ORIGINAL ARTICLE

Performance of Public Health Nurses and Coverage of the Nursing Care Program by Community Health Centers in Jember, Indonesia

Tantut Susanto[1], PhD; Syahroni Bachtiar[2], BS; Turwantoko Turwantoko[2], BS

[1]Department of Community, Family and Geriatric Nursing, University of Jember, Jember, Indonesia;
[2]The Departement of Health of Jember District, Minishtry of Health, Jawa Timur, Indonesia

Corresponding author:
Tantut Susanto, PhD; Department of Community, Family and Geriatric Nursing, University of Jember, Jl. Kalimantan 37 Jember, 68121, Jawa Timur, Indonesia
Tel: +33 1323450; **Email:** tantut_s.psik@unej.ac.id

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ABSTRACT

Background: Public Healthcare Services (PHCs) provide health care activities, including home visits by public health nurses (PHNs), as part of the Indonesian nursing care program. The present study aimed to evaluate the performance of PHNs and the coverage of the nursing care program by CHCs in Jember (East Java, Indonesia).

Methods: A cross-sectional study based on secondary analysis, obtained from the Health Department of Jember District (East Java, Indonesia), was conducted in 2016. The data included quality improvement initiatives and outcomes of the nursing care program, which had been collected from 50 CHCs in Jember. The performance of PHNs and the coverage of the nursing care program by CHCs were evaluated based on three categories, namely nursing care for vulnerable families, nursing care for community groups, and family self-care empowerment. The data were analyzed using the SPSS statistical software (version 22.0).

Results: The coverage of the nursing care program by PHCs in the category of vulnerable families, community groups, and self-care empowerment was 48.28%, 44.87%, and 49.50%, respectively. The average coverage (low vs. high) by CHCs in the category of vulnerable families, community groups, and self-care empowerment was 50.0% versus 50.0%, 52.0% versus 48.0%, and 52.0% versus 48.0%, respectively. A significant correlation was found between the pre-defined targets and the coverage of the nursing care program by PHCs in vulnerable families ($r=0.488$; $P<0.001$), nursing care in communities' groups ($r=0.316$; $P=0.026$), and empowerment of families' self-care ($r=0.531$; $P<0.001$).

Conclusion: The results showed that 50% of the CHCs did not meet the required program coverage. The performance of PHN to achieve target of PHCs was correlated with the program coverage of PHCs. The competence of PHNs in providing care to the families and the community, particularly in rural areas, should be improved through an integrated training program.

Keywords: Community health center, Indonesia, Nursing care, Public health nurse

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Introduction

Indonesians are facing family growth and developmental issues which could lead to health vulnerability and risk of health problems. Public Healthcare Services (PHCs) provide health care activities, including home visits by public health nurses (PHNs), as part of Indonesian nursing care program. Inadequate implementation by PHNs may have an adverse effect and increase such vulnerabilities and risks. The home visit program was designed to create a partnership between families and PHNs to improve the quality of care through coaching, and at the same time reduce treatment costs.[1, 2] Obviously, correct implementation of the nursing care program is vital in the process of educating and providing guidance to vulnerable families and community groups in order to empower family self-care.

The Millennium Development Goals program in the Indonesian health sector is lagging behind its targets.[3, 4] The prevalence of nutrition is less than 19.6%, stunting still at 37.2%, infants with low weight birth at 10.2%, and breastfeeding of 6 months old infants during the last 24 hours is just 30.2%.[3] The national prevalence rate of infectious diseases (e.g., tuberculosis) is 0.4%. In addition, the national prevalence rate of chronic non-communicable diseases is still quite high (hypertension 25.8%, heart attack and stroke 12.1%, and joint disease 24.7%).[4] Clearly, maternal and child health issues, infectious diseases, and chronic diseases in a community require both comprehensive and sustainable treatment.[3] PHNs are required to have sufficient knowledge of the social determinants of health, have the ability to closely work together with patients, and understand the importance of diversity in order to be able to work toward solving health problems in a community.[5] In addition, they should provide interactional strategies to community members to optimize the impact of their work.[6] Therefore, it is also important to improve the performance of PHCs to reduce health risks and the vulnerabilities of a community.

To provide comprehensive and sustainable treatment to communities, PHCs should facilitate prevention, promotion, and protection programs in support of achieving the Sustainable Development Goals (SDGs). The community support system could promote health care activities and assist support by offering economic, educational and health care training. In turn, PHNs can support and guide the community toward a healthy lifestyle and subsequently refrain from unhealthy behavior. Hence, health promotion programs by PHNs targeting vulnerable groups within the community would encourage those at risk to adopt healthy lifestyle habits.[7]

The nursing care program is an integral part of community-based healthcare. The results of a survey in Indonesia (2015) showed a poor performance by PHNs. This was due to the fact that out of a total of 9,655 CHCs (in 27 of the 33 provinces), only 663 (0.069%) centers managed to implement the nursing care program in accordance with the guidelines. In contrast, based on a survey in 2016, the Jember District Health Office (East Java, Indonesia) implemented the nursing care program in half of the 50 PHCs, which included support by PHNs to vulnerable families, community groups, and the society as a whole.[8] However, these results require further evaluations as to the process of nursing care activities provided by the PHCs, within or outside the centers. Such evaluations would establish the exact role the nurses play in providing community care and subsequently set the next targets to fully achieve the objectives of the nursing care program, as defined by the standards of the Indonesian Ministry of Health.

The main phase of implementing nursing care services, irrespective of the location, is the standard nursing process approach which includes assessment, diagnoses, action plan development, implementation of the nursing care plan, and evaluation.[3] The main challenge in full-scale implementation of the standard nursing process is the lack of knowledge among the nurses in PHCs. This is mainly

caused by unfamiliarity with the community planning program, lack of regular training on the fundamentals of nursing care program, and the absence of a clear description of the duties and responsibilities of PHNs. These shortcomings have had a negative impact on the nursing care program implementation. It has led to inadequate primary nursing care to both the families and the community. Consequently, the incidence and prevalence of diseases within the community have increased.[8] Considering the above, it is necessary to evaluate the nursing care program and to assess the extent to which the program is implemented by PHNs. The assessment would also provide a set of recommendations to PHCs to align the nursing care program with the standard guidelines. The evaluation, based on the input-process-output model, would define the duties and responsibilities of PHNs in accordance with the SDGs. Hence, the present study aimed to evaluate the performance of PHNs and the coverage of the nursing care program by PHCs in Jember (East Java, Indonesia).

Materials and Methods

A secondary analysis of the cross-sectional data, obtained from the Health Department of Jember District (East Java, Indonesia), was conducted in 2016. The data included quality improvement initiatives and outcomes of the nursing care program, which had been collected from 50 PHCs in Jember. The participants were nurses working in these centers. Their performance was compared against the SDGs targets. The inclusion criteria were the program conducted by nurses, the performance report from 2016, and the completeness of the performance reports. The exclusion criterion was incomplete performance reports.

The Performance Reports

Each performance report included three main categories, namely nursing care for vulnerable families, nursing care for community groups, and family self-care empowerment. The category "nursing care for vulnerable families" included nurse home visiting interventions dealing with maternal and child health, nutrition, chronic illness, non-communicable diseases, coaching of the elderly, and care for patients requiring post-hospital discharge follow-up. The category "nursing care for community groups" included coaching of specific community groups such as orphanages, nurseries, retirement homes, and boarding schools. Additionally, it covered health education on occupational health issues such as tuberculosis. The category "family self-care empowerment" included home visits and coaching of people in specific centers such as *Posyandu* (community center for maternal and child services) and *Posbindu* (community care center for the elderly).

Each of the above-mentioned activities was recorded by PHNs and submitted to the corresponding PHCs. At the beginning of each month, the activity reports from the previous month were sent to the Jember District Health Office. At the end of the year, the average value of the achieved performance by PHNs and the coverage of the nursing care program by the CHCs was calculated and divided by the corresponding national targets to obtain the compliance rate (Table 1). The annual report provided a reliable database to evaluate the coverage of the nursing care program across all PHCs in the district.

Data Analysis

The data were analyzed using the SPSS statistical software (version 22.0). A descriptive statistic was used to report quantitative data and frequencies. The Pearson correlation coefficient was used to determine the correlation between the performance targets of PHNs and the program coverage by PHCs. $P<0.05$ was considered statistically significant.

Ethical Approval

The study was approved by the Ethics Committee Review Boards of Indonesia (code: 099/UN25.8/KEPK/DL/2018). The

Table 1: Descriptive statistics of all community health centers (n=50)

Community health center	Nursing care								
	Vulnerable families			Community groups			Self-care empowerment		
	Target (n)	Coverage (n)	Average (%)	Target (n)	Coverage (n)	Average (%)	Target (n)	Coverage (n)	Average (%)
1	1044	279	26.73	5	0	0	522	172	32.96
2	732	533	72.81	4	0	0	366	138	37.7
3	1451	362	24.94	5	2	40	726	280	38.59
4	707	56	7.92	4	1	25	354	56	15.84
5	1567	526	33.58	5	3	60	783	0	0
6	1553	504	32.45	5	3	60	777	494	63.61
7	1666	448	26.89	5	5	100	833	70	8.4
8	1459	97	6.65	5	2	40	729	77	10.56
9	1002	1064	100	5	1	20	501	552	100
10	1046	427	40.81	5	0	0	523	144	27.53
11	745	234	31.39	5	3	60	373	234	62.78
12	1175	980	83.38	6	6	100	588	477	81.17
13	750	160	21.33	4	1	25	375	86	22.94
14	1151	589	51.18	6	3	50	575	337	58.57
15	1623	1090	67.16	4	1	25	811	417	51.39
16	1318	256	19.43	5	2	40	659	235	35.67
17	1699	593	34.91	4	1	25	849	267	31.44
18	1002	77	7.68	5	0	0	501	22	4.39
19	1214	765	63.04	5	3	60	607	431	71.03
20	2028	514	25.35	4	1	25	1014	336	33.14
21	1166	1305	100	5	5	100	583	684	100
22	844	776	91.94	5	1	20	422	310	73.46
23	1079	191	17.71	4	2	50	539	191	35.42
24	1020	800	78.47	6	2	33.33	510	341	66.89
25	1083	829	76.57	5	1	20	541	350	64.66
26	812	733	90.27	4	1	25	406	227	55.91
27	1185	37	3.12	4	1	25	592	37	6.25
28	1362	1103	80.96	6	2	33.33	681	570	83.68
29	1489	816	54.8	4	3	75	744	204	27.4
30	1220	878	71.98	4	2	50	610	480	78.7
31	1521	940	61.81	4	4	100	760	664	87.32
32	734	0	0	4	3	75	367	0	0
33	1837	765	41.64	4	2	50	919	543	59.12
34	1266	915	72.25	4	2	50	633	303	47.85
35	1618	727	44.92	6	5	83.33	809	681	84.16
36	1034	409	39.56	4	3	75	517	58	11.22
37	1037	187	18.04	5	1	20	518	62	11.96
38	1137	300	26.4	4	1	25	568	33	5.81
39	2042	1832	89.7	5	3	60	1021	987	96.65
40	1704	844	49.54	5	4	80	852	698	81.94
41	1638	881	53.78	5	3	60	819	128	15.63
42	1467	906	61.78	4	4	100	733	540	73.64
43	892	674	75.6	4	2	50	446	321	72.01
44	1359	52	3.83	5	3	60	679	36	5.3
45	706	96	13.61	5	1	20	353	79	22.39
46	872	542	62.15	5	2	40	436	299	68.57
47	2287	1342	58.68	5	2	40	1143	987	86.32
48	1154	207	17.94	4	0	0	577	187	32.42
49	1678	973	58	5	0	0	839	336	40.06
50	896	834	93.08	4	2	50	448	448	100
Total	63066	30448	48.28	234	105	44.87	31533	15609	49.5

administrative approval was obtained from the Department of Health District as well as the Community Health Centers. Written informed consent had been obtained by the Health Department of Jember District.

Results

Across all CHCs (n=50), the education level of PHNs, 32 (64.0%), and 5 (10.0%) centers was 13 of diploma in midwifery (26%), 32 of diploma in nursing (64%), and 5 of Bachelor of Science in Nursing (10%), respectively. As shown in Table 1, the average coverage of the nursing care program by CHCs in the category of vulnerable families, community groups, and self-care empowerment was 48.28%, 44.87%, and 49.50%, respectively.

The coverage of the nursing care program by PHCs was scored as low or high levels. Accordingly, the average coverage (low vs. high) in the category of vulnerable families, community groups, and self-care empowerment was 50.0% versus 50.0%, 52.0% versus 48.0%, and 52.0% versus 48.0%, respectively (Table 2).

A significant correlation was found between the targets and the coverage of the nursing care program by PHCs. As shown in Table 3, the correlation for the category of vulnerable families was r=0.48, P<0.001; community groups r=0.31, P=0.026; and self-care empowerment r=0.53, P<0.001.

Discussion

The coverage of the nursing care program by PHCs in the category of vulnerable families, community groups, and self-care empowerment was 48.28%, 44.87%, and 49.50%, respectively. The results were lower than the pre-defined district and national targets. In line with previous studies,[9, 10] the correlation between the targets and the coverage of the nursing care program by PHCs showed that PHNs adequately used their skills to effectively implement the program. In return, the nurses acknowledged that the program helped them to enhance their professional skills and knowledge as well as professional recognition.[11]

In the category "nursing care for vulnerable families", the results showed that PHNs adequately conducted home visits to resolve a variety of health issues. They ensured that the families gained self-reliance skills to deal with issues related to maternal and child health, nutrition, chronic illness care, non-communicable diseases, coaching for the elderly, and care for patients requiring post-hospital discharge follow-up. Our findings

Table 2: The average coverage of nursing care indicators across all centers (n=50)

Nursing care indicators		Coverage n (%)
Vulnerable families	Low	25 (50)
	High	25 (50)
Community groups	Low	26 (52)
	High	24 (48)
Self-care empowerment	Low	26 (52)
	High	24 (48)

Table 3: The correlation between the targets and the coverage of nursing care program by Community Health Centers

Nursing care indicators		Mean±SD	r	P value*
Vulnerable families	Target	1261.42±382.31	0.48	<0.001
	Coverage	608.96±397.89		
Community groups	Target	4.68±0.65	0.31	0.026
	Coverage	2.10±1.45		
Self-care empowerment	Target	630.62±191.09	0.53	<0.001
	Coverage	312.18±244.16		

*Pearson correlation coefficient

were in line with previous studies that reported PHNs facilitated maternal and child healthcare programs, reduced communicable diseases,[1] and changed the nutritional status of families.[2] Considering the positive effect of such periodic and scheduled home visits, it is recommended that these visits are supervised and monitored by field supervisors in each target area.

In the category "nursing care for community groups", the results showed that PHNs implemented empowerment and partnership strategies through coaching and health education to foster group healthcare in the community. Similar findings were reported in previous studies indicating that coaching in Islamic boarding schools improved hygiene and a healthy lifestyle among children,[3] health education improved self-care in patients with leprosy,[5] and health education improved self-care skills[6] and reproductive health in adolescents.[8] These findings suggest the need for a comprehensive nursing care program across all PHCs.

In the category "family self-care empowerment", the results showed that PHNs provided family health care with the goal of improving family integrity and resilience. A previous study also reported that self-care empowerment improved the lives of those with a history of drug abuse.[7] However, nurses should take the level of health literacy in a community into account in order to identify factors that might affect the successful implementation of PHCs targets. It is therefore recommended to optimize family self-care empowerment by focusing on small-scale programs, such as empowering families with children under the age of 5 years, young families, or elderly people.

Defining a set of guidelines on nursing care for both the families and community would improve the performance of PHNs. Guidelines compiled by the District Health Office would help the nurses to identify social factors and improve their own performance in a community. The competence of PHNs in assessing the health condition of the family as well as the community should be improved such that the nurses are able to diagnose in accordance with the health issues existing in the community.[12] The feedback of nurses on local, social, and cultural factors would enable the CHCs to better plan and implement the nursing care program in accordance with the pre-defined targets. It also allows accurate assessment of the PHNs' performance in line with the actual conditions of the targeted community and area.

As regards to the coverage of the nursing care program by PHCs, implementation of the program is still in its early stages. This is due to the fact that the assessment of the program has been solely based on achievements and did not include the actual process of providing nursing care by PHNs. As a direct result, nursing care indicators could not be determined in accordance with the input-process-output model.[13] Furthermore, the coverage of the nursing care program in the category of vulnerable families, community groups, and self-care empowerment is still lagging behind the pre-defined targets. In this regard, a previous study has shown that the contribution from program coordinators was significantly associated with their knowledge and attitude.[14] The report indicated that the nurses' lack of knowledge undermined correct prioritization of the problems and coaching of vulnerable families.[15] In addition, there was no support from the head of the CHC nor did the program coordinator provide guidance and reflection on a reviewed case. These had a negative impact on the performance of PHCs.[16] Hence, to increase the role of PHNs in the nursing care program, supervisors in CHCs should closely work together with both the family and community. Empowering PHNs as well as a paradigm shift in community healthcare should be considered as a strategy for optimal implementation of the nursing care programs.

The main limitation of the present study was the lack of assessing the processes involved in assisting both the families and the community. This is due to the fact that we mainly focused on evaluating the performance

of the PHNs. Future studies should include assessment of the process in order to better evaluate the program as a whole and identify obstacles both in evaluating the performance of PHNs and achieving the coverage targets of PHCs.

Conclusion

In the District of Jember, the performance of PHNs and the coverage of the nursing care program across PHCs, as defined by the Indonesian Ministry of Health, was below the pre-set targets. The results showed that 50% of the PHCs did not meet the required program coverage. The competence of PHNs in providing care to the families and the community, particularly in rural areas, should be improved through an integrated training program. Additionally, obstacles undermining the coverage of the nursing care program across all PHCs should be identified through rigorous monitoring and evaluation by field supervisors.

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Conflict of Interest: None declared.

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