

**Sigma's 30th International Nursing Research Congress**  
**Impact of Mentorship on Knowledge and Self-Efficacy for Neonatal Resuscitation in Rwandan Nurses and Midwives**

**Gerard Nyiringango, BScN**

*Arthur Labatt Family School of Nursing, Faculty of Health Sciences, Western University of Ontario, London, ON, Canada*

Mickey Kerr, PhD

*Arthur Labatt Family School of Nursing, Faculty of Health Sciences, Western University of Ontario, London, ON, Canada*

Yolanda B. Babenko-Mould, PhD, MScN, BScN, RN

*Arthur Labatt Family School of Nursing, Western University, London, ON, Canada*

David F. Cechetto, PhD, MSc, BEd

*Department of Anatomy and Cell Biology, Schulich School of Medicine & Dentistry, Western University, London, ON, Canada*

Clementine Kanazayire, PhD

*College of Medicine and Health Sciences, School of Nursing and Midwifery, University of Rwanda, Kigali, Rwanda*

Anaclet Ngabonzima, MD

*Mentorship, Training Support Access Model (TSAM) Project for Maternal and Newborn Child Health, Kigali, Rwanda*

**Introduction:**

Rwanda is among the developing countries in the world. In 2015, 39% of its population was living under poverty line (National Institute of Statistics of Rwanda, 2014). It is a landlocked country with an area of 26,338 square kilometers located in East Africa. In spite of Rwanda achieving Millennium Development Goals (MDGs) related to reducing child mortality, neonatal mortality remains high, at 29 deaths per 1,000 births (National Institute of Statistics of Rwanda, 2014) and birth asphyxia is one of the leading causes of death.

In Rwanda, birth asphyxia accounts for 33% of all neonatal deaths (Rwanda Ministry of Health, 2013). Birth asphyxia is the failure to establish breathing at birth and it is recognized as one of the leading cause of newborn deaths (Aslam et al. 2014).

Globally, 2.9 million neonates die annually, and 900,000 deaths are attributed to neonatal birth asphyxia (Enweronu-Laryea & Robertson, 2017). In 2016, the World Health Organization (WHO, 2017) report shows that newborns accounted for 46% of all deaths among children under five. Although, the same report acknowledges a decline of deaths among the children under five years, the proportion of newborn deaths increased from 41% to 46%.

Similarly, several reports show neonates deaths as a global challenge (Enweronu-Laryea & Robertson, 2017), particularly in countries where birth attendants have lower education, less resuscitation skills and limited resources. A study conducted in one Ethiopian hospital from July 2014 to June 30, 2017, reveals that of 9,738 babies who were born during the study period, 302 (3.1%) had birth asphyxia (Ibrahim, Muhye, & Abdulie, 2017). In addition, a study conducted in Kenya by Murila, Obimbo, and Musoke (2012) shows that only 30% of neonatal frontline providers passed a neonatal resuscitation assessment test. The same study reports that 70% of neonatal care providers identified the lack of refresher training in neonatal resuscitation as a key factor

leading to low confidence in skills of resuscitation. Thus, one can attribute some of the asphyxia related death to lack of skills in neonatal resuscitation.

As a part of addressing the challenge, simple steps for neonatal resuscitation referred to as helping babies breathe (HBB), were developed by American Academy of Pediatrics (AAP) in 2010 (AAP, 2016). Studies reveal the correlation of HBB based intervention and the decrease of neonatal deaths (Aslam et al., 2014; Eblovi et al., 2017). Similarly, a qualitative study that was conducted by Kasine (2017) in Rwanda, reveals the possibility of improving neonatal resuscitation skills among health care providers. It is in this regard that the Training Support and Access Model (TSAM) is conducting mentorship on Maternal, Neonatal and Child Health (MNCH) of which neonatal resuscitation or HBB is a component of the mentorship package to maternity nurses and midwives. TSAM is a Canadian government-sponsored project assisting Rwanda in the area of MNCH services.

**Purpose:**

The purpose of this study is to assess the impact of a mentorship program on nurses and midwives' knowledge and self-efficacy related to resuscitation skills in the first minute of life i.e. HBB.

**Methods:**

TSAM is using its team of nursing and midwife experts in MNCH to conduct mentorship sessions at all health centers of Gicumbi, Gakenke and Rulindo districts. The researchers for the current study were not involved directly with developing or delivering the mentorship intervention, rather they were assessing and comparing pre-and-post mentorship knowledge and self-efficacy of 141 nurses and midwives who are participating in the mentorship. The mentorship program involves a series of monthly visits from TSAM mentors over a six-month period (from September 2018 – March 2019). This study used instruments of two types: the HBB self-efficacy scale adapted from Bandura (2006), and the HBB knowledge questionnaire adapted from AAP (2016). The variables of self-efficacy were measured using Bandura (1977) Self-Efficacy Scale (SES) after adapting it to the local context and content of neonatal resuscitation in Rwanda. The SES is a 24-item scale that measures a nurse's confidence to perform neonatal resuscitation interventions. All self-efficacy items are rated on a 10-point Likert scale ranging from 0 (not confident at all) to 10 (very confident) and a final score is calculated by averaging all 24 items. In addition, the HBB knowledge scale that was developed by American Academy for Pediatrics (AAP) is being used for pre-and-post HBB mentorship intervention in assessing the knowledge. It is a multiple choice-based tool with 18 questions about resuscitation knowledge during the golden minute (the first minute of life). The tool is evaluated on a scale of 18 where 0/18 reveals no knowledge of HBB at all, while 18/18 is the maximum HBB knowledge score. The knowledge scores were converted to percentage for easier understanding.

**Results:**

Preliminary results from pre-mentorship assessment show that 69.5% (n=98) of participants were females, 30.5% (n=43) have only secondary education while 64.5% (n=91) have advanced education. 67.4% (n=95) of participants have never had any training or information on helping a baby breathe in the first minute of life. The participants' mean knowledge score for neonatal resuscitation was 78.5% (SD=12.08). Participants' score for neonatal resuscitation self-efficacy mean is 7.19 (SD=1.91). Pre-

mentorship knowledge and self-efficacy show a moderate correlation ( $r=.18$ ,  $p=.014$ ). In addition, for those report having previous neonatal resuscitation training, the knowledge mean was higher than for those who claim to have never had it (81.58 vs 77.01  $p = .035$ ). Similarly, for those reporting to have had previous training about neonatal resuscitation, the self-efficacy mean was higher than for those without the training (7.7 vs 6.9,  $p= .01$ ). While this previous training was not part of the TSAM mentorship intervention, the results do suggest the potential impact of specific HBB training. Data from the post-mentorship survey will not be available until April 2019 thus comparison of pre and post data will be presented where possible.

### **Conclusion:**

The preliminary results suggest that providing information related to helping babies breathe could improve knowledge and self-efficacy. The study will continue to assess the potential impact of the mentorship program on helping babies breathe to determine if it will enhance knowledge and self-efficacy pertaining for neonatal resuscitation for nurses and midwives in Rwandan health centres. It is possible that the findings from HBB mentorship intervention will not only equip these nurses and midwives with extra knowledge, skills, self-efficacy for newborn resuscitation but also that it will ultimately be adopted by the national health care administration in Rwanda to help reduce neonatal mortality and increase the self-efficacy for newborn resuscitation in Rwandan health care providers.

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### **Title:**

Impact of Mentorship on Knowledge and Self-Efficacy for Neonatal Resuscitation in Rwandan Nurses and Midwives

### **Keywords:**

Helping Babies Breathe, Knowledge and Self-Efficacy and Mentorship

### **References:**

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### **Abstract Summary:**

Organised, regular, and purpose orientated mentorship has the potential of affecting health care providers' knowledge and self-efficacy. Thus, assigning expert health workers to junior/less skilled staff improves health care services and saves lives.

### **Content Outline:**

#### **1. Introduction**

- Rwanda is among the developing countries in the world. In 2015, 39% of its population was living under poverty line (National Institute of Statistics of Rwanda, 2014). It is a landlocked country with an area of 26,338 square kilometers located in East Africa.
- In Rwanda, birth asphyxia accounts for 33% of all neonatal deaths (Rwanda Ministry of Health, 2013).

#### **2. Body**

- Birth asphyxia is the failure to establish breathing at birth and it is recognized as one of the leading cause of newborn deaths (Aslam et al. 2014).
- A study conducted in Kenya by Murila, Obimbo, and Musoke (2012) shows that only 30% of neonatal frontline providers passed a neonatal resuscitation assessment test.
- As a part of addressing the challenge, simple steps for neonatal resuscitation referred to as Helping Babies Breathe (HBB), were developed by American Academy of Pediatrics (AAP) in 2010 (AAP, 2016).
- Studies reveal the correlation of Helping Babies Breathe based intervention and the decrease of neonatal deaths (Aslam et al., 2014; Eblovi et al., 2017).
- A qualitative study that was conducted by Kasine (2017) in Rwanda, reveals the possibility of improving neonatal resuscitation skills among health care providers.

- Training Support and Access Model (TSAM) is conducting mentorship on Maternal, Neonatal and Child Health (MNCH) of which neonatal resuscitation or HBB is a component of the mentorship package to maternity nurses and midwives. TSAM is a Canadian government-sponsored project assisting Rwanda in the area of MNCH services.
- The purpose of this study is to assess the impact of a mentorship program on nurses and midwives' knowledge and self-efficacy related to resuscitation skills in the first minute of life i.e. HBB.
- TSAM is using its team of nursing and midwife experts in MNCH to conduct mentorship sessions at all health centers of Gicumbi, Gakenke and Rulindo districts.
- The researchers for the current study were not involved directly with developing or delivering the mentorship intervention, rather they were assessing and comparing pre-and-post mentorship knowledge and self-efficacy of 141 nurses and midwives who are participating in the mentorship.
- Preliminary results from pre-mentorship assessment show that the participants' mean knowledge score for neonatal resuscitation was 78.5% (SD=12.08). Participants' score for neonatal resuscitation self-efficacy mean is 7.19 (SD=1.91). Pre-mentorship knowledge and self-efficacy show a moderate correlation ( $r=.18$ ,  $p=.014$ ).
- For those report having previous neonatal resuscitation training, the knowledge mean was higher than for those who claim to have never had it (81.58 vs 77.01  $p = .035$ ).
- Similarly, for those reporting to have had previous training about neonatal resuscitation, the self-efficacy mean was higher than for those without the training (7.7 vs 6.9,  $p= .01$ ).

### **3. Conclusion**

- The preliminary results suggest that providing information related to helping babies breathe could improve knowledge and self-efficacy.
- The study will continue to assess the potential impact of the mentorship program on helping babies breathe to determine if it will enhance knowledge and self-efficacy pertaining for neonatal resuscitation for nurses and midwives in Rwandan health centres.

#### First Primary Presenting Author

#### ***Primary Presenting Author***

Gerard Nyiringango, BScN

Western University of Ontario

Arthur Labatt Family School of Nursing, Faculty of Health Sciences

Masters student in nursing education and leadership

London ON

Canada

**Author Summary:** Gerard Nyiringango has professional expertise in simulation teaching. He is among the group of five people who introduced nursing simulation teaching in Rwanda. He is experienced clinical instructor. His research interest focuses on mentorship, self-efficacy, and increase of nurses' knowledge. He has conducted several public talks at University Rwanda for introducing the simulation teaching.

#### Second Author

Mickey Kerr, PhD

Western University of Ontario

Arthur Labatt Family School of Nursing, Faculty of Health Sciences  
Associate Professor  
London ON  
Canada

**Author Summary:** Dr. Mickey Kerr has presented at numerous local, national and international conferences on his research on models of care, nursing intervention studies, work organization, job stress, and epidemiology.

Third Author

Yolanda B. Babenko-Mould, PhD, MScN, BScN, RN  
Western University  
Arthur Labatt Family School of Nursing  
Assistant Professor  
Faculty of Health Sciences  
London ON  
Canada

**Author Summary:** Professional expertise in curriculum development in nursing education with experience in Canada and Rwanda. Research focus on empowerment, self-efficacy, and civility in nursing education and practice.

Fourth Author

David F. Cechetto, PhD, MSc, BEd  
Western University  
Department of Anatomy and Cell Biology, Schulich School of Medicine & Dentistry  
Professor  
London ON  
Canada

**Author Summary:** Dr. Cechetto is the director of development projects which involve capacity building and professional development in the nursing and medical schools in Rwanda, assessment of the health care quality in Rwanda and more recently developing the capacity for the training and upgrading of health professionals to deliver maternal, newborn and child health in Rwanda. His research interests are in the role of inflammation in cerebral ischemia and vascular cognitive impairment and dementia.

Fifth Author

Clementine Kanazayire, PhD  
University of Rwanda  
College of Medicine and Health Sciences, School of Nursing and Midwifery  
Lecturer  
College of Medicine and Health Sciences, Remera Campus  
School of Nursing and Midwifery

Kigali  
Rwanda

**Author Summary:** Dr. Clementine Kanazayire has presented at numerous local, national and international conferences her research on Genocide against Tutsis. She has also been involved in various conference preparation and coordination.

Sixth Author

Anaclet Ngabonzima, MD

Training Support Access Model (TSAM) Project for Maternal and Newborn Child Health  
Mentorship  
Mentorship Manager  
TSAM Rwanda  
Kigali  
Rwanda

**Author Summary:** Anaclet NGABONZIMA is Specialist in Public Health and Maternal child health with clinical background. Currently, he is coordinating the component of Professional Continuous Development focusing on-site mentorship of health care providers in Training Support Access Model (TSAM), project supported by Canadian Government. Most of his activities are carried out at health facility level in the area of maternal, newborn and child health care.