs of community residents and meet such needs. These competencies of public health nurses have been found to have a significant association with the achievement of public health promotion programs [5]. Thus, for the successful operation of community health promotion programs, public health nurses are required to have self-leadership, which enables nurses to perform professional roles independently.

Self-leadership refers to individuals' ability to influence and direct their own thoughts and actions in a desirable direction in or-

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der to successfully perform their tasks and job duties [6]. A literature review study of 16 previous domestic studies on self-leadership showed that self-leadership increases job satisfaction and organization immersion, and thereby improves the productivity and efficiency of nursing duties among hospital nurses [7]. As the way tasks are carried out at public health centers has been changed from a top-down approach to a bottom-up method, public health nurses are also required to improve individual job performance in order to meet various needs of community residents [8]. Accordingly, self-leadership for creatively performing tasks is expected to act as an important factor in planning and operating health promotion programs in communities [9]. Actually, nurses who perform their job duties in an environment that allows them to exert self-leadership at an organization level were found to show a higher level of self-leadership, more actively participate in job duties, and also make greater contributions to the institution [10]. However, although nurses at public health institutions are required to carry out the planning, intervention implementation, evaluation, and improvement of various programs for community residents [9], previous studies were mainly focused on visiting healthcare service, so there is a need to study the level of self-leadership and associated factors regarding the implementation of health promotion programs among public health nurses.

Nurses working at public health institutions are required to have consultation with various departments in the overall processes of health promotion projects from planning to implementation, and apply appropriate counseling and interview skills to induce behavioral changes in the recipients of nursing services [11,12]. Communicative competence is one of the competencies that the Public Health Association in the U.S. requires public health nursing professionals to have [13], and it has been reported to be a significant influencing factor for assessment of specific needs of community residents and practice of appropriate nursing [14]. A systematic literature review study of factors associated with self-leadership among clinical nurses in Korea found that communicative competence is a factor significantly affecting self-leadership [15]. These findings suggest that it is necessary to examine the impact of communicative competence on self-leadership among nurses at public health institutions and to develop strategies for improving self-leadership based on the research results.

Health promotion projects for community residents are offered with the goal of maintaining and improving their health. Nurses need to have a deeper understanding of the characteristics of health issues faced by the recipients and, based on professional nursing knowledge and attitudes, effectively operate these health promotion projects. Therefore, it is essential for nurses to possess professional nursing competencies. Nursing professionalism is a concept that encompasses a systematic view of nursing as a profession, societal perceptions of nursing, and the attitudes demonstrated by nursing professionals toward their roles and actions in practice [16]. It has been found that a higher level of nursing professionalism is linked to a higher level of job satisfaction and the improvement of job performance, and it enables nurses to perform nursing duties with originality and professional expertise and thereby achieve high job performance [17,18]. Thus, nursing professionalism has been shown to have a positive relationship with self-leadership in clinical nurses [19]. However, although public health nurses perceive themselves as 'managers of public health services and implementers of public health projects' regarding their roles and duties, in the field of practice, they have relatively limited areas of professional nursing practice, comparted to clinical nurses, which may lead to the weakening of their professional role identity regarding nursing and deterioration in the quality of nursing [3,20]. Therefore, considering that nursing professionalism can increase the sense of responsibility and professionalism for performing job duties among nurses, it is necessary to identify the level of nursing professionalism, and examine the impact of nursing professionalism on self-leadership among public health nurses and community health practitioners in order to develop strategies to help nurses working at public health institutions exert self-leadership and provide higher-quality nursing in the implementation of health promotion projects for community residents.

For public health nurses and community health practitioners, it is a very important and essential task to implement health promotion projects for community residents. Self-leadership is a crucially required competency for the successful implementation of health promotion projects, and communicative competence and nursing professionalism can be considered major influencing factors that can improve self-leadership. However, in prior studies of self-leadership among nurses, research was mainly focused on self-leadership in clinical nurses working at hospitals [15,21,22]. Regarding research topics, the majority of domestic studies on self-leadership investigated the relationship of self-leadership with job satisfaction, organizational immersion, burnout, turnover intention, and job performance or analyzed the impact of self-leadership on the factors [8,15,19,21,23]. Meanwhile, foreign studies investigated the relationship between self-leadership and self-efficacy [24], the relationship between self-leadership and job autonomy [25] or individual characteristics affecting

self-leadership [26]. However, there have been few domestic or foreign studies to examine self-leadership and investigate its influencing factors in relation to the implementation of health promotion programs among nurses working at public health institutions such as public health nurses and community health practitioners. Therefore, this study aimed to examine self-leadership and its influencing factors among public health nurses and community health practitioners, who are nurses working at public health institutions, and mainly perform the role of implementing health promotion projects for community residents. This research is expected to give a better understanding of self-leadership among public health nurses and community health practitioners, provide basic data for the development of strategies for the improvement of self-leadership, and thereby contribute to the implementation of integrated health promotion projects for community residents.

### Objectives

This study aimed to investigate self-leadership and its influencing factors among nurses at public health institutions, including public health nurses and community health practitioners, and the specific objectives of the present study are as follows:

1) To examine the general characteristics of nurses at public health institutions and their levels of self-leadership, communicative competence, and nursing professionalism;
2) to examine differences in the level of self-leadership according to general characteristics among nurses at public health institutions;
3) to investigate correlations between self-leadership, communicative competence, and nursing professionalism among nurses at public health institutions;
4) to identify factors affecting self-leadership among nurses at public health institutions.

## Methods

### Study design

This study is a descriptive survey research to identify self-leadership and its influencing factors among public health nurses working at public health centers and primary healthcare posts.

### Participants

The participants of this study were recruited from nurses working at public health institutions located in the cities, counties (gun), or districts (gu) of J Province, and they included public health nurses working at public health centers or community health practitioners working at primary healthcare posts affiliated with public health centers. They were currently implementing a community health promotion program or had the experience of implementing such a program, and had worked for 6 months or more in a public health institution. Only those who understood the purpose of the study, and voluntarily agreed to participate in the study were included in the study. The sample size of this study was calculated using G*Power 3.1.9.2. Based on a previous study [27], the sample size for a hierarchical multiple regression analysis was calculated with an effect size of 0.15, a power of 80%, a significance level of $\alpha = .05$, and 8 variables that were expected to influence self-leadership (age, marital status, education level, place of work, total working period at public health institutions, period of previous clinical experience in a hospital, communicative competence, and nursing professionalism) for hierarchical multiple regression analysis. The minimum sample size was calculated as 109 persons, and the sample size was finally determined as a total of 129 persons considering the dropout rate of 15%. In this study, a survey was conducted with 122 people, and 120 people (98.4%) were included in the final analysis by excluding 2 people who did not satisfy the inclusion criterion about total working period at public health institutions since their total working period was less than 6 months.

### Measures

This study used a structured questionnaire to measure the participants' general characteristics (gender, age, marital status, education level, place of work, total working period at public health institutions, and period of previous clinical experience in a hospital), self-leadership, communication competence, and nursing professionalism.

*Self-leadership*

Self-leadership was assessed using a Korean version of the self-leadership scale developed by Manz [28]. The Korean version used in this study was developed by Kim [29] through the translation, adaptation, modification, and supplementation of the original tool by Manz [28]. This scale contains a total of 18 items, including 3 items in each of the following 6 subdomains: goal setting, self-expectation, rehearsal, self-criticism, self-reward, and constructive thinking. Each item is rated on a 5-point Likert scale ranging from 1 point (= 'Not at all') to 5 points (='Always'), and higher scores indicate higher levels of self-leadership. Regarding the reliability of the scale, the value of Cronbach's α was reported as .83 in Kim [29], and it was calculated as .89 in this study.

*Communicative competence*

Communicative competence was measured using the Global Interpersonal Communication Competence Scale (GICC) developed and validated by Hur [30]. This tool consists of a total of 15 items, and they each measure self-disclosure, empathy, social relaxation, assertiveness, concentration, interaction management, expressiveness, supportiveness, immediacy, efficiency, social appropriateness, conversational coherence, goal detection, responsiveness, and noise control.

Each item is rated on a 5-point Likert scale ranging from 1 point (= 'Hardly') to 5 points (= 'Very much so'), and higher scores indicate higher levels of communicative competence. Regarding the reliability of the scale, the value of Cronbach's α was reported as .72 by the developer, and the value of Cronbach's α was calculated as .89 in this study.

*Nursing professionalism*

Nursing professionalism was assessed using a tool developed by Yun et al. [16]. This scale contains a total of 29 items in 5 subdomains: self-concept of the profession (9 items), social awareness (8 items), professionalism of nursing expertise (5 items), roles of nursing service (4 items), and originality of nursing (3 items). Each item is assessed on a 5-point Likert scale ranging from 1 point (= 'Not at all') to 5 points (= 'Very much so'). Negatively-worded items (items 16, 20, 24) were reverse scored, so higher scores indicate higher levels of nursing professionalism. The value of Cronbach's α was reported as .92 by the developer, and it was calculated as .91 in this study.

**Data collection**

Data collection for this study was conducted from October 11 to 25, 2022. A letter of cooperation was sent to 22 public health centers and affiliated primary healthcare posts in J Province. The participant information sheet, a recruitment document, and a link to the Naver form for the survey, which allowed people to participate in the survey if they voluntarily wanted to, were sent together along with the letter of cooperation. The content of the participant information sheet included explanations about the purpose and methods of the study, participants' rights, and the method of withdrawal from participation in the study. Participants were asked to carefully read the informed consent form presented in the attached link, and if they agreed to participate in the study, they were asked to click the checkbox for consent at the bottom to indicate their agreement to participate in the study before participating in the survey. It took about 10 to 15 minutes to complete the survey.

**Ethical considerations**

This study was conducted after receiving approval from the IRB of C University in G Metropolitan City (IRB No. 1040198-220819-HR-103-02). All the participants of this study voluntarily agreed to participate, and the researcher informed participants about their rights to withdraw from the study without any disadvantages at any time if they wanted to. The participants were also informed that the strict confidentiality of personal data would be maintained, and that the collected data would not be used for purposes other than research. They were also given the contact information of the researcher so that they could make inquiries about the research.

**Data analysis**

The collected data was analyzed using SPSS WIN 25.0 by methods described below. A two-tailed test was used in all analyses, and the significance level was set at .05.

1) To analyze the general characteristics and levels of self-leadership, communicative competence, and nursing professionalism of the participants, descriptive statistics such as frequency, percentage, mean, and standard deviation were calculated.
2) Differences in the level of self-leadership according to general characteristics were analyzed using the independent t-test and ANOVA, and post-hoc tests were performed using the scheffe test.
3) The relationships between general characteristics, communicative competence, and nursing professionalism were analyzed using Pearson's correlation coefficient.
4) Hierarchical multiple regression analysis was performed to identify factors associated with self-leadership.

## Results

**General characteristics of the participants and differences in self-leadership according to general characteristics**

Table 1 shows general characteristics of participants and differences in self-leadership according to general characteristics. Out of 120 participants, 110 people (91.7%) were female, and the mean age of participants was 39.14±10.22 years. In terms of marital status, married people were 80 people (66.7%), taking up a larger proportion than single people (40 people, 33.3%). Regarding education level, college graduates with a bachelor's degree were 86 people (71.7%), accounting for the largest proportion. As for place of work, 46 nurses (38.3%) were working at public health centers, and 74 nurses (61.7%) were working at primary healthcare posts. Regarding total working period at pub-

**Table 1.** Self-leadership according to General Characteristics of Participant (*N*=120)

| Characteristic | Category | n (%) or Mean ± SD | Self-leadership | |
|---|---|---|---|---|
| | | | Mean ± SD | t or F or r (*p*) |
| Gender | Male | 10 (8.3) | 3.54 ± 0.54 | −1.86 (.066) |
| | Female | 110 (91.7) | 3.84 ± 0.48 | |
| Age | | 39.14 ± 10.22 | | 0.36 ( < .001) |
| Marital status | Single | 40 (33.3) | 3.62 ± 0.40 | −3.30 (.001) |
| | Married | 80 (66.7) | 3.91 ± 0.50 | |
| Education level | 3-year associate's degreea | 24 (20.0) | 3.75 ± 0.50 | 5.77 (.004) |
| | Bachelor's degreeb | 86 (71.7) | 3.78 ± 0.47 | c > a,b† |
| | Master's/doctoral degreec | 10 (8.3) | 4.30 ± 0.36 | |
| Place of work | Public health center | 46 (38.3) | 3.62 ± 0.41 | −3.56 (.001) |
| | Primary health care post | 74 (61.7) | 3.94 ± 0.50 | |
| Total working period at public health institutions (years) | < 3 | 20 (16.7) | 3.71 ± 0.47 | 5.80 (.004) |
| | 3 ≤ y < 5[a] | 26 (21.7) | 3.58 ± 0.47 | a < b† |
| | ≥ 5[b] | 74 (61.7) | 3.93 ± 0.47 | |
| Period of previous clinical experience in a hospital (years) | | 2.83 ± 4.60 | | 0.01 (.909) |

†Scheffé test

lic health institutions, 5 years or more (61.7%) accounted for the largest proportion, followed by 3 to less than 5 years (21.7%) and less than 3 years (16.7%). The average period of previous clinical experience in a hospital was 2.83 ± 4.60 years.

Among the general characteristics of the participants, age, marital status, total working period at public health institutions, and place of work had an effect on the level of self-leadership. In other words, the level of self-leadership was different according to age, marital status, length of career, and place of work. More specifically, the level of self-leadership was positively correlated with age (r = .36, $p$ < .001). In relation to marital status, the married group showed a higher level of self-leadership than the single group (t = -3.30, $p$ = .001). In terms of education level, the level of self-leadership was higher in people with the education level of graduate school or higher than other participants (F = 5.77, $p$ = .004). In terms of total working period at public health institutions, the level of self-leadership was higher in nurses with 5 years or more of work experience as a public health nurse than those with less work experience as a public health nurse (F = 5.80, $p$ = .004). In addition, the level of self-leadership was higher in nurses working at primary healthcare posts than those working at public health centers (t = -3.56, $p$ < .001).

### Levels of self-leadership, communicative competence, and nursing professionalism

The mean score for self-leadership among nurses at public health institutions was 3.82 ± 0.49 points. Regarding the subdomains of self-leadership, rehearsal had the highest mean score (4.09 ± 0.68 points), and constructive thinking had the lowest mean score (3.56 ± 0.66 points). The mean score for communicative competence was 3.62 ± 0.49 points, and the mean score for nursing professionalism was 3.59 ± 0.41 points. Among the subdomains of nursing professionalism, roles of nursing service showed the highest mean score (3.89 ± 0.53 points), while originality of nursing had the lowest mean score (2.96 ± 0.66 points) (Table 2).

**Table 2.** The Levels of Self-leadership, Communicative Competence, and Nursing Professionalism (*N*=120)

| Variable | Number of items | Mean ± SD | Min-Max |
|---|---|---|---|
| Self-leadership | 18 | 3.82 ± 0.49 | 2.78-5.00 |
| Self-expectation | 3 | 3.84 ± 0.69 | 1.33-5.00 |
| Rehearsal | 3 | 4.09 ± 0.68 | 2.00-5.00 |
| Goal-setting | 3 | 3.70 ± 0.74 | 1.67-5.00 |
| Self-compensation | 3 | 4.00 ± 0.69 | 2.33-5.00 |
| Self-criticism | 3 | 3.70 ± 0.81 | 1.33-5.00 |
| Constructive thinking | 3 | 3.56 ± 0.66 | 2.00-5.00 |
| Communicative Competence | 15 | 3.62 ± 0.49 | 2.40-4.93 |
| Nursing Professionalism | 29 | 3.59 ± 0.41 | 2.08-4.93 |
| Self-concept of the profession | 9 | 3.82 ± 0.51 | 2.33-5.00 |
| Social awareness | 8 | 3.41 ± 0.58 | 1.63-5.00 |
| Professionalism of nursing | 5 | 3.86 ± 0.54 | 2.00-5.00 |
| The roles of nursing service | 4 | 3.89 ± 0.53 | 1.75-5.00 |
| Originality of nursing | 3 | 2.96 ± 0.66 | 1.67-4.67 |

### Correlations between self-leadership, communicative competence, and nursing professionalism

Table 3 shows correlations between self-leadership, communicative competence, and nursing professionalism among the participants. Among nurses at public health institutions, self-leadership had a significant positive correlation with communicative competence (r=.64, $p$<.001) and nursing professionalism (r=.54, $p$<.001). Also, there was a significant positive correlation between communicative competence and nursing professionalism (r=.41, $p$<.001).

### Factors affecting self-leadership

To identify factors associated with self-leadership among nurses at public health institutions, a hierarchical multiple regression analysis was performed with variables that were found to have significant relationships in univariate analysis and correlation analysis (Table 4). In the regression analysis, among general characteristics, variables significantly affecting self-leadership were converted into dummy variables. In other words, regression analysis was performed by converting age, marital status, education level, place of work, and total working period at public health institutions into dummy variables.

Tolerance limit and variance inflating factor (VIF) were calculated to test the multicollinearity between the independent variables of the prediction model for self-leadership in nurses at public health institutions. The tolerance limit value ranged from 0.49 to 0.91, so all the tolerance limit values were above 0.1. Also, VIFs were less than 10, ranging from 1.10 to 2.1, indicating that there was no problem of multicollinearity. The Durbin-Watson value was 2.134, which is close to 2, indicating that there was no autocorrelation in the residuals. The analysis results of the residual analysis model showed the linearity of residuals, and the normality and homoscedasticity of the error term were also satisfied. Thus, the validity of the results of regression analysis was confirmed.

In Model 1, a prediction model for self-leadership in nurses at public health institutions, general and job characteristics that showed a significant relationship with self-leadership in univariate analysis and correlation analysis were entered. The variables entered into Model 1 were age, marital status, education level, place of work and total working period at public health institutions. The regression model for self-leadership of Model 1 was statistically significant (F=4.56, $p$<.001), and Model 1 explained 17% of the variance of self-leadership among nurses at

**Table 3.** Correlation between Self-leadership, Communicative Competence, and Nursing Professionalism ($N$=120)

| Variable | Communicative competence | Nursing professionalism | Self-leadership |
|---|---|---|---|
| | r ($p$) | | |
| Communicative competence | 1 | | |
| Nursing professionalism | .41 (<.001) | 1 | |
| Self-leadership | .64 (<.001) | .54 (<.001) | 1 |

**Table 4.** Results of Hierarchical Multiple Regression Analysis of Factors Affecting Self-leadership ($N$=120)

| Variable | Model 1 | | | | | Model 2 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | B | SE | β | t | $p$ | B | SE | β | t | $p$ |
| (constant) | 3.91 | 0.10 | | 39.58 | <.001 | 1.02 | 0.35 | | 2.88 | 0.005 |
| Age (≥39) | 0.13 | 0.11 | .13 | 1.21 | 0.230 | 0.06 | 0.08 | .06 | 0.71 | 0.481 |
| Marital status (single) | −0.10 | 0.12 | −.09 | −0.80 | 0.423 | −0.03 | 0.10 | −.03 | −0.32 | 0.747 |
| Education level (3-year associate's degree) | −0.14 | 0.11 | −.18 | −1.34 | 0.183 | −0.04 | 0.08 | −.04 | −0.51 | 0.610 |
| Education level (master's/doctoral degree) | 0.29 | 0.16 | .16 | 1.80 | 0.075 | 0.13 | 0.13 | .07 | 1.04 | 0.300 |
| Place of work (public health centers) | −0.23 | 0.09 | −.23 | −2.56 | 0.012 | −0.07 | 0.07 | −.07 | −0.91 | 0.367 |
| Total years working at public health institutions (<3) | 0.05 | 0.14 | .03 | 0.32 | 0.751 | 0.003 | 0.11 | .002 | 0.03 | 0.980 |
| Total years working at health institutions (≥3, <5) | −0.13 | 0.13 | −.11 | −1.02 | 0.310 | −0.13 | 0.10 | −.11 | −1.28 | 0.204 |
| Communicative competence | | | | | | 0.48 | 0.07 | .48 | 6.58 | <.001 |
| Nursing professionalism | | | | | | 0.31 | 0.09 | .26 | 3.43 | 0.001 |
| | $R^2$=.22 Adj $R^2$=.17 F=4.56 $p$<.001 | | | | | $R^2$=.55 Adj $R^2$=.51 Δ $R^2$=.34 F=14.77 $p$<.001 | | | | |

Adj $R^2$=adjusted $R^2$; reference categories=age (<39), marital status (married), education level (bachelor's degree), place of work (primary health care post), total years working at public health institutions (≥5)

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public health institutions. In Model 1, place of work was identified as an influencing factor for self-leadership (β = -.23, $p$ = .012).

In Model 2, where communicative competence and nursing professionalism were additionally entered, explanatory power was increased by 34%, and the change in the coefficient of determination was statistically significant. Also, communicative competence (β = .48, $p$ < .001) and nursing professionalism (β = .26, $p$ = .001) were found to have a statistically significant impact on self-leadership among nurses at public health institutions. Model 2 showed an explanatory power of 51.0% for self-leadership among nurses at public health institutions (Adjusted $R^2$ = .51).

## Discussion

This study aimed to identify self-leadership and factors associated with self-leadership among public health nurses working at public health centers and primary healthcare posts in order to provide basic data for the development of strategies to improve self-leadership in public health nurses. As a result, age, marital status, education level, place of work, total working period at public health institutions were found to influence self-leadership. Also, communicative competence and nursing professionalism were identified as significant factors affecting self-leadership. Discussion below will be focused on these findings.

The mean score for self-leadership among nurses working at public health institutions, including public health nurses and community health practitioners, was 3.82 points in this study, which is higher than the mean score for self-leadership among clinical nurses working at general hospitals, who were reported to have mean scores ranging from 3.37 to 3.53 points. [31,32]. Regarding the fact that the level of self-leadership was found to be higher in nurses at public health institutions than clinical nurses working in hospitals, it is thought to be related to the fact that nurses at public health institutions plan and carry out health promotion projects with decision-making authority for their work [8]. These results are similar to the findings of previous studies that showed a high level of self-leadership in health teachers personally performing school health projects (3.82 points) [33] and in community visiting nurses (3.72 points) [34]. In particular, similarly to the results of the study by Park et al. [8], among the subdomains of self-leadership, rehearsal and self-reward were found to have the highest mean scores. These results are presumed to show that nurses at public health institutions systematically practice their job duties before actually performing them, utilize effective strategies for self-leadership proactively, and provide valuable rewards to themselves to continuously make efforts for their work [29]. Among the subdomains of self-leadership, constructive thinking showed the lowest mean score. According to a previous study, constructive thinking refers to showing efficient thinking patterns based on positive thinking, and it is related to self-efficacy [35]. This constructive thinking has been reported to be influenced by self-talk and mental imagery [36]. Thus, to improve the constructive thinking pattern and self-leadership of nurses at public health institutions, it is important to develop strategies to help public health nurses to improve self-efficacy, set goals based on positive thinking, and maintain directions and motivation [36].

This study showed that individual communicative competence and nursing professionalism were the most important factors affecting self-leadership among nurses at public health institutions, although the general characteristics of the participants also influenced self-leadership. In particular, communicative competence was shown to have the greatest impact on self-leadership. These results are similar to the findings of a systematic literature review study of 44 domestic articles, which reported that communicative competence was found to have a large effect size among variables associated with self-leadership in clinical nurses [15]. In this study, the mean score for communicative competence among nurses at public health institutions was 3.6 points, which is similar to the level of communicative competence in new visiting nurses working in public health centers [37] and higher than the level of communication competence in clinical nurses [38,39]. Regarding the impact of communicative competence on self-leadership in nurses at public health institutions, it is thought that since nurses at public health institutions communicate with community residents, and handle many tasks in consultation with various organizations within the administrative organizational system, communicative competence was found to have a significant impact on self-leadership among the participants. According to prior studies, communicative competence can be improved in a supportive work environment [40], and it can be enhanced through participation in related educational programs [41]. In addition, it has been reported that supportive communicative competence helps to promote the health behaviors of local community residents, allows seamless work coordination with various experts and the members of other occupations within the administrative organizational system of civil servants, and improve the professional expertise of public health nurses [40]. Further, people with self-affirmation attitude [37] and individuals with a high level of self-efficacy have been shown to have high level of communicative competence [39]. Therefore, it is necessary to provide a supportive work environment at

the organizational level as well as educational programs considering factors associated with a high level of communicative competence.

Along with communicative competence, nursing professionalism was found to be a major factor affecting self-leadership. These results are supported by prior studies reporting that there is a positive correlation between nursing professionalism and self-leadership in clinical nurses [19] and in recovery and anesthesia nurses [42]. It is considered that since nurses with a high level of nursing professionalism perform their nursing duties with a sense of calling and a high level of autonomy [43,44], they can strengthen autonomous behavior, which positively influences individual effectiveness, and self-leadership, which is a cognitive strategy [45]. However, in this study, among the subdomains of nursing professionalism, originality of nursing, which involves agency, uniqueness, and independence of nursing, had the lowest mean score. This may be related to the fact that nurses working at public health institutions need to perform nursing duties as well as tasks dealt with in consultation with various departments within the administrative organizational system, but administrative duties actually take up a large part of their work, so they have difficulty in making decisions independently and autonomously [3,46]. A foreign study conducted research on self-leadership in public health nurses through interviews with the managers of public health facilities, and suggested application of theoretical knowledge, utilization of one's professional identity as nursing professionals, and exploration of political aspects of the role as strategies for the improvement of self-leadership in public health nurses [47]. Therefore, it is necessary to create an environment that allows public health nurses to maintain their identity as nursing professionals and exert their professional expertise while cooperating with people engaged in other occupations.

We found that the level of self-leadership varied according to general characteristics such as age, marital status, education level, place of work, and total working period at public health institutions among public health nurses and community health practitioners. These findings about the impact of general characteristics on self-leadership are similar to the results of a systematic literature review study on self-leadership in nurses and the findings of other previous studies. The research results regarding general characteristics are presumed to show that as the age of nurses increases, their total working period at public health institutions increases, and their professionalism and autonomy also generally increase along with the increase of their working period, which has a positive effect on self-leadership [7,48]. With respect to marital status, in this study, the level of self-leadership was higher in the married group than in the single group. According to a literature review study [7], 8 previous studies reported that the level of self-leadership was higher in the married group than the single group, and these findings support the results of this study. However, in contrast with the results of this study, another study of public health nurses reported that the single group showed a higher level of self-leadership [8]. In this regard, an additional analysis of this study revealed that mean age, total working period at public health institutions, and the proportion of people working in primary healthcare posts were higher in the married group than the single group among the participants (Supplementary Table 1). These results suggest that it is difficult to explain differences in self-leadership through a comparison simply in terms of marital status, and that there is a need to consider various background factors of study participants along with marital status. In addition, community health practitioners showed a higher level of self-leadership than public health nurses, and these results are thought to be due to the fact that as community health practitioners work at primary healthcare posts, they independently work not only to provide primary healthcare services and comprehensive nursing services for community residents with complex needs but also to implement various health promotion projects [2,8]. While community health practitioners are allowed to make autonomous judgements and actively perform tasks to a greater degree, public health nurses experience performing team tasks and regular transfers from one department to another in the administrative organizational system within the public health center. This situation may lead public health nurses to take a more passive attitude toward planning and implementing tasks compared to community health practitioners who independently take charge of overall tasks, and it may make public health nurses hesitate to make new changes or attempts due to difficulty in maintaining the continuity of tasks [49], so it is considered to hinder public health nurses from exerting self-leadership. Therefore, although public health nurses showed a higher level of self-leadership than clinical nurses, in order to further improve their self-leadership to a higher level in the future, organizational efforts, such as increasing their discretion at work by creating an open organizational culture and appropriate department transfer strategies, are needed to encourage both public health nurses and community health practitioners to more actively engage in their duties in autonomous and creative ways [22,50]. In addition, it is believed that the education level of a master's degree or higher can enhance professional self-concept [50], improve job commitment through improving self-confidence in one's profession and the work-related judgment ability, and thereby enhance

self-leadership [23,31]. Therefore, for the improvement of self-leadership in public health nurses and community health practitioners, it is necessary to provide support for academic work or opportunities to participate in related educational programs.

Although it is meaningful that this study was conducted with public health nurses from all the public health centers and primary healthcare posts located in a province, there are limitations in generalizing study findings. Moreover, although factors affecting self-leadership were examined after controlling for general characteristics by a hierarchical multiple regression analysis, the characteristics of self-leadership of public health nurses and community health practitioners, who have different work characteristics, were not sufficiently reflected. Therefore, a follow-up study is needed to compare the level of self-leadership by reflecting the work characteristics of public health nurses and community health practitioners.

## Conclusions

This study investigated the characteristics of self-leadership and its influencing factors among community public health nurses, including public health nurses and community health practitioners, in order to provide basic data for the development of strategies to improve self-leadership. In this study, communicative competence and nursing professionalism were identified as influencing factors for self-leadership in public health nurses. Therefore, to improve self-leadership in public health nurses, there is a need to develop strategies and interventions to enhance communicative competence and nursing professionalism.

The results of this study are expected to help nurses at public health institutions to successfully implement community health promotion projects through a high level of self-leadership in the future. Follow-up studies should be conducted to examine various capabilities required for public health nurses to successfully plan and operate health promotion projects.

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## Supplementary materials

Supplementary materials can be found via https://doi.org/10.12799/rcphn.2024.00493.

## Conflict of interest

The authors declared no conflict of interest.

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## Authors' contributions

Saeryun Kim contributed to conceptualization, data curation, formal analysis, methodology, visualization, writing - original draft, review & editing, investigation, resources, software, and validation. Younkyoung Kim contributed to conceptualization, data curation, formal analysis, methodology, visualization, writing - original draft, review & editing, investigation, resources, software, validation and supervision.

## Data availability

Please contact the corresponding author for data availability.

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