



Increasing Demand for Mobile Health Technologies to improve Reproductive, Maternal, and Newborn Health

Insights from Low- and Middle-Income Countries

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ICT & RMNCH: Background:

- Positive potential impact of mobile technologies
- Addressing many RMNCH disparities
 - Access
 - Information
 - Quality of care
- Mobile phone digital divide
- Need to improve access, demand, and utilization
 - User capacity
 - Financial barriers
 - Value-added to consumers

Lessons Learned: Case Studies

- Recognizing gender dynamics (Global)
- Minimizing disparities and inequities (Nigeria)
- Integrating personalized features (Kenya)

Jennings and Gagliardi *International Journal for Equity in Health* 2013, 12:85
<http://www.equityhealthj.com/content/12/1/85>

INTERNATIONAL JOURNAL FOR EQUITY IN HEALTH

RESEARCH Open Access

Influence of mHealth interventions on gender relations in developing countries: a systematic literature review

Larissa Jennings^{1*} and Laina Gagliardi²

Abstract

Introduction: Research has shown that mHealth initiatives, or health programs enhanced by mobile phone

Jennings et al – Intl J Equity in Health

INTERNATIONAL JOURNAL OF MEDICAL INFORMATICS 84 (2015) 341-348

ELSEVIER journal homepage: www.ijmijournal.com

Disparities in mobile phone access and maternal health service utilization in Nigeria: A population-based survey

Larissa Jennings^{a,b,*}, Adetayo Omoni^{b,c}, Akunle Akerele^c, Yisa Ibrahim^c, Ekenyong Ekanem^{b,c}

Jennings et al – Intl J Med Informatics

Jennings et al. *BMC Public Health* 2013, 13:1131
<http://www.biomedcentral.com/1471-2458/13/1131>

BMC Public Health

RESEARCH ARTICLE Open Access

Exploring the use of mobile phone technology for the enhancement of the prevention of mother-to-child transmission of HIV program in Nyanza, Kenya: a qualitative study

Larissa Jennings^{1,2*}, John Ong'ech^{3,4}, Rogers Simiyu³, Martin Sirengo⁵ and Seble Kassaye^{1,6}

Abstract

Background: Community-based mobile phone programs can complement gaps in clinical services for prevention of mother-to-child transmission (PMTCT) of HIV in areas with poor infrastructure and personnel shortages. However,

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Literature Review (Global):

- **Aim:**
 - To examine evidence of changes in men and women's interactions as a result of mHealth interventions.
- **Inclusion criteria:**
 - Published in English from 2002 to 2012 in a LMIC; included an evaluation of a mobile health intervention; and presented findings on resultant dynamics between women and men.
- **Search strategy:**
 - 4 electronic bibliographic databases
 - Manual review of the reference lists
 - Review of websites with recent mHealth publications.
- **Rigor:**
 - Abstracted data on the studies characteristics with iterative thematic analyses regarding gender-transformative and non-transformative experiences.

Systematic Review Summary:

- **Analytical Sample:** Out of the 173 articles retrieved for review, 7 articles met the inclusion criteria and were retained in the final analysis.
- **Study Characteristics:**
 - SMS-based and conducted in sub-Saharan Africa
 - Addressed HIV/AIDS, sexual and reproductive health

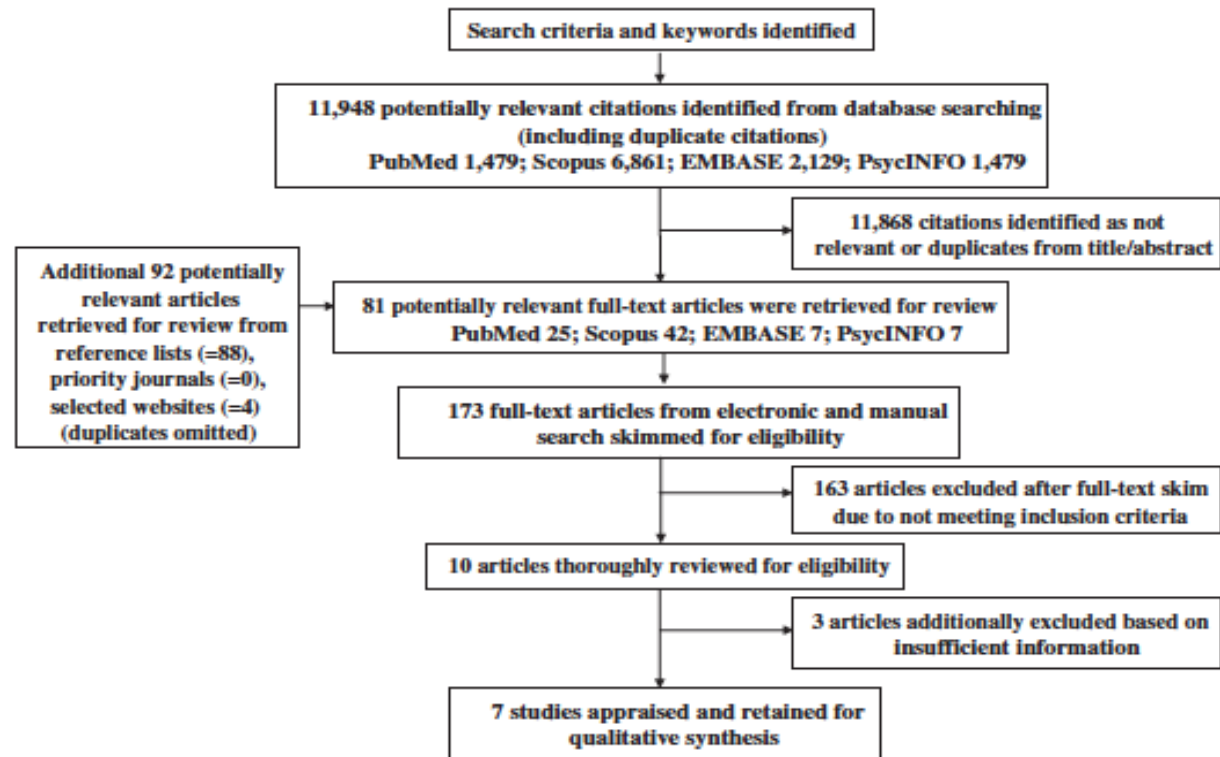


Figure 1 Search and Screening Flow Chart.

Key Findings: Gender Dynamics - LMICs

- Mobile phone programs can influence gender relations in meaningfully positive ways:
 - By providing new modes for couple's health communication
 - By improving women's social status and access to information
 - By enabling greater male participation in health areas typically targeted towards women
- ***Positive gender dynamics can increase demand of mobile health strategies and ICT interventions for RMNCH***
- **However, negative gender dynamics may hinder demand for ICT strategies.**
 - Programs by design may inadvertently reinforce the digital divide
 - Domestic disputes and lack of spousal approval hampered women's participation
 - Perpetuate existing gender-based power imbalances (i.e., greater engagement by men, phone stalking, reliance on financial support)

Population-based Study (Nigeria):

- **Background:** Mobile communication technologies may reduce maternal health disparities related to cost, distance, and infrastructure.
 - *However, accelerating maternal health goals through ICTs requires, in part, that most vulnerable women have access to mobile phones.*
- **Aim:** To examine if women with limited mobile phone access have differential odds of maternal knowledge and RMNCH service utilization
- **Methods:** Multivariable logistic regressions using survey data from n=3,390 women, aged 15-49, out of 10,107 households

Findings: *Decreasing Inequity, Nigeria*

- **Results:** In settings with unequal access to mobile phones, mHealth interventions may not reach women who have the poorest maternal knowledge and care-seeking as these women often lacked mobile connectivity.
- **Empirical Data:** As compared to mobile users:
 - Women without mobile phone access had significantly lower odds of antenatal care utilization (**OR = 0.48**, 95% CI: 0.36–0.64), skilled delivery (**OR = 0.56**, 95% CI: 0.45–0.70), and modern contraceptive use (**OR = 0.50**, 95% CI: 0.33–0.76).
 - Mobile-less women also had significantly lower knowledge of maternal danger signs (**OR = 0.69**, 95%CI: 0.53–0.90) and knowledge of antenatal (**OR = 0.46**, 95%CI: 0.36–0.59) and skilled delivery care benefits (**OR = 0.62**, 95%CI: 0.47–0.82).

Qualitative Exploration (Kenya):

- **Background:** Community-based mHealth programs can complement gaps in clinical services for prevention of mother-to-child transmission (PMTCT) of HIV in areas with poor infrastructure and personnel shortages.
- **Aim:** To examine what specific content and forms of mobile communication would be acceptable to support PMTCT.
- **Methods:** Focus groups and in-depth interviews were conducted in Nyanza Province, Kenya (N= 45 HIV-positive women enrolled in PMTCT).
- Elicited participants' current mobile phone use for PMTCT and their views on optimal mHealth platform design and messaging

Findings: Tailored mHealth Components

- High phone access and spousal mobile sharing
- Benefits of mobile phones for PMTCT included linking with health workers, protecting confidentiality, and receiving information and reminders.
- Greater emphasis on gender-tailored SMS that responded to strengths and barriers to PMTCT for men versus women
 - Pride within the community (*men*)
 - PMTCT compliance was cost-effective over time (*men*)
 - Desire to ensure newborn's health (*women*)
 - You're not alone, keep going! (*women*)
- Informative messaging relayed safely to the intended recipient was critical.
- Demand generation greatest if link with in-person counseling

Conclusions:

- Increasing access and demand for mobile health strategies is a critical strategy for improving RMNCH
- Likely most successful approaches are those that:
 - Build positive gender relations within couples
 - Respond to unique, gendered needs
 - Improve access among women who lack connectivity
 - Empower women with training, resources, and functionality for engaging in mHealth interventions

Thank You

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