

**SOCIOCULTURAL AND INSTITUTIONAL FACTORS INFLUENCING ANTENATAL
CARE UTILIZATION AMONGST MUMBAI'S SLUM POPULATION:
A CRITICAL LITERATURE SYNTHESIS**

by

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ABSTRACT

Introduction: Low-income women living in Mumbai's slums exhibit poor antenatal care utilization and, as a result, experience a disproportionate burden of maternal mortality and morbidity. Identifying the diverse range of underlying factors associated with this population's antenatal care seeking behavior is a vital step in developing effective antenatal care policies and programs.

Background: In spite of India's provision of free and subsidized antenatal care programming, women living in Mumbai's slums overwhelmingly exhibit unsafe antenatal care seeking behavior. The existing public antenatal care policies and programs are insufficient to address their antenatal care utilization rates.

Method: A critical literature synthesis utilizing two databases and one search engine identified peer-reviewed papers examining the factors associated with antenatal care utilization and non-utilization amongst low-income women living in Mumbai slum communities. The search utilized 10 Boolean terms and restricted inclusion to articles published since 2013.

Results: The search identified 12 relevant articles and included both quantitative and qualitative studies of care seeking for pregnancy, childbirth, abortion, and family planning. Studies identified a number of factors influencing women's decisions to seek antenatal care services,

including sociodemographic factors, gender and social relations, knowledge, preferences, and beliefs, and the availability, accessibility, acceptability, and quality of care provision.

Discussion: An examination of the recent literature revealed significant gaps in the literature, including measurements of between-group differences and women's real access to components of antenatal care. Additionally, the various sociocultural and institutional factors appear to intersect and exacerbate women's non-utilization of antenatal care services, with issues such as slum legality and weak public health governance complicating women's access to quality antenatal care services.

Conclusion: Given the complex nature of Mumbai's slum policies and public health care systems, slum-dwelling women's urgent need for quality antenatal care demands an effective and comprehensive public health strategy. Recommendations include adopting a more context-appropriate conceptualization of antenatal care, improving the demand for and supply of skilled antenatal care services through NGO-led community mobilization and the redistribution of key antenatal care services to more effective and acceptable providers, and addressing gaps in the existing antenatal health research.

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1.0 INTRODUCTION

Women living in Mumbai's slums face a disproportionate burden of maternal mortality and morbidity as evidenced by the Mumbai slums' rising maternal mortality rate (MMR) in direct contrast to the national and state-level improvements in MMR (Vora, 2015). Unfortunately, low-income women living in urban informal settlements have not benefited as greatly from India's ambitious maternal health programming. Consequently, while India's overall maternal health care utilization rates and outcomes have improved, many of the same indicators for the urban poor have either stagnated or worsened (McNab & Freedman, 2016). This disparity not only constitutes a maternal health crisis, but, in Mumbai specifically, has had a clear economic impact. The current level of Mumbai slum maternal deaths directly translates to an estimated annual GDP loss of US \$43,608,000 (Foster, Bryant, & Dorji, 2013; Islam & Gerdtham, 2006; The World Bank, World Development Indicators, 2016). Additionally, maternal deaths damage community stability, social cohesion, and future outcomes for children, which has long-lasting implications for slums' economic opportunities and development (Belizan & Miller, 2015).

A significant contributor to the worsening maternal health outcomes in Mumbai slums is the prevalence of poor antenatal care (ANC) seeking behavior. A majority of women in these communities tend to utilize underqualified ANC providers or delay care seeking (Nair et.al, 2013; Behera, Bharat, & Gawde, 2015; Singh et al., 2016). Moreover, especially vulnerable women, such as recent migrants and women living and working on construction sites, express even greater reluctance to utilize the formal health care system (Alcock et al., 2015; Gawde, et al., 2016).

The purpose of this critical literature synthesis is to identify the underlying factors that influence poor ANC seeking amongst low-income women living in Mumbai's slums and, ultimately, to develop specific recommendations to improve ANC utilization in order to improve the maternal health outcomes in Mumbai's slums. A focus on literature published since 2013 ensures that the analysis takes into account recent changes to India's public health policies and programming. Chapter 2 includes a background of maternal health indicators and programs relevant to women living in Mumbai's slums, as well as the definitions of comprehensive ANC and slums used in this thesis. Chapter 3 describes the literature search methods that were used, the study selection process, and a summary of the quality assessment conducted for each study included in the synthesis. Chapter 4 presents the literature search results and organizes the factors identified as influencing ANC utilization into six broad categories. Chapter 5 discusses the gaps in the literature, as well as the policy and programmatic implications of the results, such as the relationship between slum legality and ANC seeking behavior. Chapter 6 briefly reflects on the results, analysis, and limitations this synthesis and then concludes with four recommendations for research, policy, and programming.

2.0 BACKGROUND

2.1 THE STATE OF MATERNAL HEALTH

Globally, approximately 303,000 women die from preventable or treatable pregnancy- or delivery-related complications each year (World Health Organization [WHO], 2018a).

Developing countries account for 99% of these preventable maternal deaths with rural and low-income populations bearing the greatest burden of maternal mortality and morbidity (Alkemi et al., 2016; WHO, 2018a). India and its poor maternal health outcomes are of particular concern because India has one of the highest maternal mortality rates in the world and accounts for over 20% of all maternal deaths (UNICEF India, 2017). Indian women living in rural and other low-income communities also tend to be at greater risk for maternal death or disability. In fact, low-income mothers in India are two and a half times more likely to die because of preventable pregnancy- or delivery-related complications (UNICEF India, 2017).

India has attempted to address this disparity through a series of ANC initiatives implemented by the Government of India's National Rural Health Mission (NHRM) to increase hospital delivery and ANC utilization rates by lowering financial and transportation barriers that prevent women from accessing skilled maternal health care services. As a direct result of these programs, institutional deliveries and registered deliveries have risen leading to an 18% drop in the national MMR from 212 maternal deaths per 100,000 live births in 2007 to 167 per 100,000

live births in 2013 (Bhakoo & Kumar, 2013; Sanneving et al., 2013; Kakkad, Patel, Patel, & Pritesh, 2014; Tripathi, Saini, & Prinja, 2014, UNICEF India, 2015).

However, it is important to note that low-income mothers living in urban slums have not experienced the same improvements following the implementation of the NHRM programs. Instead, maternal health indicators and outcomes for extremely low-income urban mothers, such as recent internal migrants who are more likely to have significantly lower income or educational attainment than non-migrant mothers, have either stagnated or worsened (McNab & Freedman, 2016). Poor ANC utilization rates persist in Mumbai's slums where over two-thirds of women have reportedly opted for unsafe home deliveries and, of these women, 74% did not have a skilled birth attendant present (Singh, Roy, Kishore, Gupta, & Kandpal, 2016). Between 11.5% and 23.2% of women resorted to unsafe abortion services provided at unskilled and unlicensed private health facilities (Behera, Bharat, & Gawde, 2015; Nair et al, 2013). Only 46% of women sought ANC from the formal health care system and internal migrants to Mumbai slums expressed even greater reluctance to utilize the formal health care system (Alcock et al., 2015; Gawde, Sivakami, & Babu, 2016). As a result, the 2015 maternal mortality rate for Mumbai's slums grew to 158 maternal deaths per 100,000 live births, a 40% increase since 2010 (Vora, 2015).

2.2 DEFINITIONS

2.2.1 Comprehensive ANC

Traditionally, ANC comprises the medical care necessary to ensure a positive pregnancy outcome and includes skilled care during pregnancy and childbirth, as well as postnatal family counselling. ANC is vital to preventing maternal deaths since over 25% of global maternal deaths occur during pregnancy, and between 33-50% of maternal deaths occur as a direct result of serious conditions with premorbid states, such as preeclampsia or antepartum hemorrhage, which could have been prevented, treated, or maintained after detection with adequate care throughout pregnancy (Lincetto et al., 2006; Oyerinde, 2013). Moreover, the prevalence of unsafe abortions, lack of access to family planning devices, infectious diseases, insecurity and instability in low resource settings, such as urban slums and rural communities in developing countries, increases the importance of access to quality care throughout pregnancy. As a result, many major public health and development agencies, such as the United States Agency for International Development (USAID) and the WHO, recommend that all women have access to a “minimum package” of ANC. A standard set of guidelines includes a minimum of four ANC visits with an appropriate care provider (at 16 weeks, 24-28 weeks, 32 weeks, and 36 weeks) and must include the following categories of care (MEASURE Evaluation, 2018):

1. Identification of pre-existing health conditions (e.g., chronic and infectious diseases);
2. Early detection of complications that could arise during pregnancy (e.g., gestational diabetes);
3. Health promotion and disease prevention (e.g., vaccines, nutrition counselling, and family planning counselling); and

4. Birth preparedness and complication planning (e.g., birth and emergency plans or reducing mother-to-child transmission of HIV).

However, for the purposes of this paper, the definition of comprehensive ANC has been expanded to include family planning provision and safe abortion care. The prevalence of unsafe birth spacing and self-induced abortions amongst Mumbai slum populations leaves women at heightened risk for pregnancy- and delivery-related complications and, therefore, access to safe abortions and family planning devices is integral to improving women's antenatal outcomes.

2.2.2 Slums

There is no universally accepted and official definition of a slum, also referred to as an “informal settlement”. Instead, conceptualizations differ both between and within countries and organizations (Nolan, 2015). The United Nations (UN) defines a slum as at least one person living in an urban area and lacking at least one of five basic amenities, including durable and sufficient housing, clean and accessible water, improved sanitation facilities, and secure tenure (that prevents forced evictions) (UN-HABITAT, 2006/7). In comparison, the Government of India's conceptualization of a slum is grounded in slum legality and varies greatly depending on location and program (Nolan, 2015). For example, the legal recognition of a slum is based on the year that it was established, but the period of eligibility varies between states and cities. For example, Delhi does not recognize slums established after 1994, while Mumbai has not granted legal recognition to a new slum since 2000 (Nolan, 2015; Subbaraman, 2015). By tying slum status to legal recognition, close to half of all of Mumbai's slums are not legally recognized by the government and, therefore, excluded in the government's primary assessment of need, the

Census. Consequently, for the purposes of this thesis, slums are defined in accordance with the UN definition as all areas of urban deprivation.

2.3 ANC PROGRAMS IN INDIA

India's primary antenatal health care initiatives include two of NRHM's most impactful programs, Janani Suraksha Yojana (JSY), which was launched in 2005, and its 2011 expansion, Janani Shishu Suraksha Karyakaram (JSSK). JSY incentivizes institutional deliveries via direct cash transfers to women who register to deliver at a local formal health facility. The facilities are responsible for disbursing the cash transfers to women at delivery and, therefore, rely on timely and sufficient government funding mechanisms. However, the exact value of a JSY cash transfer is dependent on whether the state in question is considered a "low-performing state" (LPS) or "high-performing state" (HPS). LPSs have low institutional delivery rates and, therefore, receive greater assistance from the central government. Maharashtra, the state where Mumbai is located, is considered an HPS. Therefore, women living in Mumbai receive a smaller cash transfer for institutional deliveries. JSSK guarantees free ANC services for all women at any local government health facility. The full list of eligibility requirements and benefits are listed below (Bredenkamp, 2009; Government of India National Health Mission, 2013; Government of India National Health Portal, 2015):

2.3.1 JSY

- Eligibility: All women living in LPSs and HPSs, women who are 19 years of age or older, giving birth to their first or second child, living below the poverty line (which requires proof in the form of a below-the-poverty-line certification card issued by a state or union territory government) or of scheduled caste (SC) or scheduled tribe (ST) status, and using a government health center (or another facility if they received a referral from a government health center and are in possession of a JSY card).

Women living in both LPSs or HPSs who deliver at home may receive partial benefits in order to ensure that all mothers and neonates receive appropriate care during delivery if they are 19 years of age or older, living below the poverty line, and giving birth to their first or second child. Women may receive an additional subsidy if they require an emergency caesarean and their local government health facility does not provide such care. Community health workers known as Accredited Social Health Activists (ASHAs) in LPSs are eligible for cash payments for successfully encouraging an institutional delivery, providing a postnatal visit, and ensuring that infants receives their first round of vaccinations, as well as additional payments to cover the costs accrued if they stay with a pregnant woman at a delivery center (to provide additional support) or pay for transportation of the pregnant woman to a health facility.

- Benefits: Direct cash transfers to women for institutional delivery
 - Urban areas of LPS: INR 1,000 (USD 14.55)
 - Rural areas of LPS: INR 1,400 (USD 20.37)
 - Urban areas of HPS: INR 600 (USD 8.37)

- Rural areas of HPS: INR 700 (USD 10.19)
- Home delivery: INR 500 (USD 7.28)
- Emergency private sector caesarean: Up to INR 1,500 (USD 21.83)
- ASHAs in LPS: Between INR 600 to INR 1,200 (USD 8.37 to USD 17.46)

2.3.2 JSSK

- Eligibility: All pregnant women are eligible, regardless of their income level or living in a LPS or HPS, if they receive care for a normal delivery or a caesarian section and for treatment of sick neonates at a government health facility.
- Benefits: Free entitlements for pregnant women include free delivery or caesarian sections, drugs and consumables, diagnostics, diet (during stay at a delivery facility), blood and transport. Pregnant women are also exempt from all user charges.

2.3.3 JSY and JSSK Challenges

On paper, JSY and JSSK are pro-active programs that eliminate significant barriers to access. However, JSY and JSSK have not been fully impactful as a result of implementation errors, including delayed payments, corruption and fraud. Counterfeiting of eligibility cards and misappropriation of funds and supplies have disrupted the disbursement processes, resulting in non-availability of funds (for the cash transfers) and of vital medical supplies at the facility level (Government of India National Health Mission, 2014). Moreover, in Mumbai, the distribution and supply of public health facilities and providers has not kept up with the rapid population

growth, resulting in a public health system that is unable to provide the full range of services promised by JSSK (Gawde et al., 2016).

3.0 METHODS

This thesis is a critical literature synthesis of studies that examine the factors that influence the ANC seeking behavior of women living in Mumbai slums. This chapter describes the inclusion criteria, search methods, study selection, and quality assessment used for this synthesis.

3.1 INCLUSION CRITERIA

For this synthesis, antenatal was defined as the complete but broad set of services necessary to ensure a healthy pregnancy and delivery. In addition to the traditional components of regular antenatal care, such as pregnancy care, safe delivery, and family planning counselling, both safe abortion care and family planning provision were included as they are vital to ensuring positive outcomes for both current and future pregnancies (Conde-Agudelo et al., 2006; WHO, 2007). Studies were eligible for inclusion if they were peer-reviewed and provided information regarding the factors that influenced ANC utilization, such as financial barriers and mothers' knowledge or attitudes. Studies that assessed multiple populations had to isolate data for Mumbai slums rather than combine population-level data. Finally, studies could include either qualitative or quantitative data but must have been published after January 1, 2013. Literature older than five years was excluded to ensure that the findings reflected the current environment and recent changes in public health policies and programming or the make-up of the urban slum population

(Pautusso, 2013; Frederiksen & Phelps, 2018). This exclusion is not only in accordance with standard protocol, but also ensures that the data and analysis more appropriately reflect Mumbai's dramatic growth in population and changes in ANC availability and accessibility after the implementation of significant reforms to major public health programs, such as the free ANC available through JSSK.

3.2 SEARCH METHODS

The electronic databases PUBMED and ProQuest, as well as the search engine Google Scholar, were searched using specific keywords to limit studies to the relevant geographical and residential boundaries and types of ANC. An initial search was conducted through PubMed using combinations of the following keywords, and their respective MESH Terms and Subject Terms, until the search was exhausted and relevant articles had been duplicated in the results:

- Location: 'Mumbai'
- Housing Type: 'Slum' or 'informal settlement'
- Type of ANC: 'antenatal', 'perinatal', 'pregnancy', 'delivery', 'childbirth', 'abortion', 'family planning', or 'contracep*'

In total, ten Boolean terms were utilized in PubMed and, subsequently, ProQuest. However, since Google Scholar allows one to search through a variety of references, including peer-reviewed journals, books, patents, and citations, and, as a result, produces thousands of results, the Google Scholar search was conducted with an additional keyword, "utilization," and restricted from including patents or citations. The results for PubMed, ProQuest, and Google Scholar are shown below in Table 1.

Table 1. Complete List of Boolean Search Terms and Results

Boolean Search Terms	Results (Restricted to Date Range: 2013-2018)		
	Pubmed	ProQuest	Google Scholar (with keyword 'utilization')
(Mumbai) AND ((informal settlement) OR (slum))	66	464	1660
(Mumbai) AND ((informal settlement) OR (slum)) AND (antenatal)	4	29	1040
(Mumbai) AND ((informal settlement) OR (slum)) AND (perinatal)	2	25	349
(Mumbai) AND ((informal settlement) OR (slum)) AND (prenatal)	2	14	6460
(Mumbai) AND ((informal settlement) OR (slum)) AND (pregnancy)	11	58	1830
(Mumbai) AND ((informal settlement) OR (slum)) AND (delivery)	7	118	1760
(Mumbai) AND ((informal settlement) OR (slum)) AND (childbirth)	1	26	7530
(Mumbai) AND ((informal settlement) OR (slum)) AND (abortion)	1	18	651
(Mumbai) AND ((informal settlement) OR (slum)) AND (family planning)	7	148	8990
(Mumbai) AND ((informal settlement) OR (slum)) AND (contracep*)	2	26	295
Total	103	926	30565

3.3 STUDY SELECTION

The database search, which was limited to the date range of 2013 to 2018, identified a total of 31,574 potential articles. An initial screen of these articles eliminated 30,534 duplicated titles. This was followed by a title screen, which eliminated 811 articles that had clearly irrelevant study objectives or sites. Examples of excluded titles include “Children’s Health in Slum Settings” (Unger, 2013) and “The Adequacy of Antenatal Care Services Among Slum Residents in Addis Ababa, Ethiopia” (Bayou, Mashalla, & Thupayagale-Tshweneagae, 2016). The abstracts of the remaining 229 articles were screened for relevance. Of these, 211 were determined to be irrelevant based on the inclusion/exclusion criteria. An example of an article excluded based on its abstract included a study assessing the impacts of maternal education on maternal health care utilization in an urban slum area, which, according to the abstract, was carried out in Surat City in the state of Gujarat (Mehta et al., 2014).

The remaining 18 articles were read in full to assess for relevance. Of these, six articles were excluded based on a lack of information about the factors influencing women’s antenatal care seeking behavior or a lack of discrete Mumbai urban slum data. Of these, one was excluded since it was an incomplete process evaluation of an antenatal care utilization intervention that measured the prevalence of unmet family planning needs but did not assess factors that influenced that unmet need (More et al., 2017). Another excluded study examined women’s experiences with intimate partner violence during and after pregnancy and, while the abstract mentioned some assessments of family planning utilization, a full-text reading revealed that the analysis did not include any information about factors influencing utilization or non-utilization (Das et al., 2013). Ultimately, 12 articles were determined to be eligible for inclusion. The following PRISMA flow diagram depicts this screening process:

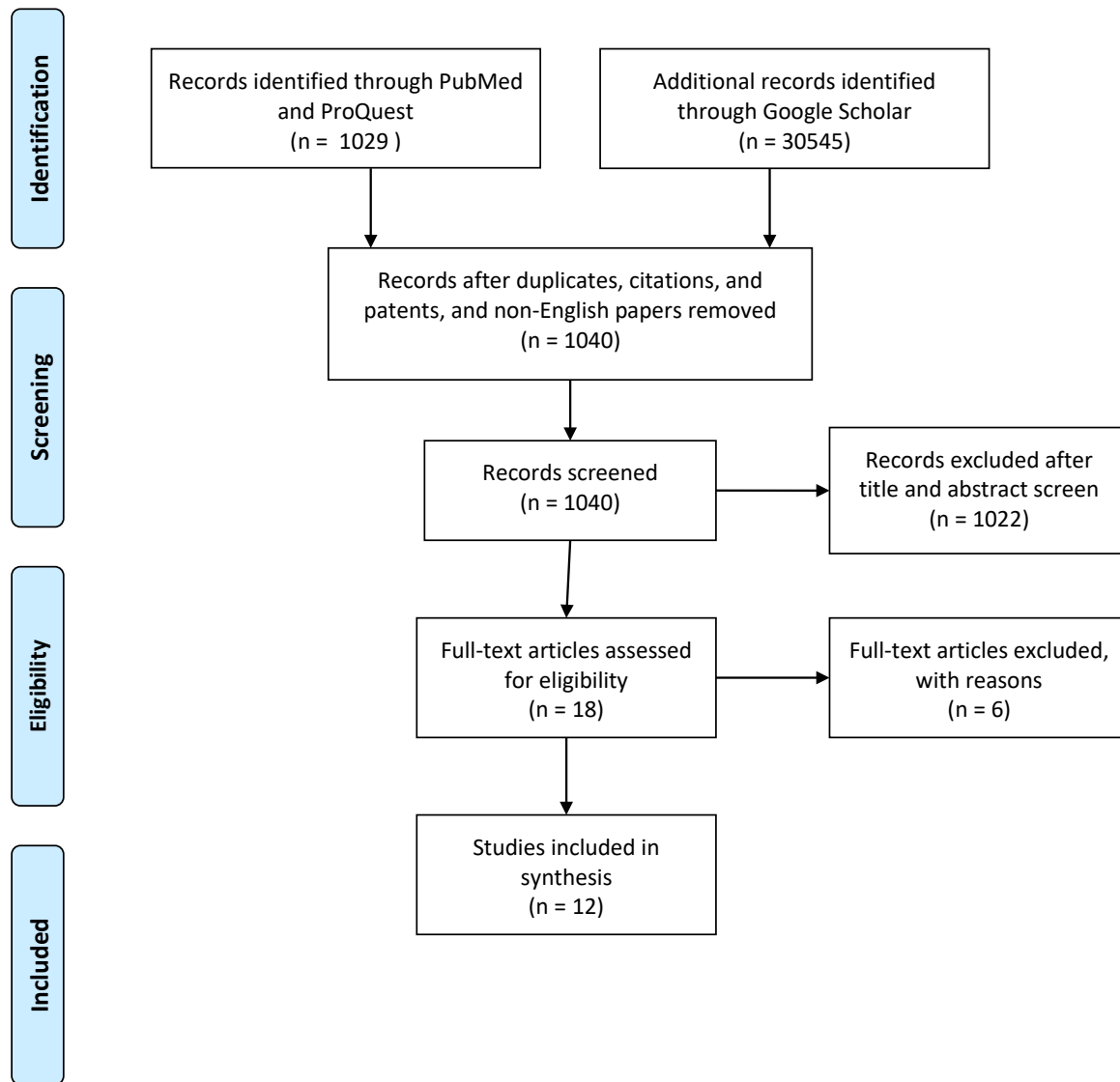


Figure 1 PRISMA Flow Diagram

3.4 QUALITY ASSESSMENT

A quality assessment was conducted for the 12 articles eligible for inclusion using two tools. The Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies tool, which was developed by the National Heart, Lung, and Blood Institute (NHLBI) and based on

methodologies created by the Cochrane Collaboration and other experts, was used for the quantitative studies (NHLBI, 2018). This tool determined quality based on 14 criteria, including specificity of study population, participation rate, justification of sample size, and potential confounders. For qualitative studies, the Qualitative Appraisal Checklist from the Critical Appraisal Skills Programme was used to assess the clarity of research objectives, appropriateness of methodology, research design, recruitment design, and rigor of data analysis (CASP, 2018). Both tools were used for mixed-methods studies. The following table (Table 2) includes a summary of the quality assessments:

Table 2. Quality Assessment Summary

Reference	Description	Quality Assessment
Alcock et al., 2015	Mixed methods study to assess patterns, determinants, and choice of antenatal care provider, specifically choice between public and private sector providers.	Large sample size for quantitative analysis and the inclusion of provider and family perspectives in the qualitative portion are positives, but interviews were conducted in-person allowing for “best behavior” bias. The study also excluded women who were absent after the third visit, which means that the findings do not apply to women who returned to their natal home for the remainder of their pregnancy. In addition, the qualitative findings were not reported in entirety (missing factors)
Badge et al., 2016	Quantitative cross-sectional study to measure ANC utilization and identify the factors influencing nonutilization	Seemingly small sample size but based on a formal calculation of minimum sample size to be considered valid given national estimates of ANC utilization and a 10% allowable error.
Begum et al., 2014	Quantitative cross-sectional study to describe the prevalence and factors influencing unmet contraceptive need	Large sample size; Additionally, the recruitment method controlled for availability of ANC by targeting women living in slums that were not only located near government health facilities but were also regularly visited by community health workers who provided oral contraceptives and male condoms door-to-door.

Table 2 Continued

<p>Behera et al., 2015</p>	<p>Mixed-method study to assess induced abortion practices in a single Mumbai slum</p>	<p>Small sample size (given population of slum), but this could be a consequence of stigmatization of abortions. Additionally, participants were limited to married women and the community was predominantly Muslim, so study may not necessarily be representative of all slum communities. Finally, data was self-reported which may limit the validity.</p>
<p>Gawde et al., 2016</p>	<p>Mixed methods study to assess the factors that influence access to and utilization of antenatal care amongst low-income internal migrants living in Mumbai's urban slums</p>	<p>Sample size was not based on statistical validity, but inclusion criteria. However, key informants were used to identify communities with high proportions of migrant households, suggesting that that bias may be less of an issue than the sample size suggested.</p>
<p>John, Saxena, & Kumar, 2016</p>	<p>Mixed-methods study to assess the antenatal care access and barrier to care faced by pregnant women living in informal settlements on construction sites in Mumbai</p>	<p>Although the sample size is seemingly small, it reflects a 72% response rate given the average number of pregnant women living in the targeted settlements each month. Additionally, while the results of this study are not generalizable to all Mumbai slums, it does provide important information regarding a particularly vulnerable population</p>
<p>Jyoti & Dehmubed, 2016</p>	<p>Cross-sectional study to assess family planning awareness and utilization amongst women</p>	<p>Sample size, inclusion criteria, and study design were not justified. Also, no indication whether the small sample was appropriate given the population make-up or a consequence of poor recruitment methods.</p>
<p>Mahajan &Sharma, 2014</p>	<p>Longitudinal epidemiological study to assess and compare antenatal and neonatal care services between urban and rural populations</p>	<p>Urban participants were predominantly Muslim, while rural participants were predominantly Hindu. Religion is documented to be associated with variations in health seeking behavior and outcomes, so the findings of this study are potentially biased and may conflate rural-urban differences with religion-based factors</p>
<p>Mody et al., 2014</p>	<p>Cross-sectional study to measure and identify reasons for postpartum contraceptive utilization or non-utilization</p>	<p>Large sample size but confined to women who are already pre-disposed to care utilization. Moreover, half of respondents answered demographic information did resume sexual relations after delivery and, therefore, did not answer questions about contraceptive use. Additionally, the study did not delineate between different types of oral contraceptives.</p>

Table 2 Continued

<p>Naydenova et al., 2017</p>	<p>Quantitative cross-sectional study to describe and compare healthcare choices and challenges faced by pregnant women and other slum dwellers</p>	<p>Sample size was relatively small given that participants were recruited from 13 urban slums in 4 large neighborhoods, covering a population of over 65,000 individuals. As a result, it is difficult to assess the accuracy or representativeness of the reported factors. However, the survey did elicit information regarding a range of healthcare decision-making considerations, including access, affordability, choice of providers, awareness, and demographics.</p>
<p>Shrivastava & Bobhate, 2013</p>	<p>Cross-sectional descriptive study to assess ANC utilization and the reasons for choice of delivery site and ANC non-utilization</p>	<p>The study provided crucial, comprehensive information. However, the inclusion and exclusion criteria were not rationalized adequately. Additionally, the sample was recruited from a single slum pocket and accessed the same urban health center, thereby limiting the generalizability of the study.</p>
<p>Silverman et al., 2016</p>	<p>Quantitative cross-sectional study to assess the association between IPV, ILV, and GBHM and maternal morbidity indicators, including ANC utilization</p>	<p>Self-reported data and under-reporting of domestic violence may limit validity. Additionally, the response rate was only 60% which may suggest that there are specific differences respondents and non-respondents. However, the large sample size and the fact that participants were recruited from a number of slums, which enhance the generalizability of the findings.</p>

4.0 RESULTS

The goals of this critical literature synthesis were to examine the sociocultural and institutional determinants of maternal health outcomes in Mumbai slums, including non-notified (not legally recognized by the government) slums and, ultimately, identify best practice and policy recommendations for public health actors, including NGOs and government agencies. A total of 12 studies were identified as eligible for inclusion. Eight were quantitative studies and four were mixed-methods studies that included both quantitative and qualitative components (see Table 3). The 12 studies identified specific factors that influenced utilization of four types of ANC, including pregnancy care utilization (8), delivery care-seeking behavior (6), family planning utilization (4), and safe abortion utilization (2). These factors are categorized into six overarching themes: Sociodemographic factors, gender and social relations, accessibility, availability, acceptability and quality of care provision, and women's perceived need, knowledge, cultural norms and religious beliefs. The following table (Table 3) lists each study along with their objectives, study population and size, relevant component of ANC, and results.

Table 3. Studies included in critical literature synthesis

Reference	Description	Study Population and Size	Component of ANC	Factors Associated with ANC Utilization
Alcock et al., 2015	Mixed methods study to assess patterns, determinants, and choice of ANC provider, specifically choice between public and private sector providers.	Quantitative: 3848 women who had delivered a baby within the past two years Qualitative: 78 women, including 56 women in 7 focus groups, 16 women in one-on-one in-depth interviews, 1 group discussion with 5 community organizers, and 1 interview with a mother-in-law	Pregnancy and delivery	<ul style="list-style-type: none"> ▪ Socioeconomic status ▪ Number of children ▪ Female autonomy ▪ Quality of previous experiences providers
Badge et al., 2016	Quantitative cross-sectional study to measure ANC utilization and identify the factors influencing non-utilization	120 internal migrant women of reproductive age recruited from an urban slum of population size 30,000	Pregnancy and delivery	<ul style="list-style-type: none"> ▪ Lack of transport, accessible healthcare facilities, perceived need, or autonomy ▪ Religion and type of family ▪ Availability of local/traditional birth attendant
Begum et al., 2014	Quantitative cross-sectional study to describe the prevalence and factors influencing unmet contraceptive need	2792 married women living in Mumbai slums, between the ages of 18-39, and having at least one child	Family Planning	<ul style="list-style-type: none"> ▪ Lack of awareness regarding side effects or types of contraceptives ▪ Lack of perceived need ▪ Lack of autonomy ▪ Age ▪ Parity
Behera et al., 2015	Mixed-method study to assess induced abortion practices in a single Mumbai slum	Quantitative: 57 married women who reported undergoing at least one induced abortion in the past 5 years Qualitative: 13 in-depth interviews with 11 respondents, 2 community health workers, and 2 key informants	Abortion	<ul style="list-style-type: none"> ▪ Religious beliefs ▪ Contraception awareness ▪ Social support ▪ Lack of safe abortion facilities ▪ Age ▪ Number of Children

Table 3 Continued

<p>Gawde et al., 2016</p>	<p>Mixed methods study to assess the factors that influence access to and utilization of ANC amongst low-income internal migrants living in Mumbai's urban slums</p>	<p>234 married women who were within 2 years postpartum and internal migrants that had been living in Mumbai for a period of 30 days to 10 years; a select number of providers and managers were included in the qualitative portion</p>	<p>Pregnancy and delivery</p>	<ul style="list-style-type: none"> ▪ Lack of perceived need ▪ Lack of awareness ▪ Lack of social support ▪ Lack of autonomy ▪ Own and social network's experiences with providers ▪ Financial barriers ▪ Cultural norms ▪ Availability and quality of local private and public ANC ▪ Access to government-run ANC
<p>John, Saxena, & Kumar, 2016</p>	<p>Mixed-methods study to assess the ANC access and barrier to care faced by pregnant women living in informal settlements on construction sites in Mumbai</p>	<p>72 pregnant women living on 13 construction sites</p>	<p>Pregnancy and delivery</p>	<ul style="list-style-type: none"> ▪ Provider and childbirth preferences ▪ Cultural norms ▪ Financial barriers ▪ Lack of knowledge ▪ Social support ▪ Availability of local private and public ANC ▪ Access to government-run ANC
<p>Jyoti & Dehmubed, 2016</p>	<p>Cross-sectional study to assess family planning awareness and utilization amongst women</p>	<p>250 married women within 6 months of postpartum</p>	<p>Family planning</p>	<ul style="list-style-type: none"> ▪ Lack of autonomy ▪ Religious beliefs ▪ Lack of perceived need ▪ Lack of knowledge
<p>Mahajan & Sharma, 2014</p>	<p>Longitudinal epidemiological study to assess and compare antenatal and neonatal care services between urban and rural populations</p>	<p>240 primigravidae, including 120 women from urban slum populations in Mumbai, attending ANC clinics</p>	<p>Pregnancy, abortion, delivery, and family planning</p>	<ul style="list-style-type: none"> ▪ Lack of perceived need ▪ Lack of awareness of ANC resources ▪ Availability of local resources ▪ Financial and transportation barriers ▪ Religious beliefs and cultural norms

Table 3 Continued

<p>Mody et al., 2014</p>	<p>Cross-sectional study to measure and identify reasons for postpartum contraceptive utilization or non-utilization</p>	<p>1049 women within 6 months of postpartum</p>	<p>Family planning</p>	<ul style="list-style-type: none"> ▪ IPV ▪ Lack of autonomy
<p>Naydenova et al., 2017</p>	<p>Quantitative cross-sectional study to describe and compare healthcare choices and challenges faced by pregnant women and other slum dwellers</p>	<p>549 participants, including 397 women who have lived in Mumbai for at least 6 months, currently pregnant or have had a child with the last 5 years, and have not participated in a recent largescale healthcare study or trial (to avoid bias in healthcare access perceptions)</p>	<p>Pregnancy</p>	<ul style="list-style-type: none"> ▪ Financial barriers ▪ Provider preferences
<p>Shrivastava & Bobhate, 2013</p>	<p>Cross-sectional descriptive study to assess ANC utilization and the reasons for choice of delivery site and ANC non-utilization</p>	<p>227 women within 1 year postpartum</p>	<p>Pregnancy and delivery</p>	<ul style="list-style-type: none"> ▪ Lack of perceived need ▪ Socioeconomic status ▪ Financial barriers
<p>Silverman et al., 2016</p>	<p>Quantitative cross-sectional study to assess the association between IPV, ILV, and GBHM and maternal morbidity indicators, including ANC utilization</p>	<p>1,039 women, ages 15-35, at less than 6 months postpartum</p>	<p>Pregnancy</p>	<ul style="list-style-type: none"> ▪ Intimate Partner Violence (IPV) and In-law violence (ILV)

4.1 SOCIODEMOGRAPHIC FACTORS

According to a number of the studies, sociodemographic factors, such as age, educational attainment, income, occupation, and parity are associated with ANC utilization or non-utilization.

A large-scale mixed methods study of pregnancy and delivery care seeking behavior amongst women living in two of the largest underserved slums in Mumbai found that maternal education, household assets, and duration of stay in Mumbai are positively correlated with skilled ANC utilization (Alcock et al., 2015). Of those who opted for an institutional delivery, wealth, education, and age are positively correlated and duration of stay is negatively correlated with private sector ANC utilization. Muslim women who had an institutional delivery were also more likely to opt for the private sector. Women who received ANC from the public sector were also more likely to receive pregnancy care or have an institutional delivery at a smaller public health facility, such as a maternity home or inpatient centers, rather than at larger hospitals (tertiary care facilities) as parity and duration of stay in Mumbai increased.

Another large-scale cross-sectional study examining unmet family planning need amongst married women with geographical and financial access to condoms and oral contraceptives found that age and number of children are significantly associated with an unmet need for family planning (Begum et al., 2014). Younger married women and women with only one child were more likely to want but not utilize contraceptives. Since availability of oral contraceptives and male condoms was not an issue for this study population, the authors attributed the high rates of unmet need to cultural norms regarding son preference or to providers

at health facilities giving younger women's contraceptive needs less priority during their antenatal and postnatal consultations.

Three studies with smaller sample sizes found similar relationships of pregnancy and delivery care seeking behavior. A study assessing utilization amongst recent internal migrants found that age was positively correlated with antenatal utilization while parity was negatively correlated (Gawde et al., 2016). Another cross-sectional study comparing healthcare choices and challenges faced by pregnant women in comparison to other slum dwellers found that pregnant women were more likely to use private ANC providers and facilities as income increased while lower income levels were more likely to be associated with greater public healthcare utilization (Naydenova et al., 2017). Shrivastava and Bobhate (2013) also found that maternal education, paternal education, and income level were positively correlated with reported ANC utilization amongst married women within one year postpartum. Income, paternal education, and poor obstetric history were also significantly positively correlated with either institutional delivery or a home birth assisted by skilled health personnel (doctors, nurses, or midwives) or a skilled birth attendant. However, unlike other studies, religion (Hindu or Muslim), type of family (nuclear or joint), maternal occupation, and age were not found to be significant determinants of ANC and delivery care utilization. The study did not include any sort of explanation for this discrepancy.

4.2 GENDER AND SOCIAL RELATIONS

Gender and social relations include family and gender-based dynamics, particularly the distribution of decision-making power, resource mobilization capacity, and gender-inequitable social phenomena, such as those about domestic violence. A number of studies found that lack of

autonomy and domestic violence directly contributed to ANC non-utilization and unsafe provider choices. Others also found that women relied on their social support network for informational and tangible support necessary for accessing ANC services.

In a large-scale mixed methods study, researchers found that low female autonomy complicated women's ability to access and utilize ANC (Alcock et al., 2015). In the qualitative portion of the study, women reported that their care seeking behavior was dependent on their ability to mobilize economic and social resources that were often outside their sphere of control. For example, in order to access care at a local health care facility, they required the support of family members, friends, or neighbors who were willing and able to accompany them to ANC appointments, take on childcare or other domestic duties, or assist with user fees and transportation costs for accessing ANC services, thereby incurring both direct and indirect costs. This was deemed a significant time and financial investment for the family, especially because of the disruption to women's ability to carry out household responsibilities, as well as lost wages. Women who lacked access to funds, sources of social support, or decision-making autonomy were unable to choose their preferred provider. In extreme circumstances, women had to delay care seeking or opt to return to their parent's home in order to access less expensive, but poorer quality ANC.

A smaller cross-sectional study measuring ANC utilization and the prevalence of specific factors influencing non-utilization amongst recent internal migrants found that family members were directly involved in or responsible for making ANC decisions regarding utilization and choice of providers (Badge et al., 2016). About 20% of the women surveyed reported that elder family members, such as their mothers-in-law, prohibited them from accessing formal ANC during pregnancy or childbirth. In their mixed methods study, Gawde et al. (2016) reported

similar findings. Surveys and face-to-face structure interviews found that internal migrant women living in Mumbai slums have limited decision-making autonomy with respect to seeking ANC or selecting ANC providers. In addition, family planning decisions were made as a family, but without women's input. Women also lacked sources of social support. Most internal migrant households lived in a nuclear family setting rather than as a joint family. Women in nuclear families reported having to bear additional household responsibilities, further weakening their ability to access available ANC services. Other potential sources of local social support, such as neighbors or friends, were unable to provide important assistance, such as childcare, due to their own economic constraints. As a result, migrant women preferred to return to their natal home for the duration of their pregnancy or for childbirth even if they perceived urban ANC to be of better quality.

Three studies also found similar results with respect to family planning and abortion care utilization. In a large-scale cross-sectional survey study of married women with available sources of oral contraceptives and condoms, Begum et al. (2014) found that opposition from husbands and other family members was a prevalent reason for women not using a family planning method. In a small-scale mixed-methods study assessing induced abortion practices, women reported that husband and family prohibition of family planning devices forced women to seek unsafe abortions for unwanted pregnancies from secret, private, unskilled providers and unregistered health facilities (Behera et al., 2015). Another small cross-sectional survey of married women within six months postpartum found that about two-thirds of respondents were aware of contraceptives and family planning resources and used at least some form of family planning method (Jyoti & Dehmubed, 2016). However, women who did not use any family planning method reported that their husbands or family members had prohibited contraceptive

utilization. As with the studies examining pregnancy and delivery care, these studies also found that family, friends and neighbors were the primary sources of contraceptive information and linkage to family planning and abortion providers.

Two large-scale cross-sectional studies examining the relationship between domestic violence and utilization of ANC found that women who reported having experienced intimate partner violence (IPV), in-law violence (ILV), and gender-based household maltreatment (GBHM) were less likely to utilize ANC services. Postpartum contraceptive utilization, intended for healthy birth spacing, was negatively correlated with IPV, including physical violence and forced sex, and lack of spousal communication regarding reproductive health and family planning (Mody et al., 2014). Women who experienced IPV or ILV were also more likely to be prohibited from accessing local ANC and from returning to their natal home for pregnancy care or delivery (Silverman et al., 2016). Additionally, some women in this study reported that their husbands and in-laws demanded that women's families pay for pregnancy and delivery care, which also contributed to poor ANC seeking behavior.

Finally, a longitudinal epidemiological study comparing rural and urban antenatal and neonatal care utilization amongst primigravidae married women found that close to 90% women received ANC information, particularly advice about seeking care, from family members rather than health care providers (Mahajan & Sharma, 2014).

4.3 AVAILABILITY

Some studies cited the availability of ANC resources, as in the appropriate distribution of providers and facilities, as influencing women's decision to use ANC or their choice of provider.

In a large-scale study of ANC utilization amongst women who had recently migrated to Mumbai, women, providers, and city agents reported that the availability of nearby ANC resources was insufficient in informal settlements, especially non-notified, temporary settlements commonly occupied by internal migrants (Gawde et al., 2016). In addition, mobile sources of skilled antenatal, such as accredited community health workers and auxiliary nurses, were unable to identify, access, or provide care to women in these settlements due to the lack of a legal permanent address. Local health care facilities tended to prioritize curative care and provided only a limited range of preventative care services. Some women also reported that their local facilities were unable to provide emergency care, so women had to travel further away to larger facilities, including tertiary hospitals that could provide emergency or specialized care. According to Gawde et al., this lack of availability was due to the fact that the number of and resources allocated to primary health centers in Mumbai had stayed the same despite the exponential growth in population.

Another study, which excluded recent migrants, reported similar findings. One-third of women who delayed care seeking until delivery reported that their reason for non-utilization of formal ANC during pregnancy was that they had never been visited by health worker (Shrivastava & Bobhate, 2013).

4.4 ACCESSIBILITY

A number of studies found that women's utilization of available ANC was determined by transportation and financial constraints. In a small cross-sectional study of recent internal migrant women from a single large slum community, 30% of participants stated that government

health facilities were geographically inaccessible and that direct and indirect costs, including loss of daily wages, of traveling to these facilities were prohibitively expensive (Badge et al., 2016). Additionally, a comparative longitudinal epidemiological study by Mahajan and Sharma (2014), women reported having to pay for medications and laboratory services at government health facilities which is in direct violation of JSSK entitlements. Recent internal migrant women in a study recruited from multiple slums throughout Mumbai reported preferring to return to their hometowns for pregnancy or delivery care despite the better quality and spectrum of care available in Mumbai due to the excessive costs associated with accessing Mumbai health care resources (Gawde et al., 2016). Women from this study also reported that another factor influencing their choice of a local private provider, rural provider, or delayed care was due to being unable to access urban government health facilities. Respondents were often ineligible for the free or subsidized care provided at government health facilities (through the JSY and JSSK schemes) because they were either unable to provide legal proof of Mumbai residence or had exceeded the programs' two-child maximum.

A cross-sectional study assessing ANC utilization amongst women who were within one year postpartum revealed that women's utilization of skilled ANC was limited by concerns about expenses and distance to the nearest facility (Shrivastava & Bobhate, 2013). Most women had at least one pregnancy care visit (77.8%), skilled assistance at delivery (80.8%), or both (73.4%), but their choice of provider was primarily influenced by concerns about user fees and travel costs. Almost 80% of women who did not have an assisted delivery cited expenses and transportation constraints as reasons for non-utilization.

Finally, a study examining ANC access challenges amongst pregnant women living in informal settlements on or near construction sites found that, in order to access quality ANC for

pregnancy and delivery, women often had to borrow money (John, Saxena, & Kumar, 2016). Women living on construction sites were particularly vulnerable due to the temporary and hazardous nature of construction work and an inability to negotiate wages, job or housing security. Because of the cost of living, many continue to work through their pregnancy, increasing their risk for maternal mortality or morbidity. Most women in the study were also ineligible for free public health programs, so those who used any formal ANC did so through the private sector despite incurring burdensome user fees. Women also reported delaying pregnancy care and opted for unattended home births due to financial constraints, fear of wage loss, and prioritization of domestic duties.

4.5 ACCEPTABILITY AND QUALITY OF CARE PROVISION

Acceptability, per the WHO definition, refers to whether providers and other health care personnel possess the necessary skills and characteristics to provide high quality patient care necessary to engender trust in and demand for formal ANC amongst urban slum dwellers (WHO: Global Health Workforce Alliance, 2018). Skills may range from medical training to cultural or language competence. Additionally, high quality patient care necessitates that high-quality technical skills and knowledge are also partnered with respectful, patient-centered care provision that takes into account patients' needs, preferences, and values. A number of studies found that women's preferences for ANC utilization and choice of provider were determined by their experiences within and perceptions of the formal health care system, including interactions with healthcare personnel.

One study found that the pregnancy and delivery care preferences of women living in urban slums were strongly influenced by their friends' and families' past experiences with ANC providers, as well as their own (Alcock et al., 2015). In addition to concerns about affordability and geographical convenience, women relied on advice from their social network regarding the quality of services provided by medical staff and expected health outcomes. Poor service provision, such as abusive behavior from providers or administrative staff, long waits, and ill-equipped facilities, acted as significant deterrents to formal antenatal utilization. Women also expressed a preference for private ANC, in spite of incurring out-of-pocket expenditures, because they believed that the private sector was of higher quality than government-run health facilities. Shrivastava and Bobhate (2013) reported similar findings. Although most women opted for an institutional delivery at a government facility due to financial constraints, women who had opted for delivery at a private facility overwhelmingly cited better quality of care as their primary motivator. Over 80% stated that government facility staff and doctors possessed poor communication skills and about 70% were concerned about the fact that deliveries at the government facilities were attended by nurses rather than doctors.

Two studies examining ANC utilization amongst recent migrants to Mumbai found that formal ANC facilities were not migrant friendly. In one study, migrant women reported being verbally abused by medical staff during consultations, especially if staff identified the women as being illiterate or having more than two children (Gawde et al., 2016). Migrant women were also fearful of physical abuse from providers during delivery and, as a result, some resorted to unsafe home deliveries. Additionally, medical staff reportedly lacked cultural sensitivity and often ignored migrant women's concerns about modesty and cesarean sections. Another study found that migrant women were deterred from using formal ANC due to the poor quality of care

provision at local health centers (Badge et al., 2016). Women included in this study reported that, in addition to being verbally abusive towards patients, the medical staff working at these facilities were often unable to provide necessary medications and exams either due to lack of technical skill or medical supplies.

Finally, a study examining abortion care seeking found that women resorted to unsafe abortion practices, such as self-inducing through traditional methods or receiving surgical abortions from unregistered private sector providers, due to concerns about poor post-abortion care and discomfort (Behera et al., 2015). Moreover, government staff reportedly pressured women to undergo surgical sterilization or insertion of an intrauterine long-acting reversible contraceptive (LARC) following abortion services, thus deterring women from seeking abortion care at local public health facilities.

4.6 WOMEN'S PERCEIVED NEED, KNOWLEDGE, CULTURAL NORMS AND RELIGIOUS BELIEFS

Women's perceived need for and awareness of ANC, as well as their traditional beliefs and norms, were common factors influencing their ANC seeking behavior. According to a longitudinal epidemiological study conducted by Mahajan and Sharma (2014), urban primigravidae women were found to have better awareness of pregnancy- and delivery-related complications in comparison to their rural counterparts, which the authors attributed to higher literacy and educational attainment rates in urban populations. However, most urban women (98.3%) in this study stated that their family was their primary source of ANC seeking advice. Of these women, 86.7% delayed care until the second trimester, and 6.7% delayed care seeking until

the third trimester, which most women attributed to being unaware of the availability of a local ANC clinic. In another study, women attributed their non-utilization of pregnancy care to low perceived need as they considered pregnancy to be a “natural phenomenon” (60%) (Shrivastava & Bobhate, 2013). Over 15% of women in that study cited traditional customs and beliefs as their reason for non-utilization of skilled delivery care or pregnancy care. Jyoti and Dehmubed (2016) found similar issues amongst married women within six months postpartum: Study participants who reported non-utilization of postpartum family planning methods stated that they were deterred from utilizing contraceptives by religious beliefs that prohibited contraceptive devices (38.5%) or a fear of side effects (8.4%) which was based on faulty information about contraceptives. This was echoed in another large-scale study of unmet family planning need in two slums where women attributed their non-utilization of any family planning method to a lack of awareness about methods or sources or had fears about potential health concerns and side effects that were based on inaccurate information (Begum et al., 2014).

Migrant women living in Mumbai slums exhibited similar behavior, but unlike non-migrant groups, had less awareness of the importance and prioritization of regular pregnancy care. In one study, migrant women reported that their perceived need for ANC was low because they believed formal ANC was necessary only for complications and that their own risk for pregnancy- and delivery-related complications was low (Gawde et al., 2016). Given the poor living conditions of slums, which included poor sanitation, no access to clean water or food, and limited security, women also felt that they had to prioritize other, more urgent needs, such as clean water and food, over what they perceived to be less-urgent preventative care. In a second study, migrant women reported believing that minimal ANC (one or two visits during pregnancy) was sufficient to ensure a healthy pregnancy (Badge et al., 2016). Women whose

elderly family members, such as mothers-in-law, prohibited them from utilizing skilled ANC stated that their family members had based their decisions and perceptions about ANC need on the fact that they had never used skilled ANC for their own pregnancies.

5.0 DISCUSSION

5.1 GAPS IN LITERATURE

Based on the critical literature synthesis, a number of gaps in the available recent literature were identified. First, there were limited accurate data regarding the availability of formal health care services and the accessibility to the formal health care system, especially the government-based antenatal care programs. Validity was further threatened since the data included in the studies were self-reported by women and, therefore, subject to recall and best behavior bias.

Additionally, for the family planning studies, authors tended to recruit participants from clinical settings and, therefore, predisposed to utilizing formal antenatal care services. Discussions of ANC seeking behavior are incomplete or unreliable without measurements of the availability of accessible ANC resources or ANC utilization amongst women who do not seek formal care.

Another gap in the literature was the existing literature's treatment of sub-groups. Most studies did not differentiate between recent internal migrants and native or long-time residents of Mumbai or between other ethnic and religious groups even though utilization data showed sociodemographic factors, including length of Mumbai residency, ethnicity, race, and religion, were associated with significantly different ANC seeking behavior and risk factors (Alcock et al., 2015; Gawde et al., 2016; John, Saxena, & Kumar; 2017).

5.2 ANC UTILIZATION AS A FUNCTION OF SOCIOCULTURAL AND INSTITUTIONAL FACTORS

The factors affecting ANC utilization amongst Mumbai slum populations can be also be categorized as either sociocultural factors, which refer to the social, cultural, and attitudinal underpinnings of behavior, or institutional factors, which refer to the specific characteristics of the formal health care system and public health programming. These two categories allow for a strategic approach to understanding and, ultimately, addressing suboptimal ANC utilization in accordance with WHO's holistic approach to comprehensive ANC (WHO, 2018b). Based on the factors identified through the critical literature synthesis, the sociocultural and institutional factors are as follows.

5.2.1 Institutional Factors

Institutional inefficiencies: Underfunded and understaffed public health facilities, poor distribution of resources, suboptimal quality of patient care, and prohibitive regulations regarding eligibility for public health benefits, which drive women to costly private, for-profit or unskilled ANC providers.

Slum legality: Lack of legal recognition of certain slums (non-notified slums) prohibits a significant portion of women from accessing public health resources.

5.2.2 Sociocultural Factors

Lack of awareness: Women living in Mumbai's non-notified slums tend to not be aware of public health services, including where and what type of services are available to them. This is

due to not only the poor geographic distribution of public health facilities and personnel, but also their poor literacy levels and educational attainment. As a result, they also have little to no knowledge of ANC and the importance of skilled care throughout their pregnancy, as well as the delivery and postnatal periods. This results in mothers being ill-prepared for birth, leading to suboptimal maternal and neonatal outcomes.

Lack of autonomy: Low-income women in India lack autonomy with regards to financial or social resources and health care decision making. This is due to both economic constraints and cultural norms regarding women's social status within the household.

Cultural norms: Amongst internal migrants, cultural norms dictating provider preferences, ideal family size, and women's autonomy result in higher rates of poor ANC utilization, such as unsafe home births or abortions.

Social cohesion: Women's primary source of ANC knowledge, advice, and linkage to care is their social support network. The ability to mobilize social support, which is also closely linked to autonomy, is positively correlated with ANC utilization suggesting that social isolation is a significant factor in poor ANC utilization.

5.3 FACTORS BY COMPONENT OF THE ANC PACKAGE

Although there is some overlap, the studies included in the critical literature synthesis suggest that identified factors may play different roles in influencing utilization of the four components of ANC:

Family Planning: Family planning utilization tended to be a function of a woman's autonomy and beliefs. Women who live in more restrictive and conservative household may have been

aware of family planning tools and resources but were unable to access them due to lack of decision-making autonomy and beliefs regarding ideal family size and harmful contraceptive side effects.

Abortion: The lack of available and accessible safe abortion facilities and family planning methods, the availability of informational support, and lack of family planning decision-making autonomy were common determinants of safe abortion care utilization. The presence of strong social cohesion and evidenced capacity for mobilization within slum communities (Stanley, 2003; More et al., 2012) suggests that the sociocultural determinants of unsafe abortion care, which include stigma and lack of husband's and family support, may be overcome by the introduction of culturally-sensitive accessible safe abortion sites.

Delivery: Skilled attendants or personnel at birth appeared to be a function of traditional norms and availability dependent on migrant status, age, and maternal education. Recent migrants were more likely to lack the awareness of available health care resources or the necessary social support to utilize skilled ANC in Mumbai. However, as women's age, duration of stay in Mumbai, and maternal education or literacy level increase, so do their social capital, ANC awareness, and decision-making capacity resulting in improved health care utilization (Kusuma et al., 2010, 2013; Gawde, 2016).

Pregnancy Care: Pregnancy care, in particular, was where the intersection between sociocultural and institutional factors was most apparent. The results of the relevant studies showed that utilization of ANC during pregnancy amongst Mumbai slum populations was not only influenced by individual and community-based factors, such as literacy rates, the availability of social support, and cultural norms, but also institutional deficiencies which limited the availability and accessibility of existing ANC resources to Mumbai's slum residents.

5.4 THE INTERSECTION BETWEEN SOCIOCULTURAL AND INSTITUTIONAL FACTORS INFLUENCING ANC UTILIZATION

Assessments of ANC utilization of women living in Mumbai slums clearly indicate a confluence of sociocultural and structural factors. NGOs, like Armman and SNEHA, and government public health programs have attempted to address sociocultural and socioeconomic factors through interventions that specifically target either demand-side or supply-side determinants of ANC utilization. Demand-side interventions, which seek to influence demand for formal and skilled ANC services via mechanisms such as awareness campaigns and cash transfers, include national government-run maternal health programs such as JSY and JSSK and local NGO-run, community-based maternal health programs. Many of these schemes have led to significant improvements in the national MMR and institutional delivery rates (Kakkad et al., 2014; UNICEF India, 2014). However, they have had very little impact on utilization, service delivery, and pregnancy outcomes amongst women living in Mumbai's slums because of specific sociocultural and institutional factors. In the recent literature included in this critical literature synthesis, this is evidenced by the strong influence of the negative experiences of women (and their social support network) within the local formal health care system, particularly the subpar service delivery from existing public health infrastructure (McNab & Freedman, 2016; More et.al., 2012).

With respect to subpar service delivery, the supply of ANC resources has not kept up with the evolving needs of a growing underserved population (Gawde et al., 2016). Not only are there insufficient numbers of facilities, skilled personnel, and supplies available for adequate care provision, but also many public health services are geographically inaccessible for slum residents. Moreover, in addition to the parity-based prohibitions on urban public health program

access, the national government has designated the state of Maharashtra as an HPS and, therefore, eligible only for partial cash transfers for normal deliveries. The limited availability of resources at public health facilities means that although women are guaranteed access to important antenatal services through JSSK, including diagnostics, medications, nutritional supplies, or emergency and specialized care, facilities are not necessarily able to fulfill those guarantees (Alcock et al., 2015; Badge et al., 2016).

Instead, women are forced to turn to the private sector for skilled ANC. This results in burdensome out-of-pocket expenses and all but negates the potential benefits of the government's provision of free ANC services. Therefore, one could argue that for Mumbai's most vulnerable population, the real access to affordable ANC is negligible. Low-income women and families living in urban slums continue to face financial barriers that lead to suboptimal prioritization of antenatal health and unhealthy ANC seeking behavior, limit utilization of quality ANC, and, ultimately, exacerbate the maternal health situation in urban slums.

Institutional factors also impact the manner in which sociocultural factors influence ANC utilization. As with utilization of skilled delivery care, either through an institutional delivery or a home birth with a skilled attendant present, institutional pressures, such as limited public health presence in slums and overburdened staff and facilities, can exacerbate the impacts of traditional norms and social capital on ANC utilization. Limited presence, either through mobile health provision (i.e. community health workers or auxiliary nurses), not only has a direct impact on perceptions of convenience and costs associated with accessing public ANC resources, especially in comparison to local private ANC resources, but also on recent migrants' awareness of ANC resources. Overburdened staff and facilities result in poor patient satisfaction, which can translate to poor perceptions of public health resources not only at the individual level but also throughout

the community via high-functioning social support networks in slums. Moreover, limited presence of skilled providers is also a product of the poor living conditions and impermanent nature of slum housing (Arya, 2012). ANC providers' inability to identify and reach women living in slums due to a lack of demographic data and infrastructure suggests that access needs to be modified on both the demand- and the supply-side of the ANC utilization equation.

While the influence of institutional factors on sociocultural factors of ANC utilization is clear, the reverse relationship (i.e. the influence of sociocultural factors on institutional factors) is less comprehensively described in the literature. Sociocultural factors, such as cultural norms, lack of awareness, and low perceived need, have a clear and direct consequence by lowering women's demand for skilled ANC and these relationships are explicitly and commonly addressed in the multiple studies. On the other hand, the only concrete example of sociocultural factors affecting supply-side institutional factors are providers' perceptions of or lack of sensitivity towards low-income women's cultural norms. In these studies, women reported that providers at health facilities were insensitive to their traditional customs and preferences regarding caesarian sections or modesty. This sometimes even presented as verbally abusive behavior during consultations and childbirth, deterring women from future utilization of skilled ANC until absolutely necessary (Gawde et al., 2016).

This evidence certainly suggests that a significant component of poor ANC delivery includes a lack quality of care, which is defined by the WHO as "the extent to which health care services provided to individuals and patient populations improve desired health outcomes. In order to achieve this, health care must be safe, effective, timely, efficient, equitable and people-centered," (WHO, 2018c) where people-centered care is further defined as provision that is responsive to and respectful of the values, preferences, and needs of individuals and

communities. However, limitations in the existing research resulted in an incomplete picture of this issue. There are few indications of how pervasive this issue is within this population or even information on provider perspectives. These are, however, important considerations given the strength or prevalence of sociocultural factors in urban slum-dwelling women's ANC decision-making process and how that they could affect care provision.

Clearly, sociocultural and institutional factors do not act in isolation. Instead, they act as modifiers for each other albeit to various extents. Moreover, existing interventions targeting only sociocultural factors or only institutional factors have been less than successful (Naydenova et al., 2017). Consequently, a much more comprehensive approach is necessary, as well as recommended by the WHO (2018b). Institutional problems, such as poorly designed policy, a lack of a coherent public health strategy, slum rights, and inadequate public health provision, must be addressed strategically in order for non-notified slum mothers to see any real impact from behavioral interventions.

5.5 SLUM LEGALITY AND ANC SEEKING BEHAVIOR

Migrant ANC utilization is significantly different from the non-migrant population's ANC seeking behavior. This could merely reflect India's persistent rural-urban inequalities in socioeconomic status. For example, rural populations and, therefore, recent rural-to-urban internal migrant populations, are more likely to have lower literacy rates and income, which contribute to poor antenatal knowledge and access (Cali, 2008; Agrawal, 2014; Motiram & Sarma, 2014). Moreover, recent migrants from rural regions may be more willing and able to return to their rural families for pregnancy and childbirth in order to access social support and

avoid the poor patient care associated with urban health resources, resulting poor ANC during the pregnancy and increasing the likelihood of opting for a home delivery (Gawde et al., 2016).

However, the evidence also suggests that issues with slum legality may also affect the disparities between recent migrant and non-migrant ANC utilization. Non-notified slums are not legally recognized by the local, state, or central government and, as a result, do not have access to important rights, protections and resources that dictate quality of life. These include access to adequate housing, clean water, and sanitation, which leaves residents even more vulnerable to infectious diseases and likely reduce the comparative perceived need for ANC and other preventative services (Subbaraman & Murthy, 2015). Most non-notified slums also have decreased access to roads (Arya, 2012), both near and through the slum, which negatively impacts access to health care services, including the supply of community health workers and auxiliary nurses to vulnerable populations living in slums. In short, the conditions within non-notified slum create the perfect environment for poor ANC utilization. While these issues have the potential to harm pregnancy and delivery outcomes for all women, the evidence suggests that recent migrants are more likely to live in non-notified slums due to the lack of available and affordable housing in notified slums, thereby exacerbating the sociocultural factors of ANC seeking that leave migrant women at greater risk for maternal mortality or morbidity (Gawde et al., 2016; Nolan, Bloom & Subbaraman, 2017).

Living in non-notified slums also means that many women do not possess legal residential proof, such as home ownership or rental documents, and, therefore, are unable to obtain the legal identification necessary to access the benefits of government-run public health programs (Subbaraman et al., 2012). Additionally, those who do attempt to obtain government identification are hindered by corruption and fraud. For example, government agents may

demand bribes during the application and delivery process, while poor electronic, security, and logistics systems not only have allowed for but also resulted in lost enrollment packets, faulty identification data, and counterfeiting (Khera, 2011; Yadav, 2014; Biswas, 2018). This compounds women's economic barriers to accessing available ANC. Women who would otherwise be eligible for free ANC at a government-run facility must either rely on a comparatively costly private for-profit provider, which would necessitate the ability to mobilize financial resources via increased social capital or autonomy, or an unskilled traditional birth attendant (*dai*), friend, or family member. Moreover, the extent to which a woman can access the complete spectrum of recommended ANC is also diminished as evidenced by the rates of delayed ANC utilization amongst women living in non-notified slums and the rates of returning to their hometown for limited and poorer quality ANC provided by local community health workers. Women who are willing to borrow money to fund ANC expenditures are also vulnerable to predatory behavior, including violence and forced evictions, from those in financial and political power within slums or at their place of employment (Arya, 2012; Subbaraman, 2012; John, Saxena, & Kumar; 2017).

Moreover, non-notified slums are not included in official census and demographic data collection. As a result, measurements of maternal health indicators, including maternal mortality rates, ANC utilization, ANC access, and sociodemographic information provide an incomplete picture of demand and supply. This is especially apparent in the recent findings regarding child marriage, formal pregnancy care, and institutional delivery rates. The National Maternal and Family Welfare Survey for 2015-2016 reports that child marriages have declined by 19 percentage points to 20.4% since the 2005-2006 survey and that 94.8% of women who had given birth within five years of data collection had done so in a formal ANC facility (Government of

India Ministry of Maternal and Family Welfare, 2016). In contrast, a recent report using 2011 Census data found that the incidence of child marriage was growing in Mumbai (Singh, 2017) while another study found that over 50% of women living in Mumbai's largest slum were married by the age of 18 (More et al., 2008). Other studies specifically measuring ANC utilization amongst women living in slums found that women were much more likely to opt for home births than institutional deliveries, regardless of safety. Such discrepancies in data are likely to hinder effective public health reforms and interventions.

Another troubling aspect of slum legality is that the government has not notified, or legally recognized, an informal settlement since 2000. In fact, it is the municipal government's current policy that slum households can only gain legal recognition (notification) and, therefore, a legal address and access to basic amenities and security, if they settled on state- or city-owned land before 2000 (Subbaraman, 2015). Mumbai slums located on central government-owned land are not eligible for notification regardless of when they were first settled. Moreover, existing legislation prevents the municipal government from extending services to these slums unless they obtain a "No Objection Certificate" (NOC) from the relevant central government agencies. However, these agencies rarely prove NOCs as they fear that allowing the municipal government to enter these slums may inadvertently legitimize slum residents' claims to land tenancy (Subbaraman et al., 2012). Moreover, the central government has not developed a cohesive strategy to address this issue thereby leaving the responsibility of obtaining rights on either the municipal governments or civil society to advocate for slum residents' rights. Ultimately, slum legality restrictions mean that women living in non-notified slums not only lack access to important public services like vital ANC programming, but also lack the right to gain access.

5.6 PUBLIC HEALTH GOVERNANCE AND INSTITUTIONAL INEFFICIENCIES

Given the scope of factors identified in the critical literature synthesis, it is apparent that women living in Mumbai slums bear the burden of institutional inefficiencies within the formal health care system. In addition to the direct impacts on the availability and accessibility of quality ANC resources, weak governance in the form of inefficient distribution of resources, corruption, and lack of transparency and accountability to patients has resulted in suboptimal ANC seeking behavior amongst women living in Mumbai slums as the women surveyed preferred private providers (despite the resulting out-of-pocket expenditures), delaying care seeking until medically necessary, or returning to rural homes where their access to quality comprehensive ANC is generally quite limited (Corbridge et al., 2013; Singh, 2013; Baruah, 2014; Sastry, 2014; Kumar & Srivastava, 2015; Gawde et al., 2016). In order to address these issues and improve low-income, urban slum-dwelling mothers' pregnancy and delivery experiences and outcomes, it is important to understand how service delivery functions (or fails to function) within the existing care provision system.

Poor service delivery is systemic in India and is a function of dysfunctional, inefficient government institutions and civil society action that either impedes or disrupts state action, or creates parallel systems (Mozumder, 2014). Despite its size, or perhaps because of it, the Indian government lacks state capacity as its policy implementation capabilities are incredibly deficient, and its government fails to be truly responsive to the public's concerns (Mehta, 2010; Mozumder, 2014; Akbar & Ostermann, 2015). India has struggled to complete infrastructure projects and many social welfare projects, such as public health, education, and economic development initiatives for the urban poor, have failed to reach the most marginalized and underserved segments due to poorly designed targeting mechanisms, as well as underfunded

understaffed and poorly regulated government facilities (Mozumder, 2014; Kapoor, 2016; Jayachandran, 2017). Moreover, fund leakages prevent resources, ranging from supplies to funds for cash transfers, from reaching populations in need through the diversion of subsidies to the black market via identity theft while bribery demands exacerbate financial constraints, thereby diminishing the potential impact of India's ambitious social welfare programming (Banerjee et al., 2016; Barnwal, 2017).

Limited state effectiveness is exacerbated by the fact that India has shifted to decentralized government and governance without building subnational capacity or developing effective accountability mechanisms (Mahal, Srivastava, & Sanan, 2000). As a result, state and local government structures remain just as weak as federal structures and institutions. All levels of government and governance, especially the bureaucratic structures, are plagued by inefficiencies, corruption, clientelism, nepotism, politicization, and capture by special interest groups (Dethier, 2000; Banerjee, 2016). Additionally, the lack of accountability, and, therefore, lack of responsiveness, have resulted in an increase in civil society action and low effective demand for government provision of goods because non-state actors, such as non-governmental organizations and private for-profit providers, who are perceived as more capable and more likely to provide high quality and responsive goods and services (Dethier, 2000). Consequently, civil society is driven to create and pursue parallel systems of service delivery. While government facilities (and staff) have their flaws, the duplication of effort and parallel systems created by NGOs has inhibited much of the demand for government accountability (Corbridge et al., 2013). This in turn diminishes the demand for or the strength of public health reform efforts.

With specific reference to the issue of ANC provision and utilization in urban slums, the problem of governance failure is particularly apparent in issues surrounding government

identification cards and the implementation of public health programming. As described in earlier sections, structural violence in the form of the lack of legal recognition (or an effective process for obtaining legal recognition) for non-notified slum tenancy impedes access to the government identification cards, free ANC programming, and basic amenities and security that are necessary for improving maternal health outcomes. Historically, corruption is another significant issue that plagues both the private- and public-sector health care systems in India (Sharma & Sharma, 2018). Although public health facilities are supposed to be free or low cost for low-income women, early studies found that ANC provision and utilization in urban Mumbai slums was impeded by a pervasive culture of informal payments (i.e. bribes) demanded by providers and staff at public facilities (Skordis-Worrall et al., 2011). While demands for informal payments are not explicitly stated in the more recent literature included in this literature review, women who utilized government health facilities reported having to pay for ANC services that are supposed to be free under JSSK policies (Mahajan & Sharma, 2014).

Additionally, the prevalence of other factors associated with institutional inefficiencies suggest that corruption remains a problem in ensuring that women have access to quality ANC in urban slums. For example, women in multiple studies reported that because government health facilities lack adequate supplies and trained personnel, they were forced to turn to private, for-profit providers for medications, diagnostics, abortion, or consultations (Alcock et al., 2015; Behera et al., 2015; Badge et al., 2016). The utilization of private health care is problematic since quality of care is not guaranteed. Low-income women who cannot afford high quality private health care must turn to less expensive, but often unregistered and untrained providers, such as unskilled local birth attendants known as “dais” or delay care seeking. This situation reflects two major examples of corruption: 1) fund leakage within service delivery, and 2) medical fraud.

Fund leakage, in the form of delayed or missing cash transfer funds for the JSY program, has been reported in the national government's training module for NHRM program implementation and attributed to lack of proper oversight and monitoring of disbursement mechanisms (Government of India National Health Mission, 2014). Medical fraud, in the form of un- or under-qualified providers, can be attributed to a lack of effective regulation of the private sector (Sharma & Sharma, 2018).

The reality is that corruption has been a long-standing feature of Indian governance since the colonial era. It is essentially one of the most institutionalized components of all levels of governance that stakeholders, including both government officials and civil society members, tend to work around rather than resolve. Corruption is not only inefficient but also has widespread implications for a variety of other issues, including the poor delivery and utilization of public services, socioeconomic disparities, and the criminalization of politics (Baruah, 2014; Sastry, 2014; Singh, 2013). Domestic anti-corruption movements thus far have been less than effective and their failures have actually dis-incentivized future reform movements (Agarwal, 2016). The government also lacks the appropriate internal mechanisms to prevent corruption, such as adequate punishments, a transparent chain of command, or a navigable, fully developed legal framework to combat corruption (Singh, 2013). Moreover, the culture of governance with respect to hiring and workforce administration is hardly meritocratic or transparent. In fact, the organizational culture in all public service systems tends towards nepotism and lacks accountability mechanisms that are accessible by both junior staff and clients (e.g. patients).

Clearly, if corruption within ANC provision is allowed to persist, the most vulnerable populations, including women living in Mumbai's urban slums, will remain at high risk for poor pregnancy outcomes. This suggests that citizens must also be given the formal right to

information while ensuring that even the most isolated, underserved populations have reasonable access to information (Singh, 2013; Xu, 2014). In addition, NGOs need to support anti-corruption movements by not only focusing on filling service gaps, but empowering communities to advocate for real change in ANC utilization.

6.0 CONCLUSION

Women living in Mumbai's slums face a disproportionate and growing burden of maternal mortality as a direct consequence of their poor ANC utilization. Recently published literature reveals that their suboptimal ANC seeking behavior is a direct consequence of a diverse range of factors including sociocultural factors, such as sociodemographic factors, gender and social relations, and women's perceived need, knowledge, and cultural norms, as well as institutional factors, such as the availability, accessibility, acceptability, and quality of care provision of the local formal health care system. These factors not only have individual impacts on ANC utilization, but also act as modifiers of each other to exacerbate the conditions that impede women's utilization of available and accessible formal ANC resources. Moreover, these factors also reflect grave problems within India's public health system and treatment of slums.

In addition to discussing the limitations of this thesis, this chapter provides recommendations to strategically address ANC utilization amongst Mumbai's slum-dwelling women.

6.1 LIMITATIONS

There are a number of limitations to analysis included in this thesis. Quality assessments found a number of issues within the studies included in this synthesis. In addition to poor response rates

and small or inadequately justified samples, the studies relied on women's self-reported data regarding ANC utilization, unmet need, and barriers to utilization. Certain topics, such as domestic violence and abortions, were highly stigmatized, while access, availability, and utilization information were subject to recall and best behavior bias, thereby resulting in potentially incorrect estimations of demand and supply. Additionally, many of the studies were not generalizable because they focused on distinct subgroups, such as construction workers, recent internal migrants, or specific religious groups. These subgroups exhibited significantly different ANC seeking behavior. For example, recent internal migrant women were much less likely to be aware of formal ANC resources than other women living in the same slums (Alcock et al., 2015). Conversely, studies that disregarded subgroup identities, either inadvertently (via a diverse slum community) or through a center-based approach (rather than community-based approach), may have failed to acknowledge and address potential threats to validity. For example, one study compared the ANC seeking behavior between a predominantly Muslim urban slum community to a predominantly Hindu rural community resulting in findings that may conflate rural-urban differences with religious-based factors (Mahajan & Sharma, 2014).

6.2 RECOMMENDATIONS

Mumbai and its slums are a low-resource, high-need setting with a fractured public health system and growing private health sector (of variable quality). Moreover, women living in Mumbai's slums are influenced by a diverse range of interrelated sociocultural and institutional factors. Navigating such an environment in order to improve antenatal utilization and maternal health necessitates a comprehensive approach that strategically targets both the supply- and demand-

side challenges. This is not a novel concept and reflects the WHO's guidelines for comprehensive ANC provision as enumerated in its report, "Recommendations on ANC for a Positive Pregnancy Experience" (WHO, 2018b). WHO takes a holistic approach to ANC provision and includes the following recommendations for health care providers, policy makers and other key stakeholders (WHO, 2018b):

1. Health system interventions for both the utilization and quality of ANC provision:
Specific recommendations include mandating a minimum of eight antenatal visits, task-shifting to a wider range of qualified providers (including community health workers, midwives, and auxiliary nurses), and community and household mobilization to improve demand for ANC.
2. Nutrition interventions, maternal and fetal assessments, preventative measures, and interventions to manage common physiological symptoms, such as nausea and vomiting.
3. Policy and program considerations including a review of existing epidemiologic contexts, health care and ANC service delivery systems and protocols, and finances, and the development of an effective and efficient ANC delivery strategy including plans for human resources, procurement, information systems, organization and delivery of ANC contacts, and monitoring, evaluation, and program learning.

However, WHO fails to take into consideration a crucial fact of maternal mortality and morbidity risk reduction: a woman's health is not merely a function of a single pregnancy and, in fact, pre-existing health conditions and safe reproductive health practices prior to pregnancy are vital components of assessing a woman's risk for pregnancy- or delivery-related complications. With that in mind, the following set of recommendations expands on the WHO guidelines, as well as

places them within the context of ANC seeking amongst low-income, urban slum-dwelling women living in Mumbai.

6.2.1 Redefine comprehensive ANC

The WHO's current guidelines state that the importance of ANC lies in ensuring that women have a healthy and positive pregnancy experience. As such, their requirements for antenatal services include preventative care and treatments, such as diagnostics, medications, supplements, and immunizations, nutritional supplements, and delivery and emergency plan development. Their guidelines also recommend family planning counselling, but do not include the actual provision of family planning methods. Moreover, the guidelines do not address the issue of risky abortions. Safe abortions, post-abortion care and contraceptive device provision are not traditional components of ANC but are integral components of lowering the risk of pregnancy- and delivery-related complications (Conde-Agudelo et al., 2006; WHO, 2007). They are especially critical given the prevalence of unsafe abortions and the unmet need for family planning amongst Mumbai's low-income urban slum-dwellers, as well as the importance of birth spacing (for both full-term pregnancies and miscarriages or abortions) to health pregnancy outcomes and overall health (for both mother and child) (Begum et al., 2014; Behera et al., 2015). This suggests that comprehensive ANC, intended to ensure positive pregnancy outcomes and experiences, should include at the very least, safe (and patient-centered) post-abortion care and contraceptive provision.

6.2.2 Community Mobilization to Improve Demand

Women's autonomy and awareness of ANC and ANC resources appear to be the most common factors associated with ANC non-utilization amongst low-income women living in Mumbai's slums, regardless of type of ANC. The literature revealed that significant portions of women in Mumbai slum communities were prevented from or not involved in the decision-making process regarding the utilization of various family planning methods or accessing pregnancy or delivery care by family members, including in-laws (Begum et al., 2014; Mody et al., 2014; Alcock et al., 2015; Behera et al., 2015; Badge et al., 2016; Gawde et al., 2016; Jyoti & Dehmubed, 2016; Silverman et al., 2016). Women also reported resorting to unsafe abortions as a direct consequence of their families prohibiting contraceptive utilization (Behera et al., 2015).

With respect to awareness, ANC utilization was a function of the knowledge base of both women and their families. Women exhibited a low perceived need for pregnancy and delivery care and family planning, as well as a high prevalence of unsafe abortions, due to a lack of awareness of the importance of regular ANC visits, preventative care, appropriate birth spacing and pregnancy weight gain, (Mahajan & Sharma, 2014; Badge et al., 2016; Gawde et al., 2016). Women also exhibited limited understanding of contraceptive availability and potential side effects, leading to family planning non-utilization and unsafe abortions (Begum et al, 2014; Behera et al., 2015; Jyoti & Dehmubed, 2016). Awareness and decision-making autonomy were also found to be directly linked since women were prohibited from ANC utilization by family members with low perceived need (Badge et al., 2016).

It is important to note that in addition to decision-making autonomy, women's autonomy, particularly within the context of ANC utilization, is also a function of the ability to mobilize social and financial resources (Bloom et al., 2001). Limited financial autonomy, in the form of

limited access to secure funds or non-predatory loans, directly contributed to antenatal non-utilization during pregnancy and delivery (Alcock et al., 2015; John, Saxena, &, 2016). However, women's ability to access social support resources was the most common factor influencing women's ANC seeking behavior. Since women's family, friends and neighbors tended to be their main source of information, tangible support, and link to providers, women who lacked access to social support were unable to access quality ANC providers (Alcock et al., 2015; Behera et al., 2015; Jyoti & Dehmubed, 2016). Social isolation often led to internal migrant women to return to their rural natal homes where formal ANC is either of poorer quality or non-existent (Gawde et al., 2016).

Early marriage, including both child and adolescent marriage, is prevalent (and on the rise) in Mumbai slums as a result of the social isolation and poverty experience by parents living in urban slums (Raj, 2010; Singh, 2017). This is particularly concerning given the strong association between low marital or maternal age, decreased autonomy, and poor maternal health outcomes (Gupta, 1995; Santhya et al., 2010). Globally, early marriage has been determined to be associated with lower contraceptive utilization, early childbearing, rapid repeat birth, inadequate use of maternal health services, unsafe pregnancy termination (Raj et al., 2009; Godha et al., 2013; Ganchimieng et al., 2014). Similarly, the studies included in this critical literature synthesis found that younger women were less likely to have an institutional delivery or regular pregnancy care visits with a skilled provider (Alcock et al., 2015; Gawde et al., 2016). Younger women were also more likely to have an unmet need for family planning (Begum et al., 2014). Moreover, early marriage is also strongly associated with IPV and ILV, poor literacy rates, and poor educational attainment, which, according to multiple studies in the critical

literature synthesis, are also associated with poor ANC utilization amongst women living in urban slums (Shrivastava & Bhobate, 2013; Begum et al., 2015; Silverman et al., 2016).

Given how impactful awareness, social support, and decision-making autonomy are to women's utilization of quality ANC, it seems necessary to target those in ANC interventions. In fact, NGOs working in both Mumbai's slums and other similar contexts, have been effective in organizing communities and community women's groups to mobilize and advocate for specific causes, such as preventing early marriage and strengthening women's access to social support, to raise awareness of public health resources and improve demand (Pande et al., 2006; Lee-Rife et al., 2012; More et al., 2012). However, they have been less successful in translating demand into utilization due to ineffective supply-side activities that are inadequate to address Mumbai's institutional problems, such as infrastructure and corruption. Therefore, NGOs working in Mumbai slums should continue or expand community mobilization efforts, in which they have an apparent comparative advantage.

6.2.3 Improving the Delivery of Public Health Services

Poor public health service delivery is a significant factor influencing antenatal utilization and non-utilization amongst low-income women living in Mumbai's urban slums. As shown in the literature included in the critical literature synthesis, women are overwhelmingly influenced by their social supports experiences and knowledge of existing resources, as well as their own. Consequently, subpar service delivery at the facility or provider level can deter women from utilizing the formal ANC necessary for a positive pregnancy outcome and experience. Therefore, improving antenatal utilization rates will require several institutional reforms to improve service

delivery. These improvements will involve correcting the current state of slum legality and improving the quality and distribution of existing services.

At present, issues with slum legality have a devastating impact on women's ability to access quality ANC. Lack of slum legality inhibits stakeholders, such as government agents and health care researchers, from obtaining accurate data regarding quantity and location of need. Non-notified slum residents also lack the rights and access to basic amenities, such as clean water, adequate sanitation, safety, security, and food, and lack the ability to obtain those rights due to current legislation limiting slum notification. Furthermore, Mumbai is going through rapid urbanization and population growth, which inevitably leads to the construction of new informal settlements both in urban and more peri-urban regions of the city (Subbaraman et al., 2012). Limiting notification to those settled before 2000 is unrealistic as it leaves millions of vulnerable people with the basic protections promised to them as Indian citizens. Given that this is clearly a human rights issue, as well the government's professed interest in improving maternal health outcomes, the central and municipal governments should find a more efficient and equitable means of extending notification or access to resources to the non-notified slums, regardless of whether the occupied land is city- or central government-owned. An extension of clean water provision (without notification) has been attempted in non-notified slums in 2014 with limited success since the regulations regarding pricing and individual household supplies of clean water were suboptimal (Subbaraman & Murthy, 2015). Once those flaws are corrected and supply policies are on par with those for notified slums, access and living conditions within non-notified slums should improve.

Government actors should also focus on improving existing public health programming and facilities. In particular, JSY, the maternal health promotion program that provides cash

transfers to low-income women to incentivize institutional delivery, is insufficient. Government policies allow only urban Maharashtrian mothers to receive a partial cash transfer which does not cover institutional delivery expenses, even at a government facility. Therefore, the cash transfer amount should be raised so that it can adequately address women's financial barriers to ANC utilization. JSY is also vulnerable to fund leakage as evidenced by delayed and insufficient payments (Government of India National Health Mission, 2014). Existing public health facilities are overburdened, underfunded, understaffed, and located far from slums where the need for economical public health services is highest. Poor distribution is a product of incorrect measurements of need (as a result of non-notification of slums) and limited resources, so merely increasing the number of facilities is not a feasible option. Additionally, health center and hospital staff lack cultural sensitivity and, therefore, act as deterrents to migrant women's ANC utilization. Consequently, public health services should focus on expanding the number of peer and community health workers, who are more reportedly more culturally-sensitive and familiar to recent migrants, and ensuring that they have the capacity to access all slums (Gawde et al., 2016). Additionally, public health facilities should work with NGOs that are active within slum communities to raise awareness of their services and to improve and maintain the skills and cultural-sensitivity of public health staff.

6.2.4 Future Research

As stated in earlier sections, the research regarding the factors influencing ANC utilization is incomplete. We need a much more comprehensive examination of the relationships between the various factors, particularly whether or not demand-side factors (sociocultural factors) have an impact on how supply-side factors (institutional factors) influence service delivery. Moreover,

the limitations of the studies included in the critical literature synthesis suggest that existing research is far too limited for generalizability. In fact, the differences in ANC seeking behavior and vulnerability between subgroups, including religious groups and migrants (compared to non-migrants), suggest that these subgroups should be treated as distinct populations for the purposes of research and intervention. Finally, future researchers should consider pursuing a more formal measurement of the formal health care system. The studies in this synthesis tended to rely on participants' self-reported data regarding the availability and accessibility of formal health care facilities. A more accurate understanding of the distribution of health facilities would improve efforts to ensure access to vulnerable populations.

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