MOTHERS’ PARTICIPATION IN COMMUNITY GROUPS, THE QUALITY OF PRENATAL CARE SERVICES, AND INFANT HEALTH: ECONOMETRIC ANALYSIS (Preliminary Finding)

by

Heni Wahyuni, S.E., M.Ec.Dev., PhD
NIDN 0005017502
Farah Amalia Yusmawan (Student No. 11/311372/EK/18192)

UNIVERSITAS GADJAH MADA
December 2014
Objectives
To investigate the effect of mothers' participation in community groups on the utilization of maternal health care services and infant health using econometric analysis.

Methods
Estimate the relationship between mothers' participation and outcome variables (prenatal visit and birth weight), while controlling for the factors that affect mothers' participation in the community groups. The estimation uses community fixed effect to control for unobserved community characteristics. The findings are used to design recommendations for policy decision making.

Lessons Learned
Mothers' participation in an informal women gathering group has a significant impact on the outcomes. The results suggest that trust and sharing of health knowledge from participation is important for increasing the utilization of prenatal care services and birth weight, especially in the context of a lack of access to health information through government channels.

Implications
Advertising/dissemination of the government programs related to maternal and infant health in the community groups will have a multiplier effect-affecting the behavior on the utilization of prenatal care services and infant health. Also, through these community groups, the health providers may share tools to educate women about the treatment of pregnancy. These tools address issues such as where and with whom to get prenatal care services and give birth, any financial support that the mothers can use to access the services, prevention and treatment for high risk or complicated pregnancies, and postpartum treatment and services. Thus, the participation in community groups may offer an effective way for health promoting activities to mothers.

Underlying theory explains that the production of health is a function of choices, such as those related to individual behavior, nutrition, physical activities, and the utilization of medical care. Mothers' participation in community groups is one possible pathway to increasing the utilization of medical care through access to health-related information, and influencing choices and the production of individual health. Kawachi and Berkman (2000) suggest that the mechanism linking participation and health is the promotion of health information. They argue that in more cohesive communities (more trust or beliefs) health information is rapidly diffused and may influence health seeking behavior. Where there are barriers to access health information through government channels and individual education, as commonly happens in the developing world,
individual involvement in a community group may provide the resources necessary to seek health information on medical care and to understand health practitioner’s advice.

In the Indonesian context, participation in community groups has a long standing tradition and mothers’ participation can be seen in many types of community groups. For example, women commonly participate in integrated health activities or posts (Pos Pelayanan Terpadu or Posyandu), women’s informal gatherings (arisan), and a formal woman’s gathering (Pendidikan Kesejahteraan Keluarga or PKK). These types of community participation may enhance trust or strong cohesion among members who are involved in these groups. However, the study of the relationship between participation in these groups and infant health has received little attention in the literature. This includes in Indonesia where the participation in community groups is one of the potential strong networks associated with the access to health services, health information and sharing knowledge.

In this research I investigate whether and to what extent mothers’ participation in community groups in Indonesia translates into benefits in terms of the utilization of maternal health care services, the quality of maternal health care services and the improvement of birth outcomes. The results may contribute to the policy decision making regarding the effects of community participation on the utilization of maternal health care and the production of infant health. In particular, whether the benefits of gaining health knowledge and information from informal education improve maternal health care utilization and infant health in Indonesia.

The results demonstrate that mothers’ participation in arisan has a significant impact on the utilization of prenatal care services and birth weight. These results may suggest that trust and sharing of health knowledge in Indonesia, from participation in arisan, is important for increasing the utilization of prenatal care services and birth weight. Therefore, arisan can be a channel for government to disseminate health related information that may improve mothers’ utilization in prenatal care and in turn improve infant health.

Indonesia Family Life Survey (IFLS) data (http://www.rand.org/labor/FLS/IFLS) is used in this study to analyze the relationship between mothers’ participation in community groups and infant
health. IFLS is a longitudinal survey that began in 1993. The data includes information related to individuals, households, and community facilities; representing welfare, education, socio-economic, demographic, and health information. For the purpose of this study, I use information from IFLS 2000 and 2007 that relates to mothers’ pregnancy history, mothers’ participation in community groups, socio-economic and demographic characteristics of mothers, mothers’ health characteristics, and infant characteristics. The sample for the empirical analysis is restricted to pregnancy outcomes which ended between the years 2002 and 2008 inclusive, using the responses of ever-married women in IFLS4 (2007). The sample size used in this study is 4436 childbirths with reported birth weight.

The literature that investigates the relationship between community participation and health has limitations regarding interpretation of a causal relationship between the two in the absence of a well-designed experiment. In particular, it is difficult to determine whether the relationships between the observed factors represent a causal correlation or whether they are actually a spurious correlation due to unobserved factors. In the context of the relationship between mothers’ community group participation (arisan, Posyandu, and PKK) and infant health, I consider some potential sources of bias that complicate the relationship between those two.

One possibility is if there are characteristics of the mother that affect both the mother’s participation and her utilization of prenatal care and birth weight (outcome variables). For example, mothers who participate in community groups may be advantaged (disadvantaged) with respect to socio-economic background and health condition while a mother’s health condition may also influence her pregnancy and the pregnancy outcomes. If we fail to control for these sources of bias, the resulting estimates will misrepresent the role of participation of social capital. In order to address this issue, I begin the analysis by examining the relationship between a mother’s socio-economic demographic status and health characteristics and the mother’s participation in community groups.

The second potential source of bias arises if there are unobserved community characteristics that are correlated with mothers’ participation and prenatal visits or birth weight. For example, if the leaders in the community where the mother lives effectively promoted hygiene conditions in the community as well as participation in community groups, then the estimated coefficient from the
analysis of group participation and pregnancy outcomes may simply be due to the effectiveness of the hygiene promotion instead of mothers’ participation in the groups. In order to address this issue, I estimate the relationship between a mother’s participation and outcome variables (prenatal visits and birth weight), while controlling for the factors that affect a mother’s participation in the community groups using community fixed effects. Community fixed effect estimates in the outcome equations provide an explanation the relationship between mothers’ participation and the outcomes within communities, controlling for constant characteristics of the community that may influence both mothers’ participation and the outcomes. I thus formulate econometric specifications as follows:

Prenatal care equation:

\[ PC_{ic} = \beta_0 + \beta_1 X_{ic} + \beta_2 Z_{ic} + \beta_3 MP_{ic} + \beta_4 MP_{ic} \times X_{ic} + \beta_5 AP_{ic} + a_c + \epsilon_{ic} \]  

Birth weight equation:

\[ BW_{ic} = \tau_0 + \tau_1 X_{ic} + \tau_2 Z_{ic} + \tau_3 MP_{ic} + \tau_4 MP_{ic} \times X_{ic} + \tau_5 Y_{ic} + \tau_6 PC_{ic} + b_c + \mu_{ic} \]  

Where MP_{ic} is the mother’s participation for child i in community c; X_{ic} is mother’s socio-economic and demographic variables for child i in community c; Z_{ic} is mother’s health endowment variables for child i in community c; AP_{ic} is the availability of prenatal care facilities variables; and Y_{ic} is child i characteristics. The variables a_c and b_c capture all unobserved, time-constant community factors that affect PC_{ic} in equation (1) and BW_{ic} in equation (2) respectively. For the dependent variables, PC_{ic} is the mother’s prenatal care utilization for child i in community c and BW_{ic} is the birth weight of child i in community c. The error terms \epsilon_{ic} and \mu_{ic} represent the idiosyncratic errors which are unobserved factors that change over individual and affect PC_{ic} in equation (1) and BW_{ic} in equation (2). Detailed variable definitions and measurements are presented in appendix table A.

Table 1 describes the community groups’ variables definitions and shows the summary statistics of mothers who participate in those three community groups by socio-economic and