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ARTICLE

An evaluation of comprehensiveness, feasibility and acceptability of a fertility awareness educational tool

R.R. Bayoumi [a], S. van der Poel [b], E.Z. El Samani [c], J. Boivin [a,*]

[a] *Cardiff Fertility Studies Research Group, School of Psychology, Cardiff University, Cardiff, UK;* [b] *Population Council, New York, USA;* [c] *Department of Community Medicine, School of Medicine, Ahfad University for Women, Khartoum, Sudan*

* Corresponding author. *E-mail address:* boivin@cardiff.ac.uk (J. Boivin).

Rasha Bayoumi is a Sudanese PhD student at Cardiff University, working on fertility awareness with a focus on low- and middle-income countries (LMIC).

Abstract The World Health Organization (WHO) and World Bank have identified infertility as a global public health issue. Since the 1980s, WHO has advocated for a focus on prevention, especially where the burden of prevalence is highest, specifically in women from low- and middle-income countries (LMIC). The aim of the two studies presented here is to demonstrate a process to enhance implementation efforts in fertility awareness programmes that could assist in preventing some forms of infertility, and increase understanding of factors that could result in fertility problems. The fertility status awareness tool (FertiSTAT) for the Middle East was adapted to provide an illustrative example of requirements for region- or country-specific adaptation. The mixed methods approach used included a survey of international medical experts concerning the comprehensiveness of risks included in the original FertiSTAT (Study I), and stakeholder meetings to assess the feasibility and acceptability of using an adapted FertiSTAT in the Middle East (Study II). The results indicate that the content of the original FertiSTAT was acceptable but not comprehensive in its coverage of potential risk factors; for example, it did not include genital tuberculosis, human immunodeficiency virus, consanguineous relationships and female genital mutilation/cutting. Furthermore, stakeholder meetings revealed that implementation in the Middle East would be enhanced by the use of more culturally sensitive wording. The data highlight the importance of implementation research with participants from LMIC, and the need for standardized protocols for adaptation of any fertility awareness programme or tool before practical application.

KEYWORDS: infertility, fertility awareness, education, sociocultural, geographic and economic influences, feasibility and acceptability, FertiSTAT, global health, low- and middle-income countries

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Introduction

Prevention focus

The World Health Organization (WHO) and World Bank have identified secondary infertility as a global public health issue (WHO/World Bank, 2011). WHO has advocated for a focus on the prevention of secondary infertility, especially in low- and middle-income countries (LMIC) where prevalence is highest (Mascarenhas et al., 2012; Van der Poel and World Health Organization, 2012). The prevention of fertility problems and promotion of 'fertility care' (Zegers-Hochschild et al., 2017) is addressed in some higher income countries and settings (National Women's Health Policy, Australia; Macaluso et al., 2010), but is under-researched and underserved in LMIC and lower-resource settings. The gap in fertility care should be addressed to ensure that policy meets reproductive needs across the lifespan, and to promote equity of access through knowledge about these issues in LMIC (Van der Poel and World Health Organization, 2012). Improvements in fertility care could also have broader health impacts through improvements in prepregnancy health. Addressing an unmet need for family planning and infertility services through the provision of universal access to sexual and reproductive health care are national targets within the sustainable development goals (United Nations General Assembly, 2015), supported through the WHO global reproductive health strategy (WHO, Reproductive Health and Research, 2004). WHO considers its intervention targets in reproductive health, including fertility care, as being 'of equal weight' to strengthen the attainment of sexual health as a whole (WHO, 2017). One important aspect of fertility care is improving awareness of the prevention of infertility by highlighting factors that can have a negative impact on fertility or cause fertility problems.

Fertility awareness tools

'Fertility awareness' has been proposed to include knowledge of reproduction, fecundity, fecundability, related risk factors and reproductive options (Zegers-Hochschild et al., 2017). Educational and information tools aimed at increasing public and self-awareness about reproductive health and fertility care have been developed recently in high-income countries. These tools use diverse methods to increase awareness including: (i) websites dedicated to fertility that tailor the information which visitors receive according to the risks they present on the site (e.g. 'yourfertility' website; Hammarberg et al., 2013); (ii) public health initiatives that use self-assessment tools as a hook to attract people to sites that provide relevant fertility education (e.g. 'test your fertility'; De Cock, 2011); and, more recently (iii) fertility assessment clinics where people can have their fertility evaluated through history-taking and biomedical tests (Hvidman et al., 2015; Petersen et al., 2015). This article reports two studies describing the process used to examine whether FertiSTAT, a fertility awareness tool developed in the UK, could be acceptable for dissemination and implementation within other sociocultural contexts.

FertiSTAT

FertiSTAT was developed as a self-administered tool for women to increase personal awareness of risk factors that negatively impact ability to achieve a pregnancy [available in printed and online versions; see Bunting and Boivin, 2010 and online supplementary material]. The tool uses 22 lifestyle and reproductive questions (i.e. risk indicators) to generate a risk profile and, based on this, personalized fertility guidance and suggested actions (e.g. to change behaviour, monitor symptoms until ready to attempt pregnancy, or seek medical advice now), weighted for importance via a colour-code system. The tool is appropriate whether women are trying to become pregnant or are using contraception. FertiSTAT was designed to assist women make informed decisions about risks (e.g. lifestyle) and to know when to seek timely medical advice if desired. The risk indicators were identified from empirical research as showing a reliable association with infertility, which has been medically defined as the inability to become pregnant after 12 months of unprotected intercourse or due to other medical or functional diagnoses of a reproductive disorder (Zegers-Hochschild et al., 2009, 2017). The FertiSTAT risk indicators are global and are assumed to operate similarly on fertility wherever people reside (e.g. similar effects of smoking on fertility across countries). Using a multifactorial weighted model, FertiSTAT was shown to discriminate to a high degree (i.e. 85.8%) between fertile women and those who had been medically diagnosed and confirmed infertile (Bunting and Boivin, 2010). FertiSTAT can assist in public health campaigns about fertility problems, and has been used in Belgium (e.g. 'test your fertility'; De Cock, 2011) and international media (Portugal, Japan, UK), but has not been evaluated or used in the Middle East to date.

FertiSTAT was selected over other available public awareness options based on its strengths, namely more comprehensive risk coverage, use of critical thresholds for each risk (e.g. number of cigarettes smoked, kilograms overweight), weighting of risks (e.g. absence of periods versus irregular periods), consideration of additive relationships between risks (age, years infertile), validation through case–controlled research studies (as described) and low cost (Bunting and Boivin, 2010). FertiSTAT is inexpensive because it comprises one sheet of paper and does not require maintenance compared with other options (e.g. apps and websites). This advantage is critical for successful dissemination in many countries and settings, especially LMIC. Despite all of the advantages listed, it was not known whether FertiSTAT would be appropriate for wider global use.

Geographic variation in risk

It is known that the global distribution of disease and the corresponding patterns of health risks vary according to geography (WHO, 2009). Variations in risks for fertility problems and infertility have been explored in narrative reviews (Bosdou et al., 2016; Ericksen and Brunette, 1996; Leke et al., 1993; Sharma et al., 2009). These reviews suggest that variations in the prevalence of cultural practices (e.g. consanguineous marriages, female genital mutilation/cutting), communicable disease [e.g. human immunodeficiency