# Monitoring Indicators for Maternal, Newborn and Child Health at Sub Primary Health Care Centers in Baghdad City: An Evaluative Study

# مؤشرات متابعة صحة الأم وحديث الولادة والطفل في مراكز الرعاية الصحية الأولية الفرعية لمدينة بغداد: دراسة تقويمية

**Majid M. Hassoon, BScN*
Hala S. Abdulwahid, PhD****

*** Academic nurse, Slah Al-Deen Health Directorate, Ministry of Health e-mail:majid1balad@gmail.com**
**** Assistant Professor, Community Health Nursing Department, College of Nursing, University of Baghdad, e-mail: mh.hala2013@gmail.com**

## المستخلص:

**الهدف:** تهدف الدراسة إلى: تقويم تطبيق مؤشرات متابعة صحة الأم وحديث الولادة والطفل من خلال تقويم مؤشرات التأثير ومؤشرات التغطية و تقويم الفائدة من هذه المؤشرات في مراكز الرعاية الصحية الأولية الفرعية لمدينة بغداد.

**المنهجية** : دراسة وصفية التي تم فيها استخدام طريقة التقويم، وقد تم تنفيذ ذلك الدراسة في المراكز الصحية الاولية الفرعية في مدينة بغداد وذلك لتقويم تطبيق كل من مؤشرات التأثير ومؤشرات التغطية والفائدة من هذه المؤشرات لمتابعة صحة الأم وحديث الولادة والطفل وللفترة من (٤) ديسمبرمن عام (٢٠١٧) الى (٢٩) ابريل من عام (٢٠١٨). تم اختيار عينة غرضية غير احتمالية شملت (٦) مراكز صحية فرعية في دائرة صحة بغداد الكرخ و (٦) مراكز صحية فرعية في دائرة صحة بغداد الرصافة . أجريت عملية جمع العينة من خلال استخدام أستمارة أستبيانية مصممه من قبل منظمة الصحة العالمية وقد تم تطويرها لغرض الدارسة ، مع استخدام أسلوب المقابلة الشخصية لكل فرد من أفراد العينة. تكونت الاستبانة من جزئيين ، الجزء الأول يتضمن تقويم تطبيق مؤشرات المتابعة الصحية للأم وحديث الولادة والطفل، والجزء الثاني يتضمن تقويم فائدة تطبيق هذه المؤشرات. تم الحصول على صدق المحتوى والاتساق الدخلي لأداة الدراسة من خلال اجراء الدراسة التجريبية . جمعت البيانات من خلال إستخدام أداة الدراسة والمقابلة الشخصية كوسيلتين لجمع البيانات. تم تحليل البيانات من خلال تطبيق إسلوب تحليل البيانات الإحصائي الوصفي كالتكرار والنسبة المئوية والوسط الحسابي للقيم والمدى وإسلوب تحليل البيانات الإحصائي الإستنتاجي كاختبار t - test

**النتائج:** وكشف النتائج ان مؤشرات متابعة صحة الام وحديث الولادة والطفل غير مطبقة وتعاني من نفس المشكلة في تطبيقها في المراكز الصحة الاولية الفرعية و أكدت تحليل البيانات من خلال اختبار الفرضية ان مراكز الرعاية الصحية الاولية الفرعية تعاني من نفس المشاكل بالنسبة للمؤشرات.

**التوصيات**: أوصت الدراسة بان تقوم دائرة الصحة العامة التابعة للوزارة الصحة والبيئة بالتخطيط الجاد للعمل على تطبيق المؤشرات والمتابعة او الرصد الدوري والمنظم وتقويم تطبيق المؤشرات، وتشجيع الموظفين على المشاركة في الدورات التدريبية وورش العمل ذات الفائدة في تطبيق المؤشرات. وتوصي اجراء المزيد من الدراسات البحثية مع عينة ذات حجم أكبر وعلى مستوى البلد.

**مفاتيح الكلمات**: مؤشرات المتابعة ، الأم ، حديث الولادة ، صحة الطفل ، مراكز الرعاية الصحية الاولية الفرعية ،دراسة تقويمية

## Abstract

**Objectives:** The study aims to evaluate the application of monitoring indicators for maternal, newborn and child health through the evaluation of impact and coverage health indicators and to evaluate the usefulness of the application of these indicators at sub primary health care centers in Baghdad City.

**Methodology**: A descriptive comparative design, which is using the evaluation approach, has been steered at Sub Primary Health Centers of Baghdad City in order to evaluate the application; impact and coverage, and the usefulness of monitoring indicators for maternal, newborn and child health from December 4th 2017 to April 29th 2018. A multistage, "non-probability" convenient, sample is selected for the present study. A total of six Sub Primary Health Centers in Al-Karkh Health Directorate, compared with six Sub Primary Health Centers in Al-Russafa Health Directorate. A questionnaire is adopted from the World Health Organization "health monitoring maternal, newborn and child health: understanding key progress indicators" and developed for the purpose of the present study. Content validity and internal consistency reliability are determined for the study instrument throughout a pilot study. Data were collected through the utilization of the study instrument and the structured interview technique as means of data collection. Data were analyzed through the application of descriptive statistical data analysis approach of frequency, percentage, mean, total scores and range and inferential statistical data analysis approach that includes t-test.

**Results:** Findings of the study revealed that the maternal, newborn and child health indicators are not perfectly applied and experiencing some deficiencies in their application at the sub primary health care centers. Confirmatory data analysis throughout hypothesis testing has revealed that sub primary health care centers are experiencing almost the same problems relative to the impact, coverage and usefulness of these indicators.

**Recommendations**: The study recommends that the Ministry of Health and Environment Public Health Directorate can take serious planning for action in applying these indicators, periodic and systematically driven monitoring and evaluating the application of such indicators, and focal personnel can be encouraged to participate in training sessions and workshops for the benefits of applying these indicators.

**Keywords:** Monitoring indicators, Maternal, Newborn, Child health, Sub Primary Health Centers, An Evaluative study

## Introduction

Global monitoring indicators are employed to cover maternal and child health (MCH) interventions includes the gathering and analysis of a restricted set of quantitative indicators to evaluate progress, which is essential to worldwide efforts in the enhancement of reproductive and maternal health, new-born and child health. Decision makers utilize the outcomes of such monitoring to identify primacies and locate resource allocation [(1)].

The monitoring of maternal, newborn and child health provide actual information on progress of countries health status with regard to the maternal, newborn and child global health and to accelerate decrease of preventable maternal, newborn and child morbidity and mortality [(2)].

Maternal, Newborn and Child Health (MNCH) indicators are utilized to monitor the population health status. These health indicators reflect impact indicators, coverage indicators, utilization of services, and outcomes indicators (positive or negative). For MNCH, health outcome indicators are maternal mortality ratio (MMR), under 5 mortality rate (U5MR) involve (newborn mortality rate (NMR) and infant mortality rate (IMR), and percentage of underweight from (6-59months) old children, while coverage indicators which are (contraceptive prevalence rate (CPR), prenatal care (antenatal care) (ANC), exclusive breastfeeding rate (EBR) from birth up to six and others) [(3)].

These indicators are significant for global health. The World Health Organization (WHO) and United Nations (UN) and other agencies present critical attention to these indicators, because they reveal the level of health among these age groups, as well as the action measures provided by the health system to control the health issues related to (MCH). Due to the importance of those indicators, the existing study aims at evaluating the application of them in the Health System of Iraq particularly in that of Baghdad City, and evaluate its usefulness, such evaluation can reflect the nature of health for the society underlying the study.

## Methodology

A descriptive comparative design, which is using the evaluation approach, has been conducted at Sub Primary Health Care Centers in Baghdad City in order to evaluate the application of impact and coverage indicators of MNCH, and the usefulness of this application for the period from December 4th 2017 to April 29th 2018.The study will attempt to test the following Hypothesis:

1. Null hypothesis:

There are no significant differences between health directorates, health sectors and primary health care centers with regard the application of monitoring indicators for maternal, newborn and child health.

$H_{o:}\ M_1 = M_2$

2. Alternative hypothesis:

There are significant differences between health directorates, health sectors and primary health care centers with regard the application of monitoring indicators for maternal, newborn and child health.

$H_{I:}\ M_1 \neq M_2$

A multistage, convenient "non-probability" sample is selected for the present study. Six Sub Primary Health Centers in Al-Karkh Health Directorate, compared with six Sub Primary Health Centers in Al-Russafa Health Directorate are selected for data collection. A questionnaire is adopted from the World Health Organization "health monitoring maternal, newborn and child health: understanding key progress indicators"[(4)], and developed for the purpose of the present study The study instrument consists of two parts: The first part includes the evaluation of the application of MNCH monitoring indicators, and the second part includes the evaluation of the usefulness the application of these monitoring indicators. Content validity and internal consistency reliability are determined for the study instrument throughout a pilot study. Data are collected through the utilization of the study instrument using the structured interview technique as means of data collection. Data are analyzed through the application of

descriptive statistical data analysis approach of frequency, percentage, mean, total scores, range, and inferential statistical data analysis approach that includes t-test. Data are scored relative to the evaluation of impact as poor (3-4) and good (5-6); coverage as poor (8-12.5) and good (12.6-16); and usefulness as poor (33-49) and good (50-66).

## Results

**Table (1): Overall Evaluation of the Application of Maternal, Newborn and Child Health Monitoring Indicators at Al-Karkh Health Directorate Sub Primary Health Centers**

| Overall Evaluation | Poor | Good |
|---|---|---|
| 1. Impact | (3-4) | (5-6) |
| | 6(100%) | 0 |
| 2. Coverage | (8-12.5) | (12.6-16) |
| | 6(100%) | 0 |
| 3. Usefulness | (33-49) | (50-66) |
| | 6(100%) | 0 |

Results out of this table present that the overall evaluation of MNCH monitoring indicators is poor relative to their application of impact, coverage indicators and their usefulness of application at the sub primary health care centers.

**Table (2): Application of Impact Indicators for Maternal, Newborn and Child Health Monitoring at Al-Karkh Sub Primary Health Centers**

| List | Indicator | Application | | Place of Application | | | | Data Source | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Applied | Not Applied | PHCC | PHCS | HD | PHD | A | B | C | D | E |
| 1 | Maternal Mortality Ratio (MMR) | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Under-five Mortality Rate(U5MR) | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Stunting Prevalence Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**PHCC: Primary Health Care Centers, PHCS: Primary Health Care Sector, HD: Health Directorate, PHD: Public Health Directorate, A: Vital registration, B: Health facility-based data, C: Population- based surveys, D: Population-based surveillance, e. Health information system**

Out of this table, not all impact indicators for maternal, newborn and child health are applied**.**

**Table (3): Application of Coverage Indicators for Maternal, Newborn and Child Health at Al-Karkh Sub Primary Health Centers**

| List | Indicator | Application | | Place of Application | | | | Data Source | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Applied | Not Applied | PHCC | PHCS | HD | PHD | A | B | C | D | E |
| 1 | Contraceptive Prevalence Rate (CPR) | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Antenatal Care Visits (four or more visits) Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Antiretroviral for HIV-positive Pregnant Women Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | Skilled Attendant at Birth Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | Postnatal Care for Mothers and Babies within Two Days of Birth Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | Exclusive Breastfeeding (up to six months) Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | Three Doses of Combined Diphtheria-Tetanus-Pertussis Vaccine Immunization Coverage Rate | 6(100%) | 0 | 6 | 0 | 0 | 0 | 6(100%) | 0 | 0 | 0 | 0 |
| 8 | Antibiotic Treatment for Childhood Pneumonia Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**PHCC: Primary Health Care Centers, PHCS: Primary Health Care Sector, HD: Health Directorate, PHD: Public Health Directorate, A: Vital registration, B: Health facility-based data, C: Population-based surveys, D: Population-based surveillance, e. Health information system**

Coverage indicators for (MNCH), reveal that the majority of them are not applied at sub primary health care centers, only the three doses of combined diphtheria-tetanus-pertussis (DTP) vaccine immunization coverage rate is applied, the data source is vital registration.

**Table (4): Application of Evaluation of the Usefulness for Monitoring Indicators for Maternal, Newborn and Child Health at Al-Karkh Sub Primary Health Centers**

| list | Indicators | Indicators Usefulness Parameter | Available | Not Available |
|---|---|---|---|---|
| **1** | Maternal mortality ratio (MMR) | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **2** | Under-five mortality rate (with the proportion of new-born deaths) | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **3** | Stunting prevalence rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **4** | Contraceptive prevalence rate (CPR) | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **5** | Antenatal care (four or more visits) rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2.Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **6** | Antiretroviral for HIV-positive pregnant women rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **7** | Skilled attendant at birth rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **8** | Postnatal care for mothers and babies within two days of birth rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |

| | | | | |
|---|---|---|---|---|
| **9** | Exclusive breastfeeding (up to six months) rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **10** | Three doses of combined diphtheria-tetanus-pertussis (DTP) vaccine immunization coverage rate | 1. Present plan of action | **6(100%)** | **0** |
| | | 2. Application of the plan | **6(100%)** | **0** |
| | | 3. Outcome of the plan (Positive or negative change) | **6(100%)** | **0** |
| **11** | Antibiotic treatment for childhood pneumonia rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |

Evaluation of the usefulness of the application of monitoring indicators for MNCH indicates that the majority of the usefulness indicators parameters are not available except those of three doses of (DTP3) vaccine immunization coverage rate which are available.

**Table (5): Overall Evaluation of Application of Maternal, Newborn and Child Health Indicators at Al-Russafa Health Directorate Sub Primary Health Care Centers**

| Overall Evaluation | Poor | Good |
|---|---|---|
| **1. Impact** | **(3-4)** | **(5-6)** |
| | **6 (100%)** | **0** |
| **2. Coverage** | **(8-12.5)** | **(12.6-16)** |
| | **6 (100%)** | **0** |
| **3. Usefulness** | **(33-49)** | **(50-66)** |
| | **6(100%)** | **0** |

Results out of this table present that the overall evaluation of MNCH monitoring indicators is poor relative to their impact, coverage and usefulness at Al-Russafa Health Directorate sub primary health care centers.

**Table (6): Application of Impact Indicators for Maternal, Newborn and Child Health at Al-Russafa Sub Primary Health Care Centers**

| List | Indicator | Application | | Place of Application | | | | Data Source | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Applied | Not Applied | PHCC | PHCS | HD | PHD | A | B | C | D | E |
| 1 | Maternal Mortality Ratio (MMR) | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Under-five Mortality Rate(U5MR) | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Stunting Prevalence Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**PHCC: Primary Health Care Centers, PHCS: Primary Health Care Sector, HD: Health Directorate, PHD: Public Health Directorate, A: Vital registration, B: Health facility-based data, C: Population-based surveys, D: Population-based surveillance, e. Health information system**

Out of this table, not all impact indicators for maternal, newborn and child health are applied.

**Table (7): Application of Coverage Indicators for Maternal, Newborn and Child Health at Al-Russafa Sub Primary Health Care Centers**

| List | Indicator | Application | | Place of Application | | | | Data Source | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Applied | Not Applied | PHCC | PHCS | HD | PHD | A | B | C | D | E |
| 1 | Contraceptive Prevalence Rate (CPR) | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Antenatal Care Visits (four or more visits) Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Antiretroviral for HIV-positive Pregnant Women Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | Skilled Attendant at Birth Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | Postnatal Care for Mothers and Babies within (Two) Days of Birth Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | Exclusive Breastfeeding (up to six months) Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | Three Doses of Combined Diphtheria-Tetanus-Pertussis (DTP)Vaccine Immunization Coverage | 1(16.6%) | 5(83.3%) | 1(16.6%%) | 0 | 0 | 0 | 1(16.6%) | 0 | 0 | 0 | 0 |
| 8 | Antibiotic Treatment for Childhood Pneumonia Rate | 0 | 6(100%) | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |

**PHCC: Primary Health Care Centers, PHCS: Primary Health Care Sector, HD: Health Directorate, PHD: Public Health Directorate, A: Vital registration, B: Health facility-based data, C: Population-based surveys, D: Population-based surveillance, e. Health information system**

Coverage indicators, for maternal, newborn and child health, reveal that the majority of them are not applied at sub primary health care centers except the (DTP)Vaccine Immunization Coverage rate indicator which is applied, the data source is vital registration.

**Table (8): Evaluation of the Usefulness for Application of Monitoring Indicators for Maternal, Newborn and Child Health at Al-Russafa Sub Primary Health Care Centers**

| list | Indicators | Indicators Usefulness Parameter | Available | Not Available |
|---|---|---|---|---|
| **1** | Maternal mortality ratio (MMR) | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **2** | Under-five mortality rate (with the proportion of newborn deaths) | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **3** | Stunting prevalence rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **4** | Contraceptive prevalence rate (CPR) | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **5** | Antenatal care (four or more visits) rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **6** | Antiretroviral for HIV-positive pregnant women rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **7** | Skilled attendant at birth rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **8** | Postnatal care for mothers and babies within (two) days of birth rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |
| **9** | Exclusive breastfeeding (up to six months) rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |

| | | | | |
|---|---|---|---|---|
| **10** | Three doses of combined diphtheria-tetanus-pertussis (DTP) vaccine immunization coverage rate | 1. Present plan of action | **1(16.6%)** | **5(83.3%)** |
| | | 2. Application of the plan | **1(16.6%)** | **5(83.3%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **1(16.6%)** | **5(83.3%)** |
| **11** | Antibiotic treatment for childhood pneumonia rate | 1. Present plan of action | **0** | **6(100%)** |
| | | 2. Application of the plan | **0** | **6(100%)** |
| | | 3. Outcome of the plan (Positive or negative change) | **0** | **6(100%)** |

Evaluation of the usefulness for monitoring indicators for MNCH indicates that the majority of the usefulness indicators parameters are not available except those of three doses of (DTP3) vaccine immunization coverage rate which are available.

**Table (9): Comparative Differences between Sub Primary Health Care Centers relative to the Application of Monitoring Indicators for Maternal, Newborn and Child Health**

| Variables | Groups | N | Mean | SD | Degree of Freedom | t-Value | P≤ 0.05 |
|---|---|---|---|---|---|---|---|
| **Sub Primary Health Care Centers** | **Al-Karkh** | **18** | **15.000** | **13.337** | **17** | **4.772** | **1.000** |
| | **Al-Russafa** | **18** | **15.000** | **13.337** | **17** | **4.772** | **1.000** |

Results out of this table depict that there are no significant differences between sub primary health care centers with respect to the application of monitoring indicators of maternal, newborn and child health. The null hypothesis is accepted.

## Discussion

### Part I: Discussion of Evaluation of the Application of Monitoring Indicators at Al-Karkh Sub Primary Health Care Centers

Throughout the course of data analysis, Table (1) presents that the overall evaluation of the application of maternal, newborn and child health monitoring indicators is poor relative to the impact indicators 6(100%), coverage indicators 6(100%) and their usefulness 6(100%) at the sub primary health care centers.

The findings of Table (2) indicate that all impact indicators for maternal, newborn and child health are not applied. Such indicators include maternal mortality ratio (MMR) 6(100%), under 5 mortality rate (U5MR) (with the proportion of newborn deaths) 6(100%) and stunting prevalence rate 6(100%).

Concerning results of table (3), coverage indicators for maternal, newborn and child health, the study findings reveal that the majority of them also are not applied at Sub primary health care centers. These indicators are contraceptive prevalence rate (CPR) 6(100%); antenatal care visits (four or more visits) rate 6(100%); antiretroviral for HIV-positive pregnant women rate 6(100%); skilled attendant at birth rate 6(100%); postnatal care for mothers and babies within two days of birth rate 6(100%); exclusive breastfeeding (up to six months) rate 6(100%) and antibiotic treatment for childhood pneumonia rate 6(100%). only the three doses of combined diphtheria-tetanus-pertussis (DTP) vaccine immunization coverage rate is applied. The data source for these findings is vital registration.

Regarding to table (4), evaluation of the usefulness for application of monitoring indicators for maternal, newborn and child health, the results show that the majority of indicators usefulness parameters are not available except those of three doses of combined diphtheria-tetanus-pertussis (DTP) vaccine immunization coverage rate which is available 6(100%).

### Part II: Discussion of Evaluation of the Application of MNCH Monitoring Indicators at Al-Russafa Sub Primary Health Care Centers

In accordance to the results of table (5)**,** the study reveals that the entire evaluation of maternal, newborn and child health monitoring indicators is poor relative to their impact indicators 6(100%), coverage indicators 6(100%) and usefulness of application 6(100%) at the sub primary health care centers.

All impact indicators for maternal, newborn and child health are not applied (Table 6). Such indicators include MMR 6(100%), U5MR (with the proportion of newborn deaths) 6(100%) and stunting prevalence rate 6(100%).

The majority of coverage indicators for maternal, newborn and child health are not applied at primary health care centers. Such indicators include contraceptive prevalence rate (CPR) 6(100%), antenatal care visits (four or more visits) rate 6(100%), antiretroviral for HIV-positive pregnant women rate 6(100%), skilled attendant at birth rate 6(100%), postnatal care for mothers and babies within two days of birth rate 6(100%), exclusive breastfeeding (up to six months) rate 6(100%) and antibiotic treatment for childhood pneumonia rate 6(100%). The Three doses of combined diphtheria-tetanus-pertussis vaccine immunization coverage is applied 1(16.6%). The data source is vital registration (Table 7).

Regarding the evaluation of the usefulness of application for monitoring indicators for maternal, newborn and child health in table (8) indicates that the majority of the usefulness indicators parameters are not available except those of three doses of combined diphtheria-tetanus-pertussis (DTP) vaccine immunization coverage rate which are available (16.6%).

According to the early stated findings the study conclude that these indicators are not perfectly applied and

experiencing some deficiencies in their application at the all sub primary health care centers. Deficiencies of application of these indicators may results in to devastating consequences relative to the quality of maternal, newborn and child health care.

A longitudinal "follow-up" study has reported that none of the eight indicators for measuring the continuum of maternal and childcare reached either the national coverage levels or the recommended (90%) threshold for achieving the MDG 4 and 5 targets. The state (average) coverage estimates fell below the national coverage. The coverage of some indicators in some LGA worsened to zero [(5)].

Furthermore, the coverage of mothers whose deliveries were supervised by skilled birth attendants, postnatal care for newborns, and DPT3 vaccination worsened in 2013, satisfied demand for FP, antenatal and postnatal care visits, breast-feeding of infants, and antibiotic treatment for suspected cases of pneumonia slightly enhanced by a few percentage points. However, access to antibiotic treatment increased by 12.6 percentage point, ANC visits was (1.0), (3.95) postnatal care, exclusive breast-feeding, and demand for FP improved by only (2.38) and (0.49) percentage points, respectively [(5)].

Birth registration in Syria and neighboring countries such as Lebanon reduced was very low. In Syria, infant mortality rate and (U5MR) and coverage of antenatal care with skilled attendant (one visit) is greater than before, while skilled attendance at birth and vaccination coverage (except DTP3 vaccine) has dropped down [(6)].

In a national cross-sectional household survey between women from (6) client populations in all of them, but (6) of South Sudan's (79) counties, the study results indicate that national coverage of maternal, neonatal and child health services was low for all maternal and newborn care, childcare and immunization indicators. However, the results of the study differed according to the states and districts. Central Equatoria State (CES), where the capital is located, revealed the maximum coverage for most indicators (e.g 4 or more antenatal care visits range was (4.5%) in Jonglei to (40.1%) in CES). Urban districts often overcame rural districts [(7)].

**Part III: Comparative Differences between Sub Primary Health Care Centers with Respect to the Application of MCNH Monitoring Indicators**

A hypothesis testing approach is employed to examine the comparative differences between Sub Primary Health Care Centers relative to its application. Results of such testing reveal that all of these health institutions have experienced almost the same problems relative to the impact, coverage indicators application and usefulness of the application of these indicators. So, the alternative hypothesis is accepted.

**Recommendations**:

According to the stated findings, the study recommends that the Ministry of Health and Environment Public Health Directorate can take serious planning for action in applying these indicators, and periodic and systematically driven monitoring and evaluation for the application of such indicators. Focal personnel can be encouraged to participate in training sessions and workshops for the benefits of applying these indicators.

**References**


1. Bryce, J., Victora, C. G., Boerma, T., Peters, D. H., & Black, R. E. (2011). Evaluating the scale-up for maternal and child survival: a common framework. InternationalHealth, 3(3), p.p.139-146.
2. Ministry of Health and Social Welfare MOHSW. (2015). The National Road Map Strategic Plan to Improve Reproductive, Maternal, Newborn, Child & Adolescent Health in Tanzania (2016 - 2020) One Plan II. Nov 2015.
3. Department of Health, National Center for Disease Prevention and Control. (2011). MNCHN Strategy Manual of Operations. (2nd Edition). San Lazaro Compound, Rizal Avenue, Sta. Cruz, Manila, 1003 Philippines.
4. World Health Organization. (2011). Monitoring maternal, newborn and child health: understanding key progress indicators. A report prepared by Countdown for Maternal, Newborn and Child Health, Health Metrics Network and WHO. Geneva: WHO.
5. Abegunde, D.; Orobaton, N.; Shoretire, K.; Ibrahim, M.; Mohammed, Z.; Abdulazeez, J. and Ganiyu, A. (2015). Monitoring Maternal, Newborn, and Child Health Interventions Using Lot Quality Assurance Sampling in Sokoto State of Northern Nigeria. Global Health Action, 8(1).
6. DeJong, J., Ghattas, H., Bashour, H., Mourtada, R., Akik, C., & Reese-Masterson, A. (2017). Reproductive, maternal, neonatal and child health in conflict: a case study on Syria using Countdown indicators. BMJ global health, 2(3).
7. Valadez, J.; Berendes, S.; Lako, R.; Gould, S.; Vargas, W. and Milner, S. (2015). Finding the Gap: Revealing Local Disparities in Coverage of Maternal, Newborn and Child Health Services in South Sudan Using Lot Quality Assurance Sampling. Tropical Medicine and International Health, 20(12), p.p. 1711–1721.