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Original scientific paper

Changes in the Organizational Structure of Public Health Nurse Service in the Republic of Croatia 1995 to 2012

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A B S T R A C T

Since 1996, after the privatization of primary health care, public health nurse (PHN) in Croatia remained employed within the health center, mainly responsible for the preventive care of the inhabitants from defined catchment's area. Before that time they were part of general practice teams. The main aim of the study was to investigate what are the trends in the organizational structure of PHN service in Croatia, from 1995–2012. The main source was the Croatian Health Service Yearbooks. The obtained results shows that they are college educated and mostly in full-time jobs. The important findings are the lack of nurses and theirs regional differences. In highly demanding societies, with growing numbers of elderly, mental, social and economic problems, it will be worthy to consider the lower standard then 5 100 inhabitants per one PHN. Also, it should be taken into account to invest into the lowering of regional disparities.

***Key words**: public health nurse, organizational structure, primary health care, Croatia*

Introduction

Public health nurse (PHN) service is an integral part of the primary health care (PHC) in Croatia. In the beginning of 1930-th, so cold »helping« nurses (nurse assistant) were involved in helping people with social problems, mostly in health-education activities of pregnant women and mothers with small children. In the beginning of the 1950-th, after the establishment of health centers, they became a member of the team, mainly family doctor's. After the privatization of PHC in 1996, a team-function was under the scarcity[1]. The family doctors/general practitioner (FD) became private, independent contractor with the Croatian Health Insurance Found (CHIF) responsible only for the patients on their list who freely choose them. PHN remain to be employed by the health centers, responsible for the inhabitants at the defined territory (catchments area). Although, they were, by the employment status, separated they mainly remain to function as a team with the FD. The numbers of inhabitants per one PHN has been changed several times (between 4 000 and 5 000 inhabitants). At present one PHN should care for 5 100 inhabitants[2].

The main characteristic of the PHN activities were and still is community orientations and free of charge service in the patient's homes. They provide multifunctional, polyvalent, scope of activities including health promotion, prevention, as well as part of the treatment. They are oriented to the individuals, family, vulnerable group of people as well as to the community as a whole. Introducing of a private home nursing service in Croatian PHC, a role of PHN turned more toward curative care, especially after 2004 contractual obligation[3].

A nursing college education was started in 1953 within the Medical Faculty and continued within the High Nursing College in 1966, as a separate curriculum for PHN. In the beginning it was 2 years curriculum, but in 1999 it started a 3 years curriculum at the bachelor degree[4]. In the beginning, it was possible to start to work

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as highly educated nurse and then to continue with college education. It was also possible firstly to finish college education and then to start working[5]. The new program of two years curriculum at the master degree started in 2007. In 2011 university nurse education was offered with the main aim to allow the academic development of nursing[6].

Until now, a small number of researches on the organizational aspect of PHN in Croatia were published. The most comprehensive was done by Mazzi[7]. This research is cross-sectional covered only the year 2009. The main aim of this study is to investigate the trends in the organizational structure of PHN service in Croatia, from 1995–2012 and to investigate is the number of PHN, their education and regional distribution in accordance to the defined standard.

Material and Methods

The study is based on routinely collected data from two sources. The first is the Croatian Health Statistics Yearbooks, Croatian Institute of Public health, related to home visiting service, in the period 1995 – 2012[8]. The second source was Statistics Yearbooks, Croatian Central Bureau of Statistics, related to the number of inhabitants in Croatia and consecutive Counties[9]. Data on the number of PHN, nurses with full-time and part-time job and number of nurses with college and high education are extracted from the Croatian Health Statistics Yearbooks. Based on this data, calculation was done as percentages related to type of employment and education and the average inhabitants per one PHN by counties and for Croatia in total. In addition, because of great variation by counties, the five Counties with greatest time variation were presented by liner-graph. The same presentation was performed in order to clarify the variations among the counties related to the level of education as well as the average number of inhabitants per one PHN.

Microsoft Office packages (Excel and Access) were used in data mining. The results are presented as a table of frequencies, percentages and time trends by linear graphs.

Results

The number of public health nurses (PHN) slightly increased from 1995–2003, have a stable trend until 2010, and then decreased. The number of PHN with full-time job was relatively stable (from 81% to 85%), but the number of those with part-time job slightly increased. In 2012, it was 763 nurses with full-time and 144 with part-time job. The majority has college education, but still exist PHN with high education, around 10% (Figure 1). The differences between the counties were observed related to the part-time job. A higher percentage of PHN with part-time job was observed in Dubrovačko-neretvanska, Virovitičko-podravska, Vukovarsko-srijemska, Koprivničko-križevačka, Bjelovarsko-bilogorska and Primorsko-goranska county.

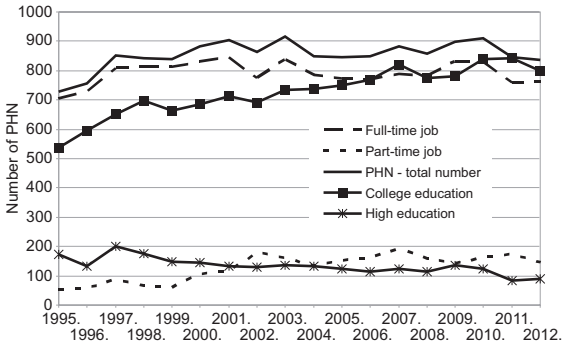

Fig. 1. Trends in number of PHN, full-time, part-time, college and high education, in Croatia, 1995–2012.

During the eighteen years of the follow-up period it was observed the variations in number of PHN in the counties. The largest variation (maximum – minimum) was observed in Splitsko-dalmatinska county (97 nurses) and in Zagrebačka county (46 nurses) and the smallest in Krapinsko-zagorskoa and Međimurska couty (7 nurses) (Figure 2).

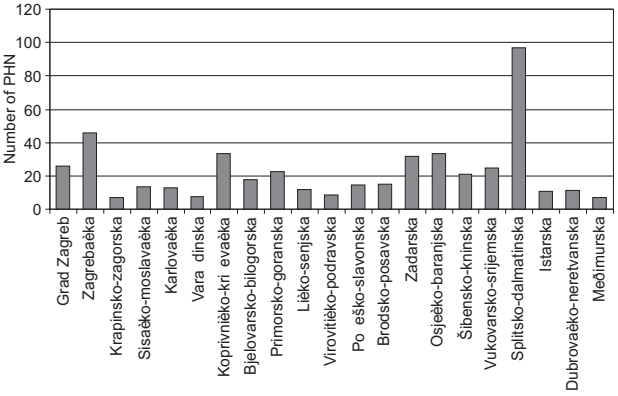

Fig. 2. Variations in the number (maximum – minimum) of PHN by the Croatian counties, observed period 1995–2012.

Besides the variations along the time, a lack of nurses in some counties and surplus in another was also observed. In 2012 a lack of nurses, according to the standard given by the Network[2], was observed in Splitsko-dalmatinska county (56 nurses), Zagrebačka (15 nurses), and Koprivničko-križevačka county (9 nurses). Surplus of nurses was found in Bjelogorsko-bilogorska (9 nurses) and Zadarska county (11 nurses).

Variations of the number of PHN among the counties happened in different years. In Splitsko-dalmatinska county it happened from 1995 – 1999, Osječko-baranjska county in 2001 and 2010, Zagrebačka county between 2008 and 2010 and in Koprivničko-križevačka county in 2003 and 2007 (Figure 3).

In the majority of counties, the percentage of college educated PHN was similar to Croatian average (over 80%), with increase trends in time period. In two counties, Zagreb city and Međimurska county, the percentage of college educated PHN is higher than Croatian average

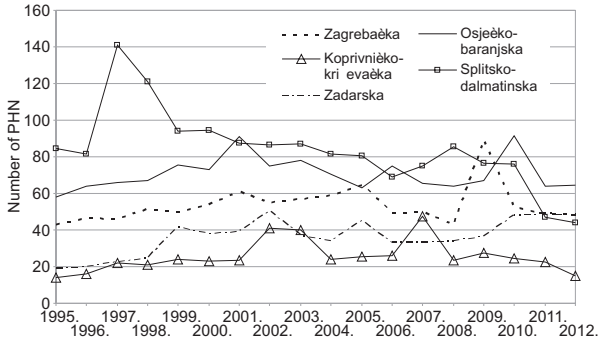

Fig. 3 Trends in number of PHN in Counties with the greatest variation, 1995–2012.

(almost 100%), but in Virovitičko-podravska, Brodsko-posavska and Ličko-senjska county, the percentage is under the average for Croatia, between 35% and 45% until 2010, but after that time the situation is better. In 2012 in those counties the percentage of the college educated nurses was between 58% and 64% (Figure 4).

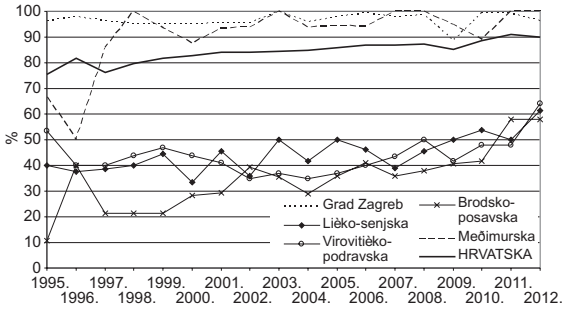

Fig. 4. Percentage of college educated PHN in selected counties in Croatia, 1995–2012.

The average number of inhabitants per one PHN in Croatia decreased through the entire follow-up period, from 6 563 in 1995 to 5132 in 2012. But, again, the variations by counties is substantial, from 17 027 to 4 197 in 1995 and from 6 233 to 3 480 in 2009. In 2012 the difference between the highest and lowest average number ratio of inhabitants per one PHN was from 10 336 and 3542 (Figure 5).

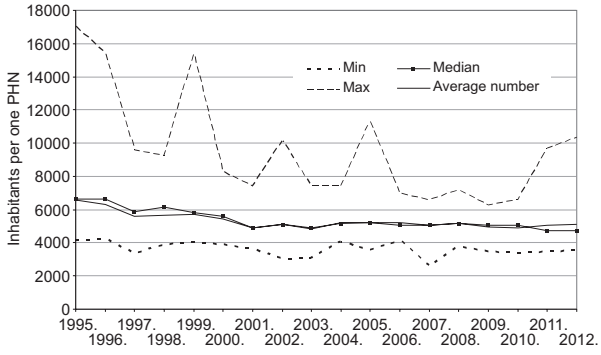

Fig. 5. Variations of inhabitants per one PHN in counties in Croatia, from 1995–2012.

The variations in the average number of inhabitants per one PHN during the follow-up period are even more substantial in some counties. The greatest variations were in Ličko-senjska, Vukovarsko-srijemska and Šibensko-kninska county (Figure 6).

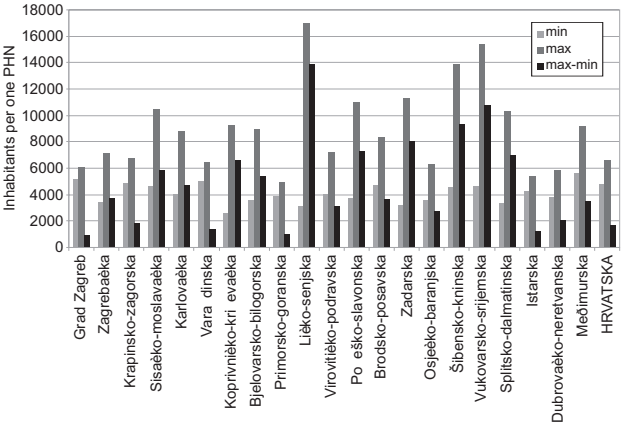

Fig. 6. Variations among the Counties related to the average number of inhabitants per one PHN in Croatia, from 1995–2012.

Discussion

The obtained results show that the number of public health nurses (PHN) slightly increased from 1995–2003, have almost the stable trend until 2010, and then decreased. But, during the almost entire period there is lack of nurses, theirs number is below the standard defined by the Plan[2]. The lack of PHN is measured as an average number of inhabitants per one nurse, one nurse per 5 100 citizens. For example, in 1995 according the standard there should be 938 nurses and there were only 729 employed (209 lacking). According the 2001 Census (number of inhabitants decreased) the situation became better. The calculation for this year shows that there were 33 nurses above the standard. This situation with relatively adequate number of PHN lasted only 3 years, when the number of nurses decreased. So, in 2004 there was again the shortage of 20 nurses, in 2005 24 nurses and in 2012 (due to repeated reduction of inhabitants, 2011 Census) only 5 nurses were lacking. It should be mentioned that the standard of 5 100 citizens per one PHN is very high and could not be taken as adequate. The most difficult problems nurses have in rural areas with low population density with difficult accessibility to communities, families and numerous risk groups (elderly, chronic patients, poor citizens, citizens without public transport, etc.). Very low number of PHN in the beginning of this follow-up period (1995–1996) could be explained as a war consequence. The decrease in the last period is mostly to the economic crisis and the health policy to reduce the public health spending.

The second important problem related to public health nursing is the regional variation of the distribution of the nurses by counties. Not all counties had the same health situation. In 2012 some counties (Splitsko-dalmatinska

and Zagrebačka) had number of nurses bellow the standard and some (Bjelovarsko-bilogorska and Zadarska) above. One of the possible explanations of those findings could be in the local government responsibility for the organization of primary care: the failure to perceive the health service needs and to undertake the necessary measures. Even more, this could be assessed as failure if we take in account that it does not need any local financial investment, because PHN service is reimbursed by CIHI. But, from another side, many restrictive measures were introduced in Croatia during the economic crisis, including restriction in the public service employment, and PHN service might belong to this group. The lack of PHN in Splitsko-dalmatinska county should be, even more seriously, taken in account, because of its geographic specificities, having many islands and villages with small number of inhabitants. Therefore, this county needs to have more PHN then Croatian average. The Zagrebačka county has the similar situation. Many people, due to different reasons, are coming in Zagreb, the capital city, but inhabiting its sub-urban, what is the Zagrebačka county. Population in this county is growing faster than the local policy can follow-up the problem. The problem of under-serving the needs is understandable for some counties with the large war influence. These are Ličko-senjska, Vukovarsko-srijemska and Šibensko-kninska county, which were hardly damaged by the war, including the great variations in the number of inhabitants and consecutively with large variations in the number of nurses.

It is not ease to make comparison with the situation in other countries, because of great differences in function of the health public nursing. In the majority of European countries PHN do not function as polyvalent professionals dealing with broad spectrum of issues, from health promotion to the terminally ill patients. As example, in United Kingdom instead of one public health nurse profession they have several nursing profession caring for different health and social problems[10]. Comparison is partly possible for neighboring countries, such as Slovenia and Serbia[11,12]. In Slovenia, a standard number of inhabitants per one PHN were set up at 2,500 and they are very much included into the home care for chronic patients. The lack of nurses was observed in Slovenia as well, besides the possibility to take a concession[11]. In Serbia, the standard number is 5,000 inhabitants, and they are mostly preventive oriented[12]. Independently of the health system organizations and functioning, PHN is recognized as valuable public health workers in USA, Australia, New Zealand and there are no such big differences in the scope of their work[13–17].

While the number of PHN with full-time job is relatively stable, the number of nurses with part-time job slightly increased. The employment as a part-time job was present in Croatia through decades, as a solution for remote areas. In such cases a nurse perform two jobs, job of practicing nurse (in health center or independent FDs contractor) and job of PHN. This might be a good solution for those counties having many small villages and islands, to follow-up the local needs and possibilities. It is promising for the quality of nursing care that the majority have college education. It is obviously connected with the introduction of such education early in 1966. The introduction of university education in 2011 is even more optimistic[5]. But, around 10% public home visiting nurses still have high education. Policy-makers on higher and local levels should be taken in account this figure, to invest in PHN education in order to achieve the better quality of care[6,15].

The results of this study can serve the policy-makers on different levels to follow-up the population's needs, to take measures to adjust the number of PHN, especially in some counties, and measures to improve the education of PHN. It is also a question related the redefinition of standard number of inhabitants per one PHN. In highly demanding societies, with growing numbers of elderly, mental, social and economic problems disparities[18–22], it will be worthy to consider the lower standard then 5 100 inhabitants per one PHN. Also, it should be taken into account to invest into the lowering of regional disparities.

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TRENDOVI KRETANJA PROMJENA U ORGANIZACIJSKOJ STRUKTURI PATRONAŽNE DJELATNOSTI U RH U PERIODU OD 1995. DO 2012. GODINE

S A Ž E T A K

Nakon privatizacije primarne zdravstvene zaštite 1996. godine patronažna služba je organizirana kao služba doma zdravlja. Prije toga je bila dio službe opće/obiteljske medicine. Patronažna sestra je odgovorna za zdravstvenu zaštitu ljudi određenog područja. Cilj istraživanja je bio istražiti trendove u organizacijskoj strukturi patronažne službe u Republici Hrvatskoj od 1995. do 2012. godine. Glavni izvor podataka su bili Hrvatski zdravstveno-statistički ljetopisi. Rezultati pokazuju da je većina patronažnih sestara višeg stupnja obrazovanja i da postoji trend rasta zapošljavanja više obrazovanih sestara. Nakon 2010. godine udio patronažnih sestara srednješkolskog obrazovanja u Hrvatskoj iznosi oko 10%, ali postoje velike razlike između županija pa je u nekima taj udio nekoliko puta veći. Zaključujemo da u Republici Hrvatskoj nedostaje patronažnih sestara, a u nekim županijama je nedostatak izrazito velik. Većina sestara je zaposlena na puno radno vrijeme. Bilo bi poželjno spustiti normativ od 5100 stanovnika po patronažnoj sestri te smanjiti razlike između županija.