Title: Developing a Comprehensive Career Development Scale for Public Health Nurses in Japan

Running head: DEVELOPING A COMPREHENSIVE CAREER DEVELOPMENT SCALE

Key words: career planning and development, comprehensive career development scale, job satisfaction, professional competence, professional identity, public health nurse

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Conflict of interest

No conflict of interest has been declared by the authors.

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Abstract

***Objectives*:** This study aims to develop a scale that can comprehensively measure public health nurses' career development and to verify the validity and reliability of that scale. ***Design and Samples*:** This study is a cross-sectional investigation. The participants were 1,009 public health nurses (PHNs) working in a government facility in Japan. Five hundred eighty-six participants who had been working for more than 3 years as PHNs were analyzed. ***Measurements*:** Anonymous self-response questionnaires included items on professional awareness, practical competency and job satisfaction. We conducted exploratory factor analysis and confirmatory factor analysis to clarify the construct validity of the scale. The reliability was examined by the Cronbach's α coefficient. The validity was examined by an external reference relevant validity and the known-group method. ***Results*:** The scale was structured with 32 items covering 3 factors: "community activities, policy, and management," "PHN identity" and "foundations as a PHN". The Cronbach's α coefficients were all greater than 0.9. In confirmatory factor analysis, the scale showed acceptable goodness of fit. ***Conclusions*:** The comprehensive career development scale for PHNs proved its reliability and validity. This scale may be useful to promote PHN identity and competency comprehensively in basic education and in-charge

education.

Keywords: career planning and development, comprehensive career development scale, job satisfaction, professional competence, professional identity, public health nurse

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The reduction in family size and reduced care capabilities of local communities have socialized child care and nursing, which have traditionally been family functions, and this occurrence, combined with improvements in social security, has caused the government's health and welfare service functions to expand. The number of public health nurses (PHNs) who work for the government as providers of health and welfare services has greatly increased; in Japan, there were 24,708 PHNs working fulltime in 2000 and 25,377 in 2014. Most of their workplaces are in municipalities followed by prefectural public health centers (Ministry of Health Labour and Welfare, 2017).

In Japan, in 2009, amendments were made to the PHNs, Midwives, and Nurses Law and Law for the Promotion of Securing Human Resources for Nurses (Ministry of Education, Culture, Sports, Science and Technology, 2009). These amendments made mandatory certain efforts to provide clinical training for nurses newly engaged in work, and defined striving for quality improvement as part of the duties of nursing staffs. However, a 2018 survey targeting all working PHNs revealed that 46.2% of municipalities had human resources development plans for PHNs, and 52.1% of municipalities had service training (programs and manuals) for PHNs (Japanese Nursing Association, 2019).

For career development over a long working life, it is necessary to develop a career

ladder that looks at the entire career and to have measurement tools to evaluate this. Scales to measure career development are still in their developmental stages and are being developed as tools to measure either PHNs' practical abilities or job satisfaction. As a scale to measure their practical abilities, the Practical Competence of PHN scale in Japan is composed of 20 items and consists of 2 factors: interpersonal health care competence and community health care and administrative competence (Saeki, Izumi, Uza, & Murashima, 2007; Saeki, Izumi, Uza, & Takasaki, 2003). In addition to reexamining the structure of competence, 10 years of research on the practical competence required of PHNs compared answers of PHNs and clerical staff and objectively evaluated the expected standards (Hirano & Saeki, 2009). The major PHN organization in the United States (Quad Council of Public Health Nursing Organizations) announced the Public Health Nursing Competencies (Quad Council of Public Health Nursing Organizations, 2004; Swider, Krothe, Reyes, & Cravetz, 2013) and began to be utilized in both practice and education. Some PHN competency scales have been developed (Issel, Baldwin, Lyons, & Madamala, 2006; Kalb et al., 2006; Reckinger, Cross, Block, Josten, & Savik, 2013). In Taiwan, Guo, Hsu, and Lin (2008) and Lin, Hsu, Li, Mathers, and Huang (2010) created a PHN practical competencies scale. In Canada, PHN activity standards were clarified and shown in the Public Health-Community Health Nursing Practice in Canada Roles and Activities 4th Ed (2010). These reflect the differences in PHNs' activities from country to country.

Job satisfaction of PHNs was related to organizational structure (Campbell, Fowles, & Weber, 2004), professional status, interaction, and autonomy (Curtis & Glacken, 2014). In Japan, an Index of Work Satisfaction was developed for PHNs that consisted of a workplace environment, professional confidence, and job commitment to the profession (Yamashita, Takase, Wakabayashi, Kuroda, & Owatari, 2009). To study PHNs' professional awareness and identity, the Career-Orientation scale for PHNs (Okura, Noro, Ogita, & Arai, 2013) and the Government PHN Professional Identity Scale (Negishi, Asahara, & Yanai, 2010) were developed.

However, PHN job duties and the methods for those activities vary, as do the health conditions of the targeted individuals, families, communities, community organizations, and government institutions. PHNs' activities are wide in degree and quite diverse; therefore, it is currently difficult for PHNs themselves, as well as their collaborating colleagues, to understand what exactly public health nursing is. PHN activity can be invisible (Schaffer, Keller, & Reckinger, 2015). One contributing factor is the fluctuations in PHNs' identity. Social justice has been the philosophy behind PHNs' activities and to fulfill their duties, nurses need not only intellectual skills but also professional awareness as specialists. Job satisfaction is a necessary condition to continue working as a PHN. Restructuring an identity as a PHN and having a firm identity may create new PHN activity in reforming health systems, so PHNs explore their

identity and its role (Dahl & Clancy, 2015; Philibin et al., 2010).

The career development of PHNs is considered to have progressed when elements such as practical competency, job satisfaction, and professional identity complement each other. Although the currently developed career development scales use an element-by-element measurement, it is necessary to develop a scale that will evaluate career development by comprehensively measuring these components. Therefore, this study references career development within an organization for the entirety of a career; including objective aspects such as job duty performance and subjective aspects such as job satisfaction and professional identity (Minami, 1988). Applying these elements to the measurement of PHNs' career development, we can broadly divide career development measurements into 1) the measurement of PHNs' competencies as practitioners, job duty performance capabilities and practical capabilities, 2) the measurement of professional awareness and identity, as a specialist, and 3) the measurement of job satisfaction.

Purpose of the Research

This study aims to develop a scale that can comprehensively measure PHNs' career development. A scale that can be applied to all PHNs that is simple and useful becomes a self-evaluation tool and can also be used as a measurement tool for evaluating the development of PHN groups. This will contribute to the systematic improvement and evaluation of service

training for PHNs in Japan. Internationally, this will contribute to the development of a PHN common competencies scale.

Methods

Design and Sample

Participants. The participants were half of the 2,000 PHNs working in a government facility in one Japanese prefecture. The sampling took into account regional characteristics and affiliated institutions, and in order to include small municipalities and a prefectural health center, we used a stratified sampling method with positive extraction. To ensure the diversity of the participants' ages, years of experience, job titles, and job duties, we conducted all surveys through the prefectural or local municipal public health nursing unit.

Data collection. We requested survey cooperation from each facility, and confirmed the number of PHNs affiliated with the institution by telephone. We mailed anonymous self-response questionnaires to each workplace; completed surveys were returned to the university by mail.

The survey consisted of items soliciting information on respondents' individual attributes, a draft of the comprehensive career development scale, and external criteria–related items. Attributes included gender, age, education, years of experience as a PHN, facility of affiliation, and job title. Responses to the draft scale items were structured by a 5-point Likert scale. External criteria–related items consisted of job satisfaction, workplace satisfaction, and PHNs'

specialized job duty performance capabilities. Job and workplace satisfaction were measured with one item each (6-point response scale). PHNs' specialized job duty performance capabilities were measured by 20 items with verified reliability and validity; responses were structured by a 4-point Likert scale (Saeki, Izumi, Uza, & Takasaki, 2004; Saeki et al., 2003).

Ethical considerations. The cooperation request explained to the participants in writing the study's aim, the protection of anonymity, and the free will of individuals cooperating in the research, and the return of the questionnaire was considered consent. This study was conducted after obtaining approval from the ethics committee of the researchers' affiliated university (approval 13–14, June 28, 2013).

Measures

Creating the scale draft. In the process of creating a comprehensive career development scale for PHNs, we first defined comprehensive career development. Minami (1988) treats careers within an organization as a multifaceted, complex phenomenon, consisting of both subjective aspects such as job satisfaction and professional identity, and objective aspects like job duty performance capabilities. Abele and Spurk (2009) used objective success (income, hierarchical position), subjective success (as compared to a reference group), and self-referent subjective success (job satisfaction) to study the direction of influence between objective and subjective career success. What is common to these definitions is that they describe the career

from both objective and subjective perspectives. Based on Minami's definition, this study included 3 elements as comprehensive career development: practical capabilities, professional identity as a specialist, and job satisfaction.

PHNs' practical capabilities were measured in this study after the removal of 3 of the 39 items in the measurement tool we developed (Hirano & Saeki, 2009), which yielded a 36-item tool covering five narrower concepts: foundational, interpersonal support, community support, policy enforcement, and management competencies. The three items excluded, which were similar in content to other scale items, were "I can support preventative health efforts for complex and difficult individuals and families," "I can assess emerging health issues in the community," and "I can support health promotion efforts in the community."

We referenced previous research on Japanese PHNs' professional awareness (Negishi et al., 2010) for PHNs' professional identities. In this study, professional identity was defined as "the awareness that one is a PHN and a self-image possessing pride and value in being a PHN."

For job satisfaction, we referenced previous studies (Best & Thurston, 2006; Campbell et al., 2004). In this study, we defined job satisfaction as "positive feelings toward one's job duties, work experience, and workplace."

During survey item creation, we identified duplicate elements for professional identity and job satisfaction, and selected 25 items for the measurement of PHNs' professional

awareness. Six of these 25 items were related to both concepts. Item selection was discussed thoroughly and checked by co-researchers with experience in public health nursing practice and research, with reference to Negishi et al. (2010).

Preliminary survey. To verify the overall and face validity of the survey items, we conducted a preliminary survey. We distributed the survey to 40 practicing PHNs selected by convenience sampling, and received answers from 27 people. The respondents indicated that the question items were appropriate. There was an opinion regarding the modification on the surface validity. One item on self-study was not expressed clearly, and its content was changed. In addition, the order of responses to the professional awareness and practical capabilities items was inconsistent, and was modified to a consistently ascending Likert scale. Changes in items were determined by discussion among co-researchers with public health nursing practice and research experience.

Analytic Strategy

Participants with more than 3 years of experience as PHNs were targeted for this study. We considered this experience level to be necessary for PHNs' objective self-evaluation of their practical capabilities and ability to express their thoughts about what a PHN is. The first and second years of work as a PHN comprise a period of rapid growth, and thus instability, of their

PHNs' specialized job duty performance capabilities (Saeki et al., 2004). In addition, "competent nurse" have worked for 2–3 years in similar situations (Benner, 2001), so the participants were required to have at least 3 years of PHN experience.

Item analysis. We performed a simple summary calculation for each item and calculated the average values. During item analysis, to examine response biases, the ceiling and floor effects were the average value ± 1 SD for each item, and items that exceeded the maximum value or minimum value were excluded.

To avoid duplicate items, we confirmed Spearman's rank correlation analysis for the 62 items. If the correlation coefficient was $r > 0.8$, the items were considered similar, and one item was excluded. To verify the discriminative power of each item, we looked at the total scores for all items and used the quartile method to divide them into the top quartile group (good-group) and the low quartile group (poor-group) and performed Good–Poor analysis. We compared the average values for each item's scores between the good group and the poor group and excluded items that had no significant difference.

Conceptual validity and reliability of scales. For the scale's construct validity, we performed exploratory factor analyses and confirmatory factor analysis. In exploratory factor analysis, we performed promax rotation using the unweighted least-squares method. Each item for which commonality was <0.3, factor loading was <0.4, and loadings for multiple factors were

above 0.15 were excluded, and analysis was repeated. Extracted factors were named. For confirmatory factor analysis, the maximum likelihood method and goodness of fit indices [goodness of fit index (GFI), confirmatory fit index (CFI), and root mean square error of approximation (RMSEA)] were used. The validity of the scale item and factor structures was verified using the goodness of fit indices.

For reliability, internal consistency was verified for the entire scale and subscales using Cronbach's α coefficient. For validity related to the criteria, the correlation coefficient between the 2 capabilities of PHNs' specialist job duty performance capabilities and job satisfaction and workplace satisfaction was calculated for the subscales. Using the known-groups method, we also performed at ANOVA for the relationship between years of experience as a PHN and the subscale scores and the total score. The multiple comparison test used the Games-Howell test. The statistical significance level was 5%. The statistical software SPSS ver.22 and SPSS Amos ver.23.0 were used.

Results

We distributed 1,009 questionnaires; 685 were recovered (the recovery collection rate was 67.9%), and there were 665 valid responses (the valid response rate was 65.9%). We analyzed 566 participants, excluding 99 who had 0 to 2 years of experience as a PHN. The average age of the participants was 40.9 ± 9.2 years old, and the average number of years of

work experience as a PHN was 17.6 ± 8.9 years. For affiliated government municipalities, 95 people (16.8%) were from prefectural municipalities, 53 people (9.4%) were from metropolitan municipalities, and 418 were from city/town (73.9%) municipalities; 300 people (53.0%) were general staff (Table 1).

[Please insert Table 1 here]

Average scores for the 62 items ranged from 2.34 to 4.29, and total scores ranged from 62 to 310. A ceiling effect was found in 2 of the 62 items, and these were excluded. In the correlation analysis, 11 pairs (22 items) showed a correlation coefficient greater than 0.8. The contents of 11 pairs of items and the importance of those items in the scale were discussed and checked by co-researchers, and 9 items were deleted. Results of a GP analysis showed significant differences in all items.

Exploratory factor analysis was conducted using 51 items. The number of factors was set at 3 based on scree plot criteria, and we successively excluded items meeting the exclusion conditions, resulting in 32 remaining items. The first-order factor, with 14 items, was named “community activities, policies, and management”, the second-order factor, with 9 items, was “PHN identity”, and the third-order factor, with 9 items, was “foundations as a PHN” (Table 2). The average score for each factor’s items was 2.8 ± .8 for the first-order factor, 3.4 ± .8 for the second-order factor, and 3.7 ± .6 for the third-order factor. The correlation among factors

was .404-.664 (Table 2).

[Please insert Table 2 here]

Confirmatory factor analysis was performed using 32 items extracted by exploratory factor analysis. Maximum likelihood estimation indicated acceptable adjustment by the three-factor oblique model. Goodness of fit results were: GFI = .804, CFI = .881, and RMSEA = .079. Standardized coefficients for the three factors (i.e., latent variables) for each observed variable were .568–.869 ($p < .001$), and all estimates were significant ($p < .001$) (Figure 1).

[Please insert Figure 1 here]

The Cronbach's α coefficient was .955 for all items, .950 for the first-order factor, .911 for the second-order factor, and .905 for the third-order factor. For relationships with external criteria, the first-order factor showed r = .675 with interpersonal support competency, and r = .851 with community support and management competency. The second-order factor showed r = .441 with interpersonal support capabilities, r = .399 with community support and management competency, and r = .380 with job satisfaction. The third-order factor showed r = .690 with interpersonal support capabilities and r = .637 with community support and management competency (Table 3). Comparison of the factors and total scores according to years of experience as a PHN using the known-groups method revealed significant differences among all factor. Multiple comparison revealed significant differences in the first-order factor in all years

of experience groups, and significant differences in the third-order factor and total score in all groups except 6–10 and 11–20 years. The second-order factor showed almost no significant difference (Table 4).

[Please insert Table 3 here]

[Please insert Table 4 here]

Discussion

We will examine the reliability and validity of the comprehensive career development scale for PHNs working in government institutions. The comprehensive career development scale for PHNs was composed of 3 factors. In this scale, the 3 factors are thought to express the different aspects of a career, and career evaluation is not the overall point but rather has meaning as the average score of items for each factor. The higher the average score of each item, the higher the assessment of practical capabilities and professional awareness.

For the scale's reliability, the Cronbach's α coefficient was over .9 for the entire scale and for each item, and sufficient internal consistency was found.

In the confirmatory factor analysis, the RMSEA slightly exceeded the recommended value of ≤.05. However, as an RMSEA ≤ .08 is considered to be reasonable (Browne, & Cudeck, 1992) we considered our result to indicate acceptable model fit. In exploratory factor analysis for construct validity, for relationships to external criteria, the first-order factor, "community

activities, policies, and management," showed a high correlation with community support and management competency. The second-order factor, "PHN identity," did not have a high correlation coefficient, though the relationship with job satisfaction showed the highest correlation of the 3 factors. The third-order factor, "foundations as a PHN," correlated most strongly with interpersonal support competency. The first- and third-order factors were also related to the number of years of experience as a PHN; more experienced PHNs gave higher evaluations. PHNs' assessment of their specialized job duty performance capabilities increased with experience, consistent with the observed rapid growth of this assessment in the early work period and slower growth after the mid-career timepoint (Saeki et al., 2004). This relationship thus demonstrated the validity of the scale.

The first-order factor encompassed a wide range of capabilities, including support for organizations and people in the community, creating policies, and organization management. The inferred common elements among these are organizations, management, and systems. These competencies are newly required in the changing health care system and need to be strongly developed in PHN basic and continuing education.

The second-order factor consisted of PHN identity, professional awareness, and job satisfaction. The correlations with the first- and third-order factors were slightly lower, and practical capabilities and professional awareness are considered to possess different

characteristics. Iwasaki, Kageyama, and Nagata (2018) clarified three identities of Japanese PHNs. The scale items in this study include an ethical, philosophical, professional identity, that is more extensive content than Iwasaki et al.'s (2018) work which summarized 3 categories. As PHN activity includes a wide range and is diverse, PHNs feel difficulty in progressing their identity and have low job satisfaction (Curtis & Glacken, 2014). It is important to develop the competency of the second factor from the subjective aspect of career development.

The third-order factor consisted of foundations as a professional, ways of thinking that become the foundation for a PHN, and interpersonal support competencies. Since interpersonal support competencies have been included in the foundations for being a PHN, we can say that interpersonal support is an element that cultivates the thinking that becomes the foundation of PHN activities. Even if PHN activity is diverse, the third factor shows that the foundation of PHN is nursing and caring. Asahara, Kobayashi, and Ono (2015) developed a scale for the moral competence of Japanese PHNs consisting of three factors: (i) judgment based on the values of community members; (ii) strong will to face difficult situations; and (iii) cooperating with relevant people/organizations. The ethical items of the scale developed by this study was only one item of "I can make ethical judgments in case aid and health practices." In consideration of the importance of ethical competency, it is necessary to think about adding ethical competence to the scale items more fully in the future.

To date, PHN competency scales have measured practical abilities, such as interpersonal health care competence, community health care and administrative competence, policy-making competence, assessment/planning/evaluation, communication, leadership, and partnership (Issel et al., 2006; Kalb et al., 2006; Reckinger et al., 2013; Saeki et al., 2003). The identity of the profession, however, prescribes the foundational work activities of PHNs (Fagermoen, 1997). The activities of PHNs expands for policy development as well as interpersonal support (Hirano, Saeki, Kawaharada, & Ueda, 2011); therefore, it is more important for a PHN's career development to clarify not only superficial practical competency but also identity and consciousness regarding PHN activity.

We provide three suggestions for the use of the scale developed in this study. The first is to utilize the scale in basic PHN education. The goal of basic education is to foster professionals, and the integration of skill and identity is important. The third-order factor findings especially suggest an emphasis on fostering of foundational abilities, including philosophy about being a PHN, in basic education.

The second suggestion is to use this scale in service training for PHNs. During service training, it is useful to be aware of one's ability to cope with various health issues as a PHN in charge of primary health care in the community. The first- and third-order factors of the scale measure the ability to provide care to individuals and communities, and within systems. Because

these factors are associated with the years of experience as a PHN, they can be periodically self-assessed using each subscale to confirm development over time.

Third, we point out the importance of the second-order factor of the comprehensive career development scale for PHNs. Career development spans one’s whole life (Schein, 1978), and the development of subjective and objective competencies enriches one's life. To develop the abilities encompassed by the second-order factor, PHNs must visualize the results and significance of their activities. By utilizing the second-order factor along with other factors, PHNs will be able to reflect on themselves as PHNs, and integrate their personal and professional lives.

Limitations

This study was cross-sectional, and the reproducibility of the scale has not been verified. In further work, the retest method should be used to verify the reproducibility of the scale. To make the scale easier to use in practice, the number of items should be reduced. Additionally, to make the scale international, the target has been verified and extended to other countries. In particular, since the second-order factor "PHN identity" could be related to the culture and climate of PHN activities in each country, it is necessary to consider the addition and reduction of items.

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Tables

Table 1

Respondents' Basic Attributes (*N*=566)

Basic Attributes		n	%
Age	Average (years)	40.9	±9.2
Gender	Female	553	97.7
	Male	13	2.3
Affiliated Municipality	Prefecture	95	16.8
	Metropolis	53	9.4
	City/Town	418	73.9
Years of Experience as a	3–4 years	49	8.7
Public Health Nurse	5–9 years	96	17.0
	10–19 years	227	40.1
	20 or more years	194	34.3
Job Title	General staff	300	53.0
	Senior staff	241	42.6
	Director	25	4.4
Education Background	Training school	393	69.4
	Junior college	72	12.7
	University, graduate school	101	17.8
Spouse	Yes	382	67.5
	No	184	32.5

Table 2

Comprehensive Public Health Nurse Career Scale: Exploratory Factor Analysis (*N*=566)

Factor Item	Factor Loadings			
	Factor 1	Factor 2	Factor 3	Commonality
1. I can develop and build community health resources and organizations.	**.936**	.000	-.122	.826
2. I can monitor the quality of communitycare.	**.848**	.038	-.054	.733
3. I can respond to community health crisis management.	**.834**	.014	-.005	.813
4. I can support community preventive health issues.	**.813**	-.028	.070	.855
5. I can use research methods and promote health program.	**.809**	.008	-.124	.671
6. I can participate in planning community healthcare and welfare and propose.	**.790**	.054	-.052	.783
7. I can support self-help groups and community organizations.	**.753**	.025	.039	.745
8. I can be part of the organization’s personnel management.	**.748**	.007	-.146	.623
9. I can use epidemiology and analyze community healthissues.	**.746**	.003	-.009	.680
10. I am able to acquire budgets for new health program.	**.687**	.013	.038	.672
11. I can evaluate policy for mothers and children and for the elderly.	**.665**	-.041	.168	.740
12. I can perform human resource development for newer staff.	**.576**	.021	.211	.688
13. I can interpret laws related to project implementation and operate a project.	**.559**	.002	.211	.665
14. I can support preventive health issues for groups.	**.551**	-.045	.327	.716

15. I feel there is job value in being a public health nurse.	-.052	**.897**	-.019	.781
16. I want to fulfill the job duties of a public health nurse.	-.032	**.835**	-.042	.699
17. I take pride in my job as a public health nurse.	-.082	**.835**	.107	.781
18. I feel that being a public health nurse is important to my life.	.127	**.807**	-.169	.699
19. I have an ideal of being a public health nurse.	-.043	**.766**	.112	.788
20. Even in retirement, I hope to utilize my experience as a public health nurse to contribute to the community.	.099	**.686**	-.153	.547
21. I have professional awareness as a public health nurse.	.007	**.628**	.255	.736
22. All of my life experiences are used in my practice as a public health nurse.	-.023	**.505**	.122	.393
23. I am satisfied with my job as a public health nurse.	.121	**.470**	.100	.503
24. I can build trusting relationships with community participants/people and related organizations.	-.139	-.031	**.921**	.754
25. I can explain the mission of the institution I am affiliated with.	.076	-.050	**.774**	.732
26. I can work in alignment with the workplace culture.	-.045	-.005	**.771**	.672
27. I can explain my job duties as a public health nurse.	-.002	.040	**.759**	.692
28. I can make ethical judgments in case aid and health practices.	.160	-.005	**.672**	.664
29. I can learn for my personal development.	-.033	.085	**.668**	.601
30. I can converse easily with community people.	-.027	.059	**.616**	.535
31. I can support individuals with complex difficulties and during the resolution of family health problems.	.351	-.075	**.544**	.702
32. I can control my personal physical and mental health.	.045	.090	**.498**	.438

Cumulative Proportion (%)		42.1	53.0	57.7
Factor Correlations	F1		.404	.664
	F2			.569

Table 3

Relationship with External Criteria (*N*=566)

	Interpersonal Competency		Community Management Competency	Support	Job Satisfaction	
	r	*P*	*r*	*P*	*r*	*P*
First-order factor	.675	< .001	.851	< .001	.167	< .001
Second-order factor	.441	< .001	.399	< .001	.380	< .001
Third-order factor	.690	< .001	.637	< .001	.260	< .001

Pearson correlation coefficient

Table 4

Multiple Comparisons of Factor Scores by Years of Experience as a Public Health Nurse Group

(*N*=566)

Factor	Years of Experience as a Public Health Nurse Group	Ave.	*P*
F1	1-5	27.8	*** *** ***
	6-10	33.9	** ***
	11-20	38.0	***
	21-	45.3	
F2	1-5	28.6	***
	6-10	30.0	
	11-20	29.0	***
	21-	32.2	
F3	1-5	29.7	* *** ***
	6-10	31.8	***
	11-20	32.8	***
	21-	35.2	
Total	1-5	86.1	*** *** ***
	6-10	95.8	***
	11-20	99.8	***
	21-	112.7	

* < .05, ** < .001, *** <. 0001

Games-Howell test

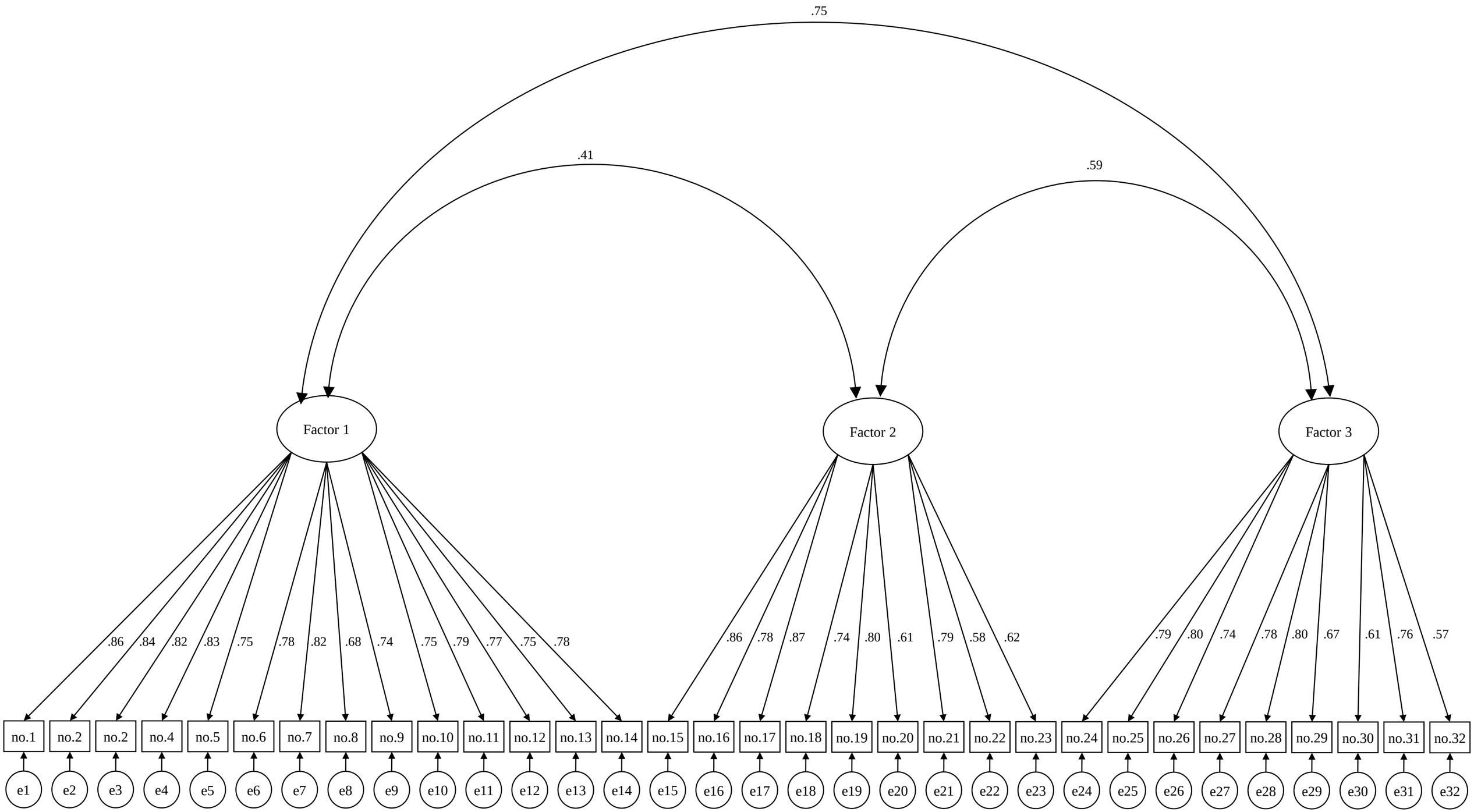

Figure 1 *Comprehensive Public Health Nurse Career Scale: Confirmatory Factor Analysis*