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Maternal deaths and their impact on children in Papua New Guinea

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In Papua New Guinea (PNG), with a population of just over seven million people, the life expectancy of men and women is 61.2 and 65.5 years, respectively.[1] Estimates of the maternal mortality ratio range from 230/100,000 live births[1] to 930/100,000,[2] even in the same time periods. A 2013 study of the variances revised the estimate to 500/100,000 maternal deaths.[3] These variances, and uncertainty about numbers of births, lead to estimates of between 800 and 2,500 women dying of maternal causes each year in PNG. Children also fare poorly; the Demographic and Health Survey in 2006[4] estimated that one in 13 children does not reach his or her fifth birthday.

International research is emerging that suggests there is an under-explored link between a mother's death and increased risk of death, ill health and poor socioeconomic outcomes in all her surviving children. As the numbers of maternal deaths are so high in PNG, any impacts on child survival and welfare require investigation. The purpose of this commentary is therefore to collate relevant evidence from PNG to identify gaps in the research and the associated implications, and to suggest policy and research responses.

In Nepal, research has found that infants of mothers who died during childbirth were six times more likely to die in the first week of life; 12 times more likely between eight and 28 days; and 52 times more likely to die between four and 24 weeks of age.[5] In Bangladesh, 89% of children who had mothers lived until their tenth birthday, while only 24% of children whose mothers had died survived to 10 years of age.[6] In Malawi, the risk of death among babies whose mother had died was nearly four times higher than that of other babies.[7] In Indonesia and Mexico, maternal deaths were found to delay school entry and worsen several measures of a child health and nutritional status as well as school dropout rates.[8] In Haiti, a study found that a maternal death increased the odds of a child's death (up to the age of 12) by 55%, whereas a non-maternal death had no impact on the odds.[9]

Focus groups across three different regions in Tanzania suggested the added financial burden of raising maternal orphans had impacts on their attendance at school and completion of schooling, which was also a greater risk for girls.[10] They found that maternal orphans were more likely to marry young, have an early sexual debut and pregnancy, and engage in high-risk sexual behaviour – particularly transactional sex – in order to meet basic needs. There were economic consequences arising from a mother's death, including loss of household and field labour and loss of secondary income in some cases. More than one-third (34%) of the caregivers said feeding the orphans was a challenge, especially the infants, as the cost of formula was prohibitively high.[10]

Evidence from PNG

The impact of a maternal death on surviving children has not yet been investigated in PNG, despite its high maternal mortality ratio. Impacts have been discussed as incidental findings or comments on maternal mortality research.

One paper assessing the reasons for the high maternal death ratio referred to the orphans' "subsequent malnutrition, infection risk and mortality" but did not quantify the effect.[11]

In 1998, a study of 131 children admitted to a PNG provincial hospital with marasmus (a form of acute malnutrition) found that 45% of these children were adopted, and 10% were born to mothers who died during childbirth.[12] Adoption was associated with malnutrition, and its practice was accountable for 5% of all deaths. The authors called for social change to empower women to plan families safely, reduce their risk of early death and take care of their own children.

Research in 2000 into paediatric admissions at the main hospital in the capital city, Port Moresby, also identified adoption as a significant risk factor for admission to the ward.[13] The most common causes for admission among adopted children were pneumonia (33%) and gastroenteritis (33%). The adopted children were lighter, shorter and more malnourished than the other children. However, adoption is a cultural phenomenon in PNG that is not limited to orphans, so it cannot be presumed that an adopted child does not have a living mother. Twelve of the 40 adopted children had been adopted because they had been abandoned or neglected and seven of these 12 had biological mothers who had died.[13]

Incidental reporting of infant and child deaths was included in a maternal death audit of 31 women conducted in the Milne Bay Province of PNG.[14] The deaths of 10 of the maternal orphans were recorded, although the age at death of the infant or child was not consistently reported.

Overall, these findings in PNG research appear consistent with the international evidence that maternal mortality is associated with increased child death and morbidity.

Maternal death as a human rights failing

High ratios of maternal and child mortality are human rights failings. A woman's right to the highest attainable standard of health, especially in pregnancy and childbirth, is recognised in the International Covenant on Economic, Social and Cultural Rights (ICESCR), as well as other international human rights treaties.

These rights are explained and clarified in the UN General Comment 14 adopted by the UN General Assembly in 2000, and include "entitlements to goods and services, including sexual and reproductive health care and information. It requires action to break down political, economic, social and cultural barriers that women face in accessing the interventions that can prevent maternal mortality".[15] Importantly, fulfilling the right to health depends upon "an effective and integrated health system, encompassing medical care and the underlying determinants of health, which is responsive to national and local priorities and accessible to all."[16]

Health services and facilities are not readily available or accessible in PNG, which is a reflection of a weak health system in need of much attention and strengthening. In 2006, it was estimated that half of all primary health care facilities had closed in the previous 15 years due to disrepair and lack of use.[17,18]

There is also a desperate shortage of doctors, nurses and midwives.[19-21] In 2009, there were only 330 doctors nationwide (0.05 per 100,000 people) and about 2,800 nurses, and it was estimated only 41% of births were attended by skilled health personnel.[22,23]

Even when health facilities or services are available, they are frequently not used. Various reasons have been offered for this, including: fear of doctors and hospitals; long queues and delays at the hospital; cost of travel; and fears of communication with health professionals. The explanations given by women in PNG for failure to use maternal health services include: the shortage of skilled care providers; distance to walk to facilities; deteriorating health facilities; and poor outreach programs that affect the quality of obstetric care provided.[24]

A retrospective study of maternal deaths for the period January 2008 to July 2012 in the main referral hospital in the Madang province in PNG identified 64 maternal deaths. This resulted in a high institutional maternal mortality ratio of 588 deaths per 100,000 live births.[25] Women's fear of hospitals is understandable.

Factors beyond the health system that limit the uptake of maternal health services include: poverty; scarcity of transport; cultural practices that harm women; lack of awareness of the risk factors of pregnancy and birth; and the geographical isolation of communities.[24]

Violence against women in PNG is another illustration of the violation of their human rights. The rates of partner abuse reported by women have been found to be as high as 66%.[26] The high rates of violence against women – including sexual violence – and the prevalence of polygamy leave women in PNG vulnerable to sexually transmitted infections (STIs), including HIV. Women also have little knowledge about STIs and, in many places, have only poor access to weak healthcare delivery systems and surveillance to detect and treat STIs, including HIV.[27] The lack of access to information, testing and treatment are all further examples of state failure to fulfil women's rights to health.

Rights-based approaches needed to save women's and children's lives

Human rights failings increase women's risk of dying in or around childbirth, and they must be addressed in order to decrease maternal mortality and its associated impacts on families and communities. PNG has made various relevant and binding human rights commitments, including: acceding to the ICESCR in July 2008; supporting the UN Human Rights Council resolution on 'Preventable maternal mortality and morbidity and human rights' in June 2009; and being party to the adoption of the UN General Assembly Technical Guidance on using a rights-based approach to preventing maternal mortality and morbidity in 2012 .[28] The PNG Government, and its international partners, are obliged under international human rights law to progressively realise women's rights, including the right to health.

Human rights-based approaches to maternal mortality, outlined in the above named instruments, look beyond the health system itself – they aim to achieve specific health outcomes as well as overcoming the underlying conditions "that drive distributions of disease, and deprivations of rights".[29]

Conclusion

The international evidence, which appears to hold true in PNG, shows that maternal deaths increase child mortality, decrease social wellbeing and contribute to a cycle of entrapment in poverty.

Some of the observations about the impact of maternal death on children in PNG were first made more than 15 years ago. In 2002, researchers concluded "ways need to be found to detect children who are at high risk of adoption (perhaps even before they are born) and to provide the means whereby their rights, and the rights of those already adopted are, as far as possible, ensured".[13]

Research is urgently needed to determine the precise risks that a mother's death poses to her family, as well as the scale of this problem. When the number of women who die of maternal causes is known, and the impacts on surviving children are documented, appropriate health system strengthening responses can be planned. This must extend into community-level engagement to identify and support maternal orphans.

The tragedy of maternal mortality is even greater than previously thought because of the under-explored subsequent and ongoing impacts on surviving children. The full impact of maternal mortality in PNG has been hidden – it must now be made visible through further research, evidence-informed policy and rights-based practice to reduce maternal death and thereby save children's lives.

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