

The influence of economic factors on the location of birth among Palestinian women in Bethlehem during the second Palestinian uprising

Rika Fujiya MHS¹ Masamine Jimba MDPhD¹
 Rita Giacaman PharmD MPhil²
 Shinji Nakahara MD MHS¹
 Masao Ichikawa PhD¹ Susumu Wakai MD PhD¹

¹Department of International Community Health, Graduate School of Medicine, University of Tokyo, Tokyo, Japan; ²Institute of Community and Public Health, Birzeit University, West Bank, Palestine

Correspondence to: Dr Masamine Jimba, Department of International Community Health, Graduate School of Medicine, University of Tokyo, 7-3-1 Hongo Bunkyo-ku, Tokyo 113-0033, Japan
 Email: mjimba@m.u-tokyo.ac.jp

TROPICAL DOCTOR 2007; 37: 13–18

SUMMARY We investigated the impact of the Palestinians' economic support programmes and the influence of Israeli army invasions on the place of birth during the second Palestinian uprising. We collected data on the number of births by place from the Palestinian Ministry of Health and Holy Family Hospital (HFH) in Bethlehem and on Israeli army's invasions into Bethlehem. We then analysed these factors. We see the percentage of births in government hospitals increased after a new health insurance scheme was introduced in 2001. The number of births in HFH decreased during this period. Israeli army invasions also contributed to the decrease of births in HFH during April 2002. However, reducing the charge for delivery at HFH in December 2002 greatly increased the number of births there. We concluded that, in urban Bethlehem, although movement restrictions contributed to the change in the place of birth, economic support programmes have also contributed to offsetting the movement restriction effects.

Introduction

Since the Israeli army re-invasions at the beginning of the second Palestinian uprising (Intifada) in September 2000, closures, siege and curfew have all induced increasing economic hardship in the West Bank and Gaza Strip, leading to the collapse of the Palestinian economy. The World Bank describes the situation as an economic crisis. (According to the World Bank, the Occupied Palestinian Territory's economic crisis was defined by severe recession, where *per capita* real income declined sharply, and where a substantial share of the population fell below the poverty line of less than US\$ 2 per person per day. For further information, see 15 months-Intifada, closures and Palestinian economic crisis – an assessment, 18 March 2002.)¹ This crisis has resulted in the deterioration of the health status of Palestinians living in the West Bank and

Gaza Strip.¹ Various studies have documented this health deterioration, including reports of high levels of malnutrition and anaemia among women of child-bearing age and children under the age of 5 years.^{2–4}

Economic crisis affects people's health-care utilization by changing their access to health-care services.^{5–9} In both Indonesia^{5,8,9} and Korea,^{6,7} for instance, people were less likely to use health-care facilities when experiencing an economic crisis. Thai people were more likely to use public medical facilities under such circumstances after the introduction and expansion of a health insurance programme.⁸ These investigations have largely focused on the impact of crisis on health-care utilization. However, none of these studies considered the location where women give birth, which, one can argue, may also be affected by difficult economic conditions.

Several authors have reported an increase in home births during the second Intifada.^{10–14} The increase in home births deterred the efforts of the Palestinian Ministry of Health (MOH) to increase hospital births, which has been a priority since its establishment in 1994.¹¹ While, in principle, home birth is an acceptable choice, the current circumstances in the West Bank can make this a risky option. A variety of factors can have a negative impact on home birth outcomes, including the inappropriate training of health-care providers to manage births at home, lack of training and insufficient supervision of indigenous birth attendants, *the dayat*, in safely assisting home births, the absence of an effective emergency obstetric care system^{15,16} coupled with insufficient access to water and generally poor hygiene conditions.¹⁷

Various sources have attributed this shift in the place of birth to the restrictions of free movement caused by the fixed and moving Israeli military checkpoints and road-blocks in the West Bank,^{10,17} which are called 'internal closures'.^{1,17} However, the increased tendency towards home birth cannot be fully explained without considering the influence of economic hardship caused by both internal and external closure. Internal closures cut off villages from urban areas where hospitals are located and restrict free movement in the West Bank^{1,8,11} but do not necessarily hinder within-area movements, except during curfew conditions. Thus, such closures affect mainly rural areas where access to medical facilities is limited.

In response to the growing economic crisis, the MOH began to provide some services free of charge, including hospital delivery services, to assist the population in coping with the sudden impoverishment that resulted from these closures. Such financial support can reverse the increasing trend of home births by alleviating the impact of economic crisis, but it cannot alleviate the effects of movement restrictions. The influences of such support on the location of birth, and the economic effectiveness of this programme have not yet been examined.

In this paper, we investigate how (a) the economic support implementation programmes and (b) the Israeli army's restrictions on free movements in Bethlehem impact the selection of place of birth.

Methods

Study site and target population

The target area of this study was the Bethlehem district. According to the 1997 census, the population of the Bethlehem district was 131,433; 55,434 (42.2%) people living in the urban Palestinian self-rule area including

Bethlehem city, Beit Jala town, Beit Sahour town and three refugee camps.¹⁸ The crude birth rate in the Bethlehem district was 33.6 per 1000 population.¹⁹

The district has one government hospital with a maternity care unit. The Bethlehem government hospital is located in Beit Jala town next to Bethlehem city. Most of the women who attend this hospital for childbirth care come from the Bethlehem district, both urban and rural areas. In addition, four non-government maternity hospitals are located in the Bethlehem district. The non-government hospitals are located in the urban Palestinian self-rule area; two are in Bethlehem city, one is in Beit Jala town and one in Beit Sahour town next to Bethlehem city. According to MOH reports for the period, access of both patients and employees to hospitals became severely restricted since the beginning of the Intifada due to closures and siege.⁴

The Holy Family Hospital (HFH) is one of the main maternity hospitals in the Bethlehem district. HFH has 30 beds, and is located in Bethlehem city, approximately 200 m from the Bethlehem government hospital. HFH targets women in the southern West Bank, including the Bethlehem and Hebron districts. However, since the beginning of the second Intifada, most of the women who attended HFH during the study period came from the Bethlehem district, most likely because of closures and siege.

Although governmental hospitals are the primary locations of births on the West Bank, it is believed that non-governmental hospitals offer better quality services than government ones.¹⁵ A recent study indicates that the quality of care in governmental hospitals is negatively affected by overcrowding, understaffing and a serious shortage of basic equipment in maternity wards compared with non-government hospitals.²⁰ Indeed, HFH informed us that the Bethlehem government hospital referred the cases with complications to HFH.

Data collection

Economic indicator We obtained data on the Gross National Income (GNI) *per capita* of the West Bank and Gaza Strip between 1999 and 2002 from the World Bank data source, the World Development Indicators Online.²¹ GNI is defined as the total income earned by country residents, and is regarded as one of the most suitable indicators to highlight the economic conditions of the country.²¹

Place of birth Using the annual reports of the MOH between 1999 and 2002,^{4,13,17,19} we collected data on the distribution of reported live births by place of birth in the Bethlehem district, which is population-based data, and the number of births of the Bethlehem government hospital, which is hospital-based data. Monthly reports of births from reliable publications were not available.

We then collected data on the annual number of births in HFH between 1996 and 2002, and the monthly number of those between January 1996 and July 2003 using the hospital records. We used the hospital data starting from 1996 because the Palestinian Authority took over the responsibility of Bethlehem city, where HFH is located, from the Israeli military government at the end of 1995 following the signing of the Oslo Peace Accords in 1993. This handover to the Palestinians inevitably created a new

environment in the community. We ensured confidentiality when using hospital records.

Israeli army invasions in Bethlehem city The Israeli army invasions of Palestinian self-rule areas took place during the second Intifada, causing considerable population movement difficulties.^{1,13} Invasions led to clamping down on the population, with curfews making movement of people and goods impossible, and also entailed the intensification of internal closures in the surrounding areas.¹ Data pertaining to invasions and curfews in Bethlehem were obtained from the daily Israeli English newspaper 'Haaretz' for the period 28 September 2000 and 31 July 2003. Another source of data on curfews was the Palestinian Red Crescent Society's 'Invasion Press Releases' for the period 1 April – 27 June 2002²² and 'Bethlehem Curfew Hours' between 20 June 2002 and 31 July 2003.²³

Data analysis

Trend of births by place and economic supports for birth care Between January 1996 and July 2003, two means of economic support for childbirth care were provided by the MOH and HFH. In addition to the existing government health insurance, which became operational in 1994,^{24–26} the MOH temporarily initiated a new health insurance programme called 'Intifada insurance' beginning in 2001, 3 months after the start of the second Intifada. The Intifada insurance costs 50 New Israeli Shekel (NIS) (approximately 12 US Dollars) per person, paid only once as enrolment fee, and this provides basic health services in the governmental hospitals free of charge, including childbirth care. Therefore, people unable to afford the cost of the existing government health insurance tended to purchase this new insurance when they needed hospital care in the government hospitals. As the Intifada insurance was implemented, HFH initiated another means of economic support, reduction of the charge for regular birth care from 700 NIS (175 US Dollars) to 300 NIS (75 US Dollars) beginning December 2002.

We compared the proportion of live births by location of birth between 1999 and 2002. Linear regression analysis was used to calculate the slope for the purpose of identifying the annual trend during the period studied.

We examined trends in the monthly number of births in HFH between January 1996 and July 2003, dividing this period into three intervals: (1) between 1996 and the beginning of the second Intifada (January 1996–September 2000); (2) between the start of the second Intifada and the beginning of the economic support for childbirth care (October 2000–November 2002); and (3) the seven-month period after the initiation of economic support for childbirth care by HFH (December 2002–July 2003). Linear regression analysis was used to calculate the slope, identifying the monthly trend for each period.

Israeli army invasions and monthly number of births in HFH

We analysed the relationship between the monthly number of births in HFH and invasions of Bethlehem city since the second Intifada erupted, to clarify the effect of restrictions of movements on the selection of place of birth.

Results

Trend of GNI per capita

GNI *per capita* began to decrease in 2000 when the second Intifada broke out, and continued to decrease in 2001 and 2002 as these exceptional conditions continued.

Trend of births by place and effect of economic support for birth care by MOH

Table 1 shows the distribution of births in the Bethlehem district by place between 1999 and 2002. The trend of births by place changed during 2001 and 2002, i.e. during the second Intifada. First, the percentage of live births in the government hospitals increased from 22.9% to 32.0% in 2001, when the MOH began to provide Intifada insurance to birthing women, and this percentage slightly increased to 32.6% in 2002. Second, the percentage of live births in the non-government hospitals decreased from 60.4% to 58.0% in 2001 and to 50.9% in 2002. Finally, the percentage of home births decreased from 7.4% to 5.6% in 2001, but increased to 10.9% in 2002.

Number of births in government hospitals and home in each district and HFH

Table 2 reveals that the number of births at the Bethlehem government hospital increased in 2001 and 2002, but the number of births in HFH decreased in the same period.

Trends in the number of births in HFH and effect of economic support for childbirth care

The monthly number of births in HFH slightly increased during the period from 1996 and up to the beginning of the second Intifada (January 1996–September 2000) (slope = 1.62, 95% confidence interval [CI] 1.11–2.13). Then, the number of births sharply declined in October 2000 (monthly change –52, the third largest decrease during our study period) and November (monthly change –58, the second largest decrease) with the beginning of

the second Intifada. During the period of the second Intifada until the start of economic support for childbirth care, the monthly number of births continued to decrease (October 2000–November 2002) (slope = –2.31, 95% CI –3.39 to –1.23). Finally, the number of births sharply increased again when HFH's price reduction programme for childbirth care began (December 2002–July 2003) (slope = 15.79, 95% CI 13.75–17.82) (Figure 1).

Number of births in HFH during the Israeli army invasion period

During the Israeli army invasions in October 2001 (Figure 2A) and March 2002 (Figure 2B), the numbers of births in HFH slightly decreased. A rapid decrease was seen in April 2002 (Figure 2C: monthly change –60, maximum decrease) when the Israeli military operation 'Defensive Shield' took place and the Israeli army imposed sustained curfews that continued 24 h for days on end in Bethlehem city. The number of hospital births in May returned to the previous level. No rapid change was seen in the number of births during the invasions with sustained curfew periods between June and August 2002 (Figure 2D). The number of births consistently increased between December 2002 and June 2003 (Figure 2E) after HFH began the price reduction for childbirth care.

Discussion

Our analysis reveals that the number of hospital births increased as a result of the implementation of two economic support schemes for childbirth under the conflict-induced economic crisis: one was the Intifada insurance initiated by MOH and another, the price reduction programme of the HFH.

Economic influence on the place of birth

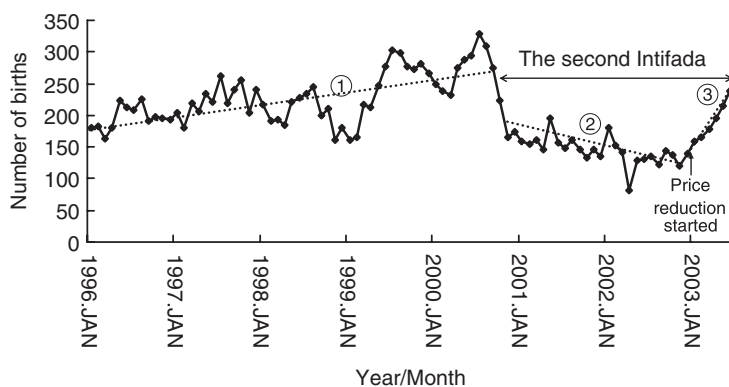
The increased utilization of childbirth services in the government hospital in the Bethlehem district is similar to what has been observed in Thailand. During the economic

Table 1 Distribution of live birth in the Bethlehem district by place (population-based) and GNI *per capita* 1999–2002 (MOH, World Bank)

Year	1999%	2000%	2001%	2002%	Slope	95% CI
Government hospitals	928 (19.6)	1193 (22.9)	1514 (32)	1515 (32.6)	4.81	0.09–9.53
Non-government hospitals	2690 (56.8)	3145 (60.4)	2743 (58)	2369 (50.9)	–2.01	–9.30 to 5.28
Hospitals outside Palestine	547 (11.5)	369 (9.6)	59 (1.2)	45 (1.0)	–3.99	–8.16 to 0.63
Private clinics	116 (2.4)	119 (2.3)	151 (3.2)	216 (4.6)	0.75	–0.82 to 1.78
Homes	456 (9.6)	383 (7.4)	264 (5.6)	509 (10.9)	0.21	–5.28 to 5.70
Total	4737	5209	4731	4654		
GNI <i>per capita</i>	\$2130	\$1920	\$1330	\$930	–419.00	–635.29 to –202.71

Table 2 Number of births in the Bethlehem government hospital and HFH (1999–2002)

	1999	2000	2001	2002	Slope	95% CI
Bethlehem government hospital	923	1160	1520	1553	225.00	30.05–419.95
HFH	2997	3052	1839	1617	–535.30	–1247.95 to 177.35



① January 1996 – September 2000:

From 1996 to the beginning of the second Intifada

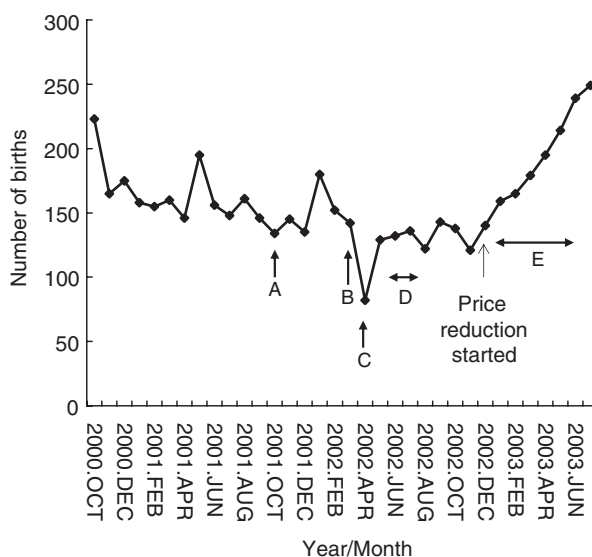
② October 2000 - November 2002:

During the second Intifada until the start of the price reduction for birth care

③ December 2002 - July 2003:

During the period of the price reduction for birth care

Figure 1 Number of births in HFH January 1996–July 2003



A, October 2001 (19-29 October): battles between Israeli army and Palestinians around HFH

B, March 2002 (8-18 March): battles between Israeli army and Palestinians around HFH

C, April 2002 (31 March-10 May): tight sustained curfews under “Defensive Shield”

D, June-August (27 May-19 August) 2002: sustained curfews

E, December 2002-June 2003 (22 November 2002 - 2 July 2003):

irregular sustained curfews (22 November 2002 – the middle of February 2003)

Figure 2 Number of births in HFH and Israeli army invasions under the second Intifada

crisis, Thai people were more likely to use public health facilities due to the expanded health insurance programme that charged very little for health care.⁵

In the case of the Bethlehem district, the number of births in government hospitals increased after the introduction of the new emergency health insurance

programme. These results are consistent with previous findings for the West Bank in which Lennox and Shubita²⁶ demonstrated that having government health insurance and lower cost of services were the primary reasons for Palestinians choosing government hospitals for childbirth in 1998.

Giacaman *et al.*²⁷ analysed the health system of the Occupied Palestinian Territories after 1994, and suggested that health sector reform efforts should be flexible and realistic, given the prevailing political and economic contexts. The economic supports for childbirth care introduced by the MOH and the HFH reflect this flexibility in assisting women in giving birth in hospitals.

Restriction of movement versus economic influences on the place of birth in urban area

Previous papers on the subject of childbirth in the area reported that home births have increased due to the restriction of free movement by the internal closures of the West Bank, which have intensified since September 2000.¹⁰⁻¹⁴ However, our results, relevant to only one Palestinian self-rule area, question the influence of such restrictions of movements as the sole influence on the place of birth in the urban setting.

The number of births increased in the Bethlehem government hospital both in 2001 and 2002. These results raise questions about the singular effect of the restriction of movement on the place of birth. Although the Bethlehem government hospital is located adjacent to HFH (see Methods), the number of births in HFH decreased in the same period. If the restriction of movement caused by the internal closures were the only reason for the selection of the place of birth, we would have had a corresponding decline in births at the MOH hospital as well. This is because we would expect the impact of movement restrictions on both hospitals to be similar, if not the same.

The Israeli army invasions of the Palestinian self-rule intensified the restriction of free movement within urban areas.^{1,13} During the invasions in April 2002, the tight sustained curfews in Bethlehem city, with intensified internal closures in the surrounding area, may have caused a decrease in the number of births at HFH. However, the number of births in HFH increased after the price reduction for birth care even during the invasion periods.

These results suggest that economic influences, i.e. ability or willingness to pay, are important factors in determining the place of birth, at least in the urban setting. The increase in the number of births at both the Bethlehem government hospital and HFH after the introduction of economic support schemes for childbirth care demonstrates this point, but only for urban residents who live in the within-movement area of the hospitals, and except during the curfew periods. Thus, under this conflict-induced economic crisis, the economic factor may be a key reason for the selection of the place of birth in the urban area where 42.2% of the residents lived.¹⁸

Limitation

In this study, we mainly used data pertaining to births in one urban area, and from only two hospitals that provide maternity care. The findings of this study may differ from those focusing on rural areas.¹⁰⁻¹² While we were able to demonstrate the influence of economic support schemes on birth location in urban areas, the influence of such schemes on rural dwellers and on others living in the north and south of the West Bank remains unclear, although impoverished rural dwellers are likely to be very vulnerable as they have been affected by both the

restrictions of movements due to closures and siege, and the worsening economy.

It was not possible to identify the magnitude of the Israeli army invasion influence on childbirth location during the specific period relevant to this study due to the lack of data on the monthly number of births in the Bethlehem government hospital. However, the MOH reported that, in April 2002, during the period of continuous and strict curfew, some 75% of population were denied access to medical services and transportation was banned; medical vehicles and ambulances required clearances from the Israeli army coordinated by the International Red Cross Committees.⁴ The hospital staff informed us of the decrease in the number of births in that specific period although the annual number of births in 2002 in this hospital increased in general.

Conclusion

The change in the place of birth in the Bethlehem district urban area during the second Intifada cannot be solely explained by either restriction of free movement or economic factors/ability to pay. The economic factor appears to be a key determinant of the selection of the place of birth in urban Bethlehem. More comprehensive research is needed, especially comparisons of urban and rural locales, as well as the different regions of the country, as those have been affected differently by events, in order to better understand the determinants of the selection of the place of birth in this conflict-affected area.

Acknowledgements

We thank the Holy Family Hospital, Bethlehem, for the provision of the hospital records and for its supports to the study.

References

- 1 World Bank. *Twenty-seven Months of Intifada, Closures and Palestinian Economic Crisis An Assessment*. Jerusalem: The World Bank West Bank and Gaza Office, 2003
- 2 Greenough G, Abdeen Z, Shahin M, Tayback M. *Nutritional Assessment of the West Bank and Gaza Strip*. Jerusalem: USAID, Johns Hopkins University, Al-Quds University, Care International, 2002
- 3 Palestine Central Bureau of Statistics, Birzeit University, Unicef. *Nutrition Survey-2002. Child Nutrition in Exceptional Circumstances. The Case of Palestinian Children Aged 6-59 Months in the Palestinian Territory (Policy Report)*. Ramallah: Palestine Central Bureau of Statistics, 2003
- 4 Palestine Central Bureau of Statistics, Birzeit University, Unicef. *Nutrition Survey-2002. Analytical Report*. Ramallah: Palestine Central Bureau of Statistics, 2003
- 5 Hotchkiss DR, Jacobalis S. Indonesian health care and the economic crisis: is managed care the needed reform? *Health Policy* 1999;**46**:195-216
- 6 Yang BM, Prescott N, Bae EY. The impact of economic crisis on health-care consumption in Korea. *Health Policy Plann* 2001;**16**:372-85
- 7 Kim H, Chung WJ, Song YJ, Kang DR, Yi JJ, Nam CM. Changes in morbidity and medical care utilization after the recent economic crisis in the Republic of Korea. *Bull World Health Organ* 2003;**81**:567-72