Performance improvement for anemia prevention programs among pregnant mothers "an operation research"

Thesis

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BY

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INTRODUCTION

Anemia is defined as a low hemoglobin (Hb) concentration in blood, or less often, as a low hematocrite value ***(Allen and Gillespie, 2001).***

Nutritional anemia's are caused when there is an inadequate body store of specific nutrient needed for Hb synthesis ***(Mclaren and Frigg, 2001).***

Iron deficiency anemia is the world's most prevalent nutritional deficiency. Women and children have a higher prevalence of nutrition anemia's than men ***(Scrimshow, 1996).***

The World Health Organization (WHO) estimated that about 40% of the world's populations (more than 2 billion individuals) suffer from anemia ***(WHO, 2000a).***

The prevalence of anemia in developing countries is about four times that of developed countries.

The WHO (2000a) estimated anemia in developing and developed countries respectively for pregnant women: 56% and 18%; school children: 53 and 9%; preschool children: 42 and 17%; and men 33 and 5%.

The ***Egyptian Demographic Health Survey "EDHS" (2005)*** showed elevated level of IDA prevalence (39.4%) among EDHS respondents higher than the figure (27.7%) reported in (EDHS 2000).

Many studies were carried out in **Egypt** during the second half of the past century some were at the national or sub-national level, local studies revealed the high prevalence of anemia especially among women in reproductive age period (17-71%) among preschool children (23-90%) and school children, (22-45%) ***(World Bank, Human Development Group "WBHDG" and Micronutrient status in Egypt over the last decade "MNSED", 1999).***

All these studies indicated that anemia constitutes a major public health problem in Egypt and needs urgent intervention. A national iron supplementation program to control anemia among pregnant and preschool children was recommended.

The **WHO** recommends that all pregnant women be supplemented with 60 mg iron daily, in a pill that also usually contains 400 ug folic acid ***(Stoltzfus and Drey Fuss, 1998).*** This is the recommendation in most of the developing and many industrialized countries. Maternal iron supplementation during pregnancy can improve both maternal and infant iron status for up to 6 months postpartum ***(Alien and Gillespie, 2001).***

Iron or folate supplementation of pregnant women may prevent a deterioration of the anemic condition during the increased physiological burden of pregnancy. However, it does not address the underlying iron deficiency that already existed when pregnancy began. Consequently supplements containing multiple vitamins and minerals could be more effective for improving Hb response than iron alone, multiple micronutrient deficiencies often occur simultaneously and should be

prevented and treated, and several nutrients are required for Hb synthesis. Multiple micronutrient supplements are now being formulated and tested by international organization ***(Alien and Gillespie, 2001).***

The National Program of iron supplementation started in **Egypt** by the year 2000. The program aimed at controlling iron deficiency anemia (IDA) among pregnant women and among children aged less than 5 years. The program was implemented on pregnant women. Therapeutic daily iron supplementation was given to all anemic pregnants in a dose of 60 mg iron + 250-400 ug folic acids. Iron was given at a dose of one tablet daily for pregnant with Hb level < 11 gm - 9 gm, and as 2 tablets for those with Hb level below 9 gm. Iron supplement was given for a period of 6 months beginning by the month in which anemia was diagnosed in the pregnant female.

Many studies were undertaken to assess the impact of iron supplementation on targeted groups, and the findings revealed improvement in anemia prevalence among pregnant women in reproductive age ***(MOHP, 2002).***

According to figures reported by the latest national survey done by high institute of public health (HIPH) in collaboration with ministry of health and population (MOHP) (UNICEF) in 2001/2002, the prevalence of anemia among pregnant women in reproductive age in the study which was found to be 33.2% was lower than the Figure of 45.4% reported in the EDHS 2000/2001 ***(DHS, 2005).***

However, iron supplementation programs may not be effective; this is due predominantly to programmatic constraints such as lack of available supplements, lack of information, education and communication campains, and poor counseling by health providers, resulting in poor compliance.

So more research is required to identify the optimal mix of strategies that will ensure the reduction of anemia.

AIM OF THE WORK

Hypothesis:

Adequate iron supply for pregnant women supported by purposeful health education to enhance intake and absorbability of iron both from food and supplement is expected to reduce prevalence of anemia during pregnancy.

Main goal:

Prevention and control of anemia among pregnant mothers through improvement of anemia prevention program.

Specific objectives:

١. Assessment of the prevalence of anemia among pregnant mothers.

٢. Assessment of the existing system to control anemia among pregnant mothers and identification of problems related to the anemia prevention program.

٣. Designing and evaluation of practical interventions for improving the performance of the ongoing program.

تبارك الذي بيده الملك وهو على كل شئ قدير

الذي خلق الموت والحياة

ليبلوكم أيكم أحسن عملا وهو العزيز الغفور

الآيتان ١،٢ – سورة الملك

ABSTRACT

The current study is an operational research study with a pre/post assessment. The study was implemented in two phases.

In phase one there was assessment of the ongoing anemia control program.

In phase two: based on the findings of phase one, practical intervention was planned and implemented targeting pregnant mothers in the second trimester, aiming at performance improvement approaches for anemia control program.

The study was conducted in two MCH centers providing antenatal care, in Giza governorate; Imbaba center as test site and Giza center as control site. Several methods were used for data collection:

- Exit-interview questionnaires for mothers in phase I and II.
- In depth interview for the health providers in phase I.
- Focus group discussion in phase I.
- Observation check list in phase I.
- Performance assessment by using another observation check list for the health education message providers, in phase I and II.
- Pre/post tests for the mothers and providers of the nutrition education session.
- Review of records, to estimate prevalence of anemia in phase I, while in phase II, it was estimated by using recorded Hb levels in the mother's card.

The most important findings in our study, was improvement in the prevalence of anemia between phase I (2004-2005) (38%) and phase II (2005-2006) (17.7%) in Imbaba center, with statistical significant P-value $\underset{\sim}{}$ 0.01.

Also, there was improvement in the prevalence of anemia in Giza center between phase I (37.5%) and phase II (18.75%), another statistical significant difference (p-value $\underset{\sim}{}$ 0.01). which might be attributed to activities of the national program of iron supplementation started in Egypt by the year 2000.

There were statistical difference between the two phases, as regard findings of the exit interview for pregnant mothers and performance assessment of the HE message providers, this may be explained by intervention approach done in the study.

Also improvement in the scoring of pre/post tests done for HE message providers and mothers was attributed to the study intervention approach.

The study recommended nutrition intervention strategies in integrated and coordinated manner, iron supplementation is one of the effective measure in reducing IDA among pregnant females, also nutrition education should be mandated as required and essential components of comprehensive health care, training of the service providers, proper job description and setting nutritional quality standards, are all required to provide high quality nutrition service.

The science of public health recognizes the key role of communication in shaping behavior communication programs increase knowledge, positive attitudes, interpersonal communication and service seeking behavior.

Key words:

- Iron deficiency anemia
- Integrated and coordinated intervention approach
- National policies and strategies
- Health education and communication
- Operation the research
- Quality assurance

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