Systematic review on implementation of mobile health (mHealth) projects in Africa: What works? What doesn’t work and why?

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INTRODUCTION
Access to mobile phone technology has rapidly expanded in developing countries. In Africa, mHealth is a relatively new concept and questions arise regarding the reliability of the technology used for health outcomes. The main objective of this study is to analyze the experience of implementing mHealth projects in Africa during the last decade, and identifies factors influencing the successes and failures of mHealth projects in Africa using a SWOT (strengths, weaknesses, opportunities and threats) analysis.

RESEARCH QUESTIONS
a) What are the factors leading to successful implementation of mHealth projects?

b) What are the factors limiting or challenging the implementation of mHealth projects?

c) Why do these factors cause project failure or limit project implementation?

METHODS
An electronic systematic literature search was conducted using PubMed and Journal @Ovid. Two search strategies were performed: firstly, we used the combination of the MESH terms “mHealth” AND “Africa”, and secondly, we combined the free-text words “mobile phone$ or cellphone$” AND “health” AND “Africa”. The searches were limited for the period between 2003-2013 and included full text articles in English. Potential abstracts were screened and studies were selected for full-text review. Exclusion criteria were: Project not located in Africa, non-mHealth implementation (telemedicine, other types of eHealth and use of other telecommunication technologies, such computer, internet or e-mail), and studies on factors associated to mobile phones but not mHealth implementation (e.g. community ownership or acceptability of mobile phones). Except for project protocols, all study designs (randomized-control trials [RCTs], pilot project, literature reviews etc.) were included.

RESULTS AND DISCUSSION
Table 1. SWOT analysis of included studies

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<th>Factors</th>
<th>Strengths</th>
<th>Weaknesses</th>
<th>Opportunities</th>
<th>Threats</th>
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<td><strong>Implementation of mHealth projects in Africa</strong></td>
<td>Overall positive perception of potential and positive outcomes at small-scale</td>
<td>- Scarce large-scale studies&lt;br&gt;- Risk of biased reporting and weak evidence&lt;br&gt;- Unknown cost-effectiveness&lt;br&gt;- Lack of integration to the health system&lt;br&gt;- Poor evidence on standards, privacy and legal issues</td>
<td>- Low replication costs and highly adaptable to specific national contexts&lt;br&gt;- Cost-effective implementation of the Health programme (e.g. mobile nursing units)</td>
<td>- Lack of adequate planning and poor project design&lt;br&gt;- Limited funding for long-term projects&lt;br&gt;- Research limited to pilot project or donor reporting&lt;br&gt;- External factors: culture, literacy, treatment duration.</td>
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