Primary health care evidence and its contribution to health outcomes in selected municipalities and cities in Philippines.

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Abstract

Background: The Alma Ata Declaration in 1978 brought about a paradigm shift in thinking about health. It mobilized a "Primary Health Care (PHC) Movement" of professionals and institutions, governments and civil society organizations, researchers and grassroots organizations that undertook to tackle the politically, socially and economically unacceptable health inequalities in all countries (The World Health Report, 2008). Evidence shows that, across the income spectrum, countries with high-performing primary health care systems deliver better health-outcomes at lower cost, with greater equity and better responsiveness to the need of the populations. However, there is considerable variation in health outcomes between and within countries at similar income level and there is no complete understanding of what makes primary health care system work. More than 30 years after the adoption of PHC in the Philippines, the health status of the country has improved but not as much as in other Southern-Asian countries. It is essential to determine the full extent by which PHC was implemented and how it helped achieve improved health outcomes.

Aim: The purpose of this study is to evaluate the evidence of primary health care (PHC) in selected municipalities and cities in the Philippines. Furthermore, it aims to determine the association between PHC indicators and the selected health outcomes such as life expectancy, infant mortality rate (IMR), under 5 mortality rate, maternal mortality rate and TB prevalence.

Method: The ecological study design and the case study method were used in the study. Secondary data analysis of the existing data from the primary study, "Reconfiguring Primary Health Care within the Context of Universal Health Care" was done, where the municipality was used as the unit of analysis. Data from 16 municipalities and one city were analyzed. These municipalities were from the Cordillera Administrative Region (CAR), Regions IV-B, VI, and XII. Scatterplot diagram was used to describe the association of the PHC indices and the selected outcomes. Data were further analyzed using Spearman's rho and Chi square test.

Results: There is evidence of PHC in all field sites. However, its existence in the areas included in the study is of varying degrees. Generally, the health outcomes of the selected municipalities when compared to national targets are noted to be good. Infant mortality, under 5 mortality, and TB prevalence of most of the municipalities are below national target. Maternal mortality rate when compared to national average is low, which is desirable. However, life expectancy of most municipalities is below the national target. The presence of any of the PHC indices, whether complete or inadequate tend to be associated with good health outcomes. There is an inverse negative association between the health outcome and the PHC indices using the scatterplot diagram. Spearman rho coefficient scores reveal significant associations among PHC indicators such as comprehensiveness $rs=0.683$, $p<0.05$ and continuity of care $rs=0.702$, $p<0.05$ with life expectancy. For TB prevalence, comprehensiveness was also found to be significantly associated $rs=0.535$, $p<0.05$. Using Chi square test, results reveal significant associations between continuity of care and life expectancy $\chi^2(2,N=16)=12.44$, $p<0.05$, first contact and IMR $\chi^2(1,N=17)=3.864$, $p<0.05$, first contact and MMR $\chi^2(1,N=17)=3.864$, $p<0.05$, comprehensiveness and TB prevalence $\chi^2(1,N=17)=4.286$, $p<0.05$, and cost effectiveness and TB prevalence $\chi^2(1, N=17)=11.875$, $p<0.05$.

Conclusion and recommendations: Primary Health Care, whether implemented completely or not remains to be a viable means of improving the health outcomes. However, although associations were found to exist between some PHC indices and the health outcomes, further evidence is needed to confirm the same findings at an individual level. There is a need to focus and work on specific indicators that denote PHC and at the same time are found to be associated with health outcomes, for PHC to genuinely serve its purpose of "raising the level of health in populations".

Keywords: Primary health care, Health outcomes, Phc measurement.

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Introduction

The Alma Ata Declaration in 1978 brought about a paradigm shift in thinking about health. The Alma Ata Conference mobilized a "Primary Health Care (PHC) Movement" of professionals and institutions, governments and civil society organizations, researchers and grassroots organizations that undertook to tackle the politically, socially and economically unacceptable health inequalities in all countries [1-5]. PHC, as it was declared in this monumental conference, refers to essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individual and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination [6].

PHC has remained the benchmark for most countries' discourse on health precisely because the PHC movement tried to provide rational, evidence-based and anticipatory responses to health needs and to these social expectations [5].

Changes have occurred throughout the world in congruence with the changes of the times. These changes cannot be ignored. First is the wide disparity in terms of substantial progress in health among and within countries. Secondly, the nature of health problems is changing in many ways that were not wholly anticipated and the rate unforseen. Thirdly, health systems are affected by today's globalization [5]. Along with these changes, was the implementation of PHC in many countries. It has reportedly changed dramatically [7]. It was observed that health systems have strayed away from the goals of PHC. The failure in most countries to provide even limited packages, coupled with the proliferation of vertical initiatives to tackle specific global health problems, hastened its eclipse. Geographic and financial inaccessibility, limited resources, erratic drug supply, and shortages of equipment and staff have left many countries' primary care services disappointingly limited in their range, coverage, and impact [8].

Despite this eclipse, growing evidence shows that, across the income spectrum, countries with high-performing primary health care systems deliver better health-outcomes at lower cost, with greater equity and better responsiveness to the need of the populations [1-3]. Evidences reveal the effectiveness of PHC on population health in low-income countries. Several analyses provide consistent evidence of the impact of PHC on improved health outcomes [7].

Moreover, in many high-income countries, various attributes of primary care have been shown to exert a positive influence on health costs, appropriateness of care, and outcomes for most of the major health indicators [9].

PHC has been an organizing principle for most of the health systems around the world and has contributed positive strides in the health outcomes of countries with organized PHC systems [5].

Nevertheless, there is considerable variation in health outcomes between and within countries at similar income level and there is no complete understanding of what makes primary health care system work [4].

In the Philippines, before the implementation of PHC, health systems were said to be largely fragmented. Inequities in health were felt and there were efforts exerted to increase access to health services [10]. PHC was considered as an important innovation in the Philippine's health care delivery system. The primary health care approach was adopted in 1979 in the country. Since the early 1970s up to the present, PHC implementation has varied in accordance with governments that come and go that employ the approach. Models of successful PHC implementation as well as those of failed attempts to revolutionize health care delivery abound due to several limiting aspects such as geographic factors, unavailability of health facilities, medical supplies and health human personnel, social barriers, and other indispensable costs in accessing health care (UHC Stock-taking). More than 30 years after the adoption of PHC in the country, the health status in the Philippines has improved but not as much as in other Southern-Asian countries. The analysis of the country's demographic and health aspects show that it is going through a demographic and epidemiological transition, characterized by a decrease in fertility, increase in life expectancy and a substantial change in risk factors. Rapid urbanization, high population density and climate change have begun to influence the emergence and re-emergence of new infectious diseases.

The review of the evidence made by Macinko, et al, [7] on the effectiveness of PHC on population health in low income-countries has shown that several analyses provide consistent evidence of the impact of PHC on improved health outcomes. However, it was a primary recommendation that as national governments and other international organizations move to renew their PHC strategies, greater clarity in specifying PHC in terms that allow for more standardized measurements and investment in rigorous evaluation of PHC effectiveness is essential. It is essential to determine the full extent by which PHC was implemented and how it helped achieve improved health outcomes. This study attempted to evaluate the evidence of primary health care (PHC) in selected municipalities and city in the Philippines. Furthermore, it aims to determine the association between PHC indicators and the selected health outcomes.

Method

An ecological design was carried out using secondary data from the primary study entitled "Reconfiguring Primary Health Care in the Context of Universal Health Care". This aims to describe the strength of association at the population level between exposure and rates of disease occurrence. The study aimed to assess the relationship of Primary Health Care with health outcomes based on the data collected at the population level, that is, at the municipal/city level in the Philippines.

Site or sampling plan

The unit of analysis for this study is at the municipal or city level. The three main Philippine islands were represented. Data sets came from a total of 16 municipalities and one city. These municipalities were from Cordillera Administrative Region (CAR), Regions IV-B, VI, and XII. The city was from Region VI. The sites were identified based their health outcomes and health services delivery performance using the

Local Government Unit Scorecard, geographic and socio-economic characteristics. Purposive selection of the sites was used. The sites that were chosen represent various situations of the health care delivery system in the country. Seventeen sites composed of sixteen municipalities and one (1) city are included in the study. In terms of income class classification, there are seven (7) 1st class municipalities, three (3) 2nd class, two (2) 3rd class municipalities, two (2) 4th class municipalities and one (1) 5th class municipality. Most are classified as rural in terms of geographical characteristics. Nine (9) municipalities are considered as geographically isolated and disadvantaged areas (GIDA), which means that these are communities with marginalized population physically and socio economically separated from the mainstream society. It was also a good mix of high performing and low performing municipalities based on the LGU scorecard. Table 1 shows the different municipalities and their characteristics.

Instrument

The instrument used in the study was the PHC indices and scoring system created by a team of experts in health policy at the University of the Philippines-College of Public Health. The team was headed by Dr. Fely Marilyn Lorenzo. The PHC indices were based on the studies done by the following:Macinko, Starfield and Shi in 2003, WHO in 2006, WHO and Public Health Agency of Canada in 2008 and Deyo in 2000. The scoring system was also result of several discussions, consultations and rigorous review of the literature.

This tool was evaluated to be most comprehensive in terms of evaluating the presence of PHC. The instrument is composed of nine (9) indicators namely;first contact and persistentcare, comprehensiveness, continuity of care and longitudinality, coordination and referral, community participation, universal coverage and access, inter-sectoral action and quality. Each indicator was assigned with weights depending on the degree of importance as a construct for PHC. Each indicator was scored using certain criteria that are appropriate for each indicator.

Data analysis

Secondary data analysis of existing data was employed in the study. SPSS version 20 was used. Quantitative data were analyzed using both descriptive and inferential statistics. In order to determine the association between the PHC indicators and the selected health outcomes the following statistical tests were used: scatter plot, to prelude the association between the two variables, the spearman rho test and chi square test statistics. The level of significance was set at $p<0.05$.

Ethical approval

The primary study, where this present study derived its data sets, applied for ethical clearance using the instruments and research bodies at the Department of Science and Technology-Philippine Council for Health Research and Development. The study protocol was reviewed and approved for implementation by the UP Manila Research Ethics Board (UPMREB). The ethical clearance was granted by the UPMREB. This study on the other hand, was also approved by the Ethics Review Committee of the Far Eastern University.

Results

In this section, the health outcomes for each of the site are presented. The health outcomes included are life expectancy at birth, maternal mortality rate, infant mortality rate, under 5

Table 1. *Profile of selected municipalities and city, Philippines, 2014.*

Area	Population	Income Classification	Geographical Characteristics	GIDA/ Non-GIDA	LGU Scorecard
MT. PROVINCE					
Bontoc	22,835	5th Class Municipality	Rural	GIDA	Low-performing
Sagada	11,127	2nd Class Municipality	Rural	GIDA	Hi-performing
IFUGAO					
Banaue	21,837	4th Class Municipality	Rural	GIDA	Low-performing
Hungduan	9,491	4th Class Municipality	Rural	GIDA	Hi-performing
PALAWAN					
Rizal	46,960	1st Class Municipality	Rural	GIDA	Low-performing
Sofronio Espanola	35,639	1st Class Municipality	Rural	GIDA	Hi-performing
ORIENTAL MINDORO					
Bongabong	70,141	1st Class Municipality	Rural	GIDA	Low-performing
Bulalacao	39,755	3rd Class Municipality	Rural	GIDA	Hi-performing
AKLAN					
Banga	38,063	3rd Class Municipality	Rural	GIDA	Low-performing
Lezo	14,158	5th Class Municipality	Rural	Non-GIDA	Hi-performing
ILOILO					
Oton	82,572	1st Class Municipality	Rural	Non-GIDA	Low-performing
Sta. Barbara	55,472	2nd Class Municipality	Rural	Non-GIDA	Hi-performing
Iloilo City	418,710	1st Class Municipality	Urban	Non-GIDA	Hi-performing
SOUTH COTABATO					
Lake Sebu	87,442	1st Class Municipality	Rural	Non-GIDA	Low-performing
Tampakan	39,525	2nd Class Municipality	Rural	Non-GIDA	Hi-performing
SARANGGANI					
Maasim	59,468	1st Class Municipality	Rural	Non-GIDA	Low-performing
Kiamba	61,058	1st Class Municipality	Rural	Non-GIDA	Hi-performing

mortality rate, and TB prevalence rate. The existence of Primary Health Care was examined in the selected municipalities using the PHC indices and scoring system. Nine (9) indicators were covered in the determination of the existence of PHC in the selected municipalities. The nine (9) indicators are; first contact and persistent care, comprehensiveness, continuity of care and longitudinality, coordination and referral, community participation, universal coverage and access, inter-sectoral action and quality. Each indicator was assigned with weights depending on the degree of importance as a construct for PHC. Each indicator was scored using certain criteria that are appropriate for each indicator.

Health outcomes in the selected municipalities and cities

Table 2 shows the different health outcomes of all the municipalities and city included in the study. The latest life expectancy at birth of most of the municipalities is still below the national target. Only Oton, Sta. Barbara, and Iloilo City have life expectancies above the national target (73.6 years).

In terms of Infant Mortality Rate, majority of the field sites have IMRs below the national target. However, Sagada (21.74) classified as a GIDA municipality has the highest IMR and is followed by Bontoc (18.56). Both municipalities are from the Mt. Province. Lake Sebu of South Cotabato has zero (0) IMR. The same is true with Under 5 Mortality Rate. Sagada (43.48) has the highest Under 5 Mortality and is also above national target. This is followed by Bontoc (24.75). Oton and Lake Sebu have zero (0) Under 5 Mortality.

For Maternal Mortality Rate, Sofronio Espanola (3.38) of Palawan and Iloilo City (2.01) have rates above the national average and the rest have improved outcomes in terms of this aspect since all their MMRs are below national average.

For TB prevalence, Bongabong (583.09) and Bulalacao (441.22) of Oriental Mindoro have TB prevalence rates that are above the national target. All the rest have TB prevalence rate below national target.

Primary health care evidence in selected municipalities and cities, Philippines

There is evidence of Primary Health Care (PHC) in all field sites. However, the existence of PHC in the areas included in the study are of varying degrees. Sagada, a municipality of Mt. Province, a GIDA municipality was noted to have the highest evidence of PHC score (26.55) among all the sites. The rest have "moderate evidence of PHC". Among the municipalities with moderate evidence, differences in the scores were noted. Bulalacao of Oriental Mindoro has the highest score (24.5) while Maaasim of Saranggani has the lowest score (13.55). This is shown in Table 3.

Association of PHC indices and health outcomes

There is weak inverse relationship between the PHC indices to life expectancy, infant mortality rate, under 5 mortality rate, maternal mortality and TB prevalence. Results are shown in the scatter plot diagrams in Figure 1 and Table 4.

Spearman rho coefficient scores reveal significant associations among PHC indicators such as comprehensiveness $rs=0.683$, $p<0.05$ and continuity of care $rs=0.702$, $p<0.05$ with life expectancy. For TB prevalence, comprehensiveness was also found to be significantly associated $rs=0.535$, $p<0.05$.

Table 2. *Health Outcomes of Selected Municipalities and City, Philippines 2014.*

Area	Life Expectancy *71.59	Infant Mortality Rate *17	Under 5 Mortality Rate *25.25	Maternal Mortality Rate **1.17	TB Prevalence *387
MT. PROVINCE					
Bontoc	64.5	18.56	24.75	0	24.45
Sagada	64.5	21.74	43.48	0	8.73
IFUGAO					
Banaue	62.3	7.52	11.28	0	43.35
Hungduan	62.3	0	6.33	0	19.74
PALAWAN					
Rizal	63.8	3.39	1.13	0	80.92
Sofronio Espanola	63.8	3.38	5.63	3.38	44.89
ORIENTAL MINDORO					
Bongabong	67.6	2.56	12.14	0.64	583.09
Bulalacao	67.6	1.23	6.13	0	441.22
AKLAN					
Banga	68	10.93	2	0	170.77
Lezo	68	3.51	7.02	0	363.61
ILOILO					
Oton	73.6	14.04	0	0	-
Sta. Barbara	73.6	1.11	3.33	0	-
Iloilo City	73.6	16.32	23.44	2.01	353.02
SOUTH COTABATO					
Lake Sebu	70	0	0	0	-
Tampakan	70	3.49	8.14	-	299.74
SARANGGANI					
Maasim	72.8	2.27	3.78	0	72.21
Kiamba	72.8	3.53	5.88	1.18	134.57

*Life expectancy/IMR/Under 5/TB Prevalence National Target-National Objectives for Health (NOH), 2011-2016
**MMR–World Bank, 2014.

Table 3. *Primary Health Care Scores of Selected Municipalities/Cities, Philippines, 2014.*

Municipality/City	PHC Score	Verbal Interpretation
Bontoc	22.45	Moderate Evidence
Sagada	26.55	High Evidence
Banaue	19.5	Moderate Evidence
Hungduan	18.3	Moderate Evidence
Rizal	19	Moderate Evidence
Sofronio Espanola	20.7	Moderate Evidence
Bongabong	19.3	Moderate Evidence
Bulalacao	24.5	Moderate Evidence
Banga	14.6	Moderate Evidence
Lezo	21.2	Moderate Evidence
Oton	21	Moderate Evidence
Sta. Barbara	19.2	Moderate Evidence
Iloilo City	16.97	Moderate Evidence
Lake Sebu	17.75	Moderate Evidence
Tampakan	15.8	Moderate Evidence
Maasim	13.55	Moderate Evidence
Kiamba	15.8	Moderate Evidence

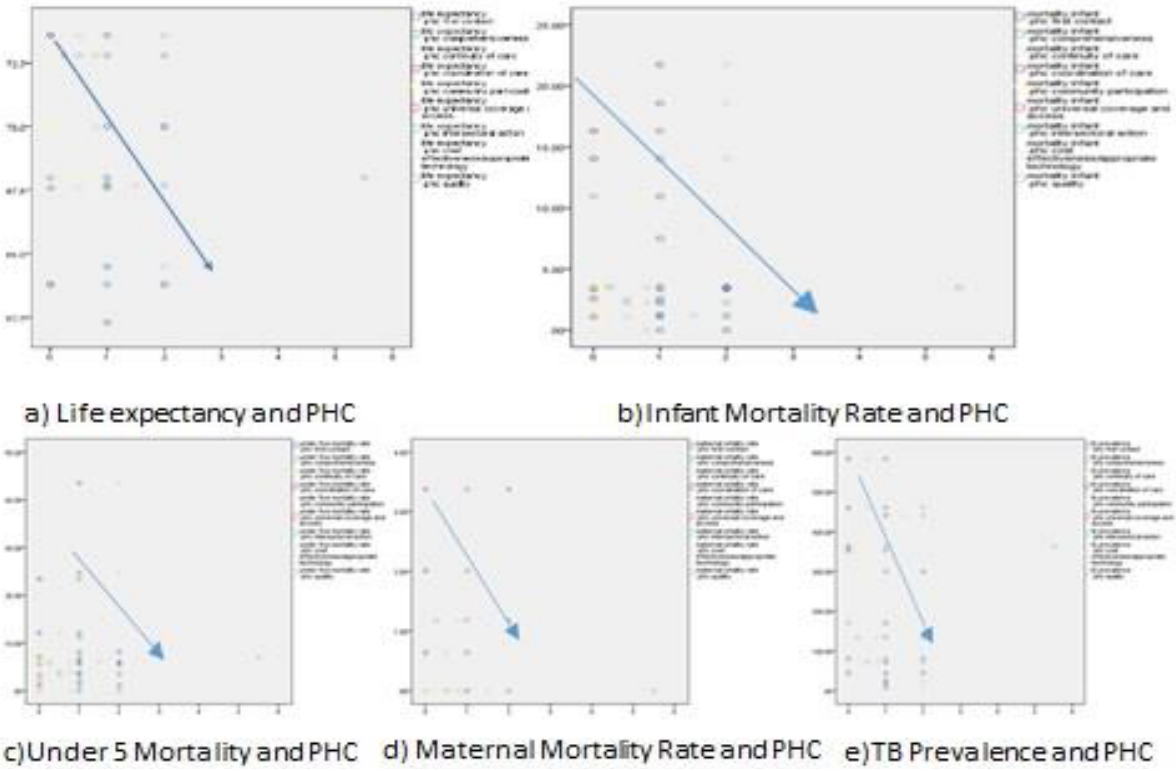

Figure 1. *Scatterplot diagram of the association of the PHC indices with health outcomes a) life expectancy and PHC (rs=0.7) b) infant mortality rate and PHC (rs=0.5) c) under 5 mortality and PHC (rs=0.3) d) Maternal mortality rate and PHC (rs=0.5) e) TB prevalence and PHC (rs=0.5).*

Table 4. *Spearman rho and Chi square test of association between PHC Indices and Health Outcomes in Selected Municipalities and City, Philippines, 2014.*

PHC Indices	Life Expectancy			Infant Mortality Rate			Under 5 Mortality Rate			Maternal Mortality Rate			TB Prevalence		
	rs	X^2	p	rs	X^2	p	rs	X^2	p	rs	X^2	p	rs	X^2	p
First Contact	0.293	0.356	0.551	0.477	3.864	0.049	0.18	0.58	0.446	0.304	3.864	0.049	0.35	1.8735	0.171
Comprehensiveness	0.683	3.200	0.74	0.161	0.44	0.506	0.06	0.07	0.797	0.116	0.443	0.506	0.535	4.286	0.038
Continuity of Care	0.702	12.44	0.002	0.077	4.08	0.253	0.06	0.58	0.901	0.481	4.083	0.253	0.345	1.875	0.599
Coordination of Care	0.429	0.084	0.771	0.167	0.768	0.490	0.236	0.94	0.331	0.182	0.476	0.490	0.13	0.268	0.605
Community Participation	0.089	2.267	0.519	0.325	4.76	0.190	0.025	1.2	0.754	0.118	4.758	0.190	0.31	6.146	0.105
Universal Coverage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Intersectoral action	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost effectivenes/ Appropriate technology	0.295	1.481	0.330	0.148	1.48	0.193	0.401	4.96	0.292	0.053	1.481	0.193	0.33	11.875	0.018
Quality	0	1.481	0.330	0	2.18	0.703	0	0.33	0.988	0.339	2.179	0.703	0.297	4.773	0.311

Using Chi square test, results reveal significant associations between continuity of care and life expectancy $\chi^2(2,N=16)=12.44$, $p<0.05$, first contact and IMR $\chi^2(1,N=17)=3.864$, $p<.05$, first contact and MMR $\chi^2(1,N=17)=3.864$, $p<0.05$, comprehensiveness and TB prevalence $\chi^2(1,N=17)=4.286$, $p<0.05$, and cost effectiveness and TB prevalence $\chi^2(1, N=17)=11.875$, $p<0.05$.

Discussion

The selected municipalities in the study consist of a good mix of urban and rural areas, of diverse geographical and socio-economic characteristics as well as of varying degrees of performance in terms of health outcomes and Primary Health Care. The field sites consisted of eight municipalities classified as "geographically isolated and disadvantaged areas (GIDA). These are the municipalities from CAR and Region 4B. Seven municipalities are categorized as rural areas. These are the municipalities from Region 6 and Region 12. The City of Iloilo, also from Region 6, is classified as an urban area.

Over-all, good health outcomes are noted among the municipalities included in the study. However, differences cannot be overlooked. Life expectancy at birth reflects the overall mortality level of a population. It summarizes the mortality pattern that prevails across all age groups in a given year-children and adolescents, adults and the elderly. Economy, educational environment and nutritional status are found to have impact on life expectancy. Life expectancy at birth continues to increase. However, the latest life expectancy at birth of most of the municipalities is still below the national target.

In terms of Infant Mortality Rate (IMR), IMR in majority of the field sites is below the national target. Bontoc and Sagada, classified as GIDAs have IMRs above the national target. Banga of Region 6 has an IMR above the national target. Improving the quality of life in rural areas, evenly distributing health care delivery services and other social economic factors across the nation, and improving maternal health care, neonatal care, and nutrient intake are said to decrease infant mortality.

Majority of the sites have under 5 mortality rates that are below the national target except for Sagada which has the highest Under 5 Mortality and is also above national target. Oton and Lake Sebu have zero under 5 mortality. Child health is determined by many factors including parental education, access to health services, and income of families. Under-five mortality reportedly is significantly associated with preceding birth interval, family size, birth type, breastfeeding status, source of drinking water, and income of mother.

Maternal mortality remains to be a very challenging health outcome. Sofronio, Iloilo City and Kiamba have rates above the national average and the rest have improved outcomes in terms of this aspect since all their MMRs are below national average.

Bongabong and Bulalacao of Oriental Mindoro and Sta. Barbara of Iloilo have TB prevalence rates that are above the national target. All the rest have TB prevalence rate below national target.

Scores of PHC indices were presented at the municipal level, with high evidence showing in the municipalities of Sagada (Mt. Province), Bontoc (Mt. Province). Moderate evidence of PHC was shown in municipalities of Hungduan (Ifugao), Banaue (Ifugao), Bulalacao (Oriental Mindoro), Bongabong (Oriental Mindoro), Rizal (Palawan), Sofronio Espanola (Manila), Sta. Barbara (Iloilo), Oton (Iloilo), Iloilo (Iloilo), Lezo (Aklan), Banga (Aklan), Tampakan (South Cotabato), Lake Sebu (South Cotabato), Kiamba (Sarangani), Maasim (Sarangani).

In this study, seven (7) out of nine (9) indicators are found to have variations in terms of the extent of presence of the PHC indicators. These are (1) first contact, (2) longitudinality/ continuity of care, (3) comprehensiveness, (4) coordination of care, (5) community participation, (6) cost effectiveness and, (7) quality.

The first five indices are congruent with the indices that Starfield et al. included in the Primary Care Assessment Tool (PCAT) which measured the presence and extent of four (4) cardinal domains and three (3) related domains of primary care and user affiliation with the care source. Starfield et al. defined four cardinal primary care domains: first-contact access, longitudinality, comprehensiveness and coordination. The same authors proposed three additional related domains: family centeredness, community orientation and cultural competence. Those considered by Starfield as cardinal primary care domains are also the indices that were found to be significant in the present study. Cost effectiveness/ appropriate technology and quality, on the other hand, are indicators that were included in the current tool that expanded the parameters by which the existence of PHC in selected municipalities was assessed.

Appropriate technology refers to modes of care that are appropriately adapted to the community's social, economic and cultural development. It highlights the importance of improved knowledge and of on-going capacity building to the design and delivery of health care services. It also means consideration of alternatives to high cost, high tech services. This definition brings also the issue of cost effectiveness as part of appropriate technology. It is posited that appropriate technology is a grass roots approach to technology that builds a strong sense of community and encompasses benefits that span across social, environmental, cultural, economic, and spiritual facets. It is said to be not a one size fits all approach, but rather adapts to best fit the community in which it is developed. Appropriate technology best fits with the community it serves because it is created by the people to meet a need. Therefore, the communities are placed at the center of decision making and create technologies that will best serve their communities in the long term.

A concept and component that transcends all other components is the issue of quality. Quality, defined in many ways, is used both in relation to health care and health systems, and in other spheres of activity. There is also a language of quality, with its own frequently-used terms. WHO, defined quality by identifying six areas or dimensions of quality that should be sought by a health system to achieve improvements. These dimensions require that health care be: effective, delivering health care that is adherent to an evidence base and results in improved health outcomes for individuals and communities, based on need; efficient, delivering health care in a manner which maximizes resource use and avoids waste; accessible, delivering health care that is timely, geographically reasonable, and provided in a setting where skills and resources

are appropriate to medical need; acceptable/patient-centered, delivering health care which takes into account the preferences and aspirations of individual service users and the cultures of their communities; equitable, delivering health care which does not vary in quality because of personal characteristics such as gender, race, ethnicity, geographical location, or socioeconomic status; safe, delivering health care which minimizes risks and harm to service users.

Integrated PHC is understood as services that, among others, provide continuity of care. Results of this study reveal that longitudinality or continuity of care is associated with life expectancy. Longitiudinality refers to care that is focused over time. This refers to care overtime by a single individual or team of health care professionals, as well as to effective and timely communication of health information. (Shi, John Hopkins). A review of the literature on "Effects of Quality on Outcomes in Primary Care" reveal that greater continuity of care is associated with less use of hospitals and emergency departments and lower health care costs.

In terms of infant mortality, first contact was found to be associated with this health outcome. First contact involves assessment of both accessibility of provider or facility and the extent to which the population actually uses the services when a need for them is first perceived. In order to be considered as providing first contact care, the services must be accessible (a structural characteristic) and used by the population each time a new need or problem arises (a behavioral characteristic) [11]. For most sites visited, barangay health workers, midwives and nurses were the first contact of the people that served as access to the health care system. Most informants go straight to the barangay health stations and municipal or city health offices for health concerns. This finding is buttressed by a recent study that analyzed integrated community health projects that had evidence on mortality impact. They have strong community based programs that utilize community health workers who maintain regular contact with households [12].

Tuberculosis deaths and TB incidence rate continue to fall globally. However the rate of decline remained only at 1.5% from 2014-2015, worldwide (World Health Organization, 2016). In this present study, results reveal that among the PHC indicators comprehensiveness is significantly associated with TB prevalence. Comprehensiveness requires that the primary care provided offer a range of services broad enough to meet all common needs in the population, and assessment includes the extent to which the provider actually recognizes these needs as they occur. Coordination requires an information system that contains all health related information; and assessment again includes the extent and the speed with which the information is recognized and brought to bear on patient care. This includes [health promotive], preventive, curative, and rehabilitative services. [13]. Programmatic experience has demonstrated that in addition to addressing the process and content of clinical care, in order to provide truly patient-centered care, it is also necessary to address the context in which the patient experiences illness and receives care. The need to move beyond successes in clinical service delivery to better address TB patients' holistic health and social needs is becoming increasingly apparent (University Research Co). Moreover, inconsistencies related to the holistic care of the sick, the consideration of socio-cultural context of the user with tuberculosis and the weaknesses in continuity of care, and the inadequate monitoring by the network of health care complicate the construction of a network of care and support for tuberculosis patients and their families, contributing to the abandonment of tuberculosis treatment [13-20]. A truly comprehensive care focusing not only on curative care should always be in place to help abate the problem on tuberculosis.

This present study attempted to look into the associations of specific PHC indicators with selected health outcomes. It was recommended that existing or planned cohort studies could begin to incorporate PHC measures through the use of validated instruments such as the Primary Care Assessment Tools. The tool used incorporated the measures in the Primary Care Assessment Tool and was expanded to include indicators that were considered to truly represent PHC.

Results reveal that certain PHC indicators are associated with some of the health outcomes. However, these may be inconclusive results. It may not mean however that all the other indices are not important. A need to look into methodological issues might be necessary. Moreover, while the findings are on a group level, the findings may be different if done in an individual level.

Primary care is said to be imperative for building a strong healthcare system that ensures positive health outcomes, effectiveness and efficiency, and health equity. It is the first contact in a healthcare system for individuals and is characterized by longitudinality, comprehensiveness, and coordination. It provides individual and family-focused and community-oriented care for preventing, curing or alleviating common illnesses and disabilities, and promoting health [11].

Conclusion

There is evidence of Primary Health Care (PHC) in all field sites. However, the existence of PHC in the areas included in the study are of varying degrees. Sagada, a municipality of Mt. Province, a GIDA municipality was noted to have the highest evidence of PHC among all the sites. The rest have "moderate evidence of PHC". Among the municipalities with moderate evidence of PHC, differences in the scores are noted. Bulalacao of Oriental Mindoro has the highest score while Maaasim of Saranggani has the lowest score Favorable.

Generally, the health outcomes of the selected municipalities when compared to national targets are noted to be good. Data on infant mortality, under 5 mortality, and TB prevalence of most of the municipalities are below national target. Maternal mortality rate of different municipalities when compared to national average is also good, which means it is below the national target. However, life expectancy of most municipalities is below the national target.

The presence of any of the PHC indices, whether complete or inadequate tend to be associated with good health outcomes. This is true for IMR, Under 5 Mortality, MMR and TB prevalence. Municipalities with absent or with little presence of PHC have life expectancies below national target.

Significant associations were found between continuity of care and life expectancy, first contact and IMR and comprehensiveness and TB prevalence.

Recommendations

In the light of the findings the following are recommended:

Primary Health Care should be continued considering the changes that the global and the Philippine health system are going through. It reportedly remains to give direction and unity to health system deeply affected by these vicissitudes.

First contact is associated with mortality rate, hence, health facilities and trained health manpower should be all the more accessible to the people.

There is a need to intensify promotive, preventive and rehabilitative services not just curative services as this is seen to improve health outcomes particularly TB prevalence (comprehensiveness).

There is a need to make health services truly comprehensive, intensifying promotive, preventive and rehabilitative services not just curative services as this is seen to improve health outcomes particularly TB prevalence.

Patient focused care should be continued and reinforced. This will prevent occurrence of serious health problems that would need expensive curative care and would contribute to improving living conditions and increasing life expectancy.

A similar study is recommended to be conducted on an individual level to determine if the same findings hold true at this level. The PHC tool used in the study can be reviewed to make it more sensitive. A separate study to further determine its validity and reliability is recommended.

There is a need to focus and work on specific indicators that denote PHC and at the same time are found to be associated with health outcomes, for PHC to genuinely serve its purpose of "raising the level of health in populations".

References

1. Acuin C. Introduction-Universal Health Care for Filipinos: A Proposal. Acta Med Philipp. 2010;44:14-21.
2. Alves Santos R, Mendes Jorge de KR, Virgínio de Oliveira AA, et al. Tuberculosis treatment abandonment and comprehensive health care to patients in the family healthcare strategy. Texto contexto enferm. 2012;21:650-7.
3. Bitton A, Ratcliffe HL, Veillard JH, et al. Primary Health Care as a Foundation for Strengthening Health Systems in Low-and Middle-Income Countries. J Gen Intern Med. 2017;32:566-71.
4. https://link.springer.com/article/10.1057/palgrave.development.1100047
5. Forrest CB, Starfield B. Entry into primary care and continuity: the effects of access. Am J Public Health. 1998;88:1330-36.
6. Friedberg MW, Hussey PS, Schneider EC. Primary Care: A Critical Review of the Evidence On Quality And Costs Of Health Care. Health Aff. 2010;29:766-72.
7. Gillam S. Is the declaration of Alma Ata still relevant to primary health care? Br Med J.2008;336:536-38.
8. Girón S. Primary health care: a necessary, current and profitable investment. Colombia Médica: CM. 2015;46:88-89.
9. https://apps.who.int/medicinedocs/en/m/abstract/Js23098en/
10. Kruk ME, Porignon D, Rockers PC, et al. The contribution of primary care to health and health systems in low- and middle-income countries: A critical review of major primary care initiatives. Soc Sci Med. 2010; 70:904-11.
11. Macinko J, Starfield B, Shi L. The Contribution of Primary Care Systems to Health Outcomes within Organization for Economic Cooperation and Development (OECD) Countries, 1970-1998. Health Serv. 2003;38:831-65.
12. Macinko J, Starfield B, Erinosho T. The Impact of Primary Healthcare on Population Health in Low- and Middle-Income Countries. J Ambulatory Care Manag. 2009; 32: 150-71.
13. Maeseneer JD, Moosa S, Pongsupap Y, et al. Primary health care in a changing world. Br J Gen Pract. 2008; 58:806-09.
14. Perry HB, Rassekh BM, Gupta S, et al. Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 7. shared characteristics of projects with evidence of long-term mortality impact. J Glob Health. 2017;7:010907.
15. http://www.phcperformanceinitiative.org/
16. Shi L. The Impact of Primary Care: A Focused Review. Scientifica. 2012; 2012: 1-22.
17. Starfield B. Primary care and health. A cross-national comparison. JAMA.1991;23: 2268-71.
18. Starfield B. Primary care: an increasingly important contributor to effectiveness, equity, and efficiency of health services. SESPAS report 2012. Gaceta Sanitaria. 2012;26:20-6.
19. https://www.who.int/whr/2008/en/
20. Wang W, Shi L, Yin A, et al. Contribution of primary care to health: an individual level analysis from Tibet, China. Int J Equity Health. 2015; 14:107.

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