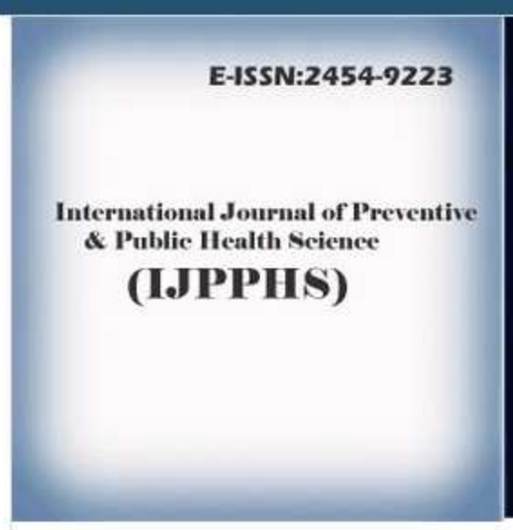

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Original Article

Effect of Empowering Dimension on the Coverage of the Weighing of Children under Five on the *Desa Siaga* in Lumajang District, Indonesia

Mochammad Bagus Qomaruddin[1], Rachmah Indawati[2]

[1]Lecturer, Department of Health Promotion and Behavioral Sciences, Public Health Faculty, Universitas Airlangga, Surabaya, Indonesia, Department of Health Promotion and Behavioral Sciences, Public Health Faculty, Universitas Airlangga, Surabaya, Indonesia, [2]Lecturer, Department of Biostatistics and Population Study, Public Health Faculty, Universitas Airlangga, Surabaya, Indonesia, Department of Biostatistics and Population Study, Public Health Faculty, Universitas Airlangga, Surabaya, Indonesia

ABSTRACT

Introduction: The core of *Desa Siaga* is to empower community to be willing and able to live healthily. In an empowerment community, weighing of children under five runs well.

Purpose: The purpose of this research was to identify the influence of empowerment dimension of alert villages toward toddler's weighing coverage.

Materials and Methods: This study was an observational one using cross-sectional approach. The samples were of 103 villages. The interview used questioners for respondents in every village that was 1 community leader, 1 health cadre, and 1 village midwife.

Results: The results showed that there were five empowerment dimensions affecting the coverage of under five children weighing (D/S); namely, dimensions of community participation, resource mobilization, program management, and capacity building with OR, respectively, 7.033, 0.256, 3.701, 5.049, and 3.841. There were three of those empowerment dimensions affecting under five children weight gain (N/D), i.e., dimensions of community participation, resource mobilization, and program management having OR of 2.558, 2.664, and 2.607.

Conclusion: Three dimensions that affect the weighting of children under five were community participation, resources mobilization, and program management.

Key words: Children, Community, Empowerment

INTRODUCTION

Desa Siaga (village alert) as a form of community empowerment is certainly expected to increase public and family awareness about the importance of health and also awareness of the sign of health risk, especially the health risk of children under five. Monitoring the growth of children under five is very important to be done to determine the existence of growth disorders (growth faltering) early. To identify the growth is faltering, monthly weighing is very necessary. The result of Riskesdas 2010 shows that children under five weighed more than 4 times during the last 6 months nationally is 49.4%, while the percentage for East Java is 61.8%.[1] The result of the coverage of the children under five weighing every month compared with the target number of children under five (D/S) in Lumajang Regency in 2011 is 80%.[2]

Children under five who come to Posyandu mostly (92.5%) get weighing service.[3] The weighing of children under five that has been done is an activity that involves the community, so if the community is more empowered in the field of health, then the weighing activities will be better. Therefore, the empowerment of a village will be able to determine the success of an existing health program, including the weighing of children under five.

Since 2006, the community empowerment policy in the health sector has focused on establishing and developing Desa Siaga as a step stone to Desa Sehat,[4] and in 2010 it has been renewed into Desa Siaga and Kelurahan Siaga Aktif. Desa Siaga

CORRESPONDING AUTHOR:
Mochammad Bagus Qomaruddin,
Kampus C Fakultas Kesehatan Masyarakat, Universitas Airlangga, Jl. Mulyorejo Surabaya 60115 Indonesia.
E-mail: bagusqomaruddin@gmail.com

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or Kelurahan Siaga Aktif is a village where (1) the residents can easily access village health services (Poskesdes) or health facilities in the area, (2) the residents develop health effort based on community resources (UKBM) and carry out community-based surveillance, health emergencies, and disaster management, as well as environmental sanitation so that the citizen apply clean and healthy living behaviors (PHBS).[5] The core of *Desa Siaga* is to empower people to be willing and able to live healthy.[4]

Community empowerment essentially discusses how individuals, groups or communities seek to control their own lives and seek to shape the future according to their will.[6,7] Successful community empowerment will make people empowered and will, in turn, produce community independence. Powerful society is a society that capable of overcoming the problems faced. Community empowerment itself has several dimensions. Based on several theories,[8-12] the dimensions used in this study include community participation, local leadership, organizational structure, resource mobilization, networking with others and program management, information access and capacity building. Indicators of each of these dimensions have been developed along with this research, and the results are used to measure each dimension.

The condition of Desa Siaga in Lumajang District is that 205 villages have all been trained on Desa Siaga and already have Poskesdes. The stratification results show that 13.2% in the Bina stratum, 27.8% in the Tumbuh stratum, 47.8% in the Kembang stratum, and 11.2% in the Paripurna stratum. Lumajang District has the largest percentage of the highest stratum, Kembang and Paripurna, in East Java which is 59.02%. Therefore, this study aims to determine the effect of the empowerment dimension of the children under five weighing coverage in Desa Siaga in Lumajang District.

MATERIALS AND METHODS

This research is an observational research conducted cross-sectional and conducted in Lumajang District, East Java, Indonesia. The unit of analysis of this research is the village. The study population is 205 villages in Lumajang District. The sample of research is 50% of the population that is 103 villages. Respondents in this study in each village were 1 community leader, 1 health cadre, and 1 midwife in the village. Data collection of empowerment dimension used interview method using questionnaire, while coverage rate of monthly weighing of children under five and the children under five weight gain was obtained from secondary data in Ponkesdes or Poskesdes Desa Siaga.

Descriptive data analysis was performed to describe each dimension of empowerment while Chi-square statistical test was used to see the level of significance of the relationship between variables. The final step was logistic regression analysis to look at the risk of each dimension of empowerment toward children under five weighing. The significance level used $\alpha = 0.05$.

RESULTS

The result of the children under five weighing coverage (D/S) is summarized in the following Table 1.

As many as 57 (55.3%) villages have coverage ≥80% and 46 (44.7%) villages have coverage <80%. Meanwhile, the children under five weight gain (N/D) that is 60 (58.3%) has coverage of ≥80%, and 43 (41.7%) villages have coverage <80%.

Table 1: Frequency distribution of empowerment dimension

Empowerment dimension	Category	*n* (%)
Community participation	Moderate	48 (46.6)
	Good	55 (53.4)
Local leadership	Moderate	44 (42.7)
	Good	59 (57.3)
Organizational structure	Moderate	52 (50.5)
	Good	51 (49.5)
Resource mobilization	Moderate	46 (44.7)
	Good	57 (55.3)
Network with other parties	Moderate	55 (53.4)
	Good	48 (46.6)
Program management	Moderate	38 (36.9)
	Good	65 (63.1)
Information access	Moderate	49 (47.6)
	Good	54 (52.4)
Capacity building	Moderate	46 (44.7)
	Good	57 (55.3)

Dimensions that have good categories, above 50%, are the dimensions of community participation, the dimensions of local leadership, the dimension of resource mobilization, the dimensions of program management, the dimensions of information access, and the dimension of capacity building. On the other hand, moderate dimensions which are <50% are organizational structure dimensions and network dimensions with other parties.

The relationship of empowerment dimension and the coverage of children under 5 monthly weighing (D/S) is summarized in the following Table 2.

The dimensions of empowerment that indicate the relationship with the monthly weighing (D/S) are community participation, resource mobilization, program management, and capacity building, while the dimensions of local leadership, organizational structure, network with other parties and access to information do not show any relation to the coverage of children under 5 monthly weighing (D/S).

Furthermore, empowerment dimensions based on Chi-square test results that are not significant are not included in the logistic regression analysis. The results of logistic regression from each empowerment dimension of monthly weighing are in the following Table 3.

Some of the decisions that can be taken from the estimation table of the monthly weighing model (D/S) are:

1. Model eligibility
   a. Chi-square model = 33.878 (d.f = 4) significant = 0.000 indicates that the model consisting of four empowerment dimensions is statistically significant at significance level $\alpha = 0.05$. This means that the model with the four dimensions of empowerment is very important in estimating the coverage of monthly weighing of children under five (D/S).
   b. The Hosmer and Lemeshow test is 14.179 with a significance level of 0.077 ($P > 0.05$) indicating that this model is eligible to explain the monthly weighing coverage (D/S). That is, there is no real difference between the predicted classification and the observed classification.

Table 2: The result of Chi-square of empowerment dimension and the coverage of children under 5 monthly weighing (D/S)

Empowerment dimension	Chi-square	*P* value
Community participation	10.623	0.001
Local leadership	0.004	0.952
Organizational structure	3.321	0.066
Resource mobilization	7.691	0.006
Network with other parties	1.362	0.243
Program management	5.158	0.023
Information access	1.078	0.299
Capacity building	5.639	0.018

Table 3: Estimation of children under 5 monthly weighing model (D/S)

Variable	β	Wald	Significant	Exp(β)
Community participation dimension	1.595	10.571	0.001	4.926
Resource mobilization dimension	1.385	7.885	0.005	3.995
Program management dimension	1.107	4.998	0.025	3.024
Capacity building dimension	1.500	8.767	0.003	4.481
Constant	−2.746	19.934	0.001	0.064

Chi-square model=33.878 (d.f=4), significant=0.000, Hosmer and Lemeshow test=14.179, significant=0.077

Table 4: The Chi-square result of the empowerment dimension and the weight gain coverage of the children under five (N/D)

Empowerment dimension	Chi-square	*P* value
Community participation	4.785	0.029
Local leadership	0.003	0.958
Organizational structure	1.244	0.604
Resource mobilization	6.403	0.011
Network with other parties	3.305	0.069
Program management	5.447	0.020
Information access	0.174	0.676
Capacity building	0.014	0.905

Table 5: The estimation result of children under five weight gain model (N/D)

Variable	β	Wald	Significant	Exp(β)
Community participation dimension	0.939	4.635	0.031	2.558
Resource mobilization dimension	0.980	5.041	0.025	2.664
Program management dimension	0.958	4.592	0.032	2.607
Constant	−1.616	15.131	0.001	0.199

Chi-square model=17.052 (d.f=3), significant=0.001, Hosmer and Lemeshow test=3.176, significant=0.786

2. Logistic regression model D/S
   The models found from the logistic regression analysis are:

The relation of empowerment dimension and weight gain coverage of the children under five weighing is illustrated as follows in Table 4.

The dimensions of empowerment that indicate a relationship with the children under five weight gain (N/D) are community participation, resource mobilization, and program management. While the dimensions of local leadership, organizational structure, network with other parties and access to information and capacity building do not show a relationship with the weight gain of the children under five (N/D).

Furthermore, empowerment dimensions based on Chi-square test results that are not significant are not included in the logistic regression analysis. The result of logistic regression from each dimension of empowerment toward the weight gain of the children under five weighted (N/D) is in the following Table 5.

Some decisions that can be derived from the estimation table of the children under five weight gain (N/D) are:

1. Model eligibility
   a. Chi-square model = 17.052 (d.f = 3) significant = 0.001 indicates that the model consisting of three empowerment dimensions is statistically significant at significance level $\alpha = 0.05$. This means that the model with the three dimensions of empowerment is very important in estimating the coverage of weight gain of children under five (N/D).
   b. The value of Hosmer and Lemeshow test is 3.176 with a significance level of 0.786 ($P > 0.05$). It indicates that this model is eligible to explain the coverage of the children under five weight gain (N/D). That is, there is no real difference between the predicted classification and the observed classification.
2. Logistic regression model N/D
   The models found from the logistic regression analysis are:

$$Y = P(x) = \frac{1}{1 + e^{-\left(\begin{array}{l}-2.46 + 1.595\,\text{community participation} \\ +1.385\,\text{resource mobilization} \\ +1.107\,\text{program management} \\ +1.500\,\text{capacity building}\end{array}\right)}}$$

DISCUSSION

The discussion of successful health empowerment processes will impact on the scope of health programs. The results of this study indicate that the dimension of community participation in Desa Siaga relates to children under 5 monthly weighing coverage (D/S) and coverage of children under five weight gain (N/D). For the villages with less community participation, the risk of D/S below 80% is 4.926 times, and the risk of N/D under 80% is 2.558 times. These results illustrate that good community participation in Desa Siaga can increase the coverage of children under five weighing and weight gain (N/D). Similarly, the results of the study showed that the higher the level of maternal participation in Posyandu (Integrated Service Post) activities, the better the nutritional status of the children under five.[13]

Community participation is an output. Encouraging people's participation as an output does not mean to be an effort to extract the community's resources and power, but rather as an effort to cultivate the capacity of the community to participate.[14] Thus, if the government has the initiative to mobilize community participation, it should not offer just one type of activity or similar activity for everyone, so that people do not feel as if forced or under pressure.[14]

The dimension of resource mobilization is related to monthly children under five weighing (D/S) and weight gain (N/D) coverage. For the villages that the resource mobilization is less good, the risk of D/S under 80% is 3.995 times, and the risk of N/D under 80% is 2.664 times. The ability to mobilize resources on Desa Siaga activities is very important because that is where the potential of the community can be drawn to contribute. This form of contribution may differ from one to another. The community's contribution can be in the form of fund, manpower, and idea.[15] From the mobilization of the community, several resources can be collected including funds (such as social health funds), facilities (such as village ambulances and Poskesdes buildings), and manpower (active cadres) that will mobilize Desa Siaga activities. The ability to mobilize resources will also maintain the continuity of activities so that it will not be dependent on the government only.

The dimensions of program management are related to children under 5 monthly weighing (D/S) and weight gain coverage (N/D). For the villages whose program management is less good, the risk of D/S under 80% is 3.024 times, and the risk of N/D under 80% is 2.607 times. The success of managing Desa Siaga program begins with successful communication among village stakeholders such as village heads, cadres, community leaders, and village midwives. The communication will be intensified if the village community consultation (VCC) is actively conducted because, in this VCC activity, planning activities, monitoring, and evaluation of the success of the program are done. This VCC activity also focuses on problem-solving to any obstacles. For the accountability, the management of this program must provide activities reports and financial reports so that people can really trust the management of Desa Siaga.

The dimension of capacity building is related to monthly children under five weighing coverage (D/S) and for the villages where the capacity building is less good, the risk of D/S under 80%, is 4.481 times. The capacity building done here is training and mentoring.

Ongoing training will be able to provide skills to village midwives, health cadres as well as community leaders as heads of Desa Siaga forums, so they have sensitivity in mobilizing communities. The results of the research in Pesisir Selatan district shows that the dominant factors related to the bad coverage of children under five weighing in Posyandu (Integrated Service Post) were the lack of supervision which is 66.0% and Posyandu service factor.[16] Meanwhile, in East Aceh district, it showed that the ability of cadre and village supervision was the dominant factor in children under five weighing at Posyandu (Integrated Service Post).[17]

Assistance is also needed because, with the assistance especially from the Puskesmas (Community Health Centre), it can make the village stakeholder feel secure in doing their work. Assistance can actually serve as strengthening, protection, and sustaining.[18]

CONCLUSION

Monthly weighing of children under five (D/S) and weight gain (N/D) is more than 80%. There was a significant relationship between each empowerment dimensions with monthly weighing coverage (D/S) and weight gain (N/D): Community participation dimension, resource mobilization dimension, and program management dimension. Meanwhile, capacity building dimension is only related to D/S.

The result of logistic regression shows that the variables that influence the coverage of children under five weighing (D/S) are four dimensions of empowerment that is community participation dimension, resource mobilization dimension, program management dimension, and capacity development dimension with OR that is 4.926, 3.995, 3.024, and 4.481, respectively. While the variables that influence the weight gain coverage are 3 dimensions that are empowerment dimension, the community participation dimension, the resource mobilization dimension, and program management dimension with OR that is 2.558, 2.664, and 2.607.

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