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The Relationship between Digital Access and Use and Health Outcomes: Evidence from Demographic and Health Surveys (AS86)

An Analysis Brief from The DHS Program

Why study the association between access to digital resources and health outcomes?



Digital resources such as the internet and mobile phones have become a big part of people's lives all over the world, influencing politics, social interactions, economics, and health.

For many, access to digital resources has meant greater access to information related to health and better access to health care. For others the benefits from the access and use of digital resources have been limited. This is especially true for women, who have less access to digital resources in many places. (See [The Gender Digital Divide: Evidence from Demographic and Health Surveys](#) for more.)

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Which countries were included in the study?

This analysis includes data from five Demographic and Health Surveys (DHS) conducted in Liberia, Nepal, Nigeria, Rwanda, and Senegal between 2016 and 2020. All datasets include information on both women and men and analyses were restricted to those aged 15-49 at the time of the survey.

What methods were used to conduct this analysis?

There has been little research on the influence of access and use of digital resources on health outcomes. This study examines the relationship between three types of access to or use of digital resources (mobile phone ownership, use of a mobile phone for financial transactions, and frequent use of the internet) on a range of health outcomes, including reproductive health, maternal and child health and use of support networks for women experiencing domestic violence.

Multivariable logistic regression was performed, controlling for other things that may affect health outcomes, such as level of household wealth and education. Therefore the analysis explores the independent effect of digital resource access and use on the following health outcomes:



- *Correct knowledge of the fertility cycle.* Whether the respondent correctly identified that women are most likely to become pregnant roughly halfway between one menstrual period and the next. This measure was collected from both women and men.
- *Current use of modern family planning.* The modern family planning method that women report they or their partner use. This was analyzed only for women who had sex in the last year.
- *Use of condom at last sexual intercourse.* This measures whether men used a condom during their last sex. This was analyzed only for men who had sex in the last year.
- *Use of antenatal care (ANC) during most recent pregnancy.* Women with a birth in the five years before the survey who attended four or more ANC visits during her most recent pregnancy.
- *Iron supplementation during most recent pregnancy.* Women who purchased or were provided iron supplements during her most recent pregnancy.
- *Medical treatment for childhood illness.* This measures whether women sought advice or treatment for any child under 5 who had fever, cough, or diarrhea in the two weeks before the survey.
- *Help-seeking following physical or sexual violence.* This measures whether women who had experienced physical or sexual violence in the year before the survey sought help or told someone about the violence.



What are the key results?

Digital resources access and use are generally associated with positive health outcomes. Most strong associations are found for three health outcomes: knowledge of the fertility cycle (especially for women, first column in Figure 1), use of ANC services during the last pregnancy (fifth column in Figure 1), and iron supplementation during last pregnancy (sixth column in Figure 1). This is consistent with prior research that has found that digital resources can improve knowledge.

It also appears that the relationship between digital resources and health outcomes is different for women and men. For women, digital resources are most associated with knowledge-based outcomes. For men, the more important factor seems to be greater engagement with or familiarity with digital technology (using mobile phones for financial transactions and frequent use of the internet). It also seems that the relationship between digital access and use and health outcomes depends on the country context. In Rwanda, Senegal and Nigeria, the relationship is stronger and more consistent than in Liberia and Nepal.

What does this mean?

The results of this study suggest that access to and use of digital resources affect health even when not linked to a specific intervention. In other words, owning a mobile phone, using it for financial transactions, or using the internet regularly impacts your health, often in positive ways. While there are many reasons for why this might be, it seems most likely that digital resources allow people to share information and connect to sources of information they might otherwise never be able to access. Given this, programmers and policy makers should seek to narrow gaps in digital resource access and use, especially between men and women.

This brief summarizes The DHS Program's Analytical Studies No. 86, by Jeffrey Edmeades, Kerry L. D. MacQuarrie, and Rebecca Rosenberg with funding from The United States Agency for International Development through The DHS Program implemented by ICF. For the full report or more information about The DHS Program, please visit <https://dhsprogram.com/publications/publication-as86-analytical-studies.cfm>.

Figure 1. Summary of associations between digital resource access and use and health outcomes.

