

Conference Paper

"It doesn't Work Here": Addressing Gaps Between Rural and Urban Maternal and Neonatal Outcomes to Enhance the First Thousand Days of Early Life

Gebi Denisa

University of Melbourne

Abstract

This paper aims to assess the disparities between rural and urban of nutrition related maternal and neonatal outcomes, to construct the points of recommendations for policy making in Indonesia and also to determine the applicability of results in other Asia Pacific countries. Secondary analysis of data from The Indonesian DHS (IDHS), using associated indicators between a woman's pregnancy and her child's second birthday to assess the current condition of the gaps by comparing data from the year 2007 and 2012. Teenage pregnancy, early childhood mortality rates and perinatal mortality were respectively four times, two times and two times higher in rural than the urban setting. Antenatal care (ANC) and initial breastfeeding showed a vast improvement in both settings although the component of ANC needs optimisation in rural, informed of signs of pregnancy complication in particular. Given the diverse health needs between rural and urban, these preventable disparities would persist and disturb the implementation of the first 1000 days for the next 15 years if not specifically addressed by reinforcing policy.

Keywords: maternal health; inequalities; the first thousand days; Antenatal Care.

1. INTRODUCTION

A global movement highlighted the importance of investment in the first thousand days of early life particularly in accomplishing Sustainable Development Goals (SDGs) by 2030. Much of the discussion around this drive has focused on combatting under-nutrition and overweightness. Such policy addressing the agitating gaps between maternal and neonatal health both in rural and urban settings only remains marginal.

Getting safe maternal health service is a fundamental human right which is the provision of the service under the responsibility of a country. Poor implementation results in a worsening condition. It is, therefore, set as a sensitive indicator performance of

Corresponding Author:

Gebi Denisa
gdenisa@student.unimelb.edu.au

Received: 21 January 2018

Accepted: 8 April 2018

Published: 17 May 2018

Publishing services provided by
Knowledge E

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Selection and Peer-review under the responsibility of the 2nd International Meeting of Public Health 2016 Conference Committee.

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country's progress in health development. In Indonesia, there has been a remarkable reduction in Maternal Mortality Rate (MMR) and Infant Mortality Ratio. This reduction does not adequately represent the performance across the country. Kusuma et al. (2016) shows in 2015, the MMR is still at 126 per 100,000 live births and the rate was three times higher among the poor than the rich. Inequality between the poor and the wealthy, the urban population and rural population persists.

Those living in a rural area are sicker and at higher risk of adverse outcomes compared with those residing in an urban area. This agitating gap should be narrowed before further effort is taken. It is the unfair and unjust distribution of socioeconomic efforts that often result in a gap between rural and urban health outcomes [10]. A health policy that fails to address the disparities is often referred to as a failing policy. Currently, apart from Sustainable Development Goals (SDGs) that is driving countries, especially Low-Middle Income Countries (LMIC) to reach the listed goals, there is the first thousand days that potentially boost up human development throughout life course approach. This includes from the first day of conception until the second birthday.

Maternal nutritional status determines foetal growth, birth outcomes, as well as health status throughout life course [2]. The urgency of addressing the gaps before further effort conducted is to ensure every single pregnant woman and newborns are leading a flourishing life. Together with Botswana, Equatorial Guinea, Guatemala, Indonesia, Mexico, Panama, Peru, South Africa and Venezuela, Indonesia is still underperforming on child nutrition compared with GDP. At least 151 per 1000 children aged 5 and under died and 40 percent stunting kids.

All of the components of the first thousand days of early life mainly aims at human development enhancement thereby lying on early life nutrition development. Its association with maternal health outcomes is pretty straightforward [12, 14]. Most of the process through a maternal period, it starts from the first day of conception. The quality of mother nutrition intake and ANC visits determine mother and new-borns health status [13]. Therefore, prior to the effective implementation of The First Thousand Days of Early Life, it is important to discuss lesson learned from previous safe motherhood programs by reviewing relevant indicators.

2. METHODS

This is a secondary analysis which was based on Indonesia Demographic and Health Survey (IDHS) Year 2007 and Year 2012. The survey was conducted by Statistics Indonesia "Badan Pusat Statistik"—BPS in collaboration with the National Population and Family Planning Board "BKKBN" and the Ministry of Health (MOH). We compare the results of relevant indicators within the scope of the first thousand days; teenage pregnancy, maternal health, neonatal health, ANC visit, components of ANC. The definition of operational of each variable follows the Codebook of IDHS. The classification of rural and urban is also in line with the guidelines used by IDHS. All statistical analysis were conducted using MINITAB 16. We document all reported results associated with all performing indicator with the maternal health and the first thousand days for descriptive analysis.

3. RESULTS

3.1. Teenage Pregnancy and Motherhood

The definition of both years 2007 and 2012 are the same, "percentage of women age 15-19 who have had a live birth or who are pregnant with their first child, and percentage who have begun childbearing". Table 1 shows the results by settings (rural or urban). In 2012, the gaps between urban and rural seems narrow than 2007. Looking at that the details, however, it is not because the reduction of cases in rural area but the increasing of cases amongst urban population.

TABLE 1: Teenage Pregnancy and Motherhood.

Year	2007		2012	
	Urban (%)	Rural (%)	Urban (%)	Rural (%)
Settings				
Have had a live birth	2.9	9.9	4.5	9.8
Are pregnant with the first child	1	2.8	1.8	3.3
Who have begun childbearing	3.9	12.7	6.3	13.1
Number of women	3,082	3,316	3,698	3,229

3.2. Early Childhood Mortality Rates

Despite the reduction for all categories, the gaps between urban and rural persist, with the same magnitude. Roughly, the cases in rural 2-fold cases in rural areas.

TABLE 2: Early Childhood Mortality Rates.

Year	2007		2012	
	Urban	Rural	Urban	Rural
Neonatal Mortality	18	24	15	24
Post neonatal mortality	12	21	11	16
Infant Mortality	31	45	26	40
Child Mortality	7	16	8	12
Under-five mortality	38	60	34	52

3.3. Perinatal Mortality

Perinatal mortality encompasses stillbirths and early neonatal deaths. There has been a rise in rural between 2007 and 2012. Whereas, urban shows a better outcome. However, there is a big difference in the number of pregnancies 7+ months in 2007 between urban and rural which needs to be considered, 6,913 and 9,765.

TABLE 3: Perinatal Mortality.

Year	2007		2012	
	Urban	Rural	Urban	Rural
Number of stillbirths	78	95	54	127
Number of early neonatal deaths	90	151	112	156
Perinatal Mortality Rates	24	25	20	33
Number of Pregnancies 7+ months	6,913	9,765	8,459	8,670

3.4. Antenatal Care Provider and Components

Despite the variation of ANC providers, the percentage of ANC providers by skilled personals are considerably high in both settings. The absence of ANC with pregnant women is five times higher in rural than urban.

TABLE 4: Antenatal Care Provider and Components.

Year	2007		2012	
	Urban (%)	Rural (%)	Urban (%)	Rural (%)
Settings				
Doctor	2	1.9	1.2	1.7
Obstetrician	20.8	5.7	27.9	10.2
Nurse or Midwife	74.9	82.5	69.1	81.3
Traditional Birth Attendant	0.6	3.4	1	1.4
Other	0.2	0.4	0.3	0.5
Missing	None	None	0.5	0.4
No ANC	1.5	6.1	0.9	4.5
Percentage receiving ANC from skilled providers	97.7	90.1	98.2	93.3
Essential Components				
Informed signs of pregnancy complications	43.3	35.4	57.1	48.7
Took iron tablets or syrup	84	72.5	79.5	71.5
Number of Women	5,897	8,145	7,358	7,424

4. DISCUSSION

This paper aims to assess the disparities between rural and urban of maternal and neonatal outcomes and to construct the points of recommendations for policy making in Indonesia prior to the implementation of The First Thousand Days. There are three crosscutting issues: Iron-folate Supplementation, Breastfeeding, and Complimentary Breastfeeding. The data for these three variable was collected in IDHS 2012, but not in 2007. Hence, it is not possible to compare the progress. However, this papers analyses the underlying fundamental factors that continuously widen the gaps; teenage pregnancy, early mortality and perinatal mortality.

There is a large body of public health literature which indicates that teenage pregnancy and motherhood ought to be a public concern for several reasons; teenage moms are more likely to disengage from ANC and are less informed about maternal health education [7]. Moreover, teenage mothers that live in a rural population experience worse outcomes and socioeconomic disadvantage. Much of the health providers focus is on adult mothers. It is, therefore difficult for them to supervise teenage pregnancy. For teenage moms, they are facing difficulties due to stigmas and limited options in rural areas. This means, if early nutrition interventions are tailored through ANC (which is the only key strategy that works in both settings), teen-focused ANC is required, especially in rural. Health providers ought to provide such services that mitigate their difficulties.

In a 5-year time frame (2007 to 2012), there was no promising improvement in Early Childhood Mortality. The rates within rural populations are still double urban. It is such tragic irony since it is preventable. A large number of studies argue Iron-folate Supplementation, Breastfeeding, and Complimentary Breastfeeding can effectively prevent early death. However, the problem in rural populations is much more complicated, where the root is poverty and low education attainment. Diets are not based on choice, but socioeconomic disadvantages.

5. CONCLUSION

Given the crosscutting concerns between the first thousand days and maternal health related SDG Goals, it is important to address the existing maternal health problems prior to effective implementation of the first thousand days. Teen-focused ANC, nutrition sensitive interventions and adequate maternal health services are urgently needed within rural population. The integration of ANC and nutrition related intervention needs to consider the outliers; groups that are not reachable through mainstream health service providers.

ACKNOWLEDGMENT

The author wishes to thank to The University of Melbourne for technical supports, as well as the conference donor Indonesian Endowment Funds for Education Ministry of Finance (LPDP).

References

- [1] Abdel-Latif, M.E., Bajuk, B., Oei, J., Vincent, T., Sutton, L., Lui, K. & NICUS Group 2006, "Does rural or urban residence make a difference to neonatal outcome in premature birth? A regional study in Australia.", *Archives of disease in childhood.Fetal and neonatal edition*, vol. 91, no. 4, pp. F251-6.
- [2] Abu-Saad, K. and Fraser, D., 2010. Maternal nutrition and birth outcomes. *Epidemiologic reviews*, 32(1), pp.5-25.
- [3] Agus, Y. & Horiuchi, S. 2012, "Factors influencing the use of antenatal care in rural West Sumatra, Indonesia", *BMC pregnancy and childbirth*, vol. 12, no. 1, pp. 1.
- [4] Belton, S., Myers, B. & Ngana, F.R. 2014, "Maternal deaths in eastern Indonesia: 20 years and still walking: an ethnographic study", *BMC pregnancy and childbirth*, vol.

- 14, no. 1, pp. 1.
- [5] Bhutta, Z.A., Chopra, M., Axelson, H., Berman, P., Boerma, T., Bryce, J., Bustreo, F., Cavagnero, E., Cometto, G. & Daelmans, B. 2010, "Countdown to 2015 decade report (2000–10): taking stock of maternal, newborn, and child survival", *The Lancet*, vol. 375, no. 9730, pp. 2032-2044.
- [6] D'Ambruoso, L., Izati, Y., Martha, E., Kiger, A. & Coates, A. 2013, "Maternal mortality and severe morbidity in rural Indonesia Part 2: Implementation of a community audit", *Social Medicine*, vol. 7, no. 2, pp. 68-79.
- [7] James, S., Rall, N. and Strümpher, J., 2012. Perceptions of pregnant teenagers with regard to the antenatal care clinic environment. *curationis*, 35(1), pp.1-8.
- [8] Koletzko, B., Brands, B., Chourdakis, M., Cramer, S., Grote, V., Hellmuth, C., Kirchberg, F., Prell, C., Rzehak, P., Uhl, O. & Weber, M. 2014, "The Power of Programming and the EarlyNutrition project: opportunities for health promotion by nutrition during the first thousand days of life and beyond", *Annals of Nutrition & Metabolism*, vol. 64, no. 3-4, pp. 187-196.
- [9] Kusuma, D., Cohen, J., McConnell, M. & Berman, P. 2016, "Can cash transfers improve determinants of maternal mortality? Evidence from the household and community programs in Indonesia", *Social science & medicine*, vol. 163, pp. 10-20.
- [10] Marmot, M., Friel, S., Bell, R., Houweling, T.A., Taylor, S. and Commission on Social Determinants of Health, 2008. Closing the gap in a generation: health equity through action on the social determinants of health. *The Lancet*, 372(9650), pp.1661-1669.
- [11] Mize, L., Pambudi, E., Koblinsky, M., Stout, S., Marzoeqi, P., Harimurti, P. & Rokx, C. 2010, "... and then she died: Indonesia maternal health assessment.", .
- [12] Oddo, V.M., Rah, J.H., Semba, R.D., Sun, K., Akhter, N., Sari, M., de Pee, S., Moench-Pfanner, R., Bloem, M. & Kraemer, K. 2012, "Predictors of maternal and child double burden of malnutrition in rural Indonesia and Bangladesh", *The American Journal of Clinical Nutrition*, vol. 95, no. 4, pp. 951-958.
- [13] Perumal, N., Cole, D.C., Ouédraogo, H.Z., Sindi, K., Loechl, C., Low, J., Levin, C., Kiria, C., Kurji, J. and Oyunga, M., 2013. Health and nutrition knowledge, attitudes and practices of pregnant women attending and not-attending ANC clinics in Western Kenya: a cross-sectional analysis. *BMC pregnancy and childbirth*, 13(1), p.1.
- [14] Ruel, M.T., Alderman, H. and Maternal and Child Nutrition Study Group, 2013. Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition?. *The Lancet*, 382(9891), pp.536-551.

- [15] Titaley, C.R., Loh, P.C., Prasetyo, S., Ariawan, I. & Shankar, A.H. 2014, "Socio-economic factors and use of maternal health services are associated with delayed initiation and non-exclusive breastfeeding in Indonesia: secondary analysis of Indonesia Demographic and Health Surveys 2002/2003 and 2007", *Asia Pacific Journal of Clinical Nutrition*, vol. 23, no. 1, pp. 91.
- [16] Wiradnyani, L.A., Khusun, H., Achadi, E.L., Ocviyanti, D. & Shankar, A.H. 2016, "Role of family support and women's knowledge on pregnancy-related risks in adherence to maternal iron-folic acid supplementation in Indonesia", *Public health nutrition*, vol. 19, no. 15, pp. 2818-2828.
- [17] World Health Organization & UNICEF 2012, "Countdown to 2015: building a future for women and children", *Washington DC: UNICEF*,.