International Journal of Nursing, Midwife and Health Related Cases 9 (3), 44-51, 2023
Print ISSN: 2397-0758 (Print),
Online ISSN: 2397-0766 (Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

Assessment of Vital Signs During the Stages of Labour

Z.M. Datti*, A.A Ladan*
Department of Human Physiology, Faculty of Basic Medical Sciences, Bauchi State University Gadau. Nigeria*

doi : https://doi.org/10.37745/ijnmh.15/vol9n34451 Published September 23 2023

Datti ZM and Ladan AA (2023) Assessment of Vital Signs During the Stages of Labour, International Journal of Nursing, Midwife and Health Related Cases 9 (3), 44-52

ABSTRACT: *Vital signs are an objective measurement for the essential physiological functions of a living organism. The first set of clinical examinations is an evaluation of the vital signs of the patient. The basis of patient triage in an urgent care /prompt care or an emergency room is on their vital signs as it tells the physician the degree of derangement that is happening from the baseline. The degree of vital sign abnormalities may also predict the long-term patient health outcomes, return emergency room visits, and frequency of readmission to hospitals, and utilization of healthcare resources.During the research 12 non pregnant women and 36 pregnant women were used. Questionnaire will be administered to the respondents and their responses formed the basic data for the study. The data will be analyzed using statistical package (SPSS version 25) and one way ANOVA, independent Sample t test and descriptive statisticsVital signs (blood pressure, heart rate, temperature, oxygen saturation and respiratory rate) are thought to undergo changes during and immediately after pregnancy. However, these physiological changes are not taken into account in the normal ranges, which themselves are not evidence-based, used in routine and acute care monitoring. During the first stage of labor we found an average heart rate of 88 (10) beats per minuteAt the beginning of labor, temperature was 37.1 ^{o}C, Temperature increased slowly during labor and was 37.4 ^{o}C after 22 hours. However, in the normal labor group, temperature remained stable, while the abnormal labor group demonstrated a slow increase of temperature. Likewise, respiratory rate, blood pressure and pulse rate were all found to be within accepted range at first but gradually increases with time due.*

KEYWORDs: Abnormalities, Pregnancy, Care, Patient, Emergency

INTRODUCTION

WHO data from 2015 state that the lifetime risk of maternal death in high-income countries is 1 per 6000 pregnancies compared with 1 in 36 in Sub-Saharan Africa.1 Efforts to rectify this stark inequity is a global health priority. Identifying mechanisms to achieve this is the challenge. Approximately 800 women die each day from complications of pregnancy and childbirth. Obstetric hemorrhage, hypertensive disorders, sepsis and abortion complications (often from

hemorrhage or sepsis) contribute to 60% of all maternal deaths. Each of these conditions is associated with abnormalities in blood pressure and pulse.

The Vital Signs

Clinical medical practitioners face patients with illness, disability, and suffering on a daily basis (Yuen & Irwin, 2005). It is the role of a physical therapist to ascertain a patient's current physical condition, in addition to determining a proper PT diagnosis when seeing a new patient. A physical therapist must first monitor the patient's vital signs in order to achieve a baseline report upon which to measure and compare future readings, during and after exercise. Baseline measurements should be determined to understand whether the patient is appropriate for exercise, and is responding appropriately to an intervention (Graham, & Clark, 2011). There are numerous vital sign applications, found in research literature, that may be utilized in various physical therapy settings. Included among these are the four traditional vital signs, which consist of heart rate, blood pressure, temperature, and respiratory rate (Cretikos et al., 2008).

Vital Sign Assessment

In general, healthcare services that utilize vital signs, will reflect the state of personal health and aid in the detection and prevention of cardiovascular disease (Kim & Kim, 2012). Performing vital sign assessment properly, utilizing reliable procedures/techniques, interpreting the findings accurately, and applying appropriate clinical judgement when deciding if the patient should proceed with treatment/exercise is of the utmost importance by PTs. In a study designed to determine whether the taking of vital signs in a clinical setting is reproducible, two trained technicians assessed the vital signs of 140 patients in an acute setting with medical complaints (Edmonds et al., 2002). The results of this study showed that even among properly trained individuals who knew they were being watched and recorded, inter-observer variability still indicated a limited reproducibility.

Cardiovascular Disease

According to the Center for Disease Control and Prevention, one quarter of all reported deaths are a result from heart disease in the United States, on an annual basis. Nearly 370,000 of the 611,105 heart related deaths, had the most common form of heart disease, which is coronary heart disease (Heart Disease Fact Sheet, 2015). Cancer is the second leading cause at 584,881 deaths, while chronic lower respiratory diseases are listed third at a rate of 149,205 deaths. A cerebrovascular accident (stroke) ranks fifth at 128,978 deaths after unintentional injuries and accidents (Leading Causes of Death, 2015).

Hypertension

A critical measure, to determine a patient's cardiovascular health status, that a physical therapist should assess is blood pressure. High blood pressure (hypertension), is the force of blood pushing against the walls of the patient's arteries, and remains at that high level for an extended period of time (High Blood Pressure Fact Sheet, 2014). Since physical therapists now play an important role as primary health care providers, the accurate measurement of blood pressure is critical for making

the appropriate clinical decisions (Frese et al., 2011). Hypertension is the most common primary diagnosis in the United States, with 22% of individuals unaware that they are hypertensive. Hypertension is also a major risk factor for renal failure, stroke, and coronary heart disease (Frese et al., 2011).

Vital Sign: Blood Pressure

Vital sign measurement and assessment are of great importance during the physical therapy exam and review of symptoms for patients who present with and without cardiopulmonary disease; for purposes of establishing a baseline status, a response to exercise, and for future exercise prescription (Frese, Frick, &Sadowsky, 2011). Hypertension is a major health problem and is relevant to physical therapy because relatively small reductions in blood pressure can result in decreased risk for stroke and myocardial infarction (Taylor, Dodd, &Damiano, 2005). In the majority of hypertensive patients, no particular cause for abnormal blood pressure is evident (primary or essential hypertension). In contrast, in the minority of patients with secondary hypertension a specific underlying cause is responsible for the elevated blood pressure (Ott, Schneider, &Schmieder, 2013).

Vital Sign: Heart Rate

The average resting heart rate for most individuals is 60-80 beats per minute, while there is typically a lower reading for physically fit people, and higher scores are found in the aged and sedentary populations (Target Heart Rates, 2013). It is important for the physical therapist to know the patient's heart rate, especially when placed on an exercise program. Maximal heart rate is one of the most commonly used values in clinical medicine and physiology, and is utilized as a basis for prescribing exercise intensity in both rehabilitation and disease prevention programs (Tanaka, Monahan, & Seals, 2001). Every patient is different, and every exercise program is tailored for each individual. The physical therapist needs to dose a proper exercise regimen based on the patient's heart rate. It is pivotal that the physical therapist maintains knowledge of their patient's heart rate throughout the exercise program. Heart rate can be affected by numerous factors, including a patient's age, medical condition (such as fever), medications currently taking (such as beta blockers), and their current fluid retention (Elliot & Coventry, 2012). A survey was mailed with a 43% return rate from clinical instructors and students working in a variety of practice settings.

VITAL SIGN	HEALTHY RANGE
Blood pressure (BP)	120/80 mmHg
Pulse or heart rate (HR)	60-100 beats per minute
Temperature (T°)	36.5°C to 37.5° Celsius
Respiratory rate (RR)	10 to 16 breaths per minute
Blood oxygen saturation (SpO_2)	98%-100%

Materials and Methods
48 women were used for the study. 38 pregnant and 12 no pregnant women, questionnaire were administer to collect the volunteer data and vital sign were observe and measure among the women.

Inclusive Criteria: The entire volunteers were women living in Kafin Madaki of Bauchi State.

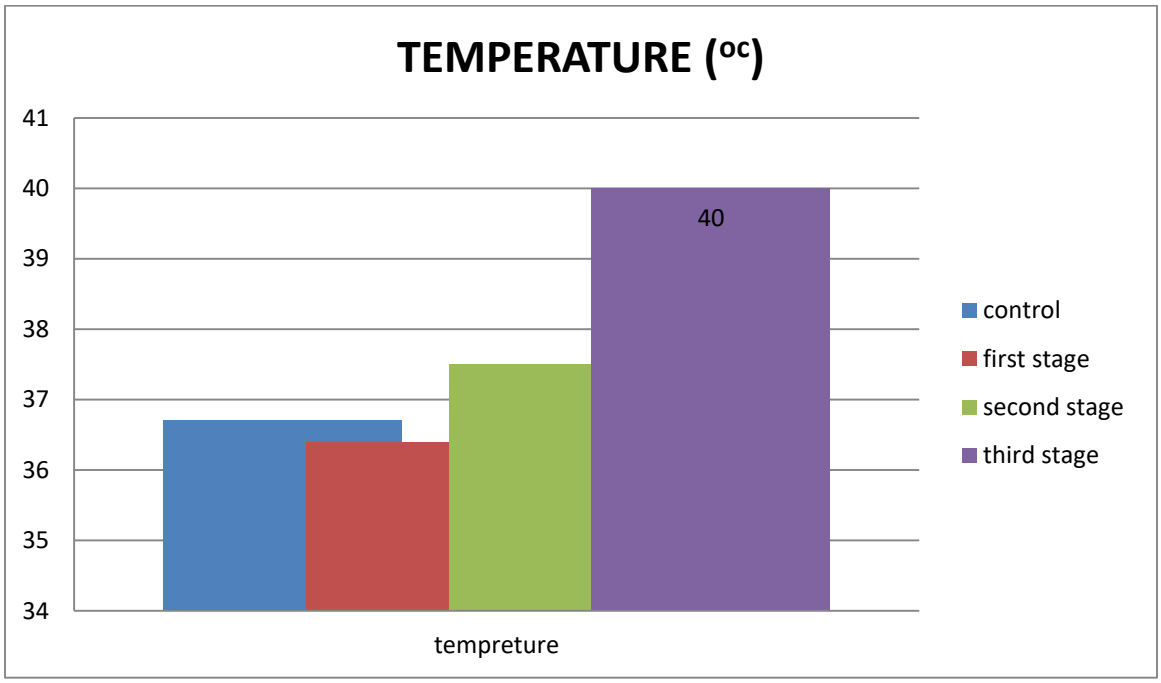
Exclusive Criteria: Subject must were all married women and must not be expose to alcohol and smoking

Study Design
The study adopted a cross-sectional descriptive study design

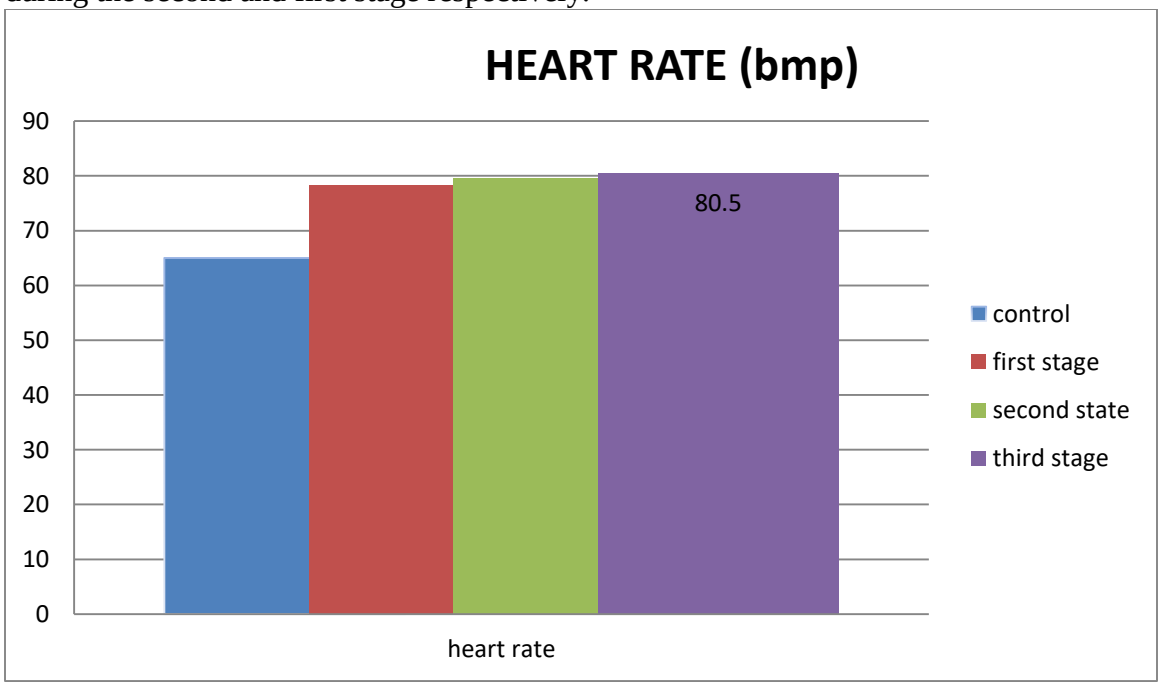
RESULT

Temperature: the control subject are having normal body temperature of 36.5^{oc}, those in the first stage are having of 36.7^{oc} while 37.5^{oc} and 40.0^{oc} are for second and third stage respectively.

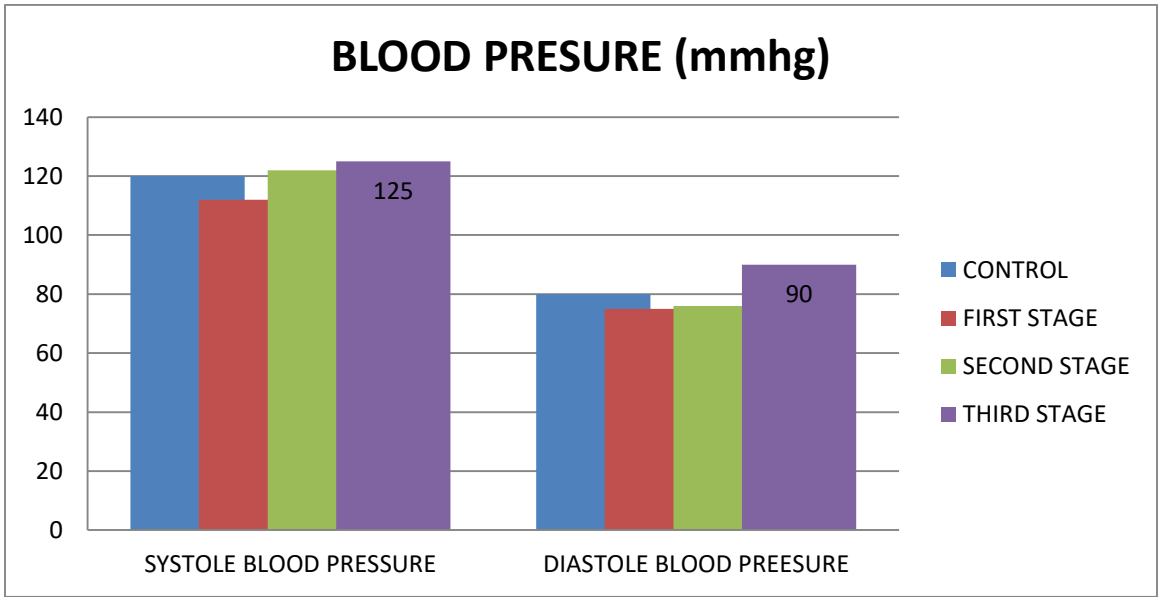
International Journal of Nursing, Midwife and Health Related Cases 9 (3), 44-51, 2023
Print ISSN: 2397-0758 (Print),
Online ISSN: 2397-0766 (Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK



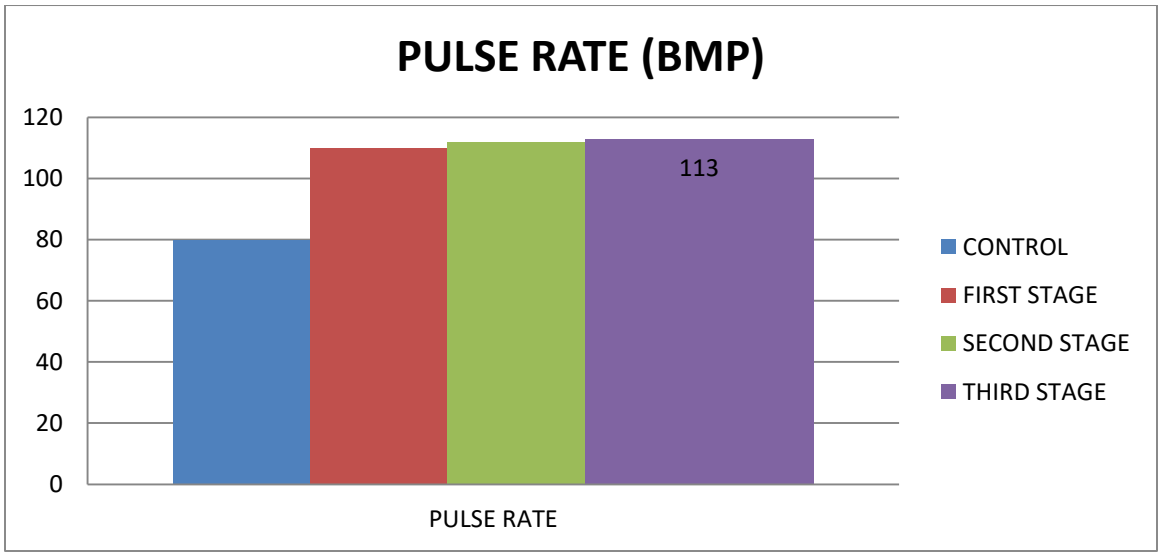
Heart Rate: there is increment of heart rate during the third stage of labor while moderate beat during the second and first stage respectively.



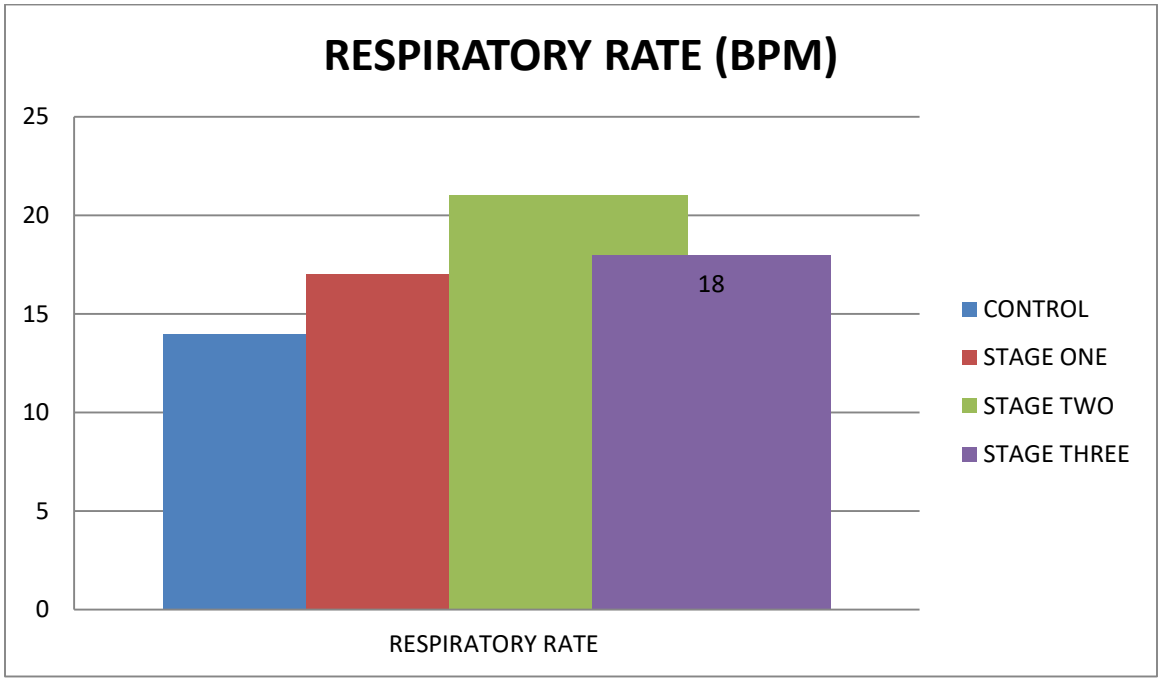
Blood Pressure: the control group are having 118 mmhg systole and 80mmhg, the first stage are 112 and 75 systole and diastole while the second and third stage are 122 and 70; 125 and 90 respectively.



Pulse Rate: the control group of women are having 80 beat per minute, women on their first stage are having 110 beat per minute, 112 and 113 for those in second and third stage respectively.



Respiratory Rate: The control groups of women are having a normal respiratory rate of 14 breath per minute, the first stage are having 17 breath per minute while the second and third are having 21 and 18 breath per minute respectively.



DISCUSSION

Vital signs (blood pressure, heart rate, temperature, oxygen saturation and respiratory rate) are thought to undergo changes during and immediately after pregnancy. However, these physiological changes are not taken into account in the normal ranges, which themselves are not evidence-based, used in routine and acute care monitoring.

We found that the first stage of labor was associated with a significant increase in SBP and DBP. The usual upper blood pressure limits, 140 mmHg for SBP and 90 mmHg for DBP, corresponded respectively to the values recorded during the first stage of labor. As expected, 140 and 90 mmHg corresponded to the SPB and DPB 5th value in the same population at the last prenatal visit thereby confirming the physiological specificity of labor. We were meticulous in excluding aberrant blood pressure values during labor (i.e. a never repeated isolated increased blood pressure value greater than 20% when compared to the immediate previous and following value) to avoid attributing clinical relevance to an incorrect measurement.

Recommendation

I would like to recommend that more studies be carried on this particular topic so as to enlighten the general public on the importance, significance, danger (in case of negligence) of vital signs during labor as it affects both the mother and child welfare/health.

REFERENCES

Jones A; Royal Prince Alfred Hospital Patient Observation. (Vital Signs) Policy - Adult, in Policy Directive. 2010, Sydney South West Area Health Service (SSWAHS). p. 1-13.

Lighthall GK, Markar S, Hsiung R. (2009) Abnormal vital signs are associated with an increased risk for critical events in US veteran inpatients. Resuscitation. 2009;80:1264-9. Medline:19744762 doi:10.1016/j.resuscitation..08.012

McQuillan P, Pilkington S, Allan A, Taylor B, Short A, Morgan G, Confidential inquiry into quality of care before admission to intensive care. BMJ. 2008;316:1853-8.Medline:9632403 doi:10.1136/bmj.316.7148.1853

Miltner RS, Johnson KD, Deierhoi R. (2014) Exploring the frequency of blood pressure documentation in emergency departments. J NursScholarsh ;46:98-105. Medline:24355058 doi:10.1111/jnu.12060

Muntner P, Shimbo D, Carey RM, Charleston JB, Gaillard T, Misra S, Myers MG, Ogedegbe G, Schwartz JE, Townsend RR, Urbina EM. (2019) Measurement of blood pressure in humans: a scientific statement from the American Heart Association. Hypertension. ; 73(5):e35-66.

Ogunlesi T. (2015) Mortality within the first 24 hours of admission among neonates aged less than 24 hours in a special care baby unit (SCBU) in Nigeria: the role of signi□cant hypothermia and hypoglycemia. Iranian Journal of Neonatology. 6:1-7

Wilson, S.F. & Giddens, J.F. (2005). Health Assessment for Nursing Practice (4th edn.). St Louis, MI: Mosby Elsevier.