

# **Interventional study to Improve Patients' Continuum of Care in Obstetrics and Gynecology/Kasr Al-Aini Hospitals**

Thesis

**Submitted for Fulfillment of the Medical Degree in  
Public Health**

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**2014**

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# ACKNOWLEDGEMENT

*First and foremost, praise and thanks are to **ALLAH**, the most merciful and compassionate, who permitted the completion of this piece of work,*

*I would like to express my deep gratitude and sincere appreciation to Prof. Dr **Mervat Roshdy Elrafie**, Prof. of Public Health, Faculty of Medicine, Cairo University, for the valuable supervision and continuous help, she has given me since I started this work,*

*I am deeply thankful to Prof.Dr. **Salwa Abdel-Azim Tawfik**, Prof. of Public Health, Faculty of Medicine, Cairo University, for her valuable instructions, inspiring guidance and support throughout this work,*

*My sincere and deepest appreciation goes to Prof. Dr. **Madiha Said Abdel-Razik**, Prof. of Public Health, Faculty of Medicine, Cairo University. I am so grateful for her supportive efforts and valuable time she spent in supervising the progress of this work. No words can express what I owe her for her endless patience and continuous advice and support.*

*I am also deeply thankful to Prof. Dr. **Mona Abdel Badie Abdel Hamid**, Prof. of Obstetrics and Gynecology, Faculty of Medicine, Cairo University, for her valuable guidance and support throughout this work,*

*Special thanks to all staff members of Kasr Al-Aini Obstetrics and Gynecology outpatient clinics who contributed to this work at different stages especially **Mrs. Hala Salah**, head of Social Relation Office and **Mrs Reda Hamdy** , Social Relations Specialist. Also, I am thankful to **Mr. Maher Moubark**, Photoshop designer for his technical role in the study.*

*Finally, I would like to thank my family for their patience, love and support throughout this challenging work,*

# ABSTRACT

Continuum of maternal care (CMC) denotes continuity of **individual** health care throughout a birth cycle through utilization of four services: antenatal care (ANC), Natal Care (NC), Postnatal Care (PNC) and Family Planning (FP) services. Despite, CMC is considered one of the important quality components that should be delivered in **integrated package** at critical times; health programs contemplate achievement of CMC by coverage rates of the four vertical programs. Additionally, there are no tested interventions and organizational modules that promotes CMC at individual and health system levels. The **objectives** of the study are to describe the profile of CMC at individual level, test the impact of the new health education communication tools on awareness of mothers on quality CMC and designate CMC-modules at health system level. **Methods:** the study is an operations research-intervention study that was conducted in Kasr-Al-Aini- Obstetrics and Gynecology Outpatient clinics, using quantitative data collected during structured interview and recorded in a pre-tested questionnaire forms to a convenient samples of 200 FP clients for needs assessment for quality CMC and 200 ANC clients for pre- post interventions. The study intervention included: development and displaying video film, distribution of leaflets and conduction of seminars by trained social relation specialist on integrated package on CMC in the ANC clinic. **Results:** FP clients reported coverage rates for ANC (90%), NC (95%), PNC (92%) and FP (86%). The CMC according to set standards at the **individual level** was estimated to 400 mothers to be 27%. There were statistically significant differences ( $p<0.001$ ) between mothers committed to standard CMC and those with Irregular Maternal Care (IMC) regarding CMC knowledge score (47% for CMC and 34% for IMC), and sources of maternal care services (private sector was the source of 52% of services for CMC group and 34% for IMC group). CMC at the health sector level showed that Missed Opportunities (MO) for CMC was the highest for Primary Health Care facilities (70%) and the lowest for private sector (22%). At the health system level integrated primary-secondary-tertiary module showed the lowest level of MO for CMC (14%). The intervention succeeded in achieving significant improvement in knowledge score on integrated package of CMC among ANC clients from 39% to 70% after exposure to health awareness materials ( $p<0.001$ ) (OR= 3.6) (CI 3.3 ; 3.8 ). Educational video contributed by 36% of the total knowledge score. The study concluded that empowerment of mothers with information about CMC, and supporting health systems to provide integrated package of CMC services are pivotal for supporting of mothers' health through CMC.

**Key words:** Integrated package, continuum of care, operations research, maternal care, organizational continuum of care, Individual continuum of care, quality of integrated care, educational video, Health System modules for Continuum of care, Missed opportunities for continuum of care

## ملخص

إن استمرارية رعاية الأمومة هي تكامل الرعاية الصحية للفرد خلال دورة الانجاب من خلال استخدام أربع خدمات: رعاية الحمل و رعاية الولادة ورعاية النفاس وخدمات تنظيم الأسرة. وبالرغم من أن استمرارية رعاية الأمومة تُعتبر من أحد المكونات الهامة لجودة الرعاية الصحية التي يجب أن تُقدم في **حزمة متكاملة** في الأوقات المحددة، إلا أن البرامج الصحية تُقيم انجازات استمرارية رعاية الأمومة من خلال معدلات تغطية البرامج الرأسية الأربع. هذا بالإضافة الى انه لا يوجد تدخلات مُحْتَبَرَة ونماذج مؤسسية لتعزيز استمرارية رعاية الأمومة على المستوى الفردي ومستوى النظام الصحي. **وأهداف** هذه الدراسة هي وصف الملامح الحالية لاستمرارية رعاية الأمومة على المستوى الفردي و اختبار تأثير أدوات اتواصل جديدة للتثقيف الصحي على مستوى وعي الأمهات عن استمرارية رعاية الأمومة وكذلك تصميم نماذج مؤسسية لاستمرارية رعاية الأمومة على مستوى النظام الصحي. **منهجية الدراسة:** تنتمي الدراسة الى بحوث العمليات التطبيقية التدخلية وقد أُجريت بالعيادات الخارجية بمستشفيات التوليد وأمراض النساء بالقصر العيني وذلك بجمع بيانات كمية من خلال اللقاءات المقننة، التي تم تسجيلها باستمارات استبيان تم اختبارها قبل استخدامهما لعينة ملائمة من ٢٠٠ منتفعة من عيادة تنظيم الأسرة بغرض تحديد الاحتياجات اللازمة لجودة استمرارية رعاية الأمومة وكذلك ٢٠٠ منتفعة من عيادة رعاية الحمل لغرض الدراسة التدخلية. اشتمل التدخل في الدراسة على: اعداد وعرض فيديو تثقيفي وتوزيع مطويات واجراء ندوات بواسطة اخصائية علاقات اجتماعية مُدربة عن الحزمة المتكاملة لاستمرارية رعاية الأمومة في عيادة رعاية الحمل. **نتائج الدراسة:** طبقا للبيانات التي أدلت بها المنتفعات في عيادة تنظيم الأسرة - تبين أن معدلات التغطية رعاية الحمل (٩٠%) و رعاية الولادة (٩٥%) و رعاية النفاس (٩٢%) و خدمات تنظيم الأسرة (٨٦%). وتبين أن نسبة استمرارية رعاية الأمومة على **المستوى الفردي** طبقا لمعايير محددة تم حسابها لعدد ٤٠٠ أم قد سجلت ٢٧%. ولقد وُجد أنه يوجد فروق ذات مدلول احصائي ( $p < 0.001$ ) بين مجموعة الأمهات اللائي التزمن بمعايير استمرارية رعاية الأمومة وبين الامهات اللائي تلقين خدمات غير متكامله من حيث قيمة المعرفة باستمرارية رعاية الأمومة (الأمهات اللائي التزمن بمعايير استمرارية رعاية الأمومة ٤٧% والامهات اللائي تلقين خدمات غير متكامله ٣٤%) و مصادر خدمات رعاية الأمومة (كان القطاع الخاص مصدر ٥٢% من الخدمات للأمهات اللائي التزمن بمعايير استمرارية رعاية الأمومة مقارنة بالامهات اللائي تلقين خدمات غير متكامله ٣٤%). وبدراسة استمرارية رعاية الأمومة على مستوى القطاع الصحي، وُجد أن الفرص الضائعة لتقديم خدمة متكاملة من استمرارية رعاية الأمومة كانت الأعلى في منافذ الرعاية الصحية الأولية (٧٠%) والأدنى في القطاع الخاص (٢٢%). وأظهرت الدراسة أن النموذج المتكامل للرعاية الأولية والثانوية والمستوى الثالث على مستوى النظام الصحي سجل أدنى مستوى للفرص الضائعة لتقديم خدمة متكاملة من استمرارية رعاية الأمومة (١٤%). نجحت تدخلات الدراسة في تحقيق تحسن ذو مدلول احصائي في مستوى المعرفة بالحزمة المتكاملة لاستمرارية رعاية الأمومة بين المنتفعات بخدمات رعاية الحمل من ٣٩% الى ٧٠% بعد تلقى مواد التوعية الصحية (٣.٨ ; ٣.٣ CI) ( $OR = 3.6$ ) ( $p < 0.001$ ). . ساهم الفيديو التعليمي بنسبة ٣٦% من القيمة الكلية للمعرفة. ولقد استنتجت الدراسة أن تمكين الأمهات بالمعلومات عن استمرارية رعاية الأمومة ودعم الأنظمة الصحية لتقديم حزمة متكاملة لخدمات استمرارية رعاية الأمومة يُعد من مقومات دعم صحة الأمهات من خلال استمرارية رعاية الأمومة.

**الكلمات الدالة:** حزمة خدمات متكاملة، استمرارية الرعاية، بحوث العمليات التطبيقية، رعاية الأمومة، استمرارية الرعاية المؤسسية، استمرارية الرعاية الفردية، جودة الرعاية المتكاملة، الفيديو التعليمي، نماذج النظام الصحي لاستمرارية الرعاية، الفرص الضائعة لاستمرارية الرعاية.

# LIST OF ABBREVIATIONS

<b>AARR</b>	: Average annual rate of reduction
<b>ANC</b>	: Antenatal care
<b>ASHA</b>	: The Accredited Social Health Activist
<b>BCC</b>	: Behavior Change Communication
<b>CCC</b>	: Continuum of Care Coverage
<b>CCP</b>	: Center for Communication Programs
<b>CDAs</b>	: Community development associations
<b>CDC</b>	: Centers for Disease Control and Prevention
<b>CHL</b>	: Communication for Healthy Living
<b>CHW</b>	: Community Health Workers
<b>CI</b>	: Confidence Interval
<b>CMC</b>	: Continuum of maternal care
<b>CMD</b>	: Community Medicine Department
<b>CMD</b>	: Community Medicine Department
<b>EC</b>	: European Commission
<b>EDHS</b>	: Egypt Demographic and Health Survey
<b>E-health</b>	: Electronic health
<b>EMRO</b>	: Eastern Mediterranean Regional Office
<b>EU</b>	: European Union
<b>FHC</b>	: Family Health Centers
<b>FHU</b>	: Family Health Units
<b>FP</b>	: Family planning
<b>GP</b>	: General Practitioner
<b>HIV</b>	: Human immunodeficiency virus
<b>HEWs</b>	: Health Extension Workers
<b>ICT</b>	: Information Communication Technology
<b>ICT4D</b>	: Information Communication Technology For Development
<b>IEC</b>	: Information, Education and Communication
<b>IHC</b>	: Interactive Health Communication
<b>IMC</b>	: Irregular maternal care
<b>IMCI</b>	: Integrated Management of Childhood Illness
<b>IPC</b>	: Interpersonal Communication
<b>IPC/C</b>	: Interpersonal Communication/Counseling
<b>ITN</b>	: Insecticide treated nets
<b>ITU</b>	: International Telecommunication Union
<b>IUD</b>	: Intra Uterine Device

<b>KAA</b>	: Kasr-Al-Aini
<b>KAA-OB&amp;GYNE H</b>	: Kasr-Al-Aini Obstetrics and Gynecology Hospitals
<b>LMICs</b>	: Low and middle income countries
<b>LSM</b>	: Living Standards Measurement
<b>MaNHEP</b>	: Maternal and Newborn Health in Ethiopia Partnership
<b>MCH</b>	: Maternal and Child health
<b>MDG</b>	: Millennium Development Goal
<b>MDSR</b>	: Maternal Death Surveillance
<b>MMR</b>	: Maternal Mortality Ratio
<b>MOH</b>	: Ministry Of Health
<b>MoHFW</b>	: Ministry of Health and Family Welfare
<b>MOHP</b>	: Ministry of Health and Population
<b>NC</b>	: Natal care
<b>NC</b>	: North Carolina
<b>NCI</b>	: National Cancer Institute
<b>NRHM</b>	: National Rural Health Mission
<b>OR</b>	: Odds Ratio
<b>PHC</b>	: Primary Health Care
<b>PMNCH</b>	: The Partnership for Maternal, Newborn and Child Health
<b>PMTCT</b>	: Prevention of mother-to-child transmission
<b>PNC</b>	: Postnatal care
<b>PSAs</b>	: Public service announcements
<b>SIHFW</b>	: State Institute of Health and Family Welfare
<b>SMS</b>	: Short Message Service
<b>SPSS</b>	: Statistical Package for the Social Sciences
<b>UK</b>	: United Kingdom
<b>UN</b>	: United Nations
<b>UNFPA</b>	: United Nations Population Fund
<b>UNICEF</b>	: United Nations Children's Fund
<b>USA</b>	: United States of America
<b>USAID</b>	: United States Agency for International Development
<b>USSD</b>	: Unstructured Supplementary Service Data
<b>WAP</b>	: Wireless access point
<b>WHO</b>	: World Health Organization
<b>YFC</b>	: Young family cohort

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## INTRODUCTION

The continuum of care is a recurrent theme in the *World Health Report 2005* (WHO, 2005) and *The Lancet Neonatal Survival Series* (Tinker et al, 2005). The continuum also provides the foundation for the conceptual framework of the *Partnership for Maternal, Newborn and Child Health (PMNCH)* and *Opportunities for Africa's Newborns (PMNCH, 2006)*. The Global Business Plan for *Millennium Development Goals 4 and 5*, which was called for at the *World Health Assembly 2007*, also emphasizes the continuum of care (Stoltenberg, 2007).

Safe motherhood can be attained through utilization of four services: antenatal care, natal care, postnatal care and family planning (UNICEF, 2010). To ensure the health of the mother and the newborn child, and reduce maternal morbidity and mortality these services should be provided in a continuum of care (UNICEF, 2009, Wang and Hong, 2013).

The term “continuum of care” refers to continuity of individual care throughout the life cycle which is necessary between places of caregiving (PMNCH, 2010a).

The concept of continuum of maternal care implies that each contact with the health system is an opportunity not only to provide promotional, preventive and curative service, but also to enhance the effect of the subsequent contact (Kerber et al., 2007). Pregnant women need antenatal care that is linked to safe childbirth care provided by skilled attendants. Both mothers and babies need postnatal care during the

crucial 6 weeks after birth; postnatal care should also link the mother to family-planning services and the baby to child health care (**International Federation of Red Cross and Red Crescent Societies, 2013**).

Egypt is one of the 2008 countdown priority countries (The Countdown to 2015 collaboration aims to track coverage for interventions that are essential to attainment of Millennium Development Goals 4 and 5 and continuum of care was one of the key interventions) (**Bryce et al, 2008**). Despite indicators used to represent the continuum of care are compatible with the “countdown to 2015” tracking mechanisms (e.g. ANC care (at least one visit), Contraceptive prevalence rate), they don’t adequately measure the entire continuum (**Kerber et al., 2007 and Countdown to 2015, 2010**).

The unit of measurement of continuity is mainly the individual (**Waibel et al., 2012**). A study conducted by **Wang and Hong (2013)** by performing secondary analysis of the 2010 Cambodia Demographic and Health Survey to explore the gaps in the continuum of maternal care showed that the coverage rates of antenatal care, skilled birth attendance, and postnatal care in Cambodia is 90%, 74% and 71% respectively. However, measuring the continuum of maternal care at the individual level by selecting a set of criteria that consider the quality and the timing of the service delivered revealed that only 60% of women had the full range of services for the continuum of care. So using coverage indicators of vertical programs may give an overestimation of the continuum of maternal care compared to indicators at the individual level.

At the national level, searching the published work didn’t reveal any studies addressing the continuum of maternal care in Egypt.

However, tracing the **EDHS (2008)** indicators showed evidence that continuity of care is one of the weak points in the health care system in Egypt. Despite families have accessibility to different service delivery outlets; there is a gap in utilization pattern of different health services: antenatal care, natal care, postnatal care to the mother and the newly born. This gap extends across Egypt regions and across socioeconomic strata of the population. According to **EDHS (2008)**, 74% of mothers had received ANC. However, out of those who received ANC, 20% had delivered at home. At the same time, out of those who did not receive any ANC 48% had delivered in health facilities (25% in public and 23% in private facilities). Despite 82% of mothers who had medically assisted deliveries had received postnatal care (81% within the first 2 days of delivery), but only 33% of their newborn children had received neonatal care (**El-Zanaty and Way, 2009**).

Literature based-evidence showed that using different types of health communication interventions increase positive behaviors, educate, create demand and improve care seeking and service utilization especially in the maternal and neonatal health domains (**Darmstadt et al., 2005 and Storey et al., 2011**). In Egypt, mass media, interpersonal communication and community engagement revealed great success as health communication interventions in the field of reproductive health. One of the most recent health communication programs conducted in Egypt is the *Mabrouk!* (“Congratulations!”) Initiative (**Hess et al., 2012**).

Also, innovation is one of the keys to accelerating progress along the continuum of care, i.e. finding new and creative ways to deliver services and apply new technologies (**PMNCH, 2010c**). MDG 8 addresses