

Quality of Health Care Services

Elan Satriawan

Department of Economics

University of Gadjah Mada



Motivations

- Studies show that the quality of medical care is an important determinant of demand for health care.
- Conditional on change of health-seeking behavior, such quality may also determine the health outcomes.
- Majority of previous studies focus on structural quality
- An important element of quality is skill and knowledge of health workers
- Yet it is still thin in the literature

Potential Topics

- Disparity in quality of health services; correlate it with local budget, political parties, decentralization level, etc.
- Quality as outcomes: impact of decentralization, outcome of tightening competition, etc.
- Quality as determinant: on utilization, on health outcomes, etc.

Reference paper

- Barber and Gertler (Health Policy, 2009)
- Barber et al (Health Affairs, 2007a & 2007b)
- Das and Hammer (J of Dev Econ, 2009)

Barber & Gertler (Health Affairs, 2009)



- **Objective:**
 - Test whether number of health workers in the facility determine quality
 - Whether quality affect child health status
- **Innovations –as paper claimed:**
 - Use different measure of quality
 - Address ‘endogenous program placement’
- **Estimations for two eq used fixed-effect model**
- **Data: IFLS 93 & 97**
 - facility-level data (link # HW to quality of health services)
 - Individual-level (child health outcomes)

Econometrics Model



1. Quality regression:

$$Q = \alpha_0 + \alpha_1 T + \sum_{j=1}^3 \beta_j HW_j + \sum_{j=2}^3 \delta_j NoMD * HW_j + \sum_{k=1}^K \gamma_k SC_k + \mu + \varepsilon$$

2. Height regression:

$$HAZ = \alpha_0 + \alpha_1 T + \beta Q + \delta Pub + \sum_{j=1}^J \theta_j Ch_j + \sum_{k=1}^K \gamma_k SE_k + \mu + \varepsilon$$

Results

Table 2
Fixed effects models explaining the contribution of health staffing to variations in the quality of care, public facilities.

Explanatory variables	Prenatal and child care quality, standard deviation units	
	1	2
Human resources at facility		
Medical doctors (MDs)		
One	0.593 ^{***} [0.204]	0.561 ^{***} [0.203]
Two or more	0.673 ^{***} [0.218]	0.631 ^{***} [0.218]
Nurses		
One	0.069 [0.137]	0.086 [0.136]
Two	0.194 [0.182]	0.201 [0.182]
Three or more	0.369 ^{**} [0.185]	0.368 ^{**} [0.185]
No MD × Ln number of nurses	-0.009 [0.156]	-0.029 [0.155]
Midwives		
One	0.122 [0.148]	0.112 [0.148]
Two	0.131 [0.173]	0.119 [0.172]
Three or more	0.085 [0.174]	0.082 [0.173]
No MD × Ln number of midwives	0.393 ^{**} [0.197]	0.398 ^{**} [0.196]
1997 (=1)	-0.399 ^{**} [0.042]	-0.153 [0.130]
Socioeconomic controls		
	No	Yes

Notes: Coefficients and standard errors reported, $n = 1907$. The omitted category is "0" for all three categories of human resources. In addition to the variables shown, all models include facility factors: inpatient beds, electricity, microscope, facility type. Model 2 includes socioeconomic controls (district GDP, household expenditures, maternal age and education).

^{**} $p \leq 0.05$

^{***} $p \leq 0.01$.

Results



Table 3

Explaining the contribution of health care quality to child length and stunting, 0–36 months.

Explanatory variables	Length in centimeters			Moderate and severe stunting		
	1 <18 months	2 <24 months	3 <36 months	4 <18 months	5 <24 months	6 <36 months
Prenatal and child care quality (SD units)	0.444 [0.256] <i>p</i> =0.08	0.475 [0.231] <i>p</i> =0.04	0.442 [0.189] <i>p</i> =0.02	−0.057 [0.027] <i>p</i> =0.04	−0.049 [0.024] <i>p</i> =0.04	−0.032 [0.019] <i>p</i> =0.10
Year (1997 = 1)	0.582 [0.274] <i>p</i> =0.03	0.272 [0.242] <i>p</i> =0.26	0.372 [0.198] <i>p</i> =0.06	0.012 [0.029] <i>p</i> =0.69	0.032 [0.025] <i>p</i> =0.20	0.018 [0.020] <i>p</i> =0.37
Household, socioeconomic characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Maternal and infant characteristics	Yes	Yes	Yes	Yes	Yes	Yes
3-month age/sex dummy variables	Yes	Yes	Yes	Yes	Yes	Yes
Constant	−44.601 [33.987] <i>p</i> =0.19	−61.051 [31.013] <i>p</i> =0.05	−102.063 [24.519] <i>p</i> <0.01	12.313 [3.581] <i>p</i> <0.01	13.979 [3.223] <i>p</i> <0.01	15.623 [2.480] <i>p</i> <0.01
# Observations	1246	1664	2563	1246	1664	2563

Notes: Coefficients and standard errors reported. Quality score based on the percent of 31 criteria mentioned in the case scenarios measuring the quality of prenatal and child curative care. The index is standardized and expressed as standard deviation units from the mean. All models include household and socioeconomic controls, maternal characteristics, 3-month age/sex dummy variables, community fixed effects, and a dummy variable for 1997. Moderate and severe stunting defined as length for age z-scores less than 2 standard deviations (SD) below the National Center for Health Statistics (NCHS) reference median.

Detail data:

- Child anthropometric?
- Quality of services?
- # of doctors, midwife in facility
- Socio-economic characteristics
- Maternal & infant chars

Potential Extensions

- **Data:**
 - Various health outcomes in IFLS
 - Supplementing IFLS with PODES to capture the actual size of health workers
- **Methods/approach:**
 - As community-level FE might not be sufficient to capture endogenous social take-up, it need identifying variable
- **Use of knowledge to measure quality:**
 - Combining Item Response Theory with Vignette data (Das & Hammer, 2008)



THANK YOU....

Questions & Comments are welcome....