

Effect of Counseling Using Social Capital Implementation on Container Index (CI) of *Aedes aegypti* Larvae

1stHeru Subaris Kasjono

2ndMaria H. Bakri

ABSTRACT-Dengue Hemorrhagic Fever (DHF) still becomes one of community health problems in Indonesia, until now it cannot be overcome and become highest dengue fever case in the world. Even it can be found almost in every province in Indonesia. Mosquito nest eradication program (PSN) that has been conducted, and previous research results is not sufficient to overcome DHF and it cannot improve community participation in PSN program. In order to make it continuous, it is needed to do community social capital mapping before conducting health promotion.

The research aims to determine the effect of counseling using social capital implementation on *Container Indeks* (CI) of *Aedes aegypti* larvae in Panggungharjo, Sewon, Bantul.

The research used quasi experiment with pre and post with control design. It used 60 families as control group and 60 families as the treatment group. The analysis method used was independent t-test.

The research results showed that counseling using social capital implementation and community trust to community leaders as the counselor, in this case was the head of the neighborhood had an influence to *Container Indeks* (CI) of *Aedes aegypti* larvae in Panggungharjo, Sewon, Bantul (p,0.001).

It is suggested that counseling using social capital implementation, especially from people that are trusted by the community can be implemented in PSN program. It can become one of the models in preventing DHF to complete health promotion efforts that have been conducted all this time.

Key words: Container Indeks, Dengue Hemorrhagic Fever, Social Capital, Counseling

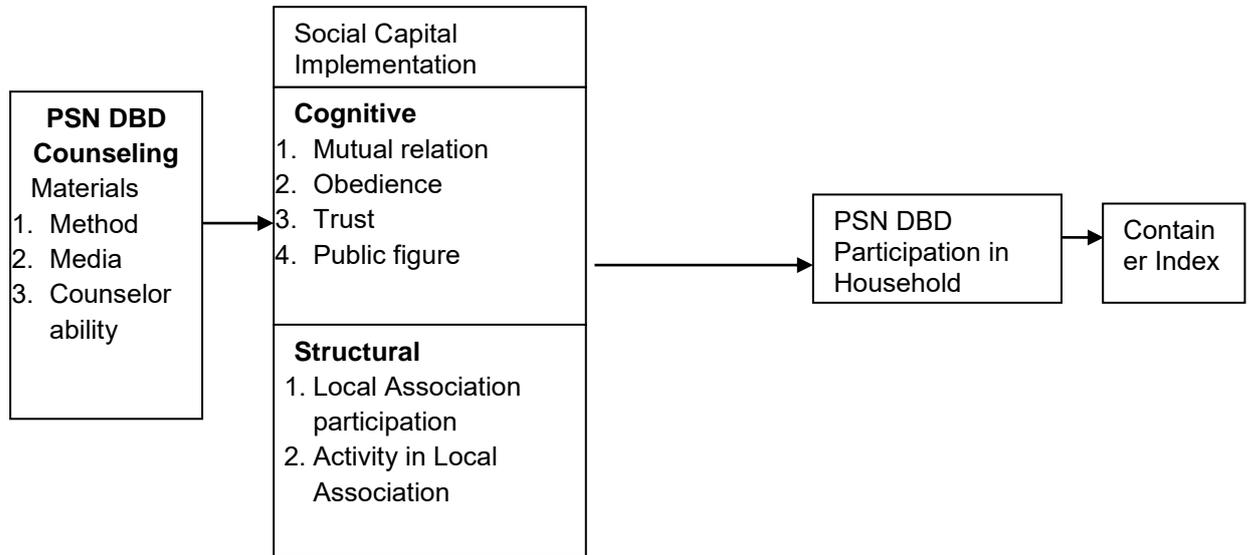
1. INTRODUCTION

Some programs conducted with health promotion approach about Dengue Mosquito Nest Eradication Program (PSN DBD) and previous research results has not been successful in overcome dengue problem and it also cannot improve community participation in eradicating mosquito nests. Whereas, community participation is the main factor in dengue control and they are the only one that can maintain the continuity (WHO, 2006). In order that community can participate in improving and continuing PSN implementation, it is needed to do mapping of social capital in the community before conducting health promotion, PSN program, and other factors that influence community participation (Kasjono, 2016).

The purpose of the research is to know the effects of social capital implementation in health promotion toward community participation in PSN DBD program with *Aedes Aegypti* Container Index (CI) indicator in Panggungharjo, Sewon, Bantul. The research aims to determine the Container Index for PSN DBD in Panggungharjo, Sewon, Bantul before and after treatment.

2. MATERIALS AND METHOD

This study implements social capital factor because based on recent literary review and journals, social capital is an important thing for development in every area, including health. However, social capital in community health research is still rarely found (Eriksson, 2010). Besides, Kasjono research on health promotion model in PSN DBD (2016) stated that social capital has a huge role in community participation for PSN DBD. The conceptual framework can be seen in Picture 1.



Picture 1. Relations among research variables

This research employed quasi-experiment with pre and post with control design. Research location was chosen purposively in Yogyakarta Province and Bantul regency. The research was conducted in Panggungharjo, Sewon, Bantul which was one of the endemic areas of dengue fever. Then, 2 villages were chosen randomly to become research replication area, those were Dongkelan dan Kweni.

The population of the research is all family in Panggungharjo, Sewon, Bantul, while the sample was taken from Dongkelan and Kweni randomly with lottery system. It was obtained 30 families as control group and 30 families as treatment group for each village, so that in this research, 60 families were in the control group and 60 families in the treatment group. The early step of the research was conducting survey of social capital to determine who were trusted by the community the most. The first step was conducting a survey on who will give the counseling related to the dengue fever prevention in the two chosen villages. The result was the Heads of the Household for the treatment group with health promotion. They got explanation first from the researcher. Health promotion without social capital implementation before counseling for control group (Sewon 2 Public Health practitioners). The data were analyzed by comparing CI score before and after the treatment and also in the control area using independent t-test.

3. RESULTS AND DISCUSSION

Social capital survey was only conducted in the treatment group, before conducting a research, social capital was seen from family cognitive social capital and family

structural social capital. Cognitive social capital included level of trust, role of public figure, obedience level, and mutual relation, while structural social capital was seen from the number of local association followed by the family and the family activity in the local association.

Respondents Characteristics

The characteristics of the respondents in the research area, based on population factors included: level of education, gender, formal education related to dengue fever, house ownership, and age. The complete result of the characteristics as below:

Table 1. Frequency distribution of respondents characteristic in treatment and control group in Panggunharjo, Sewon, Bantul 2018.

Characteristics	control		Treatment		.p value
	N	%	N	%	
Level of education:					0.094
a. Kinder garden	2	3.3	2	3.3	
b. Primary School	6	10.0	16	26.7	
c. Junior High School	16	26.7	16	26.7	
d. Senior High School	30	50.0	18	30.0	
e. University	6	10.0	8	13.3	
Gender:					1.00
a. Male	30	50.0	30	50.0	
b. Female	30	50.0	30	50.0	
Formal Education related to Dengue Fever:					0.339
a. Courses	4	6.7	4	6.7	
b. Training	2	3.3	2	3.3	
c. Counseling	24	40.0	18	30.0	
d. None	30	50.0	36	60.0	
House Ownership:					0.479
a. Self ownership	44	73.3	40	66.7	
b. Rent	2	3.3	4	6.7	
c. Parent ownership	14	23.4	16	26.6	
Age :					0.553
a. 30 – 34	6	10.0	3	5.0	
b. 35 – 44	8	13.3	12	20.0	
c. 45 – 54	20	33.3	18	30.0	
d. 55 – 64	19	31.7	20	33.3	
e. 65 – 74	7	11.7	5	8.3	
f. 75 – 84	0	-	2	3.3	

Based on table 1, there was no difference for respondents' characteristics between treatment and control group. It can be concluded that individual characteristics did not affect the Container Index (CI) in this research.

Population characteristics have significant roles related to health problem. This condition can be caused by population characteristics that become strengthen and weaken factors in the efforts of health programs, including dengue eradication context with PSN. If it was seen from the ownership of the house, respondents should pay attention more to the condition of the house and surrounding compared to people who rent the house. However, if it was seen from the respondent age, majority of the respondents was in the

productive age, it was probably it took lots of time to go to the workplace, so they were mostly outside the house. It should be noticed in PSN DBD Program implementation.

Tabel 2. Distribution of the respondents based on Social Capital Score for Treatment

Category	Group	
	N	%
Low	17	28.33
Medium	31	51.67
High	12	20.0
Total	60	100

Source : Primary Data Analysis, 2018

Social capital: overall, the treatment group was included in the medium group with 51.67%. If it was specified based on aspects forming the social capital, it will be explained in table 3 as follows.

Tabel 3. Frequency Distribution of Aspects forming Social Capital

Indicator	Category	Frequency	
		N	%
a. Cognitive Social Capital			
Level of Trust	Very not trust	0	0.0
	Not trust	13	21.7
	Trust	37	61.6
	Very trust	10	16.7
	Total	60	100
Role of Public Figure	Never	0	0
	Sometimes	19	31.67
	Often	36	60.00
	Usually	5	8.33
	Total	60	100
Level of obedience	Very not obey	0	0
	Not obey	0	
	obey	42	70.00
	Very obey	18	30.00
	Total	60	100
Mutual Relation	Very bad	1	0.2
	bad	0	0
	good	41	68.33
	Very good	18	30.00
	Total	60	100
b. Structural Social Capital			
Number of local association followed by family members	really few	0	0
	few	2	3.33
	many	40	66.67
	huge	18	30.00
	Total	60	100
Family activity level in local association	Not active	6	10.0
	Less active	6	10.0
	Active	40	66.67
	Very active	8	13.33
	Total	60	100

Source: Primary Data Analysis, 2018

Social capital from the aspect of family level of trust towards family members, neighbors, population in general, entity, village officials, Head of the household, health workers, public figure, larvae observer, religious figure, health counselor & cadre showed that the overall level of trust in the treatment area was in the level of trust and very trust by 78.3%.

Frequency distribution of family social capital from the aspect of public figure role in PSN DBD showed that it was included in the often and very often category by 68.3%.

Cognitive social capital from the aspect of community obedience to rules in the village environment related to environment health was delivered by religious figure. The obedience to cultural value of *gotong royong* (the spirit of cooperation), *mertidesa* (festival to showing thankfulness), rules or norm for putting garbage in place, and clean Friday for the past six months showed the frequency distribution that 70% of the respondents were obey and 30% were very obey. Based on the family mutual related aspect in treatment area, it can be seen that the frequency distribution was in the good (68.33%) and very good category (30%).

The result of structural social capital survey on the aspect of the number of local association followed by family members showed that 66.67% of the respondents were in the many category and there were only 30% that were in the huge category. The existence of a network allows information or something new become new knowledge. Concept model of building network will make information to change the habits easily (Kornelsen and Grzybowski, 2012). Social networking can also facilitate the service and government program to be accepted. The good acceptance of the services will create a trust and this condition can lead to habits changing in society (Heaney & Israel, 2008). Reviewed from the family participation in the local association, 79.5% were active and 20.5% were less and not active.

Research results showed that the confidence level on social capital mostly was in the trust and very trust category, and more specific they trust the Head of the Household more for each village. It showed that each village has social capital in the trust aspect towards the Head of the Household. They were appointed as the speaker/counselor for the dengue fever prevention counseling.

The social capital of trusting each other caused the emerging of the same problem relation. Hasbullah (2006) stated that one of the important social capital in the society is trust among the population. One of the factors that determine the quality of health promotion is trusted health counselor and being public figure in the society.

Counseling given to the community was an effort to prepare the community in improving resources for participating in dengue fever prevention. Ife (1995) said that "*Empowerment means capacity to determine with the resources their own future and*

participate in affect of their community”. Preparing community or individual with resources, opportunity, skill and knowledge so that community capacity improving therefore able to participate in determining the future. According to Mardikanto (2007), counseling activity is developed to motivate community awareness and participation so that they have ability to help themselves in improving life quality and wealth.

After having counseling based on social capital survey, especially community trust, the researcher conducted a briefing to the Head of the Household in Donkelan and Kweni related to the presented material, however the delivery method was up to them.

The counseling implementation was conducted twice, the CI data before and after were taken from both of treatment and control group.

The result was shown as follows:

Tabel 4.Result of Container Indeks (CI) Mean dan Bivariat Test

Group	Pre (Mean CI ± Sd)	Post (Mean ± Sd CI)	CI Min & Maks (Pre)	CI Min & Maks (Post)	.p value
Treatment	82.77 ± 0.73	82.87 ± 3.37	90 ± 95	40 ± 80	.p=0.00 ^a
Control	75.87± 8.81	96.80 ± 9.29	70 ± 95	70 ± 100	

Information: ^ap <0,001

The minimum mean of Container Index (CI) in the control group was lower than treatment, that was 40 and the maximum score was also higher in the treatment group. After treatment, the mean was higher in the control group (CI)= 96.80, while in the treatment group the increase was not significant from before, that was 82.87%.

After conducting hypothesis test by using Independent t-test, the different between before and after treatment in treatment and control group, it was obtained p value 0.00 (p<<0.001), that means there was a significant effect between treatment and control group.

There was a significant effect of counseling with social capital implementation in improving Aedes Aegypti CI in Panggungharjo, Sewon, Bantul compared to counseling conducted by DBD officers from Public Health Center. It is in line with Rogers (1971) that stated the key of the success of counselor/facilitator are: (1) Willingness and ability to create both direct and indirect relation (through public figure) and benefit recipients, (2) Facilitator willingness and ability to become a mediator between innovation sources,

government, and community, and also (3) facilitator willingness and ability to adjust conducted activity and needs of the government and community.

The research results were in accordance with Anom (2012) research that explained there is an effect of counseling/knowledge management implementation towards social capital in improving the quality of medical record in Pambalah Batung Hospital. Health promotion program that build community development principles do not have main purpose to prevent certain disease or promote certain research result. On the contrary, they create community capacity to improve bases for community to develop (Mittelmark, 1999). This kind of program underlines "the importance of creating environment where individual and community can be empowered since they improve their competence or problem solving ability" (Mittelmark, 1999).

Apart from that, the effort of DBD eradication involved public figure is a very good attempt, since dengue fever disease model is related to community behavior. Hasbullah (2006) stated that public figure role is forming interaction network in community by creating: (a) trust among people, (b) reciprocity, (c) social norm, (d) social value, and (e) proactive action. Counseling is one of health promotion forms in order to change community behavior. This change is important in the attempt of dengue fever vector eradication. Counseling and motivation for the community must be done continuously because the existence of mosquito larva is closely related to community behavior (Depkes RI, 2007). Hadinegoro et al. (2005) stated that one of the important strategies in preventing dengue fever is counseling.

Counseling is an effort to empower client individual potency so it can be independent. Based on the view, it can be concluded that counseling activity is always oriented in behavioral change, also new invention and able to increase awareness and individual confidence (Asngari, 2003). Good counseling program will consider some requirements, such as counseling materials, method, interaction, and counselor ability. Counseling that focuses on behavioral change requires counselor to have good ability so that the role to motivate the community to do changes can be achieved well (Sumardjo, 2008).

Counseling that are delivered by trusted person and become role model in the community can change cognitive changing pattern and community action faster. Community cognitive changes give awareness on the importance of dengue fever prevention. Counseling given to the community is not automatically improving community understanding, it will take time to process the understanding into awareness. Information received by the community to improve the understanding takes time to process the understanding into awareness. This is in accordance with Solso dan Mc.Lin (2002) that stated the information is understood in the short exposure period called perceptual span, which is an early component in information processing. Human

have sensory store that is able to take quick decision based on short exposure on an event. This condition happens naturally. The stimuli we get are not only from sight but also from other sensory.

Counseling given to the community is an effort to prepare community in improving resources so that they can participate in dengue fever prevention. Ife (1995) said, “*Empowerment means capacity to determine with the resources their own future and participate in affect of their community*”. It means that preparing community or individual with resources, opportunity, skill and knowledge so that community capacity improving therefore able to participate in determining the future. According to Mardikanto (2007), counseling activity is developed to motivate community awareness and participation so that they have ability to help themselves in improving life quality and wealth.

CONCLUSION

Public Figure chosen is the Head of the Household as a counselor of PSN DBD program in Panggungharjo, Sewon, Bantul in implementing social capital.

There is no difference in characteristic of treatment and control group in Panggungharjo, Sewon, Bantul.

The Mean of Container Index for PSN DBD program in Panggungharjo, Sewon, Bantul after treatment in the control group is higher, while in the treatment group, the increase is not significant than before.

Counseling using social capital implementation (community trust towards formal and informal public figure) has an effect on Container Index (CI) of *Aedes Aegypti* larvae in Panggungharjo, Sewon, Bantul ($p < 0.001$).

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