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Losing blood and saving lives: Recognising the problems and impacts

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Introduction

Maternal and infant morbidity and mortality is a global health concern that contributes to the long-term burden of disease to a given nation. In 2013, it was estimated that 1500 women died from pregnancy or childbirth-related complications each day. However, there was a notable reduction from 380 maternal deaths per 100,000 live births in 1990 to 210 maternal deaths per 100,000 live births in 2013 (WHO, 2014a). Unfortunately, large maternal and infant morbidity and mortality disparities still exist between high- and low-income countries (UNICEF PNG, 2013).

The major causes of maternal deaths are preventable conditions, such as postpartum haemorrhage, hypertensive disorders, sepsis and abortion, while 85% of newborn mortality is due to pre-term and birth asphyxia. These causes of maternal deaths are underscored by the social determinants of poor nutrition, shortage of skilled health professionals, inadequate supply of medical equipment, and distance or transportation obstacles to accessing formal healthcare (Karlsen, 2011; UNICEF PNG, 2013). In the Pacific, the leading causes of the maternal mortality rate (MMR) remain the same as those reported globally, with the addition of the important indirect causes of malaria and anaemia, particularly in the Solomon Islands and Papua New Guinea (PNG) (WHO, 2010).

In 2012, WHO reported a reduction in PNG's maternal mortality, with an estimated 250 deaths per 100,000 live births (down from 733/100,000), and reported infant mortality of 48 deaths per 1,000 live births (a reduction from 65 deaths/1000 live births) between 2009 and 2012 (WHO, 2013). When compared to PNG's high-resource Western Pacific neighbours, such as Australia, Japan, and China—where the MMR ranges from 8.4 in Australia to 34 in China (WHO, 2011), PNG still ranks low in obstetric indicators and health service provision. In 2013, the PNG population had steadily increased since 2006 due to safer childbirths, many unplanned pregnancies, women having children at close intervals and an increase in teenage pregnancies (Department of Health, 2009). In 2010, the total fertility rate was 3.8% per woman, with a population growth rate of 2.8% (AusAID, 2011; WHO and National Department of Health, 2012). It was also estimated that the number of births attended by health professionals increased from 38% in 1990 to 53% in 2009 (WHO, 2013).

In PNG, the number of skilled birth attendants increased from 39% in 2000 to 53% in 2009. The last not onducted any demographic health survey, conducteded in 2006 to provide data for a wide range of monitoring and impact evaluation indicators in the areas of population, health, and nutrition including data on maternal health. PNG is one of the countries where 'the availability and quality of the underlying primary data is limited' (Bauze et al., 2012; WHO, 2018). T the 2018 World Health Statistics: Monitoring Health for the SDGs (WHO, 2018) further notes that the the proportion of births attended by skilled health personnel in Papua New Guinea is 40% (WHO, 2018). This estimated percentage

Abbreviations: AIDS, Acquired Immunodeficiency Syndrome; BCMCH, Bachelor of Clinical Maternal and Child Health; FGP, Focus Group; HIV, Human Immunodeficiency Virus; MDG, Millennium Development Goal; MMR, Maternal Mortality Rate; NGO, Non-government Organisation; PNG, Papua New Guinea; PNGMRAC, Papua New Guinea Medical Research Advisory Committee; TBA, Traditional Birth Attendant; UNICEF, United Nations Children's Fund; VBA, Village Birth Attendant; VCHW, Village Child Health Worker; WHO, World Health Organization.

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proportion of institutional births is used as a 'proxy for the Sustainable Development Goal Indicator' (2018, p. 24) to measure the improvements in quality skilled birth attendants to provide maternal health services of note is that these development have not s not corresponded with improvements in the number of births supervised. The the number and educational preparation of birth attendants was still inadequate for the increasing population (UNICEF, 2009). In 2009, in PNG, deliveries in hospitals and health centres accounted for 52% of births, with 48% of deliveries in rural populations given minimal or no supervision. Women in remote rural areas are e still reported to be largely delivering unsupervised due to the remoteness of the areas (Kamblijambi and Holroyd, 2017; UNICEF, 2009).

Reducing maternal mortality requires comprehensive educational and skill-based interventions that acknowledge the importance of culture, language, transportation, distance to health facilities, and the educational preparedness of health service staff (both skilled and unskilled). Also of critical importance is the educational levels of attainment, attitudes, and clinical skills competency of the allied health service providers.

UNICEF's Integrated Management of Childhood Illness (IMCI, 1990) training checklist was for the purpose of improving health worker skills, improving community and family practice, and strengthening the health system (Nicoll, 2000). Ts. In 2014, the IMCI has been available through online distance learning module (WHO, 2014b). IMCI was sued to inform the child health component recent e Bachelor of Clinical Maternal and Child Health (BCMCH) curriculums in PNG (University of Goroka, 2008). This compontent featured the transfer of knowledge and skills to the students who in turn target their education towards Village Birth Attendants (VBAs) in rural and remote communities. VBA training programmes started in the early 1970s when maternal mortality became a major concern in low income and resource-poor countries due to a lack of skilled care during birth (Kamblijambi and Holroyd, 2017; Sibley et al., 2007).

A disparity of health education resources between high- and low-resource populations has been found to have adverse effects on health service professionals knowledge acquisition. The successful transfer of maternal and child health knowledge and skills should produce behavioural change in practice and produce measurable outcomes. Relevant tertiary educational standards, including the outcomes and competencies to be achieved are critical components that need to be considered when conducting the examining of the transfer of knowledge form an educational curriculum to its stakeholders.

In a framework for evaluating global public health programs, outlined steps that need to be followed for effective evaluation: engaging stakeholders, describing the program, focusing on the evaluation design, gathering credible evidence, and justifying conclusions. When examining the transfer of knowledge and clinical skills, macro (disciplinary) or micro (student learner experience) levels (Metcalfe et al., 2008; Owen, 2006) analysis is required. In PNG, a double major was offered in one particular university in midwifery and child health (BCMCH), until 2009. The authors recently published an evaluation of the nurse/midwives perceptions of the utility of the programme as a series of one in three papers from a larger study (Kamblijambi and Holroyd, 2017). The current study reports the second group of stakeholders, the VBA perceived utility of the knowledge transfer from the midwives.

Methods

The aim of this phase was to examine education knowledge transfer from a targeted tertiary education programme to VBAs and Village Child Health Workers (VCHWs). The BCMCH programme consisted of 16 core curriculum modules embedded in midwifery and child health nursing education, with seven modules focusing on VBA and VCHW community training on rural health education, practice and health promotion initiatives.

Design

The descriptive exploratory design used a retrospective approach to examine the effect of a set curriculum on individuals and groups of stakeholders (Flick, 2014). Phase one included the curriculum mapping of core competencies, educational and clinical resources and assessments (Kamblijambi and Holroyd, 2017). Phase two consisted of face to face interviews with seventeen graduate nurses from the programme (Kamblijambi and Holroyd, 2017) .

Settings

During the BCMCH, it was mandatory that each student train between one to two VBAs in a designated village in both midwifery and child health knowledge and skills. The BCMCH training specifically targeted rural and remote geographical locations and regions with different language and cultural backgrounds.

Data collection occurred in Ungaii and Lufa districts in the Eastern Highlands province and Aronis in Madang province. The bachelor students were sent to live in the community to train VBAs and VCHWs as a part of their practicum. The settings selected had linguistic, geographic, and cultural differences that reflected the cultural and linguistic diversity of PNG.

Sample and sampling

Purposive sampling of matched VBAs and VCHWs directly trained by BCMCH graduates between 2006 and 2009 was undertaken to recruit focus group members specifically from the highlands and coastal regions of PNG. The exclusion criteria encompassed Traditional Birth Attendants (TBAs) who had been practising as VBAs, and VBAs trained by other organisations than the BCMCH programme. The focus group discussions occurred between June and August 2013.

Interview guide

A semi-structured interview guide was developed from the results of the analysis of phase two (Kamblijambi and Holroyd, 2017) and review of the existing literature in order to guide the focus group discussions.

Piloting

Piloting was conducted on a group of six VBAs in another district (Daulo), independent from the main study. These VBAs were also trained by BCMCH graduates. This was done to examine the semi-structured questions for timing and ambiguity prior to collecting data. Any issues noted in the interviews were corrected and this raw data was later incorporated into the results.

Approach to data collection

A total of four ethnographic focus group interviews were conducted in Pidgin (Creole language) using the piloted semi-structured questions. Focus group 1 (highlands) had seven participants, focus group 2 (highlands) had six participants, focus group 3 (coastal) had seven participants, and the pilot focus group was included in the analysis.

Each focus group interview was led by an experienced moderator (the primary researcher) and all discussions were recorded, with field notes taken. The researcher commenced by explaining the purpose of the study and gained a signed written consent form prior to data collection. Each focus group discussion took approximately one to 1.5 h. Concurrent data analysis was employed for each focus group, with any changes noted and then incorporated in the next round of interviews.

Data analysis

Each focus group interview was conducted in PNG's national language (Pidgin) using an audio recorder, with verbatim translation initially undertaken. Transcription and coding for broader themes were undertaken, and more concrete themes were identified.