Available online at www.sciencedirect.com

ScienceDirect

Procedia Manufacturing 3 (2015) 242 – 249

Procedia MANUFACTURING

6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015) and the Affiliated Conferences, AHFE 2015

Safety and quality of maternal and neonatal pathway: A pilot study on the childbirth checklist in 9 Italian hospitals

Sara Albolino[a], Giulia Dagliana[a], Margerita Meda[b], Francesco Ranzani[a], Michela Tanzini[a]

[a]*Center for Clinical Risk Management and Patient Safety of the Tuscany Region, Via P. Dazzi n.1, 50141, Florence, Italy*
[b]*Careggi Teaching Hospital, Largo Brambilla n. 3, 50134 , Florence, Italy*

Abstract

Maternal and neonatal mortality and morbidity associated with childbirth is a global health problem of the highest priority. Of the more than 130 million births each year, the WHO estimates that about 287.000 are maternal deaths, 1 million fetal deaths during intra-partum period and 3 million deaths of infants during the neonatal period. In low- and middle-income countries, low levels of quality and safety of care still represent an important "issue". The presence of protocols, procedures and cognitive support tools represent still key factors along with procedure for integration with the territory, continuity of care at birth path. In high-income countries the use of tools to support the work of health workers with the aim of managing clinical risk and improving patient safety, is quite usual. The pilot study aims to design and to test a safety checklist for supporting sharp-end healthcare workers coping with critical activities during delivery. The pilot study is based on quantitative analyses to evaluate the tool in terms of usability, feasibility and impact on team working, communication among member's team and work organization. The evaluation process related to the pilot allowed the researchers to collect very interesting input from the clinicians aimed at improving the tool in terms of usability and patient safety. Implications for the theory are the redesign of some areas of the checklist according to the specific organization of a delivery center. The pilot study also allowed the researcher to engage clinicians thanks to their direct involvement in designing the best solution that can fit their daily work. The checklist, as most of the checklists in healthcare settings, promotes the interdisciplinary work, as the control process has to be done by different figures. This is still a big challenge. Implication for practice is the extension of the pilot at the regional level with the involvement of 3 teaching hospitals and the analysis of more than 3000 cases. The results of the extended pilot will constitute the basis for the participation to the WHO Safe Childbirth Checklist program.

Keywords: Safebirth checklist; Patient safety; Maternal and neonatal safety; Ergonomic approach design

doi:10.1016/j.promfg.2015.07.135

1. Introduction

Maternal and neonatal mortality and morbidity associated with childbirth is a global health problem of the highest priority. Of the more than 130 million births each year, the WHO estimates that about 287.000 are maternal deaths [1], 1 million fetal deaths during intra-partum period [2] and 3 million deaths of infants during the neonatal period [3]. The phenomenon is closely related to poverty and limited resources: 99% of the deaths occur in fact in low-income countries, with 85% of the cases concentrated in sub-Saharan Africa and South Asia. The mortality risk related to childbirth, in fact, amounts to 1 probability of 39 for an African mother, compared to 1 in 4.700 for a woman from Europe or from North American. To be noted that within a single state differences related to ethnic origins or social status can have great weight: in the United States, for example, the risk index for Afro-American women is nearly four times higher than that of non-Hispanic white women. According to the World Health Organization (WHO), every year in the world 800 women died during pregnancy or delivery. The 80% of the causes of death is due to postpartum hemorrhage, infections subsequent childbirth, hypertension (eclampsia) during pregnancy or abortion in unsafe conditions [4].

Childbirth is therefore a delicate moment in terms of safety: it has been found that childbirth is the moment in which the majority of deaths occur and most of all within the first 24 hours after birth [5].

In low- and middle-income countries, low levels of quality and safety of care still represent an important "issue". The presence of protocols, procedures and cognitive support tools represent still key factors along with procedure for integration with the territory, continuity of care at birth path [6, 7]. In high-income countries the use of tools to support the work of health workers with the aim of managing clinical risk and improving patient safety, is quite usual. The adoption of the checklist in clinical practice as well as the introduction of the surgical checklist has shown a reduction of deaths and complications in intensive care medicine and surgery [8]. WHO has always concentrated its efforts on the goal of reducing maternal mortality and morbidity, perinatal and neonatal deaths. In 2008 it has developed and designed a pilot checklist for safe childbirth (WHO Safe Childbirth Check List Program) for low- and middle-income. The program and the related pilot checklist was initially tested in Africa and Asia and today the pilot study has been opened also to developed countries [9].

2. Material and methods

The study can be defined as a "research-intervention" whose aim is to design and to test a tool for supporting sharp-end healthcare workers coping with critical activities during delivery. The pilot study is based on quantitative analyses to evaluate the tool in terms of usability, feasibility and impact on team working, communication among member's team and work organization.

2.1. First phase: review of international literature

The first phase of the pilot study has been dedicated to the review of international literature and research of scientific articles focusing on the application of checklist as a tool to support clinical and organizational activities in healthcare facilities. Particular attention was devoted to the research carried out by the World Health Organization that, since 2008, is working on the implementation and testing of a checklist for childbirth. This tool was initially designed for low- and middle-income countries but in the last years the program was open to also to developed countries that are invited to personalize the WHO prototype according to the context of application and to put on trial.

For our study, each item of the WHO checklist was translated into Italian and it was classified according to the following categories: suitable to the context, unsuitable, difficult to translate. Personalization of the tools has required the addiction of several items relative to the context of experimentation.