

Original article

## Attitudes of Health Care Professionals About Importance of Health-Education Work of Public Health Nurses in Osijek-Baranja County

Marko Maceković<sup>1</sup>, Nada Prlić<sup>2</sup>

<sup>1</sup> Medical School Osijek

<sup>2</sup> Faculty of Medicine Osijek, University of Osijek, Osijek, Croatia

Corresponding author: Marko Maceković, markomacekovic@gmail.com

### Abstract

**Aim:** To examine the attitudes of health care professionals towards the importance of health-education work of public health nurses directed at individuals, families and communities.

**Methods:** 142 subjects participated in the research, of which 56 public health nurses, 44 primary care (family) physicians and 42 nurses working in family medicine teams. Research was conducted at the Health Centres in Beli Manastir, Osijek, Valpovo and Đakovo, Croatia. A segment of the standardized questionnaire Public Health Nursing Survey Instrument – a table of interventions conducted by public health nurses (California public health nursing investigation – Center for California Health Workforce Studies) – was used as the survey instrument.

**Results:** There were no significant differences in the attitudes of respondents by gender ( $p = 0.898$ ) and age ( $p = 0.067$ ) regarding the importance of public health nurses' health-education work. However, respondents aged 60 and over expressed more disagreement with some of the statements related to emotional components of their attitudes ( $p = 0.019$ ). Regarding the length of work experience, there were no statistically significant differences ( $p = 0.228$ ) on the overall scale of attitudes about health-education work of public health nurses. Regarding individual components on the scale, respondents with less work experience tended to agree more with the statements related to emotional components of their attitudes ( $p = 0.004$ ). Regarding the level of education, there were no significant differences in the attitudes of respondents ( $p = 0.156$ ) towards nurses' health-education work. Research also showed that there were no significant differences in attitudes about the importance of public health nurses' health-education work when it comes to the subjects' workplace ( $p = 0.159$ ).

**Conclusion:** Health professionals have positive attitudes about health-education work of public health nurses directed at individuals, families and communities.

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## Introduction

Health education is an indivisible part of health care, intertwined with human, cultural, social, health, emotional, ethical and psychological needs (1). It is defined as a health care measure for improvement and prevention of health and treatment and mitigation of consequences of diseases, which is achieved by adopting a healthy lifestyle and eliminating harmful health behaviours, as well as by providing education and spreading information on health care (2). National League of Nursing Education has developed a health education planning model called PRECEDE, which clearly defines the role of nurses in the process of health education (2). The model was created because neglecting the essential elements of public health work – preventive and educational tasks – was considered a weakness in the nurse education system. Nurses' health-education work demands cooperation on all levels of health care (primary, secondary, tertiary). Besides cooperating at all levels of health care, public health nurses also need to cooperate with other institutions – cities, counties, media, schools, nurseries – on matters related to nursing activities. In their work, public health nurses encounter many obstacles and unknowns when it comes to activities related to conducting health-education work. Cooperation in Croatia is still not established at a satisfactory level. In their research, Reckinger et al. evaluated 6 factors of competence: evaluation competencies, individual/family/community competencies, systems competencies, partnership/collaboration competencies, planning competencies and assessment competencies. Research was conducted on a sample of 2,269 public health nurses. The authors concluded that the abbreviated instrument could facilitate research on the relation between competencies, public health nursing interventions and public health nursing outcomes (3). In his paper, While demonstrated the importance of public health nurses' work through health education and its impact on the result of health care (4). Perception of public health nurses, in relation to their present role and future activities, was studied by Schoenfeld and

MacDonald. Their results showed that public health nurses are focused mainly on working with individuals and families. In addition, they include community care and health promotion as one of the activities (5). Also, the study conducted by Grumbach, Miller, Mertz and Finocchio contains a survey of public health nurses regarding interventions targeted at individuals, families, communities and the entire system. Results indicate that the population health focus of public health nursing is not reflected in the practice activities, management priorities or educational preparation of public health nurses (6). In their study, Schaffer, Olson, Keller and Reckinger outline the activities of public health nurses that contribute to community health as one of the recognised factors of their work. Some of the important activities addressed in the research were emergency preparedness, health education of individuals and families, receiving and making of referrals, health promotion programs and case management (7). Based on a review of relevant literature, Thomas et al. conducted a study aimed at determining the effectiveness of interventions conducted by public health nurses. The conclusion was that current methods for a systematic review of quantitative literature can be successfully adapted for issues related to public health nursing and that systematic literature reviews are useful for policy development, program planning and development of future research questions (8). The main purpose of the present study is to examine health care professionals' attitudes about the importance of public health nurses' health education work targeted at individuals, families and communities by their level of education, age, gender, work experience and workplace.

## Materials and Methods

A cross-sectional study involving 142 respondents was conducted. 56 public health nurses, 44 family physicians and 42 nurses working in family medicine teams participated in this survey. The research was conducted at the Health Centres in Beli Manastir, Osijek, Valpovo and Đakovo from May to June 2016. The original

survey questionnaire contained 32 questions. The research instrument used in the survey was a part of the "PHN Survey Instrument" – the table of interventions (California public health nursing investigation – Center for California Health Workforce Studies) (6) – which was modified for this research with prior permission for use. The questionnaire was adjusted for the purpose of conducting the research and specifying the work of public health nurses in Croatia, with the help from a professor from the Department of Nursing, Medical Ethics and Palliative Medicine of the Faculty of Medicine Osijek. The questionnaire was translated into Croatian by an independent language expert. The first part of

the survey questionnaire contained demographic issues (age, gender, level of education, length of work experience and place of work). The second part of the survey contained a questionnaire consisting of 19 statements on health education which were rated by public health nurses. The statements were divided into three groups. The first group consisted of five statements related to the cognitive component of an attitude. The second group consisted of six statements related to emotional components of an attitude. The remaining eight statements were related to the statements constituting the behavioural component of attitudes (Table 1).

**Table 1. Statements**

<b>STATEMENTS</b>	<b>1-</b> completely disagree <b>2-</b> disagree <b>3-</b> neither agree nor disagree <b>4-</b> agree <b>5-</b> completely agree
1. Public health nurses contribute to the quality of health care by providing health education and information in cooperation with other experts at the local community level.	1 2 3 4 5
2. Public health nurses contribute to the preservation of health by implementing preventive measures through health education in cooperation with other community-based institutions.	1 2 3 4 5
3. Health education must be integrated into the daily activities of public health nurses.	1 2 3 4 5
4. Public health nurses carrying out health education activities succeed in preserving and improving health and preventing illness and injuries at the local community level.	1 2 3 4 5
5. Public health nurses establish and monitor health risks in the community, maintain and improve health, prevent diseases and injuries at the system level.	1 2 3 4 5
6. Public health nurses feel that they achieve something worthwhile through health education and awareness, cooperation and expert support at the system level (local or state).	1 2 3 4 5
7. Public health nurses believe that by cooperating and coordinating health and non-health services they solve or mitigate specific issues by implementing specific knowledge and skills.	1 2 3 4 5

8. Public health nurses feel useful when they participate in the implementation of health education measures for the improvement of the quality of health services at the system level.	1	2	3	4	5
9. Public health nurses try to implement preventive health measures targeted at individuals/families by providing health education.	1	2	3	4	5
10. Public health nurses are confident of the implementation of community-level preventive-health measures, including health education activities.	1	2	3	4	5
11. Public health nurses try to provide health education and awareness through the media whenever possible.	1	2	3	4	5
12. Public health nurses assess an individual's/family's health by coordinating the individual's health care and education to improve the quality of their life.	1	2	3	4	5
13. Public health nurses in their daily work advocate the interests of users/patients by educating them.	1	2	3	4	5
14. Public health nurses carry out planned interventions at homes for patients with chronic diseases and gives advice to chronic patients.	1	2	3	4	5
15. Public health nurses plan and carry out health consultations and educate families and/or individuals in specific cases.	1	2	3	4	5
16. Public health nurses implement health education measures aimed at individuals/families by identifying their problems/needs.	1	2	3	4	5
17. Public health nurses detect risk groups timely and implement community-based preventive-health measures.	1	2	3	4	5
18. Public health nurses provides information on which rights an individual/family can obtain at the local community level.	1	2	3	4	5
19. Public health nurses provide information about the rights and support that individuals/families can obtain at the system level for the purpose of ensuring full health care.	1	2	3	4	5

Statements were rated on the Likert scale from 1 (completely disagree) to 5 (completely agree). Reliability coefficient for the entire scale was calculated. Cronbach's alpha was 0.944. Prior to statistical data processing, the respondents were divided into 5 groups based on to their gender, level of education, work position, age and work experience.

Before the research was conducted, written consents of the Ethical Committees of the Health Centres Beli Manastir, Osijek, Valpovo and Đakovo were obtained. Approval to use the standard questionnaire "PHN Survey Instrument" was obtained from Kevin Grumbach from the UCSF Department of Family and Community Medicine of the SF General Hospital in San Francisco. All respondents were informed about

the purpose of the research. Prior to research, the respondents received a written statement and consent document for participating in the research. All respondents participated in the research voluntarily, which was confirmed by their signature. Filling out the questionnaire was anonymous. The research was conducted in accordance with ethical principles and human rights in research.

### *Statistical methods*

Data in the categories was represented by absolute and relative frequencies. Numerical data was described by median and interquartile range boundaries because the variables did not follow normal distribution. The normality of the distribution of numeric variables was tested by the Shapiro-Wilk test. Differences in numeric variables were tested by the Kruskal-Wallis test based on the subjects' level of education and their workplace due to a deviation from the normal distribution. The correlation rating was given by the Spearman's coefficient of correlation  $\rho$ . All P values were two-tailed. The level of significance was set to  $\alpha = 0.05$ . The MedCalc statistical program (version 16.2.0, MedCalc Software bvba, Ostend, Belgium) was used for the statistical analysis.

## **Results**

The study involved 13 (9.2%) men and 129 (90.8%) women. Regarding the level of education (completed secondary education, baccalaureate or university education), the fewest respondents had secondary education qualifications (N=42; 29.6%). Regarding work position (public health nurses, nurses in family medicine teams and family medicine physicians), the fewest respondents, 42 (29.6%) of them, were nurses working in family medicine teams. The respondents were divided into the 5 following age groups: up to 29 years of age, 30 – 39 years of age, 40 – 49 years, 50 – 59 years, and 60 years and over. Regarding the length of work experience, the respondents were divided into 4 groups: up to 14 years, 15 – 24 years, 25 – 34 years, and 35 years and more. The mean value of the respondents' age was 48 (interquartile

range from 30 to 56, ranging from 24 to 65). As for the length of service, the mean value was 23 years (interquartile range from 5.5 to 33.5 years), ranging from 0.8 to 45 years. All respondents were from the Osijek-Baranja County.

Concerning cognitive components on the scale of attitudes in general, the largest number of respondents (N=102; 71.8%) agreed with the statement that health education must be integrated into the daily activities of public health nurses. 14 respondents (9.9%) neither agreed nor disagreed with the statement that public health nurses establish and monitor community health risks, maintain and improve health and prevent diseases and injuries at the system level. There were no significant differences in the rating of cognitive components on the scale of attitudes by gender (Mann-Whitney U Test,  $p = 0.052$ ) or age group (Kruskal-Wallis test,  $p = 0.082$ ).

Respondents aged between 30 and 39 gave lower ratings for the statement that public health nurses succeed in preserving health by implementing preventive measures through health education in cooperation with other community-based institutions. However, there were no significant differences in comparison with other age groups (Kruskal-Wallis test,  $p = 0.060$ ). This is also true for the statement that public health nurses carrying out health education activities succeed in preserving and improving health and preventing illness and injuries at the local community level. However, there were no significant differences between different age groups (Kruskal-Wallis test,  $p = 0.216$ ).

Respondents aged between 30 and 39 and between 50 and 59 gave a lower rating for the statement that public health nurses who determine and monitor health risks in their work maintain and improve health in the community or prevent diseases and injuries at the system level. However, there were no significant differences when compared to other age groups (Kruskal-Wallis test,  $p = 0.454$ ) or with regard to work experience (Kruskal-Wallis test,  $p = 0.516$ ).

The median value of cognitive components of attitudes with regard to the nurses' work position

was 4.8 (interquartile range 4.2 to 5). The value was lower for nurses working in a family medicine team (interquartile range = 4.6), but the difference was not significant in comparison with public health nurses (interquartile range = 5) or family medicine practitioners (interquartile range = 4.7). Likewise, subjects with a bachelor's degree gave higher ratings for cognitive components (interquartile range = 5), but the difference was not significant in comparison to the subjects with secondary education qualifications (interquartile range = 4.6) or university qualifications (interquartile range = 4.6).

As far as emotional components of attitudes are concerned, 132 (93%) subjects agreed with a statement that public health nurses try to implement preventive health measures directed at individuals/families by carrying out health education activities. Among these statements, the most substantial disagreement was expressed for the statement that public health nurses try to conduct health education and educate people through media whenever possible, with which 12 respondents (8.4%) disagreed.

Significantly lower rating for the statement that public health nurses are confident of implementing preventive health measures on the community level, including health education activities, was given by the subjects above 50 years of age (Kruskal-Wallis test,  $p = 0.004$ ). However, there were no significant differences between age groups in relation to other statements. There were also no significant differences in the overall ratings on the scale of emotional components of attitudes by gender (Mann-Whitney U test,  $p = 0.723$ ). Respondents with 35 or more years of work experience (Kruskal-Wallis test,  $p = 0.005$ ), gave significantly lower ratings for said statement, as well as for the statement that public health nurses try to conduct health education activities and educate people through media whenever possible (Kruskal-Wallis Test,  $p = 0.041$ ).

Nurses working in family medicine teams gave a significantly lower rating for the statement that public health nurses try to implement preventive

health measures directed at individuals/families by providing health education when compared to the ratings given by public health nurses and family medicine practitioners (Kruskal-Wallis test,  $p = 0.029$ ). Regarding other statements, there were no significant differences considering their work position (Kruskal-Wallis test,  $p = 0.395$ ) or level of education (Kruskal-Wallis test,  $p = 0.492$ ), taking into consideration the overall ratings on the scale of emotional components.

With regard to behavioural components, 89 respondents (62.7%) agreed with the statement that public health nurses carry out planned interventions at homes for patients with chronic diseases and give advice to chronic patients. On the other hand, eight respondents (5.7%) disagreed with the statement that public health nurses provide information about the rights and support that individuals/families can obtain at the system level for the purpose of ensuring full health care. There were no significant differences in the rating of behavioural components by gender (Mann-Whitney U Test,  $p = 0.666$ ) and work experience (Kruskal-Wallis Test,  $p = 0.399$ ).

With regard to age, the statement that public health nurses in their daily work advocate the interests of users/beneficiaries by educating them (Kruskal-Wallis Test,  $p = 0.024$ ) received the highest rating from the respondents aged 40 to 49. On the other hand, respondents aged 50 and over gave significantly lower ratings for the statement that public health nurses detect risk groups timely and carry out community-based preventive health measures (Kruskal-Wallis Test,  $p = 0.012$ ).

Regarding nurses working in family medicine teams, there was a significant disagreement with the statement that public health nurses in their daily work advocate the interests of the users/patients (Kruskal-Wallis Test,  $p = 0.001$ ) and the statement that public health nurses implement health education measures aimed at individuals/families by identifying their problems/needs (Kruskal-Wallis test,  $p = 0.010$ ).

When compared to family physicians and public health nurses, nurses working in a family

medicine team expressed a substantial disagreement with the following statements: public health nurses advocate the interests of users/patients by educating them (Kruskal-Wallis Test,  $p = 0.002$ ); public health nurses carry out planned interventions at homes for patients with chronic diseases and give advice to chronic patients; (Kruskal-Wallis Test,  $p = 0.032$ ); public health nurses plan and carry out health consultations and educate families and/or individuals in specific cases (Kruskal-Wallis Test,

$p = 0.031$ ); and public health nurses implement health education measures targeted at individuals/families by identifying their problems/needs (Kruskal-Wallis Test,  $p = 0.030$ ).

There were no significant differences in the overall ratings on the scale of attitudes regarding the importance of health-education work of public health nurses by gender, age, work experience, level of education or work position, as presented in Table 2.

**Table 2. Overall scale of attitudes about the importance of public health nurses' health-education work based on gender, age, work experience, level of education and work position**

Overall scale of attitudes about health-education work	Median (Interquartile range)	$p^*$
<b>Gender</b>		
Male	4.5 (3.9 – 4.9)	0.898 <sup>†</sup>
Female	4.5 (4.1 – 4.9)	
<b>Age groups</b>		
up to 29	4.8 (4.1 – 5.0)	0.067
30 – 39	4.5 (4.0 – 4.8)	
40 – 49	4.9 (4.3 – 5.0)	
50 – 59	4.5 (3.9 – 4.8)	
60 or over	4.4 (3.9 – 4.7)	
<b>Work experience</b>		
up to 14	4.7 (4.1 – 5.0)	0.228
15 – 24	4.5 (3.9 – 5.0)	
25 – 34	4.5 (3.9 – 4.9)	
35 and more	4.4 (4.1 – 4.7)	
<b>Level of education</b>		
Secondary education qualifications	4.3 (3.9 – 4.8)	0.156
Post-secondary qualifications	4.6 (4.2 – 4.9)	
University qualifications	4.6 (4.0 – 5.0)	
<b>Work position</b>		
Nurse in a family medicine team	4.3 (3.8 – 4.8)	0.159
Public health nurse	4.6 (4.2 – 4.9)	
Primary care (family) physician	4.5 (3.9 – 5.0)	

\*Kruskal-Wallis Test; †Mann-Whitney U Test

Older respondents expressed more disagreement with the statements related to emotional ( $p = 0.019$ ) and behavioural ( $p = 0.034$ ) components of attitudes, as well as with the

scale in general ( $p = 0.035$ ). Respondents with less work experience expressed agreement with emotional ( $p = 0.004$ ) and behavioural components ( $p = 0.033$ ) of attitudes to a larger

degree, as well as with the scale in general ( $p = 0.020$ ). This correlation is weak, but significant (Table 3).

**Table 3: Assessment of correlation between the subscales and the scale of attitudes of the respondents towards public health nurses' health education-work based on age and work experience**

	Spearman's Correlation Coefficient (p value)	
	Age	Work experience
<b>Cognitive components</b>	-0.078 ( $p = 0.357$ )	-0.081 ( $p = 0.342$ )
<b>Emotional components</b>	-0.198 ( $p = 0.019$ )	-0.243 ( $p = 0.004$ )
<b>Behavioural components</b>	-0.178 ( $p = 0.034$ )	-0.180 ( $p = 0.033$ )
<b>Overall scale rating</b>	-0.178 ( $p = 0.035$ )	-0.196 ( $p = 0.020$ )

## Discussion

Demographic data in the study shows that the age of respondents ranged from 24 to 65 years and that the number of male respondents (13 or 9.2%) was, as expected, considerably lower than the number of female respondents (129 or 90.8). It is therefore difficult to make comparisons on the basis of the respondents' gender. Research has shown that the number of men in all segments of public health care is relatively smaller than the number of women working in this area (9). Though contrary to the research, this "trend" has recently been decreasing, even in public health nursing.

Respondents' age or length of work experience can be among the most important factors in the creation of their general attitude towards the importance of public health nurses' health-education work. The results of this study did not show significant statistical differences in attitudes, but one can notice that older respondents expressed more disagreement with the statements about health-education work of public health nurses, especially with the statements about emotional components of attitudes. On the other hand, the respondents with less work experience tended to agree more

with the statements related to emotional components of attitudes, as well as with the statements on the overall importance of public health nurses' health-education work. Also, the results obtained in this research, considering the entire range of attitudes about the importance of public health nurses' health-education work, did not exhibit any significant differences in said attitudes with regard to the subjects' age and length of work experience. We assume these evaluations were based on an objective assessment of their own attitudes, but it is possible to question whether the older respondents observed these statements from the perspective of their own work experience and evaluated them on that basis.

An extremely large number of respondents agreed with the statement that health education must be integrated into the daily work of public health nurses. Likewise, looking at the overall set of attitudes, several respondents stated that public health nurses try to implement preventive health measures targeted at individuals/families by providing health education. In contrast, nurses working in family medicine teams gave significantly lower ratings for that statement due to differences in their workplaces.

It should be emphasised that many respondents recognised the importance of integrating health-education work of public health nurses into their day-to-day activities. Also, in the majority of research pertaining to interventions, competencies and standards of public health nurses' practice, health education is regarded as one of the essential and major components of public health nurses' activities (6, 10).

Eight respondents disagreed with the statement that public health nurses provide information about the rights and support that individuals/families can obtain at the system level for the purpose of ensuring full health care. Also, respondents over the age of 50 and with 35 or more years of work experience gave considerably lower ratings for the statement that public health nurses are confident of the implementation of preventive-health measures targeted at the local community, including health education activities.

Research by Schaffer, Olson Keller and Reckinger and research by the Washington States Nurses Association showed that the public health nurses' activities at the local community level include coordinating health care for their beneficiaries, instructing patients and providing them with necessary information.

Also, health care activities of public health nurses are aimed at delivering health care to the entire population for the purpose of improving the quality of life, respecting individuals as equal subjects in the health care system, prioritising primary prevention and cooperating with other professionals and interest groups with a view to promote and protect human health (7, 11, 13).

Overall ratings on the scale of attitudes towards health care showed that 8.5% of respondents expressed disagreement with the statement related to health education and media literacy. It is important to note that a significantly lower rating was given by the respondents with work experience of 35 years and more.

Although public health nurses and other health care professionals should and indeed do take part in public health campaigns aimed at health

preservation, some respondents did not recognise it.

Results of this survey showed that the majority of respondents agreed with the statement that public health nurses carrying out health education activities succeed in preserving and improving health and preventing diseases and injuries at the local community level. The majority of authors, such as Schoenfeld, MacDonald, Grumbach, Miller, Mertz, Finocchio, Schaffer, Olson Keller and Reckinger, state in their research that public health nurses carry out interventions targeted at individuals and that their health-education work is directed towards the entire community. This implies that it is required to assess the situation and plan health education activities with the aim of improving the health of a population in general (3, 5, 6, 7).

Results of this research showed that a small number of respondents disagreed with the statement that public health nurses detect risk groups timely and implement community-based preventive health measures. In their research, Schaffer et al. listed several negative impacts on the community health from the perspective of public health nurses, which impacts could arise if no preventive health measures were implemented (7). In their research, Schoenfeld and MacDonald regarded the implementation of community-based preventive health measures as one of the activities carried out by public health nurses (5).

Research results also show that nurses working in family medicine teams gave significantly lower ratings for the statements related to emotional components of attitudes about public health nurses' health-education work in comparison with public health nurses and doctors in family medicine. The same applies to the statement that public health nurses intend to implement preventive health measures targeted at individuals/families by providing health education.

In the research conducted by Keller et al., the most frequent interventions of public health nurses are listed in five groups. These activities relate to screening, coordination of individual health cases, consulting, cooperation with other

experts and health education, which can refer to both individuals and the community (12).

Regarding the behavioural component of attitudes about health education in terms of the respondents' workplace and level of education, nurses working in family medicine teams expressed more disagreement with the statement "Public health nurses in their daily work advocate the interests of users/patients by educating them." and "...implement health education measures aimed at individuals/families by identifying their problems/needs".

Interestingly, regarding the respondents' age, a considerably higher rating for the first statement, i.e. "Public health nurses assess an individual's/family's health by coordinating the individual's health care and education to improve the quality of their life", was given by the respondents aged 40-49. The question arises as to whether age and experience are related to "sensitivity" in terms of patient health care.

In the research they conducted, Schoenfeld and MacDonald state that the education and consultations for individuals and families provided by public health nurses are largely regarded as one of the most important components of their work. Likewise, the reduction, recognition, management and control of chronic diseases are regarded as some of the tasks of public health nurses (5).

The results of this study also show that nurses working in family medicine teams expressed more disagreement with the following statements related to the behavioural component of attitudes on the public health nurses' health-education work: "Public health nurses carry out planned interventions at homes for patients with chronic diseases and gives advice to chronic patients" and "Public health nurses plan and carry out health consultations and educate families and/or individuals in specific cases". The problem is that a large number of health professionals still assume that the only intervention performed by a public health nurse is blood pressure and blood sugar control; whereas all other interventions related

to specific cases remain within the domain of in-home nursing care.

The results also show that nurses working in family medicine teams expressed more disagreement with the statement that public health nurses in their daily work advocate the interests of users/patients by educating them, identifying their problems/needs and implementing health education measures directed at individuals/families. In their research, authors Grumbach et al. stated that respondents focused mostly on activities targeted at individuals and families as those are some of the most important components of a public health nurse's work (6). In their research, which was focused on activities in the community, authors Olson Keller et al. state that public health nurse's tasks include the following: focus on the entire population, social representation, ethics, cultural diversity, holistic approach, prevention and health promotion and care for vulnerable groups of population (13).

Considering the overall ratings on the scale of attitudes, there were no significant differences in terms of the importance of the nurses' health education work regarding the respondents' level of education and workplace. However, significant number of nurses with secondary education qualifications gave lower ratings for their attitudes towards the importance of health-education work. In the research conducted by Zahner and Greding, the authors proposed raising awareness of the public, health care workers, social organisations and community members regarding the activities and the function of health-education work of public health nurses in order to keep such work visible and recognised, rather than "hidden" (14).

This research revealed that the importance health-education work of public health nurses is largely recognised. However, further research on this issue is important for raising awareness among health professionals regarding the primary and basic purpose of public health services as one of the most important constituents of the health care system. It is necessary to include the primary, secondary and tertiary level, which will increase cooperation

and coordination of delivering health care to individuals, families and the community, as well as improve the organisation of health care teams involved in such non-institutional care.

Also, more male respondents should be included in future research so that more gender-based comparisons could be drawn.

## Conclusion

Public health nurses, nurses working in family medicine teams and family medicine doctors have positive attitudes towards the health-education work of public health nurses directed at individuals, families and the community. There are no differences in attitudes on the health-

## References

1. Grčić M, Rončević T, Sindik J. Zdravstveni odgoj i uloga medicinske sestre. *Hrvatski časopis za javno zdravstvo*. 2012;8(32):137-42.
2. Sindik J, Rončević T. Metode zdravstvenog odgoja i promocije zdravlja. Unaprjeđenje zdravlja i zdravstveni odgoj. Dubrovnik: Sveučilište u Dubrovniku;2014: 122-129.
3. Reckinger D, Cross S, Block DE, Josten LV, Savik K. Public Health Competency instrument: Scale Reduction and Reliability of Factors. *Public Health Nurs*. 2013;6(30):566-74.
4. E. While A. Are nurses fit for their public health role? *Int J Nurs Stud*. 2014;9(51):1191-4.
5. Schoenfeld BM, MacDonald MB. Saskatchewan Public Health Nursing Survey Perceptions of Roles and Activities. *CJPH*. 2002;6(93):452-6.
6. Grumbach K, Miller J, Mertz E, Finocchio. How Much Public Health in Public Health Nursing Practice? *Public Health Nurs*. 2004;3(21):266-76.
7. Schaffer MA, Olson Keller L, Reckinger D. Public Health Nursing Activities: Visible or Invisible. *Public Health Nurs*. 2015;6(32):711-20.
8. Thomas BH, Ciliska D, Dobbins M, Micucci S. A Process for Systematically Reviewing the Literature: Providing the Research Evidence for education work of public health nurses arising from differences in the respondents' level of education, age, gender, workplace or length of work experience.

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Public Health Nursing Interventions. *Worldv Evid-Based Nu*. 2004;1(3):176-84.

9. Underwood JM, Mowat DL, Meagher-Stewart DM, Deber RB, Baumann AO, MacDonald MB, i sur. Building Community and Public Health Nursing Capacity: A Synthesis Report of National Community Health Nursing Study. *CJPH*. 2009;5(100):1-11.

10. Issel ML, Ashley M, Kirk H, Bekemeier B. Public Health Nursing Job Description: Are They Aligned with Professional Standards. *J Public Health Man*. 2012;3(18):1-8.

11. Washington States Nurses Association. Public Health and Public Health Nursing. WSNA Executive Committee. 2011. Available at: <https://www.wsna.org/assets/entry-assets/Nursing-Practice/Publications/Position-Paper-on-Public-Health-r2.pdf>. Date of access 8 August 2016.

12. Keller LO, Strohschein S, Lia-Hoagberg, Schaffer MA. Population-Based Public Health Interventions: Practice-Based and Evidence-Supported. *Public Health Nurs*. 2004;4(21):453-68.

13. Keller LO, Strohschein S, Lia-Hoagberg, Schaffer MA. Cornerstones of Public Health Nursing; *Public Health Nurs*. 2011; 28(3):249-260.

14. Zahner SJ, Greeding QB. Public Health Nursing Practice Change and Recommendations for Improvement. *Public Health Nurs*. 2005;22(5):422-28