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كلية العلوم الطبية

***Prevalence and Associated Factors of Postpartum  
Hemorrhage in the Public Hospitals in Sana'a City-  
Yemen***

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*Thesis Submitted to the Department of Community Health and Nutrition,  
College of Medical Sciences, Al-Razi University as A partial Fulfillment for  
MSc. Epidemiology.*

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# انتشار النزف بعد الولادة والعوامل المرتبطة به في المستشفيات العامة بمدينة صنعاء-اليمن

رسالة مقدمة إلى قسم صحة المجتمع والتغذية، كلية العلوم الطبية، جامعة الرازي لاستكمال  
متطلبات نيل درجة الماجستير في الوبائيات

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## CERTIFICATE

This is to certify that the thesis entitled "*Prevalence and Associated Factors of Postpartum Hemorrhage in the Public Hospitals at Sana'a City-Yemen*" which Submitted to the Community Health and Nutrition Department, College of Medical Sciences, Al-Razi University for the award MSc. degree in Epidemiology. It is a recorded of the original and bona fide thesis work carried out by *Ferdoos Abdoalmez Mansoor* under our guidance. Such material as has been obtained from other sources has been duly acknowledged in the research. This thesis embodies the work of the candidate herself and no part thereof has been submitted for any other degree.

### *Supervisor*

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## **DEDICATION**

**To my family**

**To my supervisor Dr. Abdullah Abul-Aziz Muharam**

**He was a good supporter for me.**

**To all public hospitals and all staff in delivery room.**

**To all women participated in this study.**

## ACKNOWLEDGMENT

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## LIST OF ABBREVIATIONS

|          |  |
|----------|--|
| AMTSL    | Active Management of Third stage of Labor.             |
| ANC      | Ante Natal Care.                                       |
| APH      | Antepartum Hemorrhage.                                 |
| APTT     | Activated Partial Thromboplastin Time.                 |
| CCT      | Certificate of Completion of Training.                 |
| CMV      | Cytomegalovirus.                                       |
| CS       | Cesarean Section.                                      |
| DIC      | Disseminated Intravascular Coagulation.                |
| DVT      | Deep Vein Thrombosis.                                  |
| Epi calc | Epidemiological Calculation.                           |
| Epi info | Epidemiological Information.                           |
| FDA      | Food and Drug Administration.                          |
| FDPs     | Fibrin degradation Products.                           |
| FIGO     | Federation International of Gynecology and Obstetrics. |
| FFP      | Fresh Frozen Plasma.                                   |
| HB       | Hemoglobin.  |
| HDI      | Human Development Index                                |
| HELLP    | Hemolysis, Elevated liver enzymes, Low platelet count. |
| HIV      | <i>Human Immunodeficiency Virus.</i>                   |
| HT       | Hormone Therapy.                                       |

|        |   |
|--------|---|
| INR    | International Normalized Ratio.                   |
| IV     | Intra Vascular.                                   |
| IU     | International Unite.                              |
| MDG    | Minimum Development Goals.                        |
| MMR    | Maternal Mortality and Morbidity.                 |
| NSAIDs | Nonsteroidal anti-inflammatory drugs.             |
| PE     | Pulmonary Embolism.                               |
| PET    | Pre-Eclampsia Toxemia.                            |
| PGE1   | Prostaglandin E1.                                 |
| PPH    | Postpartum Hemorrhage.                            |
| P-V    | P-Value.  |
| RCOG   | Royal College of Obstetricians and Gynecologists. |
| ROM    | Rupture of Membrane.                              |
| SD     | Standard Deviation.                               |
| SMO    | Site Management Organization.                     |
| SPSS   | Social Passage Statistical Sciences.              |
| UK     | United Kingdom.                                   |
| UPTH   | University of Port Harcourt Teaching Hospital.    |
| USA    | United States of America.                         |
| WHO    | Word Health Organization.                         |

# ABSTRACT

## **Background of the study**

Post-partum hemorrhage is a leading cause of maternal mortality worldwide.

**Objective:** To determine the prevalence and associated risk factors of post-partum hemorrhage among mothers who were delivered in the public hospitals at Sana'a City.

**Methods:** Descriptive, cross-sectional study was done to assess prevalence and risk factors for post-partum hemorrhage among mothers who were delivered in the public hospitals at Sana'a city during study period from May to December 2020. The sample size was determined using Epi calc program. A consecutive sampling was administered to select 182 participants. Data were collected through structured questionnaire. The questionnaire was including: the demographic characteristics of the participants, Reproductive characteristics of the participants, Risk factors of PPH, the data was analyzed by using Statistical Package of Social Science (SPSS) program version 26.0. Frequencies, Chi- square and t-test were done to find out the association among variables Approval was obtained and oral consent was obtained from participant to participate in the study.

**Results:** The prevalence of PPH was (6.5%) in the study population. Factors associated with PPH were mode of delivery, rapid labor, prolonged labor, retained product of conception, placenta Previa and chorioamnionitis.

## **Conclusion:**

Prevalence of PPH was 6.5%. There were statistically significant associations between the prevalence of PPH and the following risk factors: rabid labor, prolonged labor, retained product of conception, placenta Previa, and chorioamnionitis of the participated

mothers at  $p\text{-value} < 0.05$ . This mean these mentioned risk factors of the participated mothers were the most risk factors related factors of PPH.

The mean differences between hemoglobin, hematocrit and pulse (before - delivery and post-delivery) were statically significant among participated mothers at  $p\text{-value} < 0.05$ .

## ملخص الدراسة

### خلفية الدراسة

النزف ما بعد الولادة هو سبب رئيسي لوفيات الأمهات في جميع أنحاء العالم.

### هدف الدراسة

هدفت الدراسة الى تحديد مدى انتشار وعوامل الاختطار المصاحبة لنزف ما بعد الولادة بين الأمهات اللواتي تم ولادتهن في المستشفيات العامة في مدينة صنعاء.

### منهجية الدراسة

تم إجراء دراسة وصفية مقطعية عرضية لتحديد الانتشار وعوامل الاختطار لنزف ما بعد الولادة بين الأمهات اللواتي تم ولادتهن في المستشفيات العامة في مدينة صنعاء خلال فترة الدراسة من مايو إلى ديسمبر 2020. تم تحديد حجم العينة باستخدام برنامج Epi Calc. تم إجراء أخذ عينات ملائمة لاختيار 182 مشاركة. تم جمع البيانات من خلال استبانة منظمة. تضمنت الاستبانة: الخصائص الديموغرافية للمشاركات، الخصائص الإنجابية للمشاركات، عوامل اختطار النزف بعد الولادة، البيانات التي تم تحليلها باستخدام الإصدار 26.0 من برنامج الحزمة الإحصائية للعلوم الاجتماعية (SPSS). تم إجراء التكرارات ومربع كاي و t-test لمعرفة الارتباط بين المتغيرات، واعتبرت قيمة ( $P < 0.05$ ) على انها دالة إحصائية. تم الحصول على الموافقة الشفوية من المشاركات للمشاركة في الدراسة.

### النتائج

بلغ معدل انتشار النزف بعد الولادة (6.5%) في مجتمع الدراسة. كانت العوامل المرتبطة بالنزف التالي للوضع هي طريقة الولادة، والولادة السريعة، والمخاض المطول، وبقايا الحمل داخل الرحم، وتقدم المشيمة والتهاب السائل الأمنيوسي.

### الخلاصة

كان معدل انتشار النزف بعد الولادة 6.5%، كانت هناك ارتباطات ذات دلالة إحصائية بين انتشار النزف التالي للوضع وعوامل الخطر التالية: الولادة المتعسرة، الولادة المطولة، انحباس بقايا الحمل، المشيمة المتقدمة والتهاب السائل الأمنيوسي للأمهات المشاركات عند قيمة ( $P < 0.05$ ). هذا يعني ان عوامل الخطر المذكورة للأمهات المشاركات كانت أكثر عوامل الخطر المرتبطة بالنزف بعد الولادة.

كانت الفروق المتوسطة بين الهيموجلوبين والهيماتوكريت والنبض (قبل الولادة وبعد الولادة) ذات دلالة إحصائية للأمهات المشاركات عند قيمة ( $P < 0.05$ ).