

## Abstract

# Accuracy of visual estimation of blood loss in pregnancy by using simulated case scenarios

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### Introduction

Major obstetric haemorrhage continues to be one of the life threatening problems in pregnancy around the world as it accounts for 31% of overall maternal deaths.

### Objective

This observational study is to determine discrepancy between actual blood loss (ABL) and estimated blood loss (EBL).

### Methods

Twelve simulated case scenarios with known measured amounts of blood were created using expired packed red cell and common surgical materials, and assessed by the participants including doctors, medical students, nurses and midwives at the Teaching Hospital, Kandy

### Results

There were 120 participants. 30% doctors with 66.7% nurses with mean years of clinical experience at 14.25 years (mode – 5y) and experience to maternity unit at 6.54 years (mode – 5y). Visual estimations were especially inaccurate with smaller volumes, which could be overestimated by up to 120%: surgical towel soaked with 40mL of blood (+75%) and soaked with 60mL of blood(+33%), surgical swab soaked with 15mL of blood(+33%), surgical gauze 18 inch with 100mL of blood(+120%).

Blood in a container was more accurately estimated: 300mL of blood in a kidney tray (0%), 500mL of blood in a bowl(0%)

Significant underestimation of the ABL occurred in 3 of the 12 stations: blood spill on the floor of 500mL (20%), 1000mL (40%), 2000mL (25%).

There was no significant difference in clinical experience and type of exposure in most stations.

### Conclusion

Health care providers tend to overestimate at lower blood volumes (< 500 ml) but underestimate at higher blood volumes (> 500 ml). Further training and monitoring in visual estimation skills are necessary in order to prevent associated maternal mortality and morbidity.

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