ORIGINAL RESEARCH

Factors Affecting Family Planning Service Delivery by Community Health Workers in District 2, Quezon City, Philippines: A Cross-Sectional Study

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Abstract

Background: In the Philippines, family planning (FP) service delivery is an integral part of the roles expected of community health workers who are at the forefront of primary health care delivery, especially among the underprivileged. District 2, Quezon City has the highest concentration of informal settlers in the country.

Objective: To determine the factors that significantly affect FP service delivery by community health workers in District 2, Quezon City, Philippines.

Design: Cross-sectional study.

Setting: All community health workers in the 11 health centers in the District during the period from April to September 2013.

Measurements: The authors collected both quantitative and qualitative data on selected factors found in previous studies to be significantly cor-
related with contraceptive prevalence rate (CPR), the performance target measure for FP service delivery. Bivariate analysis and multiple regression were used to establish associations between these variables and CPR. Thematic clustering was used to extract themes and generate hypotheses on possible reasons for the strength of associations. Because the whole population of community health workers was sampled, confidence intervals and *p*-values were not reported and all associations were assumed to be significant.

Results: Four factors reported moderate level of association with CPR: FP training received ($r = 0.40$), allowances received ($r = 0.55$), satisfaction with incentives ($r_s = 0.46$), and age ($r = -0.44$). Multiple regression showed that these four variables account for 26% of the variation in CPR. For every unit increase in FP training (hours), allowance received (pesos), and rating higher in satisfaction with incentives, there is an increase of 2.85, 0.11, and 2.31 CPR percentage points, respectively. For every decrease in one year of age, there is an increase of 1.07 CPR percentage points.

Limitations: Although the questionnaire was pretested and based on previous studies, survey data is prone to recall bias. We were unable to independently verify information provided by respondants during the conduct of the study. The researchers informally confirmed some of the qualitative data from focus group discussions through interviews with supervisors and local leaders, and observation by the researchers themselves.

Conclusions: The factors that have moderate impact on FP service delivery are FP training,

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allowances, satisfaction with incentives, and age. The authors recommend that the local health department increase training sessions, increase allowances and other benefits, and encourage younger people to become community health workers.

Introduction

As mandated by law, delivery of primary health care in the Philippines has been devolved from the national government to the provincial and city governments as well as the *barangay* (community) level.[1] Health centers in the barangays serve as the basic primary care facilities in the country and are the most commonly utilized health facilities, especially among the underprivileged.[2]

Community health workers (CHW) constitute the majority of the public health workforce, with doctors, nurses, and midwives acting as supervisors. They are recruited as volunteers to assist in the delivery of primary care, e.g. conducting home visits and handling patient records. Included in these responsibilities is the delivery of family planning (FP) services.

Although recruited volunteers are expected to be trained on all of these services before they are accredited as community health workers, many studies have cited that most of them do not receive sufficient training; this has a negative impact on service delivery.[3-7]

The Philippine Department of Health (DOH) uses the modern contraceptive prevalence rate (CPR) as a performance target for FP service delivery; the CPR is defined by the World Health Organization as the "proportion of women of reproductive age who are using (or whose partner is using) a contraceptive method at a given point in time."[8] The target rate has been set at 12.325% of the total population or catchment size of the health center.[9]

All health centers in Quezon City provide all natural and artificial FP services promoted by the DOH, except for permanent sterilization methods such as bilateral tubal ligation (BTL) and no-scalpel vasectomy (NSV), which are offered in partner clinics in the city. Oral contraceptives, injectables, and cycle beads for the standard days method (SDM) are all provided free of charge.[9]

The Quezon City Health Department appoints population program officers (PPO) who are responsible for providing FP services to health centers. Doctors and midwives sometimes fulfill the roles of PPOs in their absence. Doctors also provide guidance on the choice of FP method to use. All new FP users are required to visit them for consultation.
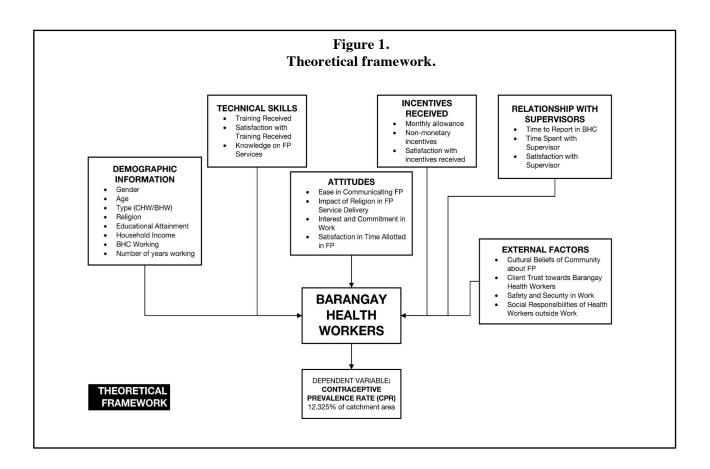
This study aimed to determine factors that significantly affect FP service delivery by community health workers. Specifically, we attempted to offer a profile of a typical community health worker in the district, to uncover any relationships between various factors and the CPR, the target outcome for FP service delivery in the Philippines, to use a multivariate analysis to determine the relative strengths of any associations, and finally, to provide possible reasons for the strength of associations based on qualitative information collected by interviews, observation and focus groups.
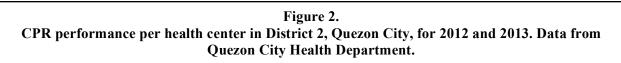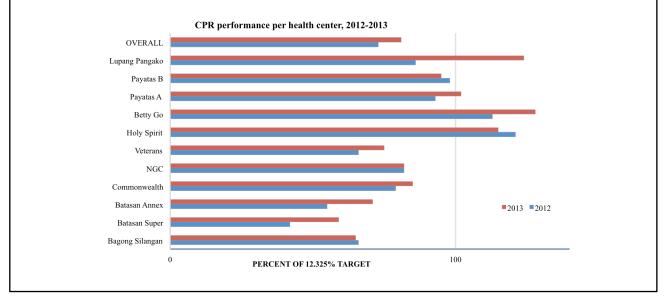
Methods

This study used a cross-sectional research design, and was conducted from April to December 2013. The main quantitative data collection was done using a questionnaire crafted and pretested by the researchers prior to actual assessment. Data on CPR for each health center was provided by the Quezon City Health Department. Qualitative data was gathered through key informant interviews with health worker supervisors and local leaders, and focus group discussions with community health workers and FP users.

All 88 active community health workers from all 11 Quezon City health centers were included in the study. For variables with more than one indicator, an index score was obtained to represent the combination of these variables. Cronbach's α (alpha) was generated among these indicators for a specific variable in order to test the reliability of the index score. Those with Cronbach's α values above 0.70 are considered to be reliable, and then considered as an interval/ratio variable.

Figure 1 shows the theoretical framework used in this study. Bivariate analysis was done between independent variables and CPR as well as between selected independent variables. Qualitative data from interviews and focus group discussions were coded into themes and related to the relationships of various variables to provide possible reasons for strength of association.

Figure 1.
Theoretical framework.

DEMOGRAPHIC INFORMATION
- Gender
- Age
- Type (CHW/BHW)
- Religion
- Educational Attainment
- Household Income
- BHC Working
- Number of years working

TECHNICAL SKILLS
- Training Received
- Satisfaction with Training Received
- Knowledge on FP Services

INCENTIVES RECEIVED
- Monthly allowance
- Non-monetary incentives
- Satisfaction with incentives received

RELATIONSHIP WITH SUPERVISORS
- Time to Report in BHC
- Time Spent with Supervisor
- Satisfaction with Supervisor

ATTITUDES
- Ease in Communicating FP
- Impact of Religion in FP Service Delivery
- Interest and Commitment in Work
- Satisfaction in Time Allotted in FP

EXTERNAL FACTORS
- Cultural Beliefs of Community about FP
- Client Trust towards Barangay Health Workers
- Safety and Security in Work
- Social Responsibilities of Health Workers outside Work

BARANGAY HEALTH WORKERS

DEPENDENT VARIABLE: **CONTRACEPTIVE PREVALENCE RATE (CPR)** 12.325% of catchment area

THEORETICAL FRAMEWORK

Figure 2.
CPR performance per health center in District 2, Quezon City, for 2012 and 2013. Data from Quezon City Health Department.

CPR performance per health center, 2012-2013

OVERALL
Lupang Pangako
Payatas B
Payatas A
Betty Go
Holy Spirit
Veterans
NGC
Commonwealth
Batasan Annex
Batasan Super
Bagong Silangan

■2013 ■2012

0   PERCENT OF 12.325% TARGET   100

Although the questionnaire was pretested and based on previous studies,[3,7,12-14] data collection was prone to recall bias. Aside from the data on modern CPR, community health workers themselves reported all other collected data; there was no other source of secondary data available during the conduct of the study. The researchers informally confirmed some of the qualitative data from focus group discussions through interviews with supervisors and local leaders, and observation by the researchers themselves.

Results and discussion

Contraceptive Prevalence Rate Performance

Figure 2 shows the CPR performance of all health centers in 2012 and 2013. The latest CPR data was used for bivariate analysis. Only Holy Spirit and Betty Go health centers have achieved targets for both 2012 and 2013, while Payatas A and Lupang Pangako health centers achieved 2013 targets. The district failed targets for both years, but there was a 12% increase in achievement overall.

Figure 3 shows that the most commonly used FP methods in the district are oral contraceptives (35%), condoms (18%), and the lactational amenorrhea method (LAM) (15%). Other natural FP methods are barely utilized (<1%).

Profile of a Community Health Worker

A typical community health worker in District 2, Quezon City is female (94%), with a mean age of around 46 years, although she can be as young as 24 or as old as 64. She has been working in the health center for around 10 years; most community health workers work until they retire at age 60. Most are Roman Catholic (85%), reflecting the predominantly Catholic population of the Philippines, but there are also those who belong to non-Catholic church denominations. The worker has either graduated high school (31%) or has received some college education (32%). Although community health workers are volunteers who do not receive a salary, they receive an allowance from the city government. The average monthly allowance is around PhP3,250 (around $70), which contributes around a quarter of a community health worker's average monthly household income of PhP12,220 (around $270).

Technical Skills

The Table on page 17 summarizes correlation coefficient values between technical skills and CPR, as well as other key relationships with selected variables.

Figure 3.
Modern CPR prevalence per method in District 2, Quezon City, for 2013. Data from Quezon City Health Department.

Modern CPR prevalence per method, 2013 (N = 70,486)

Table: Correlation coefficient values: technical skills variables		
Variable	Correlation coefficient with CPR	Correlation coefficient with other variables
Training Received	$r = 0.40$ (moderate)	vs. Knowledge on FP services: $r = 0.16$ (low)
Satisfaction with Training Received	$r_s = 0.03$ (very low)	vs. Training received: $r_s = 0.11$ (low)
Correlation coefficient values – incentives variables		
Allowance received	$r = 0.55$ (moderate)	vs. Satisfaction with incentive received: $r = 0.56$ (moderate)
Satisfaction with Incentives Received	$r_s = 0.46$ (moderate)	vs. Interest and commitment: $r_s = 0.22$ (low)
Correlation coefficient values: relationship with supervisor variables		
Time to Report in Health Center	$r = -0.06$ (very low)	vs. Satisfaction with time allotted for FP: $r = 0.003$ (very low)
Time Spent with Supervisor	$r = 0.03$ (very low)	vs. Satisfaction with supervisor: $r = 0.89$ (very high)
Satisfaction with supervisor (Cronbach's $\alpha = 0.92$)	$r = 0.003$ (very low)	vs. Interest and commitment: $r = 0.48$ (moderate)
Correlation coefficient values: attitudes variables		
Ease in Communication FP	$r_s = 0.02$ (very low)	vs. Religion not affecting FP: $r_s = 0.51$ (high)
Impact of Religion in FP Service Delivery	$r_s = 0.02$ (very low)	
Interest and Commitment (Cronbach's $\alpha = 0.81$)	$r = 0.01$ (very low)	
Satisfaction with Time Allotted for FP Services (Cronbach's $\alpha = 0.84$)	$r = 0.11$ (low)	
Unstandardized Coefficients (B) for Variables with Moderate Correlation with CPR		
Variable (Unit)	B	
Training received (hours)	2.847	
Allowance received (PhP)	0.11	
Age (years)	-1.065	

Average number of hours of training received is 26.72, but there are community health workers who have received no training in FP. Supervisors send only selected community health workers to attend a particular seminar; therefore the training an individual CHW receives is quite unsystematic.

The city government relies on partnerships with pharmaceutical companies and nongovernment organizations (NGO) to provide most of its FP-related training. A positive, moderate correlation between training received and CPR ($r = 0.40$) indicates that community health workers perform better if they are given more training; this has been shown in other studies.[3]

Although training is the main source of information for community health workers, there is only a positive, low correlation ($r = 0.160$) between training received and knowledge of FP. This is because there are other means for community health workers to gain information about FP services; these include information sharing with their colleagues and learning from their supervisors.

Community health workers want to be equipped with sufficient technical knowledge because this impacts on how likely they are to gain the trust of their patients. They also gain confidence in dealing with patients when they have more knowledge, as shown by the high correlation between knowledge in FP and ease in communicating FP ($r_s = 0.69$). Nonetheless, they still find value in the training they receive, as most of them rated their satisfaction with training a five out of five, regardless of how many hours were involved. This may explain why there was no association between length of training and satisfaction.

Some community health workers find their limited training sessions repetitive; they also want training that will provide them with new information. The positive, low correlation with CPR ($r = 0.12$) is probably because of the low variations in the score on the 12-point knowledge exam despite the high variation in CPR.

Incentives Received

The table also summarizes correlation coefficient values between incentives received and CPR, as well as other key relationships with selected variables.

Even though they are volunteers, the workers saw their duties as a community health worker as being a real, wage-earning job. They have regular schedules and do a significant amount of work.

There is a general dissatisfaction among community health workers over the amount of incentives they receive, which they consider as their living wage. Most of them rated their satisfaction with incentives as one out a possible five. Moreover, there is a moderate correlation between allowance and satisfaction with receiving it ($r = 0.56$), allowance and CPR ($r = 0.55$), and satisfaction with incentives received and CPR ($r_s = 0.46$). This means that an increase in allowance was associated with greater satisfaction of barangay health workers with their allowance, as well as increases in the CPR performance scores of their health centers.

CHW also want the nonmonetary incentives that are standard among employees in the Philippines. These include social security benefits such as a pension upon retirement and health insurance. They want paid sick leave when they or their children are sick. Currently, their allowance is reduced by PhP100 (around $2.50) for every day they do not report to the health center.

Community health workers also face various occupational risks, such as the presence of stray animals in their assigned areas, many of whom have not been vaccinated against rabies. Some of them have actually been bitten by dogs, and complain they were not given free treatment.

Despite all the negativity towards their allowances, some workers are grateful that they are even given allowances because they still treat their work as volunteerism, comparing their situation to volunteers who do not receive anything at all. Satisfaction with their allowances does not necessarily affect their interest and commitment, as there is only a positive and low correlation between the two variables ($r_s = 0.22$). Across all focus group discussions, workers constantly reiterate that despite their low allowances and their general dissatisfaction, they try their best to not let this affect the work they need to fulfill. Their supervisors confirm these statements.

Relationship with Supervisor

The Table shows that all variables under Relationship with Supervisor have negligible correlations with CPR.

Community health workers work daily doing home visits. Only some are required to report to the health center during the week.

The workers are also in constant communication with their supervisor, and are very satisfied with them. This is reflected in the high correlation between time spent with supervisor and satisfaction with supervisor ($r = 0.89$). There are formal meetings where the workers meet with their supervisors usually to discuss achieving targets. Regular seminars update the community workers on new health programs and other announcements from the Quezon City Health Department. Supervisors provide personal assistance to community health workers by giving them afternoon snacks, transportation allowance for those who commute, and small loans.

Many of the community health workers rated their supervisor highly (five out of five) on all criteria in the questionnaire (approachable, considerate, helpful, supportive, and flexible with time). An increase in satisfaction translates to better interest and commitment in the work they do, as there is a positive, medium correlation between the two variables ($r_s = 0.48$).

However, supervisors do not tolerate mistakes made by the community health workers. They provide guidance and even reprimand community health workers as needed. Community health workers understand why some of their supervisors are strict, because they all work together to achieve common health targets.

Attitudes

The table shows negligible to low correlations between attitude towards FP and CPR due to the small variation in the responses of these variables.

Difficulty in communicating FP does not come from the community health workers themselves but from the clients who have various misconceptions about FP services. These cultural beliefs include: (1) permanent methods like ligation and vasectomy can negatively affect sexual performance; (2) *coitus interruptus* or "withdrawal" method is a modern FP method; (3) IUDs induce abortion; and (4) LAM is not an effective FP method. These misconceptions usually arise from gossip amongst neighbors who have had unexpected pregnancies when they were using a particular FP method. Supervisors, community health workers, and some FP users all claim that most cases of unexpected pregnancy are because FP users do not correctly follow their instructions.

There are also religious concerns. Although the Catholic Church in the Philippines is vocal against the use of population control measures,[15] community health workers and FP users alike mentioned in focus group discussions that their Catholic faith

does not affect their recommendation or use of FP methods. This is also reflected in the high correlation between the variables ease in communicating FP and religion not affecting FP (r_s = 0.51). Concerns also come from smaller, local denominations.

As mentioned previously, there are many factors that contribute to workers' continued interest and commitment, although this does not necessarily translate to better CPR performance. Nonetheless, clients respect community health workers and their presence in the community.

Multiple Regression Analysis

A multiple regression analysis was conducted on the four variables that had moderate strength of correlation with CPR: training received, allowance received, satisfaction with incentives received, and age.

Statistical analysis shows that the multiple regression coefficient is $r = 0.51$, with coefficient of determination $r^2 = 0.26$ and $p = 0.000$. The four independent variables account for 26% of the variation in CPR.

Unstandardized coefficients (B) were also computed, presented in the table. An increase in age of the community health worker has a negative effect on CPR (decrease of around 1% for every year increase), while others have a positive effect. Lower performing health centers have CPR performance of around 60%. In order to achieve 100% compliance for the following year, possible interventions include additional 14 hours of training or an increase in monthly allowance of around Php 360 (around $8).

Conclusions

In this study we found that the most important factors affecting family planning service delivery by community health workers are: training received, allowance received, satisfaction with incentives received, and age. Most community health workers feel that the trainings they receive are not sufficient and are repetitive. Even if this is so, they gain more authority and confidence with more training sessions attended and knowledge gathered.

Their knowledge on FP services is based on more than what they have learned from training, due to sharing of information and guidance from their supervisors. However, it does not directly impact on how they deliver FP services to their clients because clients have their own apprehensions.

Community health workers are also generally dissatisfied with the allowances they receive, and an increase will definitely increase their satisfaction, as well as possibly impacting on CPR performance. However, low allowances do not negatively affect their interest and commitment. They are generally highly satisfied with their supervisors, and this also translates to better interest and commitment to their work.

Policy recommendations

Training sessions, not simply limited to FP, should be offered regularly and standardized for all community health workers. A one-week course may first be conducted in order to standardize the information that all current community health workers have, regardless of the number of years they have been working. Subsequent one- to two-day annual refresher courses should follow.

Allowances should also be increased, and social security benefits added. There was a city ordinance more than a decade ago that incrementally increased allowances for every year that a community health worker serves. This was never implemented when there was a change in administration.[9] This legislation may be reviewed again for future implementation.

Younger members of the community should be encouraged to serve as community health workers. An increase in allowance may help incentivize their participation. City government may also partner with nursing and midwifery schools to recruit students interested in community health to work as a community health worker for a year first as a form of internship before finishing with their education.

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