Breaking down cultural barriers to modern contraceptive use: A review of targeted interventions

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ABSTRACT

Background – Family planning has been on the reproductive health agenda since the 1960s yet, however the level of unmet need for contraception remains high. Cultural aspects have been identified as key barriers to contraceptive uptake.

Objective – This study will identify and assess interventions which have addressed cultural barriers to the uptake of modern contraception, in order to understand these interventions and their impact.

Methods – A literature search of 11 databases, including CINHAL, Embase and Medline was conducted. A strict inclusion and exclusion criteria was applied to each of the 6,914 articles identified by the search.

Results – 13 studies were identified which involved targeted family planning interventions and contained enough detail and analysis of the programs. A quality appraisal tool was used to evaluate and extract data from these studies.

Findings – The meta-synthesis identified the key themes in articles discussing interventions. These were 1.Intervention characteristics 2.Provider characteristics 3.Intervention facilitation 4.Type of contraception and 5.Intervention outcomes.

Conclusion – Targeted interventions have proved successful, especially where interventions combined both demand and supply strategies. Community support of interventions from religious and other respected community members helped to initiate discussions about family planning, increasing knowledge and dispelling misconceptions about modern contraception and to increase social acceptability of contraceptive use.

BACKGROUND

Family planning has been on the reproductive health agenda since the 1960s, when developments in healthcare led to increased child survival, development of contraceptive methods and availability and access to family planning methods and facilities. Despite worldwide promotion and the increased use and acceptance of family planning programs and facilities, high fertility and unmet need for contraception remain in many lower and middle income countries (LMICs). In 1994 at the International Conference on Population and Development (ICPD) family planning was high on the agenda once again. The international community was urged to identify the continued barriers to the supply and delivery of reproductive health services, and to facilitate access to the commodities essential to these programs (United Nations, 1995).

Bongaarts (2006, p.8) observed that “once a region or country had started a fertility decline, neighbouring regions with the same language or culture followed”. This statement emphasises the social nature of fertility preferences, and highlights the ability of culturally acceptable fertility behaviour to cross community borders. It is therefore plausible that this effect may be replicated in attitudes towards contraceptive use, given that one of the reasons for variations in contraceptive prevalence rate is cultural difference (Adeyemi et al., 2005, Gakidou and Vayena, 2007, Tucker, 1986) . A family planning intervention targeted towards a culturally homogenous group may result in

neighbouring communities also adapting new approaches and desires regarding contraceptive use, leading to overall greater use and acceptance of modern contraceptive methods.

To facilitate the identification of relevant intervention studies, this review will combine the 'old view' of culture explored by Wright which emphasises culture as shared elements present in a particular way of life (Tylor 1871, cited in Wright, 1998)and the 'new view' that culture is the "active process of meaning making" (Street, 1993, p.25). It is important to accept the active and dynamic nature of culture as cultural understanding changes throughout the life course with exposure to external factors such as the media.

Many studies have highlighted the importance of culturally targeted interventions. For example, improved access to health services for Andean women in Latin America was attributed to the recognition of cultural perspectives and the needs of users when implementing new health strategies (Camacho et al., 2006). Cleland et al. (2006) stated that some of the best interventions have materialised through context specific implementation, by reaching underserved groups using creative promotion and cultural knowledge, but examples of these studies were not actually identified in the paper.

It is recognized that the implementation of culturally sensitive programmes continues to be a complex process (Goodburn and Campbell, 2001, UNFPA, 2005) by collating family planning intervention studies it is hoped that a richer understanding of successes and failures will be provided. Systematic reviews have been described as "intellectual gold" (Jensen and Rodgers, 2001). By applying formal methods of review, the aim of this paper is to obtain a better understanding of interventions which address cultural barriers to the uptake of contraceptive use and their outcomes.

This is not the first systematic review to evaluate family planning interventions or contraceptive use. Mwaikambo et al. (2011) conducted a review which "focused on studies of family planning interventions that took place in developing countries and assessed changes in outcomes directly attributable to a program". They identified 63 evaluation studies which included youth and school based interventions. Other reviews have decided that adolescent interventions and contraceptive use studies should be reviewed separately as they experience different patterns of sexual behaviour from adults (Pedlow and Carey, 2004, Williamson et al., 2009). This systematic review will attempt to ascertain the culturally targeted interventions mentioned in the previous paragraph and to synthesise their outcomes in order to see if there are any particular similarities or differences between them.

Authors do not always explicitly refer to 'culture'. For example Bongaarts (2006, p.11) stated that "appropriately designed services can reduce unmet need for contraception even in traditional settings". In this case "traditional" has been interpreted as a term which is interchangeable with culture; this will be discussed further in the study. To help overcome this impediment to literature searching, it was decided that in order to be included in this study an intervention must be targeted towards a group of people with low levels of contraceptive use who, for example, were ethnically homogeneous or may live in the same village or area, even if the publication did not explicitly discuss cultural influences.

OBJECTIVE

The primary objective of this study is to identify culturally targeted family planning interventions regarding contraceptive use and their outcomes in lower and middle income countries.

In order for studies to be included they must:

1. Identify a group of people practising lower contraceptive use
2. Implement a family planning intervention targeted at the identified population or a subsection of the population
3. Provide an evaluation of the intervention

For the purpose of this study, culture will be defined as the context in which we live, which shapes our thinking and behaviour. The idea is not to create a definition which segregates any one culture but to identify collectives who may react in a specific way to contraceptive interventions due to the meaning and interpretation they place upon the situations, in light of their cultural difference from another group of people. Although culture is not restricted by spatial constraints, targeted interventions have geographical barriers and it is the adoption of modern contraceptive use in low contraceptive prevalence areas which will signify the breaking down of the cultural barriers which were in place pre-intervention.

Cultural barriers to family planning were identified as different in high income countries, compared to lower and middle income countries. Therefore a list of lower and middle income countries was compiled using information from the World Bank, and only studies carried out in these countries were included in the review (Appendix 1).

METHODS

Systematic reviews have been carried out to synthesize research evidence on various factors associated with contraceptive use (DiCenso et al., 2002, Harden et al., 2006, Marston and King, 2006, McDermott et al., 2004, Williamson et al., 2009). However interventions which address cultural barriers to modern contraceptive use have not been investigated in such depth. It is hoped that this systematic review will highlight gaps in the research evidence of this area, which can in turn be used to enrich the findings of other systematic reviews of intervention research whilst increasing our "understanding of the challenges of applying [a] cultural lens" to reproductive health issues (UNFPA, 2005).

Culture is a diverse concept with many different interpretations. Therefore the identification of search terms was challenging. To facilitate the process the main concepts from the research question were identified. The search terms were then grouped under these concepts: cultural factor, barriers and contraception (Appendix 2). An extensive list of words was created to fit each of these concepts. It was decided that for this study a wide search would be carried out, as the scope and inclusion criteria were extensive, in order to capture as many relevant studies as possible.

Studies were identified through the use of both manual and electronic searches. The databases chosen for the search were initially those used in other systematic reviews (Marston and King, 2006, RamaRao and Mohanam, 2003, Williamson et al., 2009) and then restricted by institutional constraints or removed due to no relevant hits found from a quick scoping search.

The databases searched and included in the study were: AMED (via Ovid), CINAL, Conference Papers Index, Embase (via Ovid), HMIC (Ovid), IBSS (via CSA), Medline (via Ovid – three different areas), PsychInfo.

Studies identified by the search were then imported into EndNote where the inclusion/exclusion (Table 1) were applied in order to ensure that only articles which may be relevant to this particular systematic review were captured. It was decided at this stage that any studies published before 1994 would be removed from the review. This was due to the ICPD taking place in 1994, which led to a shift from the focus of demographic goals for family planning programmes towards a client orientated service delivery (United Nations, 1995). Only studies in English or French were included.

Table 1: Inclusion/exclusion criteria

Criteria	Inclusion	Exclusion
Date	1994-2011	Pre-1994
Location	Lower and middle income countries	High income countries
Types of participant	Males and females of reproductive age	Same-sex couples
Study design	There will be no discrimination between study types	There must be an evaluation of the intervention
Scope of study	Studies targeted at a population(s) where lower levels of modern contraceptive use have been identified	Interventions which are not specifically targeted towards a group of people who are practicing less contraception than another
Contraceptive methods	Hormonal and barrier methods	Natural family planning, traditional birth control, sterilization, abortion, emergency contraception
Contraceptive Use	Contraceptive use, uptake and discontinuation	Studies which are focused on STI/HIV interventions, abstinence, age at first sex, number of sexual partners or the interaction between contraceptives and other drugs or illnesses
Study quality	Studies graded A-C	Studies with a D grade

RESULTS

Searches of the 11 databases identified 10,438 articles; of these 3,524 were duplicates. With the remaining 6,914 articles; first the title, then the abstract and finally the full text was examined in order to establish relevance to this review. The full text was needed for 586 of these articles. This was either because the studies had no abstract and could not be excluded on title alone or they were potentially relevant but the abstract did not give enough information. Through various resources 361 of these full texts were located[1]. With the application of the criteria outlines in Table 1; only 8 studies were identified as fulfilling all the criteria. Studies which focused specifically on HIV/AIDS interventions, youths, general evaluations of contraceptive knowledge and views on contraceptive use were excluded. This is because our particular focus was on interventions which address cultural barriers which may cause families who wish to limit or restrict births not to adopt modern contraceptive methods.

There is an "increasing focus on formal methods of systematically reviewing studies" (Egger et al., 2001), yet there is still great debate as to the best tools to use for data extraction (Downe, 2008, Jensen and Rodgers, 2001, McDermott et al., 2004). In light of these debates, a quality assessment and data extraction tool specific to the studies identified for this review was established and is outlined in Table 2. The criteria within this tool were created to assess various aspects of the content of each study. After the initial extraction of data, a quality grade was assigned for each of

Table 2: Quality Assessment Criteria (adapted from(McDermott and Graham, 2005, Sheperd et al., 2002, Williamson et al., 2009)

1. Background – how informed by, or linked to existing body of knowledge, literature review
2. Aim – clearly stated aims and objectives
3. Context – is it adequately described
4. Sampling design – details of sampling and recruitment; size and characteristics, how conducted, are exclusions and refusals accounted for
5. Methodology – Data collection; means of data collection and by whom and data analysis; methods and process clearly defined,
6. Data interpretation – clear integration of the data interpretations and conclusions
7. Reliability/Validity – attempts to establish reliability and validity of analysis

[1] The remaining 225 articles are still being accessed.

the seven quality criteria to all eight aspects of extraction and an overall quality grade was established. The grading scale can be seen in Table 3. Only studies with grades A-C were to be included in the final review, all of the 8 studies were of high enough quality to be included.

Table 3: Appraisal grading

A – No or few flaws
B – Some flaws
C – Significant flaws which may affect the quality of the findings
D – Untrustworthy findings/conclusions

The key characteristics of these studies are outlined in Table 4. Of these 3 were from Africa (two from Ghana and one from The Gambia), 1 was from Central Asia (Afghanistan) and four were from South Asia (three from Bangladesh and one from Pakistan). All but one of the studies described the sample population as married women aged 15-49. The remaining study, in Bangladesh, did not define the participants further than households within the intervention area. Sample sizes ranged from 420 women in The Gambia to 8998 women in one of the Ghanaian interventions. Only one intervention was urban based and the remaining seven were reports on interventions implemented in rural settings. All the interventions had an aspect of household delivery of contraceptives, although one of the interventions from Bangladesh (Mercer 2005) involved the replacement of satellite clinics (including doorstep delivery) with static clinics.

The lines of argument meta-ethnographic approach, introduced by Noblit and Hare (1988), was used to synthesize the findings of this systematic review. This involved finding common themes between the studies, discussing differences and then a general interpretation of the lines of argument. In order to facilitate this process a table was created showing the identified themes and a circle was used to indicate whether or not a study identified this theme (Appendix 3).

FINDINGS

When examining the cultural element of the identified studies, only three used the word culture. Awoonor-Williams et al. (2004)used culture to describe the difference between the original intervention area (Navrongo) and the intervention extension area (Nkwanta), stating that they differed by culture and ecology. It was identified by Mercer et al. (2005) that “phasing out home delivery might reduce contraceptive use, especially in a culture that has traditionally restricted women’s movements” (p.115) and therefore the introduction of static clinics may reduce contraceptive use. This was not found as contraceptive use did increase slightly in the intervention areas and only about 11% of respondents from both the intervention sites reported that the clinics were too far away. Huber et al. (2010) did not mention culture throughout the main text of the article. However they did state in the French resume, that the regular interactions with community leaders, religious figures, community health providers and couples enabled the cultural acceptance of the interventions. There is an equivalent paragraph in the main text but the author chose to use the terms “developing trust” and “confirming acceptance” (Huber et al., 2010, p.229). This highlights the fact that although ‘cultural barriers’, in this case religious and social acceptance, are discussed it was not felt necessary by the authors to define them as cultural.

Although all the interventions were implemented towards targeted areas the description of these varied with the different authors. Contraceptive prevalence was generally low across all the countries where the interventions were implemented. The intervention in Ghana was instigated in

Table 4: Characteristics of the interventions included in the meta-ethnography

Study Author	Country	Sample size	Sample characteristics	Data collection	Locality	Intervention
Awoonor - Williams et al. (2004)	Ghana	891 heads of household, 1,064 women, 180 community leaders, health officials and school personnel.	Women aged 15-49	Surveys	Nkwanta District	1. Communities were grouped into zones 2.Community leaders were used to foster ownership of the program 3.The construction or renovation of facilities to be used as service points was undertaken 4.Community health officers were deployed 5.Volunteer selection, training and deployment was engaged to provide support for the community health officers
Debpuur et al. (2002)	Ghana	8998 women	Currently married women of reproductive age	Navrongo Demographic Surveillance System and interviews	Kassena-Nankana Districtst	Nurse outreach: community health officers were to visit each household in their defined area on a 90 day rotation. They carry contraceptives with them. Zurugelu outreach: presence at community meetings on a 90 day rotation to promote family planning discussions. Combined nurse and Zurugelu intervention.
Gazi et al. (2005)	Banglad esh	2100 women	Married women aged 15-49	Surveys, interviews and focus groups	1 -Rayer Bazar in Dhaka city (city corporation) B - Brahmanbaria (distric town) and C - Sherpur in the Dhaka division (sub-district)	Depot-holders provided a group of households (about 350-450 couples) with contraceptives.
Huber et al. (2010)	Afghani stan	3708 families	Woman of reproductive age	End-of-project survey and interviews	Tormay, Ghazni province; Islam Qala, Herat province and Farza, Kabul province	Accelerating Contraceptive Use (ACU) project - One male and one female community health worker served 100-150 households.
Luck et al. (2000)	The Gambia	420 women	Women aged 15-49	Surveys	Three areas within the North Bank Division of The Gambia	The Kabilo Approach: a female community volunteer provided village women with basic health information, on a weekly basis and a discussion at Imam meetings were used to mobilize demand. Improved availability was provided through support for the community health nurses. One intervention area was the control, one had both interventions and one had only the demand mobilization intervention.
Mercer et al. (2005)	Banglad esh	11,000 households	Married women aged 15-49	Surveys	Mirsarai district (seven unions) and Abhoynagar district (five unions)	Transition from satellite clinics to static clinic system in Bangladesh
Phillips et al. (1996)	Banglad esh	4236 respondents	All households in the study districts	Sample Registration System for baseline information, surveys and client-worker exchange records.	Sirajganj district (Central) and Abhoynagar district (Western)	Family welfare assistants delivered family planning services to couples at their homes.
Sultan et al. (2002)	Pakistan	4676 women	Ever married women aged 15 to 49	Interviews and facility surveys	163 rural clusters	5500 village-based family planning workers introduced to provide home visits at regular intervals to local married women of reproductive age

an area which represented a traditional rural African population but also had a surveillance system which would help with program evaluation. The Ghanaian extension project was implemented in an area with less resources than Navrongo, greater linguistic diversity and an observed contraceptive prevalence rate which was very low, in order to really test the duplicability of the intervention. The intervention in Afghanistan was also implemented in rural areas with a mature data reporting system. Five of the studies had comparison or control areas, which were used to compare intervention results. Where studies had no control group pre and post-intervention results were included.

The intervention in Pakistan was the only intervention where the author did not target the intervention on a smaller level than at the rural population. The interventions in Ghana were implemented in one district and then a number of cells within the district. The remaining interventions were executed in 2 districts or three areas.

Theme 1: Intervention Characteristics

All the interventions which were identified were created to increase access and supply of contraceptives. Five of the eight studies also tried to increase the demand for such services. The three studies examining interventions in Bangladesh are interesting because they show the progression and development of interventions. Initially a satellite clinic intervention with depot-holders was put in place in Bangladesh (Gazi et al., 2005) and Mercer et al. (2005) describe a recent intervention where satellite clinics are being replaced with static clinics. The intervention evaluated by Phillips et al. (1996) is an extension of a field experiment in Matlab, a district in Bangladesh. Interestingly the Ghanaian intervention reported on by Awoonor-Williams et al. (2004) was an extension of the intervention in the Debpuur et al. (2002) article.

Gazi et al. (2005) found that depot-holders were unable to foster new demand for contraceptives or other health services as “non-users were not aware” (p.383) of their activities. Philips also noted that “Outreach helps women to implement their preferences, but plays a relatively minor role in shaping those preferences”. However, when the static clinics intervention was introduced women did note that they “would still value home visits…for information”, implying that although statistically not very significant in generating demand, home visits were valued by those receiving them.

The three African interventions added an extra dimension in order to create demand and acceptance through integrating interventions with community meetings. The interventions described by Awoonor-Williams et al. (2004) and Debpuur et al. (2002) involved the community through the mobilization of volunteers to build and renovate community health compounds in order to foster “community ownership of the program” (Awoonor-Williams et al., 2004, 165).

Theme 2: Provider Characteristics

Only three of the intervention providers focused solely on providing family planning, the remaining five interventions were concerned with improving good health practices and received training and health supplies additional to contraceptives such as ORS and medications related to child health. Interestingly the Bangladesh extension and the intervention in Pakistan used the term family

planning workers yet in the Afghani intervention, although the providers were part of the Accelerating Contraceptive Use (ACU) project, they were named as community health workers.

Not all the studies identified the gender of the intervention providers, those that didn't were the two from Ghana. The Pakistan and Bangladesh depot-holder interventions stated the sole use of women; the others consisted of a combination of both genders. Interestingly the intervention in Gambia had a hierarchal division of gender. The community health nurses were all male and the health subcommittee volunteers were all women. Only the study by Phillips et al. (1996) evaluated the effect of gender on acceptance of the interventions. They found that "the role of female workers is greater than the outreach from male health workers" (p.209) and that "male health assistants should be phased out altogether" (p.212).

Theme 3: Intervention Facilitation

It was interesting to take note of the factors which intervention providers were given access to in order to facilitate implementation. Most (75%) of the interventions provided some form of training to their providers. This ranged from 7 months (Sultan et al., 2002) to 2 days (Luck et al., 2000). Initially the intervention described by Phillips et al. (1996) used already trained and paid Ministry of Health and Social Welfare workers. However it does not describe whether or not the new family welfare assistants were trained or paid.

Only three of the interventions mentioned financially compensating the intervention providers. In Pakistan the family planning workers were given a salary of about US $25 a month, whereas the Bangladesh depot-holder intervention paid an honorarium of US $4-8 per month. The depot-holders also received 50% of profits from sales of commodities and 50% of the service charge from NGO clinics for referrals. The intervention in The Gambia only provided a monthly stipend for the community health nurses of 80% of their base salary.

The interventions implemented in Africa and Afghanistan had an element of religious leader or village elder acceptance. The intervention implemented in Afghanistan produced updated information about contraception including religious quotes which dispelled misconceptions. A result of this intervention was that "several *mullahs* (religious leaders) began emphasizing the importance of birth spacing during Friday prayers" (Huber et al., 2010, p.228). In contrast the African interventions used community meetings to discuss family planning issues. In Gambia these meetings seemed to have no significant effect (Luck et al., 2000). However this could be due to the provision of half-day meetings not being sufficient enough to change women's beliefs.

In order to further facilitate the application of the interventions some extra provisions were also noted. In Ghana, the community health officers and nurses were given offices and facilities to help with information management, as well as motorbikes where households were situated far apart. The intervention evaluated by Awoonor-Williams et al. (2004) noted the addition of radio-telephone provision at the community health compounds to raise staff morale and service quality.

Theme 4: Type of Contraception

Five of the studies briefly mentioned which contraceptives the intervention providers supplied, others discussed levels of use and one (Phillips et al., 1996) didn't mention anything more specific than contraceptive use (discussed in the next theme).

Half of the interventions provided oral contraceptives, injectables and condoms. The intervention in The Gambia also provided spermicides. Unfortunately not all the studies mention levels of contraceptive use for individual types of contraception. However two of the interventions in Bangladesh discussed oral contraceptive use in more depth. The intervention aimed towards contraceptive use increase in urban areas, reported increased pill cycle distributions in all three intervention areas. With the introduction of the static clinics the oral contraceptive overtook the injectable as the most popular method as a result of the intervention. In Afghanistan there was a varied use of oral contraceptives across the three intervention areas. Where little change was seen in oral contraceptive use, injectable use increased, which could be attributed to ability of community health workers to administer the first injection in this pilot program. A decrease in oral contraceptive use was balanced by an increase in condom use in the third intervention site, which could be attributed to greater condom acceptance and promotion within this area.

In Gambia, the injectable was perceived as the most effective, private and convenient method (Luck et al., 2000) but no levels of use were given in the report. Whereas Awoonor-Williams et al. (2004) stated that injectables were most commonly used in their Ghanaian expansion project and although use was high in non-intervention areas at 44%, where the intervention was in place injectables were used by 62% of contraceptive users.

In the Ghanaian intervention reported by Awoonor-Williams et al. (2004), only 1% of contraceptive users were practising with condoms. The urban satellite clinic intervention in Bangladesh saw increased use of condoms in two of the three interventions sites. The static clinic intervention in Bangladesh reported an increase of 2% in the implant, and the use of IUD remained the same. The Gambian workers provided spermicides but no levels of use were discussed.

Theme 5: Intervention Outcomes

Only the study by Phillips et al. (1996), on the long term application of an intervention in Bangladesh, did not have additional outcomes other than contraceptive use. The other intervention studies also looked at how the interventions affected knowledge of contraceptives and three of the interventions discussed outcome findings related to special issues.

Knowledge of contraceptive use was clearly an important measure of intervention outcome as six of the studies discussed this in their results and findings. Some provided analysis in relation to the intervention and two provided comments. The Ghanaian extension project reported a twofold increase in the odds of family planning knowledge in intervention areas. The Ghanaian intervention in Navrongo, having four arms to the intervention (including a control) was able to establish that the pace at which knowledge is acquired is accelerated by project activities, in the arm where both interventions were present had the most positive effect on knowledge but as time passed this effect decreased. In Gambia the only the demand mobilization intervention created increased knowledge of oral and injectable contraceptives. Whereas the intervention in Pakistan reported 92% of family planning worker visits resulting in the discussion of family planning, compared to the health workers (79%).

Although the article by Huber et al. (2010) on the intervention in Afghanistan did not mention levels of knowledge as a measured outcome the dissemination of literature and written guidance as part of the community education branch of the intervention would have increased knowledge. Mercer et al.

(2005) similarly did not discuss levels of knowledge but identified that “women need direct access to family planning information, advice and follow up services” (p.122) which may become an issue as home visits (the main source of this) are replaced by static clinics.

Some of the studies mentioned spatial issues with the implementation of the interventions which may have affected the outcome of the intervention. It was noted by Gazi et al. (2005) that the differences in the success and variation in the intervention outcomes may have been due to the character of the intervention areas. This was concluded due to the fact that the area which performed poorer than the other two and all areas had predominantly more spread out households than the other intervention areas. Awoonor-Williams et al. (2004) using multiple logistic regression, identified distance as a confounding factor for use of pre-intervention facilities. Huber et al. (2010) related the increase in the use of injectables as a result of the doorstep provision and related previous non-use to the distance needed to travel to clinics (2-4 hours round trip).

Interestingly, the article by Mercer et al. (2005) was the only evaluative study which recorded user satisfaction of the intervention. Overall 64% of the participants were satisfied with the implementation of static clinics. Reasons for non-satisfaction were lack of supplies and that not all services were available at the static clinics. This intervention also observed a switching from injectables to the contraceptive pill, which is probably due to an increase in shops and pharmacies for contraceptive supplies as home delivery declined dramatically.

All the studies reported on contraceptive use, however Gazi et al. (2005) only implied this through noting an increase in the levels of contraceptives being distributed by depot-holders. The implementation of static clinics in Bangladesh saw a small rise (7%) in the percentage of women using any modern method of contraception in one of the intervention sites, yet a similar rise was seen in the non-intervention sites within the same geographical area.

The intervention in Pakistan was interesting as it also reported on other national interventions occurring during the same study period. In the intervention area Sultan et al. (2002) noted an increase of contraceptive use from 11% to 19%. In intervention areas where there was the presence of a health worker and a family planning worker, the odds of using a modern method of contraception increased by 74%. Awoonor-Williams et al. (2004) noted an 8% difference in the contraceptive use of users in the intervention and non-interventions areas.

Both Phillips et al. (1996)and Huber et al. (2010)observed contraceptive prevalence rates of around 40% or above in intervention areas. The study intervention in The Gambia found contraceptive prevalence rates of 10-12% in intervention areas, compared to 2-3% in the control areas. This is supportive of the finding that non-users in intervention sites were two times more likely to be using contraception in the follow up survey. The intervention described by Debpuur et al. (2002) reported that the odds of contraceptive use in the combined condition intervention area were increased by 24%, compared to the comparison area. However this was only significant for the first three years of the intervention after which the odds of current use of contraception were no longer significant at the 95% level.

DISCUSSION

The interventions identified in this systematic review were implemented in very different settings, yet there were some similarities and successes which have become evident. For example, the sole urban intervention in Bangladesh reminds us of the importance of targeted interventions. In the least receptive area, the district town, reasons for weaker impact were the "more culturally conservative" nature of the population living in this area.

Firstly, when generalizing these interventions, it seems that when there were various different combinations of intervention put in place (Ghana, The Gambia), "only the combination of the two strategies is shown to improve modern contraceptive use significantly" (Debpuur et al., 2002, p.160). There are observed increases in contraceptive use in the single intervention areas, compared to the comparison area, but these are smaller and not statistically significant at the 5% level.

Of the studies which examined demand and supply interventions, all but one described an aspect which involved consultation with and gaining acceptance from religious and community leaders. The results of this were mixed. "Meetings with religious and other community leaders ….were important for developing trust and confirming acceptance of innovations" (Huber et al., 2010, p.229) and "reassuring men that family planning is acceptable to respected leaders" (Debpuur et al., 2002, p.160). Contrary to this, the intervention in The Gambia found no evidence that the community meetings had "a significant effect on women's beliefs about …family planning" (Luck et al., 2000, p.332) . However, this may have been due to the length of the meetings held, as it was felt that perhaps "a one-day meeting may not have been sufficient to change respondents' longstanding beliefs about their religious prohibitions" (Luck et al., 2000, p.332).

Although it is difficult to say with any certainty, it seems that the three project interventions using providers which were family planning focused were more successful. In Pakistan the intervention was implemented alongside a national health worker scheme, where both a family planning and health worker were working the odds of using a modern contraceptive increased by 74%, whereas the presence of only one worker increased the odds by 14%. A similar finding was noted by Phillips et al. (1996) where the contraceptive prevalence rate increased by 15% due to the household contact provided by worker-outreach.

The intervention described by Gazi et al. (2005)in Bangladesh was the only study to mention the retention rate of the providers. It was suggested that due to the availability of alternative work opportunities in urban areas intervention providers would need "greater financial and other benefits" (p.385). Interestingly the evaluation of the long-term effect of community-based distribution by Phillips et al. (1996) found that "organized support for family welfare assistant can greatly improve their performance"(p.213).

The provision of the injection by the intervention providers, was always linked an increase in the use of contraceptive injectables. This method was seen as "safe and acceptable" (Huber et al., 2010, p.229) by the users. Despite the fact that injectable use and knowledge increased in The Gambia, the demand-mobilization intervention "had little effect on knowledge or use of other methods" (Luck et al., 2000, p.333) this could be an issue which needs to be explored, to ensure intervention providers are promoting all types of contraception, in order to provide the most suitable for each couple.

Both the expansion interventions in Ghana and Bangladesh were successful. Necessary adjustments were made to both interventions to enable success, especially in Ghana where the intervention area lacked the infrastructure present in the original intervention site, “demonstrating that replication can work” (Debpuur et al., 2002, p.174).

The most recent intervention to be implemented in Bangladesh, which saw the emergence of static clinics, although well received, did not seem to increase the levels of contraceptive use dramatically. This may be due to the lack of demand stimulation, women who were no longer receiving contraceptive supplies on their doorstep did not always use the new clinics, but pharmacies and shops instead, meaning that women who are currently using are continuing, but non-users are not receiving the exposure needed to adopt a modern contraceptive method.

LIMITATIONS

One of the considerations for systematic reviewers is whether or not all the relevant studies were identified and included in the synthesis stage. Problems with achieving a complete systematic review can occur in the search creation stage, identification stage and the retrieval stage. Using a wide search strategy, with many search terms, was used to reduce early exclusion of relevant studies. In total 404 cultural terms, 57 barrier terms and 73 contraceptive terms were used to identify any study which may be relevant. Combined the identified studies had over 100 keys words, of those 9 were search terms, the most commonly used being contraception and family planning services. Using a wide search scope meant that over 10,000 articles were identified by the search. This included studies specifically family planning as well as less relevant topics such as assisted reproduction, the manufacture and development of contraceptive.

It is hard to gauge the efficacy of the identification stage, in order to minimise the miss-classification of relevant studies as irrelevant the abstract was consulted for any studies with questionable titles such as ‘The Simon Population Trust’ (Furedi, 2002) or ‘Rotary responds to women’s health needs’ (Devlyn, 2000). Likewise the full text was sought for any studies which may have been relevant based on the abstract. This is probably why there was a need to acquire such a high number of full texts. The greatest challenge for this systematic review was the acquisition of full texts and some of the studies which were inaccessible may have been relevant and should have been included in the review.

A strength of this review is that the inclusion criteria is strict and the need for 1.Population identification (with lower contraceptive use) 2.Targeted family planning intervention at this population 3.Evaluation of the intervention helped to ensure focus when identifying relevant studies. There are two major factors of these inclusion criteria which may be criticised; 1.The exclusion of HIV and STD interventions and 2.The exclusion of national interventions.

It was considered necessary to exclude interventions which focus on HIV/AIDS or STI reduction as the focus of this review is to evaluate interventions which foster a different perception of family planning and lead to an increase in modern contraceptive use in order to allow families to achieve their desired family size. Although HIV or STI interventions also aim to increase contraceptive use and an offshoot of this is potentially a greater, continued use of modern contraceptive methods the

primary focus of these interventions are not to enable couples to exercise autonomy over their family size. It maybe that some national interventions have been implemented in order to tackle a national cultural barrier towards modern contraception, however it was found that often when a cultural barrier is identified the intervention will be tried out on a small scale before being rolled out as a national scheme. This is demonstrated by the successes in the Matlab and Navrongo intervention, leading to the extension interventions in other areas of Bangladesh and Ghana, in order to establish transferability.

Another limitation of a systematic review is the comparability of the studies. There is no prescription of what must be included when evaluating interventions. The systematic review is dependent on the identified articles in two ways. Firstly what is said and secondly what is not said. In terms of the information that is included in the studies for review, difficulty arises when trying to compare the results of the interventions and questionability arises as to how valid any comparisons made can be. The second point is very important, especially in the instance of this systematic review, this is because omission of facts does not mean that the intervention did not include something, it just means that the author of the evaluation didn't see it necessary to include the information. For example the study by Philips et al (1996) doesn't report on any specific type(s) of contraception, considering supply is part of the intervention and increased contraceptive use is an outcome yet the intervention may have involved specific types of contraception. Additionally more relevant targeted interventions were identified than were reviewed but this was because they did not include an evaluation of the intervention and so did not fulfil the inclusion criteria, yet that is not because the intervention was not strong enough, but because the evaluation report wasn't strong enough.

Publication bias is a limitation for systematic reviews, but especially in this case and may account for the small quality of identified articles. Conducting a systematic review of journal articles means that only interventions which authors have deemed evaluation worthy will be recognised. This is probably why the included interventions were successful, to varying degrees. It would be interesting to know the details of interventions which failed to provide a true understanding of the drivers of intervention success.

CONCLUSION

Despite being an important barrier to the access and use of modern contraceptives, culture is not a word often used in family planning intervention evaluation studies. The identification of targeted interventions has helped to identify interventions which try to address cultural issues such as the restricted mobility of women or religious/community acceptance of contraceptive use which will affect the uptake of modern contraceptives.

All the interventions experienced some success, however where demand and supply issues were implemented at the same time the effect was more pronounced. There is strong evidence that collaborating with respected members of the community can help to break down social and religious norms towards family planning. Interventions which increase worker-client contact proved successful in disseminating contraceptive knowledge.

The urban intervention in Bangladesh emphasises the need for targeted and easily modified interventions. No one intervention will work everywhere, if there are confounding variables which are not addressed by the intervention. An advantage of the interventions which involved the community was that by finding out their needs and desires a program can be implemented which will be accepted and beneficial to them.

These conclusions have been drawn based upon only eight studies however there is strong evidence that by making appropriate allowances for various cultural barriers levels of contraceptive uptake can be improved. The findings of this study should be taken into consideration by organizations and governments when implementing family planning programs.

Appendix 1 – *List of lower and middle income countries:*

Low income:

Afghanistan, Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Congo, Dem. Rep., Eritrea, Ethiopia, Gambia, The, Guinea, Guinea-Bisau, Haiti, Kenya, Korea, Dem. Rep., Kyrgyz Republic, Liberia, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nepal, Niger, Rwanda, Sierra Leone, Somalia, Tajikistan, Tanzania, Togo, Uganda, Zimbabwe

Lower-middle income:

Angola, Armenia, Belize, Bhutan, Bolivia, Cameroon, Cape Verde, Congo, Rep., Côte d'Ivoire, Djibouti, Egypt, Arab Rep., El Salvador, Fiji, Georgia, Ghana, Guatemala, Guyana, Honduras, Indonesia, India, Iraq, Kiribati, Kosovo, Lao PDR, Lesotho, Marshall Islands, Mauritania, Micronesia, Fed. Sts., Moldova, Mongolia, Morocco, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Paraguay, Philippines, Samoa, São Tomé and Príncipe, Senegal, Solomon Islands, Sri Lanka, Sudan, Swaziland, Syrian Arab Republic, Timor-Leste, Tonga, Turkmenistan, Tuvalu, Ukraine, Uzbekistan, Vanuatu, Vietnam, West Bank and Gaza, Yemen, Rep., Zambia.

Upper-middle income:

Albania, Algeria, American Samoa, Antigua and Barbuda, Argentina, Azerbaijan, Belarus, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, Gabon, Grenada, Iran, Islamic Rep., Jamaica, Jordan, Kazakhstan, Latvia, Lebanon, Libya, Lithuania, Macedonia, FYR, Malaysia, Maldives, Mauritius, Mayotte, Mexico, Montenegro, Namibia, Palau, Panama, Peru, Romania, Russian Federation, Serbia, Seychelles, South Africa, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Thailand, Tunisia, Turkey, Uruguay, Venezuela, RB.

Source: http://data.worldbank.org/about/country-classifications/country-and-lending-groups last accessed on 08/10/2011

Appendix 2 – *Search terms and strategies*

The following search terms will be used and adapted to provide search strategies for each of the electronic databases.

Cultural terms;

acculturation or ceremonial behavior or ceremonial behaviour or cross-cultural comparison or crosscultural comparison or decision making power or ethnicity or ethnic group or ethnic groups or ethnography or ethnology or minority group or minority groups or taboo

(culture or cultural or ethnic or indigenous or population or race or racial or religion or religious or social or tradition or traditional or tribal) AND (anthropology or background or behaviour or behavior or belief or beliefs or characteristics or construct or custom or customs or discrimination or diversity or ideas or influence or interaction or knowledge or language or lifestyle or moral or perception or practice or practices or preference or ritual or rule or rules or taboo or value or values or upbringing)

Barrier terms;

attitude or attitudes or barrier or communication or constraint or delivery of health care or deprivation or disadvantage or facilitator or factor or geography or health knowledge or health practice or health seeking behavior or health seeking behaviour or health services accessibility or hinder or hindrance or impediment or knowledge or limitation or location or mobility or obstacle or patient acceptance of health care or region or restriction

(health services OR health care system OR health service OR service OR services OR facility) AND (accessibility OR access OR acceptability OR utilisation OR utilization)

Contraceptive terms;

barrier method, Beyaz, birth control, Cerazette, cervical cap, Cilest, coil spring, combined contraceptive pill, combined pill, condom, condoms, Contraception, Contraceptive, contraceptive injection, contraceptive methods, contraceptive patch, contraceptive sponge, copper intrauterine device, Copper IUD, copper T, Cyclofem, Depo Provera, Dianette, diaphragm, DMPA, Evra, family planning, family planning programs, Family planning services, FemCap, female condoms, femidom, Femodene, fertility control, GyneFix, hormonal contraception, Implanon, intrauterine device, IUD, Lunelle, Lybrel, Marvelon, Mercilon, Microgynon, Micronor, mini pill, Mirena, monophasic pill, Norethisterone, Norgeston, Noriday, Noristerat, Norplant, NuvaRing, oral contraceptive, oral contraceptives, Ortho Evra, Ovrette, Ovysmen, ParaGard, patch, planned parenthood, planned pregnancy, progestogen only pill, progestogen-only pill, prophylactics, Qlaira, safe sex, safer sex, spermicide, vaginal contraceptive film, Vimule, Yasmin

Appendix 3 – *Themes identified in the intervention studies included in the analysis*

	Mercer et al. 2005	Sultan et al. 2002	Huber et al. 2010	Luck et al. 2000	Debpuur et al. 2002	Gazi et al. 2005	Phillips et al. 1996	Awoonor-Williams et al. 2004
Intervention Characteristics								
Supply	●	●	●	●	●	●	●	●
Demand			●	●	●		●	●
Provider Characteristics								
Family planning worker		●	●				●	
Gender	●	●	●	●		●	●	
Intervention Facilitation								
Training	●	●		●	●	●	●	●
Pay		●		●		●	●	
Religious/elder acceptance			●	●	●			●
Type of Contraception								
Oral contraceptives	●	●	●	●	●	●		
Injectable contraceptives	●	●	●	●	●			●
Implant	●							
IUD	●							
Condoms		●	●	●	●	●		●
Spermicides				●				
Intervention Outcomes								
Knowledge	●	●	●	●	●			●
Spatial issues			●			●		●

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