HEALTH SYSTEM FUNCTIONALITY AND UNDERWEIGHT PREVALENCE: A VILLAGE-LEVEL CORRELATIONAL STUDY IN THE PHILIPPINE MUNICIPALITY OF TANAUAN, JUNE-DECEMBER 2011

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Abstract

Background

This study focused on village health system functionality as a social determinant of malnutrition. The primary objective of the study was to correlate village health system functionality with underweight prevalence in selected rural villages.

Methods

Twenty-four (24) rural villages (known locally as barangays) in the Philippine municipality of Tanauan in Leyte Province were randomly selected for the study. The study involved interviews of 24 village heads as chairs of their respective barangay health committees (BHCs). To assess village health system functionality, a 12-point scale adapted from the MSH Health Systems Manual, was utilized. Mean functionality scores were then correlated with the prevalence of under-five children who were underweight-for-age as computed from municipal records.
Results

The majority of the villages fared poorly on the functionality scale, with only two earning the label “fully functional”. The barangays performed best in “health training” (mean score 2.83) and worst in “availability of pharmaceuticals” (0.47). The Pearson’s r for health system functionality and underweight prevalence was -0.42 indicating a negative moderate association. The overall coefficient of determination ($r^2$) was 0.184 indicating only 18 per cent of the underweight prevalence is approximated by health system functionality. Among the 12 system functionality indicators, “community participation” was the best predictor of underweight prevalence.

Conclusions

The study demonstrated that the prevalence of underweight children in a community is negatively and moderately correlated with village health system functionality. However, health system functionality only accounts for 18 per cent of the underweight prevalence, which affirms the multifactorial nature of malnutrition.

Key words: malnutrition, underweight prevalence, health systems
Introduction

The study of undernutrition and its correlates remains a relevant enterprise given that malnutrition is the primary underlying cause of child deaths globally. Current estimates suggest that malnutrition is associated with a third of all deaths among children (Rice et al, 2000).

Undernutrition is an outcome of the interplay of social determinants such as household level food security, access to health and sanitation services, and child caring practices (Alderman and Shekar, 2011). This study focused on village-level health system functionality as a correlate of undernutrition.

The World Health Organization (WHO) defines health systems as “all the organizations, institutions, and resources, and people devoted to producing health actions or whose primary purpose is to improve health (WHO, 2010).” Health systems encompass all levels: central, regional, district, community, and household.

A functional health system has six “building blocks”: governance, health financing, health service delivery, human resources, pharmaceutical management, and health information system. A local health system is a health system at the sub-national level. It comprises a well-defined population living in a particular administrative area.

Currently, there are only health systems assessment tools at the country and inter-local health zone (health district) levels, but none at the village level. In 2007, Management Sciences for Health (MSH) and other organizations published Health Systems Assessment Approach: A How-To Manual to guide USAID country representatives in conducting rapid appraisals of country-level health systems only to generate recommendations for health systems strengthening and no score was given to the countries being appraised (Islam, 2007).
Objectives of the Study

This study aimed to:

(1) Perform a quantitative assessment of village health system functionality in selected villages in a Philippine municipality, utilizing a tool modified from the MSH Health Systems Manual and the WHO “building blocks” framework.

(2) Correlate village health system functionality scores with the village prevalence of underweight under-five children.

Materials and Methods

This was a cross-sectional study conducted in rural villages in a Philippine municipality. The villages were selected through cluster random sampling. Data collection techniques consisted of key informant interviews (KII s) of elected village heads (as chairs of their respective VHCs), a performance assessment of village health system functionality using an instrument modified from the MSH Health Systems 20/20 Core Module (Figure 1), and secondary data review of municipal health records. Data collection lasted for seven months, from June to December 2011.

Figure 1. 12-Point Scale for Assessment of Village Health System Functionality

<table>
<thead>
<tr>
<th>HEALTH SYSTEM FUNCTION</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>No existing village health committee (VHC)</td>
<td>No existing VHC but does not meet regularly</td>
</tr>
<tr>
<td>No barangay health plan</td>
<td>With barangay health plan but no evidence of implementation</td>
</tr>
<tr>
<td>No existing health financing scheme</td>
<td>With health insurance indigency program but less than 50% coverage</td>
</tr>
<tr>
<td>No portion of village internal revenue allotment (IRA) allocated for health programs</td>
<td>&lt;5% of village IRA allocated for health programs</td>
</tr>
<tr>
<td>Health service delivery</td>
<td>No community participation in health service delivery</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Never visited by catchment rural health midwife (RHM) in the last 3 months</td>
</tr>
<tr>
<td></td>
<td>No volunteer health workers VHWs</td>
</tr>
<tr>
<td></td>
<td>All current VHWs have no health skills training</td>
</tr>
<tr>
<td></td>
<td>No village pharmacy, no existing FDA-licensed pharmacy</td>
</tr>
<tr>
<td></td>
<td>Virtually no physical access to a village pharmacy or any FDA-licensed pharmacy</td>
</tr>
<tr>
<td></td>
<td>Local health information never collected by VHWs</td>
</tr>
<tr>
<td></td>
<td>Local health information never utilized in health planning</td>
</tr>
</tbody>
</table>

Source: Derived and adjusted for village-level assessment from MSH Health Systems Manual 2008

Variables investigated during the study were:

1. Village-level health system functionality, defined as the mean score accumulated by the village based on the 12-point functionality scale above.

2. Underweight prevalence, defined as the proportion of the village population who are children below 60 months of age and are underweight-for-age. This includes all under-five children whose weights fall between -2 and -3 standard deviations for age (below normal, low [BNL] or underweight-for-age) and all under-five children whose weights fall below -3 standard deviations for age (below normal, very low [BNVL] or severely underweight-for-age).
Pearson’s r and linear regression and the coefficient of determination (r²) between health system functionality and underweight prevalence were computed using Statistical Program for the Social Sciences (SPSS) software.

Institutional consent was secured from concerned heads of agency (municipal mayor and village heads) prior to actual interviews and secondary data collection. Informed consent was sought from each informant prior to face-to-face interview. The objectives of the study as well as the possible risks to person and institutions were fully explained prior to conduct of data collection. No information collected by the investigators in the course of the research was divulged to third parties.

Results

The majority of the villages have existing village health committees (VHCs), although most of them do not meet regularly. The VHC is usually composed of the village head as chair and three other elected village officials as members. It is a committee which focuses mainly on assessment, planning and implementation of health and health-related programs at the village level.

Six out of ten barangays (58.3%) have village health plans with evidence of partial implementation. Only six (25%) of the villages do not have a village health plan. More than half of the villages included in the study have programs addressing the problem of malnutrition such as “Pabasa sa Nutrisyon” (community-based health promotion and nutrition program) and feeding programs.

The majority of the villages implement a social health insurance program for the poor, which usually consists of the village subsidizing poor families’ insurance
premiums. However, nearly two-thirds have less than 50 per cent coverage and about four per cent of villages do not have the said program.

In regard to the health service delivery system, half of the villages included in the study indicated that there is no active community participation in health services provision. Community health planning is only done by the members of the village council.

The study also revealed that rural health midwives do not regularly visit their catchments especially if the villages are far-flung. Most rural midwives go on duty in the village health station only twice a week. Some villages are visited only once a month.

Nevertheless, more than half of the barangays included in the study have a ratio of one VHW for every 200 population. Almost all of the VHWs have undergone at least one health training in their entire length of service. However, owing to the political nature of selection of VHWs, a trained VHW may be replaced by an untrained VHW when a new village head is elected to office.

In regard to pharmaceutical management, the vast majority of villages have no access to essential medicines. Eight out of 10 villages have no village pharmacy. While most of the villages have a trained village pharmacy operator, these barangays have yet to open an outlet given the numerous requirements imposed by the Philippine Department of Health.

Finally, with regard to health information, the majority of villages indicated that VHWs collect health data on a monthly basis. However, the said data is seldom used by the VHC for planning and budgeting. Most of the data collected by the
VHWs are submitted directly to municipal physician. Village officials do not regard these data as a basis for planning and policy-making but only as a municipal requirement that should be complied by the VHWs.

Based on their functionality scores, only eight per cent of the villages have fully functional health systems. Most of the villages (79.2 per cent) only have moderately functional health systems. About 12.5 per cent have non-functional health systems.

The highest mean underweight prevalence was observed in the non-functional category with a mean of 15.3 per cent. The fully functional barangays had the lowest mean underweight prevalence of 3.15 per cent suggesting that the more functional the village-level health systems are, the more likely it is for the underweight prevalence to be low.

Among the specific health system functionality indicators, “health skills training” and “frequency of data collection” corresponded to the highest functionality scores at 2.83 and 2.75, respectively. On the other hand, the villages fared poorly in availability of pharmaceuticals (0.42), community participation (0.67), and IRA allocation (0.79).

Among the functionality indicators, “community participation” had the highest coefficient of determination with underweight prevalence (0.184). On the other hand, it is in the indicator “health skills training” that the barangays earned the highest mean functionality score of 2.83. Apparently, the barangays included in the study performed uniformly well on this indicator. However, its coefficient of determination was only half of the coefficient for “community participation” (0.095). Hence, while the
majority of barangays included in the study fared poorly in “community participation,” the results show that it is the better predictor of underweight prevalence among the health system indicators tested in the study.

The Pearson r is -.429 indicating moderate negative correlation between village health system functionality and underweight prevalence. This was significant at 95% level of confidence. The coefficient of determination was 0.184, which suggests that only 18 per cent of the underweight prevalence is explained by health system functionality. This finding underscores the multifactorial nature of undernutrition.

Conclusions

This study shows that village health system functionality is negatively and moderately associated with the underweight prevalence. The less functional the village health systems are, the more likely it is for the barangay to have a high underweight prevalence. The strongest predictors of underweight prevalence were community participation in health service delivery and health committee functionality. These findings suggest that the important determinants of underweight prevalence at the village level are related more to community participation and local governance. It is recommended that greater local investment be channelled towards increasing community participation in health service delivery and sustaining VHC functionality in order to lower underweight prevalence.

REFERENCES


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