



EFFECTIVENESS OF BEHAVIOUR CHANGE
COMMUNICATION INTERVENTIONS IN IMPROVING THE
DELIVERY OF HEALTH MESSAGES FOR ANTE-NATAL
CARE IN LIMITED LITERACY SETTINGS: IMPLICATIONS
OF EVIDENCE FOR SOUTH ASIA

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There were no conflicts of interest in the writing of this report.

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EXECUTIVE SUMMARY

This evidence summary aimed to synthesize the evidence on effectiveness of different behaviour change communication interventions to increase pregnant women's coverage for antenatal health check-ups (ANC) and to increase uptake of health services offered during ANC. We found that strengthening interventions implemented at community level, along with community participation, are more effective in the South Asian context for improving maternal health outcomes. A package of different interventions, along with Behaviour Change Communication (BCC) intervention, is more effective in the context of improving maternal health outcomes than that of standalone BCC intervention.

ABOUT THIS SUMMARY

This contextualisation document presents the findings of a review into the context of the South Asian region and for specific South Asian countries Bangladesh and Nepal. Contextualization broadly is a process of assessing the acceptability and transferability of the synthesized evidence to a specific context. This process is helpful to policymakers and researchers in assessing the evidence in this field in the context of a regional setting and conditions. This document presents our approach to contextualizing the current evidence regarding the effectiveness of interventions and describes which interventions are likely to work in the context of Bangladesh and Nepal.

APPROACH

Using an ecological framework (Richard et al., 2011) we identified the possible contextual factors at the level of individuals, partner/family, household, community and health system that might affect the behaviour of the population. We scanned each systematic review and extracted the data about different contextual factors. We included the key contextual factors particularly relevant to South Asia, Bangladesh and Nepal that might influence women's behaviour along with the level of intervention that targets those factors and, thus, the effectiveness of the intervention.

Other sources of information such as advisory team members' feedback, consultative meeting with subject experts and review of external literature (primary studies and reports) were also explored.

SUMMARY OF CONTEXTUALISATION ANALYSIS

The assumption underlying the process of contextualisation is that an intervention that has been shown to be effective in one setting may turn out to be effective in another setting, supposing it can be implemented there once contextual factors are accounted for.

In this document we present our plan and considerations to contextualise the findings from an evidence summary of systematic reviews to South Asia, Bangladesh and Nepal. It is intended to provide policymakers with a reliable basis for informed decision-making regarding the *applicability* and *transferability* of behavioural change communication (BCC) interventions for antenatal care (ANC) to South Asian settings, with particular emphasis on Bangladesh and Nepal. It aims to trigger discussion among the public health research community on the new-to-the-field concept of

contextualisation. We considered only those interventions that have proven effective in LMIC settings.

Although South Asia is geographically, socially and politically diverse, we focused on the contextual similarities existing across the South Asian region. Healthcare utilization by women is lower in rural areas of South Asia. Some of the main factors for the same are socio-economic status and gender differences. Urban-rural and district-related differences and inequities in Bangladesh and Nepal are prominent in terms of health, education, exposure to media and family planning messages with impact on ANC-seeking behaviour (Kamal et al., 2016; Simkhada et al., 2010; Furuta & Salway, 2006).

The following are the interventions which are applicable and transferable to South Asia, Bangladesh and Nepal:

Home visits and community engagement: Providing BCC through home visits by community health workers and community engagement targeting pregnant women and community can be effective in the South Asian region, especially in a region which has poor access to a healthcare facility (Gogia & Sachdev, 2010; George et al., 2015). Community based interventions to promote awareness of entitled health services and rights done through home visits can be effective (George et al., 2015). Some of the constraints which may hinder the intervention are the geographic terrains such as hilly regions in Nepal and yearly floods in Bangladesh.

m-health: Mobile health (mHealth) interventions, in the form of reminders and text messages. With the advancement and increasing use of technology in South Asia (especially in urban areas, including urban slums), m-health can be a promising tool in changing behaviour of the people to have a better MCH outcome (Watterson et al., 2015).

In Bangladesh 53% of the population owns a mobile phone, with a greater percentage in urban areas (GSMA, 2014). Many private health facilities, which can be involved in implementing mHealth interventions, are available in urban areas. Hence this intervention might be better suited for the urban poor. In Nepal, mobile penetration has sharply increased with 92% usage in urban and 72% in rural household (Nepal demographic health survey, 2011). Considering the lack of trained health staff particularly in rural areas, mhealth could be a promising intervention to increase ANC coverage.

Nutrition education counselling (NEC): Focused NEC, instead of combining it with other health messages, is effective in improving nutrition knowledge, uptake of iron and folic acid (IFA) and change in dietary practices, especially when combined with providing free supplements. This intervention is relatively easy to adopt in a health facility. In Bangladesh, more community oriented approaches to providing NEC might be beneficial. However, the availability of the workforce and training needs should be considered. Currently there is a lack of adequate nutrition counselling to pregnant women during ANC in Nepal. Facility as well as community based interventions to cover most pregnant women would be useful. Counselling should consider food-based approaches including dietary diversity (MoHP, Department of Health Services).

Provider initiated testing and counselling (PITC): PITC is a strategy where healthcare providers recommend HIV testing and counselling to all patients who exhibit conditions that might suggest underlying HIV disease (WHO 2017). Adopting PITC in ANC closes the gap towards achieving universal voluntary HIV testing of pregnant women and consequently increases the opportunities for

pregnant women to access prevention of mother to child transmission (PMTCT) and appropriate treatment and prevention interventions. In Bangladesh and Nepal, PITC is currently implemented strategy for HIV testing in pregnancy (MoHP, 2011).

The remaining interventions described in the summary of evidence were found to be effective but we are not in a position to comment on applicability and transferability as the evidence is mostly from high income countries. Contextual factors in HICs and LMICs such as Bangladesh and Nepal are comparatively different.

STRENGTHS AND LIMITATIONS

STRENGTHS

This contextual analysis summarizes the best available evidence regarding effectiveness of behaviour change communication interventions to improve ANC coverage and uptake of ANC services in the South Asian context, specifically for Bangladesh and Nepal. It will help practitioners and policymakers in decision making about applicability and transferability of these findings to improve the ANC outcomes in the South Asian context.

LIMITATIONS

The primary studies included in the systematic reviews were from different lower and middle-income countries. The information on contextual factors was severely lacking in many of these SRs as well as in primary studies. It was challenging to contextualise the findings from a specific setting to the whole South Asian region, considering the wide diversity of contexts observed in this region.

1. BACKGROUND

1.1 CONCEPT OF CONTEXTUALIZATION

The concept of contextualisation in the field of public health emerges from the need for utilising effective evidence coming from a given context to inform policies and implement programmes in other contexts lacking evidence on the issue and where ‘very limited resources put a high demand on evidence-based approaches to health promotion’ (Wang et al., 2006).

A key concept in this process is that of **context**. By ‘context’, we mean the particular socio-cultural, political, economic and environmental settings in which the intervention takes place. The context in which public health interventions operate plays an important role in influencing their implementation and effectiveness (Wang et al., 2006).

The assumption underlying the process of contextualisation is that an intervention that has been shown to be effective in one setting may turn out to be effective in another setting, supposing it can be implemented there once the contextual factors are accounted for.

1.2. SOUTH ASIA: SIMILARITIES AND DISPARITIES ACROSS AND WITHIN COUNTRIES

There are **disparities across the countries and within countries themselves in the South Asian region in terms of socio-economic status, culture and maternal, reproductive (etc.) healthcare**. These exist not only geographically, but also socio-culturally, politically and economically. However, for the purpose of this contextualization report, we focus on the contextual similarities existing across the South Asian region.

Literature on maternal healthcare utilization in South Asia reveals some distinct patterns. Healthcare utilization by women is lower in rural areas, with a predominant factor being socio-economic status and public health interventions, which initially increase the rich-poor gap as they tend to reach the wealthier sections of society first (Kamal et al., 2016). Earlier work in South Asia has suggested various ways in which **gender roles** and **relations** may operate to restrict women’s access to healthcare during pregnancy and at the time of delivery. These include heightened restrictions on women’s movement because the pregnant state is considered “shameful”, young women’s lack of say within the family and the fact that pregnancy-related knowledge and decision-making authority are commonly vested in older women such as mothers-in-law (Simkhada et al., 2010). Other reasons include young women’s lack of influence over material resources (Furuta & Salway, 2006) and the exclusion of men – who are often the primary decision makers in the use of material resources – from the “polluting” event of childbirth (Furuta & Salway, 2006). It is widely asserted that **increased gender equality is a prerequisite for achieving improvements in maternal health** (Chowdhury et al., 2013; Furuta & Salway, 2006; Sen, 2013; WHO, 2011). Bangladesh and Nepal rank globally within the ten “fast-track” countries that made progress to achieve Millennium Development Goals (MDG) 4 (reduction of the under-five mortality rate, between 1990 and 2015, by two-thirds) and MDG 5 (reduction of the maternal mortality **ratio** (MMR) by three-quarters and achievement of universal access to reproductive care).

1.3. BANGLADESH, A COUNTRY IN “HEALTH TRANSITION”

Bangladesh has the highest population density in South Asia and in the world (World Bank, 2015, 2016), with 90% of the population being Muslim. It has set an extraordinary example of gaining good health at very low cost (WHO, 2011). Multiple strategies have been employed by Bangladesh to improve the health of the people (Chowdhury et al., 2013; Sen, 2013; WHO, 2011; Bangladesh demographic and health Survey, 2014) giving stress on MCH care related policies such as Demand-Side Financing programme (Anwar et al., 2015).

Despite being an “**exceptional health performer**”, Bangladesh presents the **paradox** of pronounced reductions in mortality accompanied by persistent malnutrition and low use of some basic health services (Chowdhury et al., 2013). **Bangladesh still faces many challenges**. Urban-rural and district-related differences and inequities are prominent in terms of health, education, exposure to media and family planning messages (Bangladesh demographic and health Survey, 2014) with impact on ANC-seeking behaviour (Kamal et al., 2016). ANC from a medically-trained provider for the highest wealth quintile was 75% (compared to the lowest quintile at 31%) and they were three times more likely than women in the lowest wealth quintile to receive such care (WHO, 2011). Over the last decade, equity in utilization of health facilities for deliveries has improved at a faster rate in urban areas; the private sector appears to be the dominant provider of maternal healthcare in both domains with the share of NGOs increasing in urban areas (Kamal et al., 2016).

Bangladesh has an extensive health infrastructure in the public and private sectors, though it faces the challenge of lack of human staff and other resources in healthcare, such as drugs, instruments and supplies (WHO, 2011). The need for more investment of public funds, stronger local accountability to improve the quality of public services, increasing for-profit private health sector and the lack of its regulation are some of the challenges for health systems (WHO, 2011).

1.4. NEPAL

Nepal has a low population density. Despite several positive outcomes in the health sector and significant progresses to achieve MDGs 4 and 5, there are still significant disparities in health, education, wealth and access to care between Nepal’s 126 distinct ethnic/caste groups, and between the different regions and rural/urban areas. The country faces the challenge of high levels of poverty, difficult access to health facilities and poor, though improving, health indicators (Witter et al., 2011).

The use of maternal health services has improved since 1996, with **increase** in the coverage, number of ANC visits and rates of institutional deliveries as well as deliveries attended by a skilled birth attendant (SBA) (MoHP, 2014). In Nepal, Aama Programme is one of the successful programmes for improved MCH by addressing both supply and demand side barriers (MoHP, 2014). There has been substantial financial investment from the donor community around the world (MoHP, 2014). The government of Nepal is also implementing the Female Community Health Volunteer (FCHV) programme in the country, which mainly focuses on family planning, maternal/neonatal and child health (New, 2007). Topographically, Nepal is divided into three distinct ecological zones: mountain, hill, and terai (or plains), accounting for 7%, 43% and 50% of population respectively. Due to harsh

climatic conditions, transportation and communication facilities are limited (MoHP, 2014). Table 1 below compares different indicators of South Asia, Bangladesh and Nepal.

Table 1: Health Indicators for South Asia, Bangladesh and Nepal

INDICATOR	SOUTH ASIA ^a	BANGLADESH	NEPAL
Population Density (per sq. km)	361 (2014)	1,222*	197*
Human Development Index	0.607 [#]	0.57 [†]	0.548 [†]
Patterns of mortality			
Neonatal Mortality Rate (NMR)/1,000 live births	30	23	22
Infant Mortality Rate (IMR)/1,000 live births	42	31	29
Under-5 Mortality Rate (U5MR)/1,000 live births	53	38	36
Maternal Mortality Ratio (MMR)/100,000 live births	182	176	258
Maternal Health			
Fertility rate, total (births per woman)	2.5	2.1	2.2
Adolescent fertility rate (births per 1,000 women ages 15-19)	35*	83*	73*
Antenatal care (ANC) coverage [at least one visit, by skilled health personnel] (%)	54	64*	68*
ANC coverage [at least four visits] (%)		21**	50.1
Births attended by skilled health staff (% of total)	51***	42*	56*
Contraceptive and HIV/AIDS			
Contraceptive prevalence, any methods (% of women ages 15-49)	53***	62*	50*
Prevalence of HIV total (% of population ages 15-49)	No data available	0.1*	0.2*
General			
Health expenditure, total (% of GDP)	4.4*	2.8*	5.8*
Out-of-pocket health expenditure (% of total expenditure on health)	61.5*	67*	47.7*

Physicians (per 1,000 people)	0.7 [§]	0.4 [§]	0.2 ^{**}
Hospital beds (per 1,000 people)	0.7 [§]	0.6 [§]	NR
Mobility and Communications			
Mobile phone subscriptions (%)	*	75.9 [†]	82.5 [†]
^a South Asia comprises of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. # source: UNDP (2014)(UNDP, 2014); † source: UNDP (2015)(UNDP, 2015a, 2015b); *last data available from year 2014, World Bank(WorldBank, 2016); ** source: CBS (2012), SAARC in Figures in Shakya (2013)(Shakya, 2013); § last data available from year 2011, World Bank (WorldBank, 2016); *** last data available from year 2012, World Bank (WorldBank, 2016).			

1.5. PURPOSE OF THIS DOCUMENT:

- It presents our plan and considerations to contextualise the findings coming from an evidence summary of systematic reviews to South Asia, Bangladesh and Nepal.
- It is intended to provide policymakers with a reliable basis for informed decision-making regarding the *applicability* and *transferability* of behavioural change communication (BCC) interventions for antenatal care (ANC) to South Asian settings, with particular emphasis on Bangladesh and Nepal.
- It aims to trigger discussion among the public health research community on the new-to-the-field concept of contextualisation.

Applicability (or feasibility) refers to whether the intervention process could be implemented in the desired local setting, irrespective of whether it will be effective or not. The leading question for policymakers is: *Is it possible to run a particular intervention in this local setting?* (Wang et al., 2006).

Transferability (or generalisability) comes after applicability and deals with effectiveness. The leading question for policymakers is: supposing there were conditions for implementing the intervention in local setting, *can it achieve the same effectiveness as it did in the study settings?* (Wang et al., 2006).

2. METHODS

2.1. PROCESS OF CONTEXTUALISATION

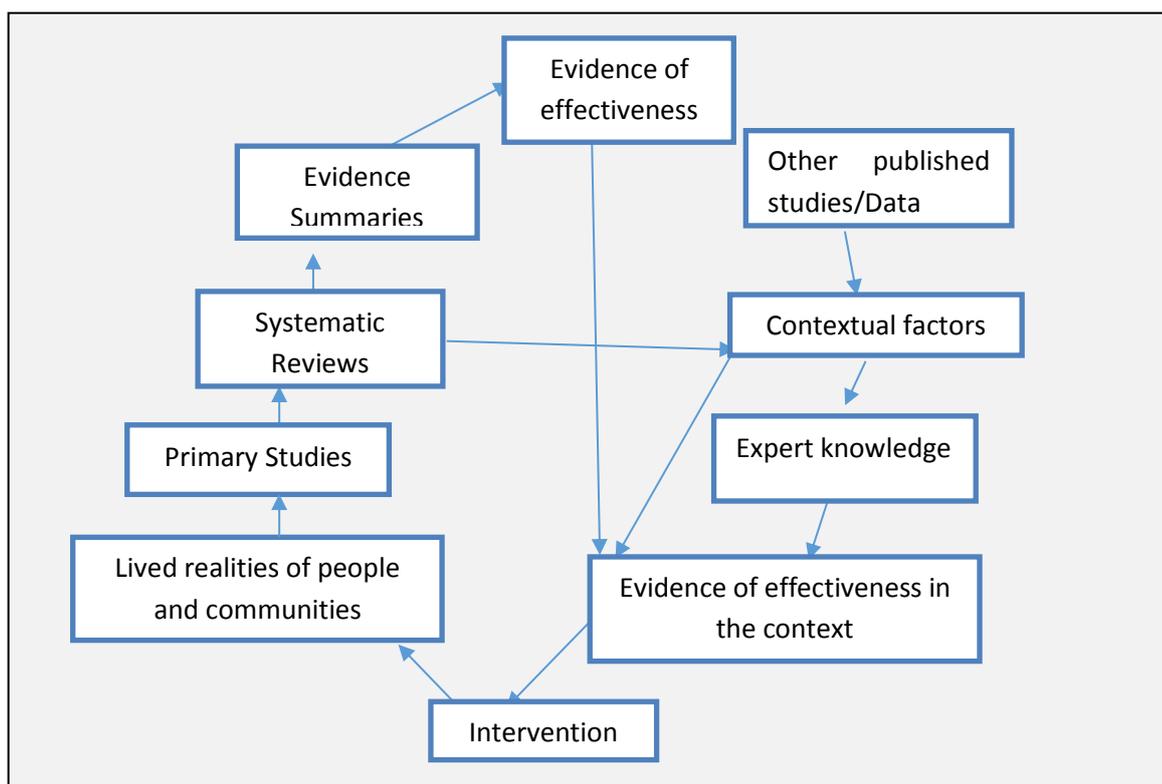
As far as we know, this is the first attempt made to contextualise the findings of an overview of systematic reviews. Several steps are necessary to understand if the effective intervention would be feasible and would retain its effectiveness in other contexts. In **Figure 1** we summarise the process of contextualisation for evidence summaries. This is to highlight: 1) the loss of contextual information in the process of building the evidence at the level of primary studies; 2) sources of gaining the contextual information to interpret the effectiveness of evidence in a particular context; and 3) that accurate evaluation/appraisal of the evidence can be strengthened not only by a better framework to understand contextual factors at the level of systematic reviews, but also by incorporating contextual information in the process of building the evidence at the level of primary studies. These assume particular relevance in the field of BCC interventions, especially for understanding the context in which people's health-related behaviours occur and are enacted, also considering the extent to which context and health-related behaviours (and therefore, BCC programmes) are mutually dependent. While systematic reviews are important sources of deriving the knowledge about contextual factors, other sources such as survey data, external literature (e.g. recent qualitative studies/publications) and experiential knowledge or expert opinions are also important.

This document has the added value of integrating suggestions, comments and feedback provided by field experts during consultative meetings as well as incorporating data from external relevant literature on the status of health systems in South Asia, Bangladesh and Nepal.

One of the crucial aspects of the process of contextualisation is determining what contextual information is needed to assess the evidence. A conceptual framework can help to extract and organise contextual information. Considering that individual behaviour is embedded in the family, community and the larger socio-cultural context, we propose to use a framework that considers these ecological relationships.

A detailed process of contextualisation is attached in Appendix 2.

Figure 1: The process of contextualizing evidence



2.2. APPROACH OF CONTEXTUALISATION

In order to assess the evidence on effectiveness in a transparent and systematic way and recommend the applicability to the South Asian context, interventions were reviewed using the following criteria:

- i. We included only SRs of high and moderate relevance (n=19), based on the criteria of relevance explained and critically reviewed in **Part I, par. 3.6**. Due to this selection criterion, we had to exclude all SRs concerning the third outcome, uptake of ARV prophylaxis during pregnancy, as none of them was classified as of high or moderate relevance.
- ii. We adopted an ecological model (Richard et al., 2011) to define different levels at which the interventions can be targeted/at which they are implemented. These levels were: individual, partner/family, household, community and health systems. At times, interventions may be carried out at/target multiple levels as packages (Figure 2).
- iii. We enlisted possible contextual factors acting at each of the above mentioned levels. We hypothesize that the impact of BCC interventions (targeted at different levels) is mediated through these contextual factors and these contextual factors can be targeted by different BCC interventions.
- iv. We identified the key contextual factors (barriers/enablers) specific to Bangladesh and Nepal through data collated from the evidence summary, from external literature (country surveys, qualitative studies, etc.) as well as consultative meetings with subject experts.

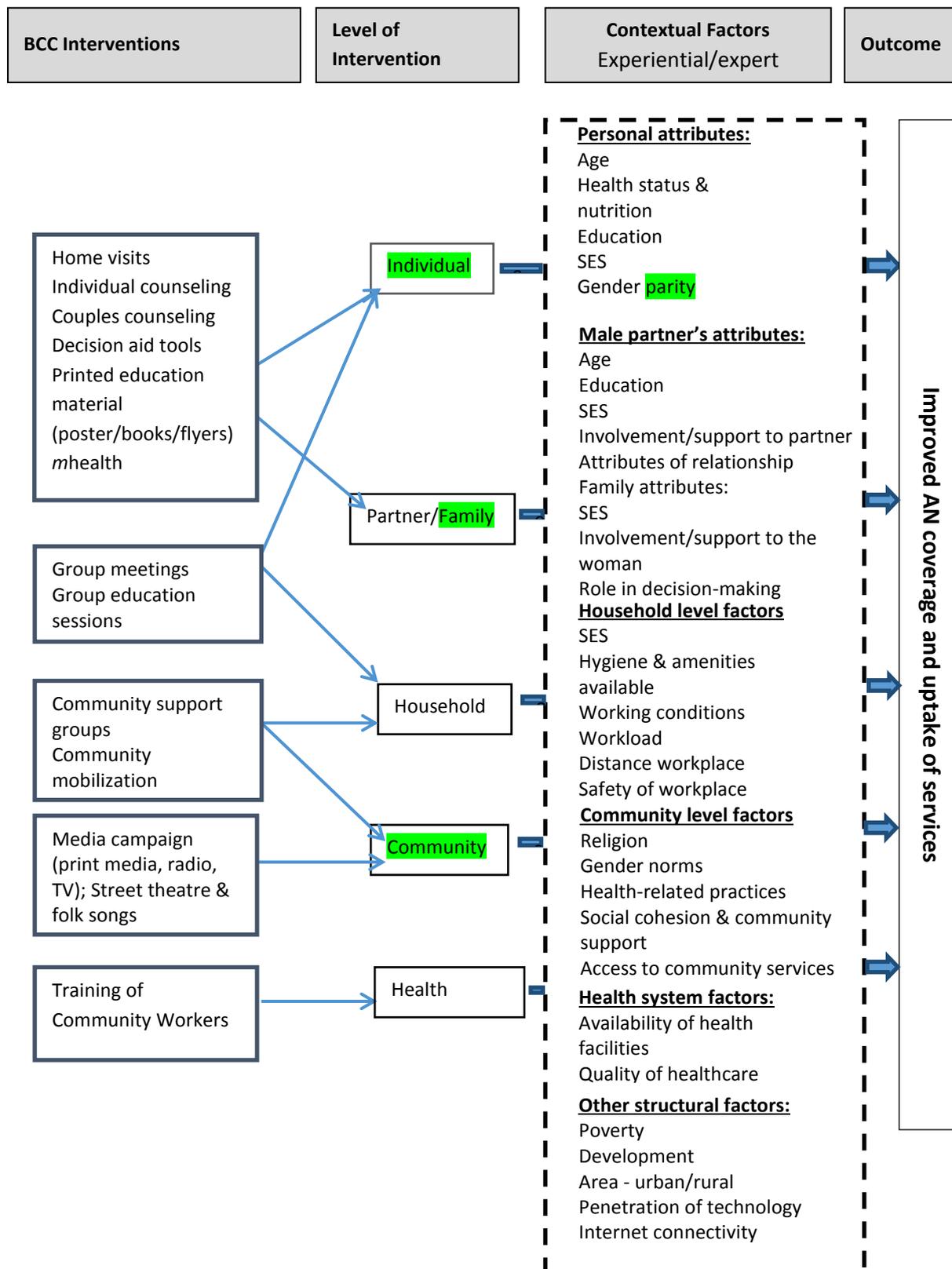
- v. Along with extracting the contextual factors from systematic reviews, we reviewed primary studies mainly from Bangladesh and Nepal.
- vi. Based on the available contextual information we propose our considerations for applicability and transferability of BCC interventions to South Asia, Bangladesh and Nepal.

3. CONTEXTUALISATION RESULTS

3.1. POSSIBLE CONTEXTUAL FACTORS THAT MIGHT IMPACT EFFECTIVENESS OF BCC ON ANC OUTCOMES

We identified some of the key factors that might influence women's behaviour in using healthcare facilities which are responsible for the improvement in ANC related outcomes (ANC coverage and uptake of ANC services). We tried to map different BCC interventions targeted at different levels and possible contextual factors in Figure 2 below. These are conceptual factors derived mainly from discussion between the team members.

Figure 2: List of possible contextual factors that might impact effectiveness of BCC



3.2. LEVELS TARGETED BY INTERVENTIONS IN SYSTEMATIC REVIEWS

In **Table 2**, we tried to map the interventions as well as the co-interventions (if any) mentioned in the SRs included for contextualisation. As shown by the table, the majority of SRs portray interventions that were carried out at multiple levels, which we have broadly distinguished into individual level, partner level, family/household level, community level and the level of health systems.

Due to the heterogeneity of interventions carried out at multiple levels, it was difficult to determine which specific component of each intervention was effective in changing women’s ANC-related behaviours.

Table 2: Levels targeted by interventions in systematic reviews

SR ID	Individual	Partner	Family/ Household	Community	Health Systems
Birch, 2015					
Nabhan et al., 2015					
Vlemmix et al., 2013					
Lathrop, 2013					
Aguiar & Jennings 2015					
Brusamento et al., 2012					
Hemsing et al., 2012					
Di Mario et al., 2015					
Dugas et al., 2012					
Higgs et al., 2014					
Watterson et al., 2015					
George et al., 2015					
Hensen et al., 2012					
Gilinsky et al., 2010					
Gogia et al., 2010					
Lassi et al., 2015 [c]					
Webb and Olude, 2012					
Stockley et al., 2008					
Nielsen et al., 2006					

3.3. PRESENCE OF CONTEXTUAL INFORMATION IN THE SYSTEMATIC REVIEWS

We have included the SRs that offer some degree of contextual information. Eleven SRs provided contextual information and follow (distributed under each outcome).

Under the outcome ANC coverage, Gogia et al., 2010, Watterson et al., 2015 and George et al., 2015; under uptake of TT, Gogia et al., 2010; uptake of HIV testing, Hensen et al., 2012; under IFA uptake, Stockley et al., 2008 and Webb and Olude, 2012; under nutritional knowledge and dietary changes, Webb and Olude, 2012 and Nielsen et al., 2006; under knowledge of prenatal screening, Dugas et al., 2012 and Birch, 2015; decision making for prenatal screening, Dugas et al., 2012; alcohol consumption reduction, Gilinsky et al., 2010; under smoking cessation, Hemsing et al., 2012; changes in other behaviour, George et al., 2015. Details are presented in Table 3 below.

Table 3: Description of the contextual factors under each systematic review

SR ID	Outcomes	Intervention/ Effectiveness	Regional Settings	Contextual factors
Gogia et al., 2010	ANC coverage & Uptake of TT	-home visits -community-level meetings Intervention effective	South Asia	Included studies were from resource limited setting with poor access to health services. No other contextual factors were discussed.
Watterson et al., 2015	ANC coverage	mhealth (text or voice message reminders to encourage women to attend ANC visit), mostly provided through health facilities. Intervention effective	Africa, Asia	Interventions were mostly provided through health facilities. SR does not describe factors such as role of literacy level, skills in using mobile, SES of women, penetration of mobile technology, connectivity.
George et al., 2015	ANC coverage & Other changes in behaviours	Spreading awareness about entitled health services, awareness of rights through: public meetings organised by community-based organizations; home visits by trained volunteers; street theatre; audio and printed material. Improvement in use of ANC services but limited to rural communities.	South Asia, Africa	Separate meetings were conducted with people from lower cast and higher cast. Intervention was not effective for lower cast people. Perceived entitlements/rights, access to knowledge, power structure appears significant.

SR ID	Outcomes	Intervention/ Effectiveness	Regional Settings	Contextual factors
Webb & Olude, 2012	Uptake of IFA, nutrition compliance and dietary practices	Nutrition Education and Counselling (NEC) Intervention effective in LMIC when provided with nutritional supplements	South Asia and Africa	Inconsistent supply, inappropriate targeting, and inadequate counselling are reported as the biggest barriers to compliance
Hensen et al., 2012	Uptake of HIV testing & Uptake of IFA	Provider initiated testing and counselling Intervention effective	Africa, Europe and US	Most studies were from African countries with generalized HIV epidemic. HIV testing uptake is likely to be influenced by availability of rapid testing kit, increased availability of ART, healthcare providers' expectations and attitudes, and introduction of free services. Cost effectiveness needs to be investigated.
Stockley et al., 2008	Uptake of folic acid during pregnancy	printed education material counselling reminder calls multimedia (TV, audio, magazines, etc.) Intervention effective	USA, Australia, Europe	Contextual factors (barriers) associated with lower awareness and use included: lower household income; lower educational attainment; being a lone parent, unemployed, from a lower socio-economic group, younger or from particular racial/ethnic groups, lacking knowledge of the potential benefits, not being convinced of efficacy; and having a less healthy lifestyle, advice given by mothers and friends compared to that provided by health professionals.

SR ID	Outcomes	Intervention/ Effectiveness	Regional Settings	Contextual factors
Birch, 2015	Patient's knowledge regarding prenatal screening and pregnancy	e-tool: Interactive educational tool Intervention effective	US	The population included in these studies was mostly young to middle age Caucasians, have had higher education compared to the norm. Users' attributes such as health literacy, age, risk of the disease, familiarity and comfort with computers, health information seeking tendency, attitude to prenatal testing, perceived importance of genetic information, user preference for concise or extensive information were analysed in the SR. Higher education had increased information recall and time spent with e-tool. In a study, healthcare providers reported that it disrupted the clinic flow.
Dugas et al., 2012	Decision making and Knowledge on prenatal screening;	Decision aid (DA) using any/combination of following tools: -audiotape-booklet -DA information pamphlet -routine consultation structured by decision analysis tool -audio-CD -worksheet and booklet -computer based aid -DA booklet Interventions effective	Australia, Canada, Europe	Contextual factors such as quality of the decision aid tool, technology access and competence in effectiveness of decision aid tools were identified. The SR did not provide detailed information on individual factors such as age, education that would determine use of technology based tools.

SR ID	Outcomes	Intervention/ Effectiveness	Regional Settings	Contextual factors
Hemsing et al., 2012	Smoking cessation in pregnancy	<ul style="list-style-type: none"> -motivational counselling along with self-help material -telephonic counselling -video and booklets -biofeedback-based intervention which demonstrated the effect of smoking on fetal heart rate -press advertisement publicity campaigns <p>Interventions not effective</p>	Europe, Australia, US	All studies from HIC. Proportion of women smoking during pregnancy is 25-30% compared to 0.7-5% in SA. Authors identify the role of partner smoking and suggest that gender - sensitive smoking cessation interventions may be needed that account for male perceptions on smoking cessation.
Gilinsky et al., 2011	Reduce alcohol consumption during pregnancy	<ul style="list-style-type: none"> -Single or multi-session brief psycho-educational interventions ranging from 10 minutes to 1 hour -motivational interviewing counselling delivered by midwife -ultrasound feedback -nine-step cognitive behavioural self-help manual <p>Effectiveness of intervention: Inconclusive</p>	US, UK, Europe	Studies were conducted in HICs, relatively affluent population and many women had abstained from drinking alcohol after enrolment in the trial. Participants received financial inducement of up-to \$175 which was considered high even in UK context.
Nielsen et al., 2006	Influence of nutrition education on prenatal dietary behaviours	<p>Nutrition education and counselling (NEC) through:</p> <ul style="list-style-type: none"> - health education classes - home visits - group interactions - peer educators - questionnaires - feedback - multimedia - nutritional prescriptions <p>Interventions effective</p>	US, Scotland, Canada	Authors mention that studies identified in this review involved interventions based on a medical model that emphasised enhancing prenatal care with specialised nutrition counselling. Also that there is need to measure mediating variables such as dietary beliefs, knowledge, self-efficacy or dietary practices.

3.4. APPLICABILITY AND TRANSFERABILITY

We considered only those interventions that have proven effective in LMIC settings. In this section we discuss the applicability and transferability of these interventions to South Asian regions with specific emphasis on Bangladesh and Nepal.

HOME VISITS AND COMMUNITY ENGAGEMENT

Providing BCC through home visits and community engagement can be effective in the South Asian region, especially in a region which has poor access to healthcare facility. Involving men, mothers-in-law and group leaders/village heads would be a promising step. Community engagement can help in addressing social norms and thus sustained change in behaviour is possible. Community health workers should be extensively trained and need to be motivated, and a presence of strong and motivated community-based organisation could be important. Ensuring availability of health services is an important consideration. Home visits may not be appropriate for more sensitive issues such as HIV testing due to stigma and discrimination.

Some of the constraints which may hinder the intervention are the geographic terrains such as hilly regions in Nepal and yearly floods in Bangladesh. Socio-economic inequality is one of the significant predictors of ANC coverage in Bangladesh. While overall ANC coverage has been improving, it is very low in rural, poor, less educated population ("Bangladesh demographic and health survey," 2014). Therefore, home visits with community engagement could be an effective strategy to increase ANC coverage and uptake of services. Bangladesh has established a network of community health clinics and has been appointing female community healthcare providers in these clinics. Their role in strengthening home visits and community engagement could be explored further ("People's republic of Bangladesh: Human resources for health country profile," 2013).

There are significant regional differences within Nepal regarding coverage and uptake of ANC services. It is particularly lower in hilly and mountainous regions. The health work force is significantly below the recommended level. The Strengthening Female Community Health Volunteers (FCHV) program could play important role in increase coverage and uptake of ANC services. Maintaining commitment, motivation and reducing attrition rates of FCHVs would be important to program success (Schwarz et al., 2014).

M-HEALTH

Mobile health (mHealth) interventions in the form of reminders through text messages. With the advancement and increasing use of technology in South Asia (especially in urban areas including urban slums), mhealth can be a promising tool in changing behaviour of the people to have a better MCH outcome. It can be a low cost intervention and can target large numbers of women. Messages can possibly reach partners and family members. It appears that this type of intervention has a positive impact when delivered through health facilities. It is unclear if the intervention is equally effective if delivered at community level in settings where availability and access to healthcare facilities is poor. It is also important to consider the implementation level difficulties in settings where penetration of mobile technology, connectivity, and women's comfort level/skills of using mobile phones is low. It is likely that more personalised narrative voice messages would have better

impact on behaviour change compared to didactic messages / reminders. Reminders combined with support from CHW would be valuable in bringing the women to health facility. However, the operational effectiveness of this intervention at large scale has not been tested.

In Bangladesh 53% of the population, predominately within urban areas, owns a mobile phone ("Bangladesh demographic and health survey," 2014). Many private health facilities, which can be involved in implementing mHealth interventions, are available in urban areas. Hence this intervention might be better suited for the urban poor. Involvement of other family members such as partner or mother-in-law will increase the acceptance and effectiveness of the intervention (Mobile alliance for maternal action (mama) research agenda, 2015).

Mobile penetration has sharply increased in Nepal with 92% urban and 72% rural household possessing mobile phones (Nepal demographic and health survey 2011. , 2012). Considering the lack of human resources for health particularly in rural areas, mhealth could be a promising intervention to increase ANC coverage.

NUTRITION EDUCATION COUNSELLING (NEC)

Focused NEC, instead of combining it with other health messages, is effective in improving uptake of IFA and change in dietary practices. The interventions work better when combined with providing free supplements. This intervention is relatively easy to adopt in health facility. The cost effectiveness of focused NEC should be considered. Involving other family members such as partner, mother-in-law might be more acceptable and effective in changing dietary practices. Periodic reinforcement and motivation of pregnant women for behaviour change is needed. Consideration of factors such as making counselling appropriate as per the availability of the food, economic condition of the family, cultural and religious beliefs about diet in pregnancy is also very important.

The current national nutrition services in Bangladesh are mainly implemented through health facilities, hence reaching only to the pregnant women accessing health services [NEC World Bank evaluation study Bangladesh]. More community oriented approach to provide NEC might be beneficial. However, availability of workforce and training needs should be considered.

Currently there is a lack of adequate nutrition counselling to pregnant women during ANC in Nepal. Facility as well as community based interventions to cover most pregnant women are useful. Counselling should consider food based approaches including dietary diversity. Poor dietary diversity, inequitable household food distribution and a lack of trained human resources should be considered. Involving family members such as partner and mother-in-law increases the acceptability and effectiveness.

PROVIDER INITIATED TESTING AND COUNSELLING (PITC)

Adopting PITC in ANC closes the gap towards achieving universal voluntary HIV testing of pregnant women and consequently increases the opportunities for pregnant women to access services for Prevention of Mother To Child Transmission of HIV and appropriate opportunities for prevention and/or treatment of HIV. The evidence is mainly from the high HIV prevalent settings (African countries) so cost-effectiveness of the PITC should be considered in the setting with low prevalence of HIV. Factors such as availability of rapid testing kits, availability of ART, healthcare providers'

expectations and attitudes, and cost of services, ensuring comprehensive pre and post-test counselling and no coercion for HIV testing in pregnancy need to be considered.

In Bangladesh and Nepal PITC is currently implemented strategy for HIV testing in pregnancy.

Other remaining interventions described in Table 3 above were found to be effective but we are not in a position to comment on applicability and transferability as the evidence is mostly from high income countries. Contextual factors in HICs and LMICs such as Bangladesh and Nepal are comparatively different.

4. DISCUSSION AND CONCLUSIONS

As far as we were able to find in the published literature, the concept of “contextualisation” is mentioned scarcely. For instance, it appears as the contextualisation of a specific public health programme to a specific country (i.e., Nigeria) (Abdulmalik et al., 2013), or as the contextualisation of the findings of a single systematic review of qualitative studies looking at patient and carer experiences of diagnosis and treatment of dementia into local or current experience (Bunn et al., 2015), or as the contextualisation of WHO-CHOICE effectiveness and cost-effectiveness (Hutubessy, Chisholm, & Edejer, 2003). However, attempts to create a framework for contextualising evidence of effectiveness of interventions coming from an evidence summary of SR findings have not been found. This appears to be the first attempt made to contextualise global findings on intervention effectiveness from an evidence summary of SRs to specific settings, here the South Asian settings and two specific South Asian countries, Bangladesh and Nepal. Reasons for this may lie in the fact that numerous challenges exist in the task of approaching interventions at the complex level of evidence summary of SRs findings. One example of these challenges is that the SRs assessed in the evidence summary often do not directly address the communication aspect of the BCC intervention, so the data available does not always allow for assessing the effectiveness of the communication components of the BCC intervention. Additionally, where BCC for ANC was a component of the aforementioned interventions, it was often treated as instrumental to the overall goal (impacting MCH indicators) and specific data on its effectiveness remains marginal or poor.

In seeking to contextualise global evidence to specific local settings, it is vital to assess and evaluate what has been defined as ‘the black box’, or the causal mechanisms and determinant factors (e.g., barriers to the BCC, such as linguistic barriers, literacy level of the target population, etc.) inherent to the BCC intervention. One key aim of the evaluation phase is to unpack programmatic ‘black boxes’ and explain how and why programmes work (or fail to work) in different contexts and for different programme stakeholders (Astbury & Leeuw, 2010). Recent publications have confirmed the evidence of effectiveness for maternal and child nutrition-related BCC interventions, but these studies did not probe the ‘black box’ of the design, implementation (Fabrizio, Liere, & Pelto, 2014) and evaluation (Haynes, 2016) processes. At present day, one of the major challenges is still the low volume of evidence – and the poor quality thereof – of published data on the content of ‘black boxes’ among which are the determinant factors and mechanisms (enablers and barriers) that make interventions work, for whom, when, why, at what cost and for how long (Fabrizio et al., 2014).

Information on *how* and *why* an intervention worked or did not work and the role played by the context is found to be limited in the literature included, both at the level of the systematic reviews as well as that of primary studies. Hence, we have not provided prescriptive guidelines as we do not have strong enough evidence to do so. We have been advised by team advisory members and by the workshop participants that we are not in a position to make recommendations to policymakers, nonetheless we have critically reviewed a great depth of literature and have explained certain key elements in the South Asian, Bangladesh and Nepalese contexts which need to be assessed at local level by policymakers, perhaps through a Delphi process.

CONCLUSIONS

An intervention that has been shown to be effective in one setting may turn out to be effective in another setting, supposing it can be implemented there. With this basis we tried to contextualise the findings coming from the evidence summary and the applicability and transferability of the BCC interventions to South Asia, Bangladesh and Nepal to help improve maternal health outcomes. Home visits and community engagement, mhealth, nutrition education counselling and provider initiated counselling and testing can be applied and transferred to this region to improve ANC coverage and uptake of ANC services.

5. REFERENCES

- Abdulmalik, J., Kola, L., Fadahunsi, W., Adebayo, K., Yasamy, M.T., Musa, E., & Gureje, O. (2013). Country contextualization of the mental health gap action programme intervention guide: A case study from nigeria. *PLoS Med*, *10*(8), e1001501.
- Aguiar, C., & Jennings, L. (2015). Impact of male partner antenatal accompaniment on perinatal health outcomes in developing countries: A systematic literature review. *Maternal & Child Health Journal*, *19*, 2012-2019 2018p.
- Anwar, I., Nababan, H.Y., Mostari, S., Rahman, A., & Khan, J.A. (2015). Trends and inequities in use of maternal health care services in bangladesh, 1991-2011. *PLoS one*, *10*(3), e0120309.
- Astbury, B., & Leeuw, F.L. (2010). Unpacking black boxes: Mechanisms and theory building in evaluation. *American Journal of Evaluation*, *31*(3), 363-381.
- Bangladesh demographic and health survey. (2014).
- Bangladesh demographic and health survey 2014. (2016): NIPORT, Mitra Associates & ICF International.
- Birch, P.H. (2015). Interactive e-counselling for genetics pre-test decisions: Where are we now? *Clinical Genetics*, *87*, 209-217.
- Brusamento, S., Ghanotakis, E., Car Lorainne, T., van-Velthoven Michelle, H.M.M.T., Majeed, A., & Car, J. (2012). Male involvement for increasing the effectiveness of prevention of mother-to-child hiv transmission (PMTCT) programmes. *Cochrane Database of Systematic Reviews*.
- Bunn, F., Sworn, K., Brayne, C., Iliffe, S., Robinson, L., & Goodman, C. (2015). Contextualizing the findings of a systematic review on patient and carer experiences of dementia diagnosis and treatment: A qualitative study. *Health Expectations*, *18*(5), 740-753.
- Chowdhury, A.M.R., Bhuiya, A., Chowdhury, M.E., Rasheed, S., Hussain, Z., & Chen, L.C. (2013). The Bangladesh paradox: Exceptional health achievement despite economic poverty. *The Lancet*, *382*(9906), 1734-1745.
- Di Mario., Simona, Basevi, V., Gagliotti, C., Spettoli, D., Gori, G., . . . Magrini, N. (2015). Prenatal education for congenital toxoplasmosis. *Cochrane Database of Systematic Reviews*.
- Dugas, M., Shorten, A., Dube, E., Wassef, M., Bujold, E., & Chaillet, N. (2012). Decision aid tools to support women's decision making in pregnancy and birth: A systematic review and meta-analysis. *Social Science & Medicine*, *74*, 1968-1978.

Fabrizio, C.S., Liere, M., & Pelto, G. (2014). Identifying determinants of effective complementary feeding behaviour change interventions in developing countries. *Maternal & child nutrition*, 10(4), 575-592.

Furuta, M., & Salway, S. (2006). Women's position within the household as a determinant of maternal health care use in nepal. *International family planning perspectives*, 17-27.

George Asha, S., Branchini, C., & Portela, A. (2015). Do interventions that promote awareness of rights increase use of maternity care services? A systematic review. *PLoS ONE*, 10, e0138116. doi: 10.1371/journal.pone.0138116

Gilinsky, A., Swanson, V., & Power, K. (2011). Interventions delivered during antenatal care to reduce alcohol consumption during pregnancy: A systematic review. *Addiction Research & Theory*, 19, 235-250.

Global System Mobile Association (GSMA). (2014). Country overview: Bangladesh August 2014. Available from, <https://www.gsmainelligence.com/research/?file=140820-bangladesh.pdf&download>

Gogia, S., & Sachdev, H.S. (2010). Home visits by community health workers to prevent neonatal deaths in developing countries: A systematic review. *Bulletin of the World Health Organization*, 88, 658-666B.

Hemsing, N., Greaves, L., O'Leary, R., Chan, K., & Okoli, C. (2012). Partner support for smoking cessation during pregnancy: A systematic review. *Nicotine & tobacco research : official journal of the Society for Research on Nicotine and Tobacco*, 14, 767-776.

Hensen, B., Baggaley, R., Wong, V.J., Grabbe, K.L., Shaffer, N., Lo, Y.R., & Hargreaves, J. (2012). Universal voluntary hiv testing in antenatal care settings: A review of the contribution of provider-initiated testing and counselling. *Tropical Medicine and International Health*, 59-70.

Higgs, E.S., Goldberg, A.B., Labrique, A.B., Cook, S.H., Schmid, C., Cole, C.F., & Obregon, R.A. (2014). Understanding the role of mhealth and other media interventions for behavior change to enhance child survival and development in low- and middle-income countries: An evidence review. *Journal of Health Communication*, 19 Suppl 1, 164-189.

Haynes, A., Brennan, S., Redman, S., Williamson, A., Gallego, G., Butow, P. and THE CIPHER team. (2016). Figuring out fidelity: A worked example of the methods used to identify, critique and revise the essential elements of a contextual intervention in health policy agencies. *Implementation Science*, 11.

Hutubessy, R., Chisholm, D., & Edejer, T.T.-T. (2003). Generalized cost-effectiveness analysis for national-level priority-setting in the health sector. *Cost effectiveness and resource allocation*, 1(1), 1.

Kamal, N., Curtis, S., Hasan, M.S., & Jamil, K. (2016). Trends in equity in use of maternal health services in urban and rural bangladesh. *International journal for equity in health*, 15(1), 1.

Lassi, Z., & Bhutta, Z. (2015). Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. *Cochrane Database of Systematic Reviews*.

Lathrop, B. (2013). A systematic review comparing group prenatal care to traditional prenatal care. *Nurs Womens Health*, 17, 118-130. doi: 10.1111/1751-486X.12020.

Ministry of Health and Population (MoHP) Nepal, P.f.M., Newborn & Child Health, WHO, World Bank and Alliance for Health Policy and Systems Research. (2014). Success factors for women's and children's health: Nepal. Geneva: World Health Organisation.

Ministry of Health and Population (MoHP) Department of Health Services, Government of Nepal. Health Sector Strategy for Addressing Maternal Undernutrition (2013-17). Available from http://www.chd.gov.np/downloads/National_Strategy_Maternal_Undernutrition.pdf

Ministry of Health and Population (MoHP) National Centre for AIDS and STD Control. (2011). Available from http://www.nationalplanningcycles.org/sites/default/files/country_docs/Nepal/hiv_plan_nepal_0.pdf

Mobile allianze for maternal action (mama) research agenda. (2015).

Nabhan A, F., & Aflaifel, N. (2015). High feedback versus low feedback of prenatal ultrasound for reducing maternal anxiety and improving maternal health behaviour in pregnancy. *Cochrane Database of Systematic Reviews*.

Nepal demographic and health survey 2011. (2012). Kathmandu, Nepal: Ministry of Health and Population (MOHP) [Nepal], New ERA, and ICF International Inc. 2012.

New, E. (2007). An analytical report on national survey of female community health volunteers of nepal. *Kathmandu: USAID/Government of Nepal*.

Nielsen, J.N., Gittelsohn, J., Anliker, J., & O'Brien, K. (2006). Interventions to improve diet and weight gain among pregnant adolescents and recommendations for future research. *J Am Diet Assoc*, 106, 1825-1840.

People's republic of bangladesh: Human resources for health country profile. (2013): Human Resource Mangement Unit & Minsistry of Health and Family Welfare.

Richard, L., Gauvin, L., & Raine, K. (2011) [Ecological models revisited: their uses and evolution in health promotion over two decades](#). *Annu Rev Public Health*, 32, 307-26.

Schwarz, D., Sharma, R., Bashyal, C., Schwarz, R., Baruwal, A., Karelis, G., . . . Maru, D.S. (2014). Strengthening nepal's female community health volunteer network: A qualitative study of experiences at two years. *BMC Health Serv Res*, 14, 473. doi: 10.1186/1472-6963-14-473

Sen, A. (2013). What's happening in bangladesh? *The Lancet*, 382(9909), 1966-1968.

Services, G.o.N.M.o.H.a.P.D.o.H. Health sector strategy for addressing maternal undernutrition [2013-2017].

Shakya, K. (2013). Achievements of millennium development goals (mdgs) in south asian association of regional corporations (saarc) countries: A case of nepal. *Journal of Pro-Poor Growth*, 1(1), 19-28.

Simkhada, B., Porter, M.A., & Van Teijlingen, E.R. (2010). The role of mothers-in-law in antenatal care decision-making in nepal: A qualitative study. *BMC pregnancy and childbirth*, 10(1), 1.

Stockley, L.L.V., Lynn, S., Associates, Stockley, L., Lynn, S., Associates, . . . Chepstow. Use of folic acid supplements, particularly by low-income and young women: A. URCE Public Health Nutrition (2008) 11:8 (807 821). Date of Publication: August 1368 9800 1475 2727 (electronic) Cambridge University Press, Shaftesbury Road, Cambridge, United Kingdom.

UNDP. (2014). Human development reports: Human development index and its components. from <http://hdr.undp.org/en/composite/HDI>

UNDP. (2015a). Human development reports, bangladesh. from <http://hdr.undp.org/en/countries/profiles/BGD>

UNDP. (2015b). Human development reports, nepal. from <http://hdr.undp.org/en/countries/profiles/NPL>

Vlemmix, F., Warendorf, J.K., Rosman, A.N., Kok, M., Mol, B.W.J., Morris, J.M., & Nassar, N. (2013). Decision aids to improve informed decision-making in pregnancy care: A systematic review. *Bjog-an International Journal of Obstetrics and Gynaecology*, 120, 257-266.

Wang, S., Moss, J.R., & Hiller, J.E. (2006). Applicability and transferability of interventions in evidence-based public health. *Health Promot Int*, 21(1), 76-83. doi: 10.1093/heapro/dai025

Watterson J, L., Walsh, J., & Madeka, I. (2015). Using mhealth to improve usage of antenatal care, postnatal care, and immunization: A systematic review of the literature. *BioMed Research International*, 2015, 153402. doi: 10.1155/2015/153402

Webb, G., & Olude, O. (2012). Nutrition education and counselling provided during pregnancy: Effects on maternal, neonatal and child health outcomes. *Paediatric and Perinatal Epidemiology*, 26(Supplement 1), 191-204.

WHO. (2011). *World health statistics 2015*. Geneva: WHO.

WHO. (2017). Provider Initiated HIV testing and counselling in health facilities. Geneva: WHO. Available from <http://www.who.int/hiv/topics/vct/PITC/en/>

Witter, S., Khadka, S., Nath, H., & Tiwari, S. (2011). The national free delivery policy in nepal: Early evidence of its effects on health facilities. *Health policy and planning*, 26(suppl 2), ii84-ii91.

World Bank. (2015). Global financing facility launched with billions already mobilized to end maternal and child mortality by 2030.

World Bank. (2016). Indicators. Retrieved 15/06/2016: <http://data.worldbank.org/indicator>

6. APPENDIX

APPENDIX 1: AUTHORSHIP OF THIS REPORT

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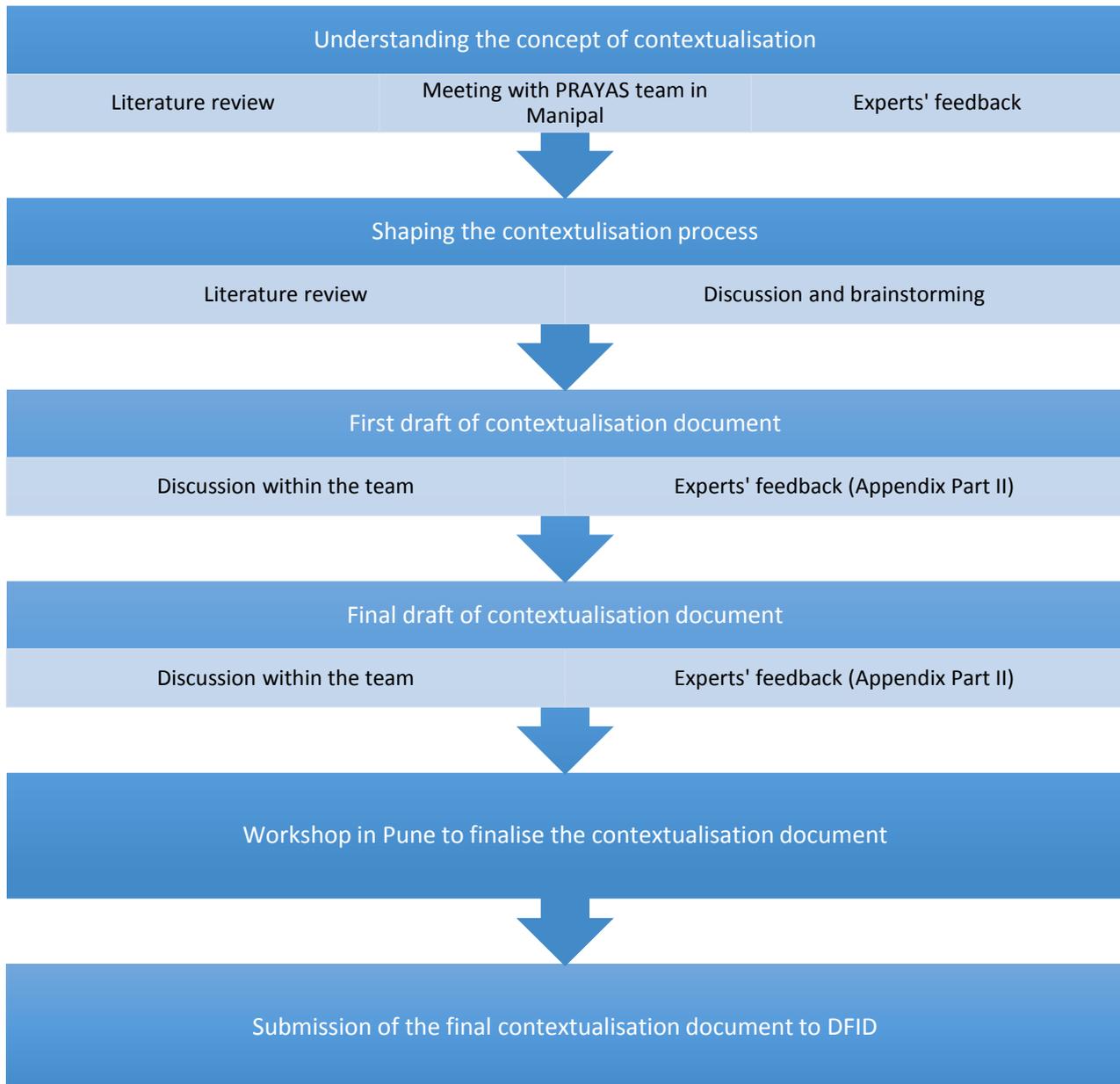
Conflicts of interest

None declared

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APPENDIX 2: PROCESS OF CONTEXTUALISATION



LIST OF ABBREVIATIONS

ANC:	Antenatal care
ARV:	Antiretroviral
BCC:	Behaviour Change Communication
CHW:	Community Health Worker
IFA:	Iron and folic acid
MCH:	Maternal and Child Health
MDG:	Millennium Development Goal
MMR:	Maternal Mortality Ratio
NGO:	Non-Governmental Organisation
PITC:	Provider initiated testing and counselling
PMTCT:	Prevention of mother to child transmission
SR:	Systematic review
WHO:	World Health Organisation