**Appendix 1: Final included studies for data extraction**

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| **ID Code** | **Title** | **Author** | **Year** | **location** | **Target****population** | **Sampling****Sample size** | **Type****Of****Study** | **Determinants****reported** | **Final Results** | **Explanation** |
| 1 | Prevalence and factors associated withabortion and unsafe abortion in Nepal: anationwide cross-sectional study | Abinath Yogi | 2018 | Nepal Demographic and Health Survey | women with the most recent abortion | national survey | cross sectional | Buddhist religion (OR 2.15; 95% CI 1.04,4.44) - literate (secondary level education OR 1.69; 95% CI 1.22, 2.34)-who knew about legalabortion (OR 1.88; 95% CI 1.41, 2.52)-who were aware of safe places for abortion services (OR 4.96; 95%CI 3.04, 8.09)-women in age group 25–34 years (OR 0.43; 95% CI0.19, 0.97-e who were in the richest wealth quintile (OR 0.10; 95% CI 0.04, 0.25)  | The five-year prevalence of abortion was 21.1% among women of reproductive age who ever had aterminated pregnancy and 16.0% of total abortions were unsafe | Education, religion, age, knowledge about legalabortion and safe places to undergo abortion were the major decisive factors associated with abortion. Young,poorest and uneducated women were more likely to undergo unsafe abortions. Therefore, intervention studiesamong these target groups are warranted. |
| 2 | Understanding Generational Differences in Early Fertility:Proximate and Social Determinants | Rachel E. Goldberg | 2018 | USA | US youth population |  longitudinal data from Waves 1–4 of Add Health, a nationally representative studyfollowing a cohort of youth who were in grades 7–12 in 1994–1995. | cross sectional | Immigrant generation -Age -Parental education (ref: > high school)-Race/ethnicity-Married-Sexual onset(Age and Duration following onset) | Proximate determinants include sexual activity (timing of sexual onset and sexual frequency), contraceptive use, and whether a pregnancy is carried to term Social factors must operate through at least one of these proximate determinants to influence fertility |  |
| 3 | Adolescent motherhood in Bangladesh:Trends and determinants | Mohammad Mainul Islam | 2017 | Bangladesh | adolescent  | 7 waves of Bangladesh Demographic and Health Survey(BDHS, 1993–2014) data but for multivariate analysis 4 waves of BDHS (2004–2014). | cross sectional | Lower spousal age gap and higher education were found to be associated with lower likelihood of adolescent motherhood both among teenage girls. Teenage girls in the poorestwealth quintile [OR 1.712 [1.350–2.173] were more likely to experience adolescent motherhood than the richest wealth quintile. Teenage girls who had no education were found tohave 2.76 times higher odds of adolescent motherhood than their counterparts who hadhigher than secondary education. Concerning the time effect, the odds of adolescent motherhood among adult women was found to decline overtime. | Bangladesh adolescent motherhood is still highly prevalent though declining from 1993 to 2014 | , it was found that lower spousal age gap had lower odds of adolescentmotherhood among adult women in terms of their age, education, employment status, wealthindex, place of residence, region, religion, exposure to media, husband’s education and time(year of surveys). In addition, lower education was found to be associated with higher risk ofadolescent motherhood among adult women. For example, adult women who had no education were 5.26 times more likely to become mothers before age 20 compared to those who hadpost- secondary education. |
| 4 | Women’s empowerment and fertility preferences in high fertility countries in Sub-Saharan Africa | Esso-Hanam Atake | 2019 | countries inSub-Saharan Africa |  married women |  | cross sectional |   | All below determinants improve the number of wanted children significantly: .Economic empowerment index..Sociocultural empowerment( only in Niger).Familial empowerment.Household wealth index.Husband education.Household size.Islam and Christian religion in Burkina Faso |  |
| 5 | Determinants of teenage pregnancy in DeguaTembien District, Tigray, Northern Ethiopia: Acommunity-based case-control study | Brhane G/kidan Ayele | 2018 | DeguaTembien District, Tigray, Northern Ethiopia | Female teenagers in Degua Tembien district constituted the source population | community-based case-control study | lower monthly income below ~$25 and ~$25–50 (adjusted odds ratio (AOR) = 23.96; 95% confidence interval (95%CI) 4.89–117.29 and AOR = 4.91; 95%CI 1.64–14.66, respectively); aged 18–19 years (AOR = 16.75; 95%CI 6.45–43.47); being married (AOR = 15.91; 95%CI 7.43–34.04); not communicating with parents on reproductive health issues (AOR = 6.52; 95%CI 3.12–13.64) and having a history of maternal teenage pregnancy (AOR = 4.14; 95%CI 1.84–9.33). | The factors associated with higher teenage pregnancy in our study were : lower family monthly income, being married, being in the 18–19 year age group, not communicating with parents on reproductive health issues and having a maternal history of teenage pregnancy. |  |  |
| 6 | Achieving fertility control through woman’s autonomyand access to maternal healthcare: Are we on track?In-depth analysis of PDHS-2012-13 | Sehar-un-Nisa Hassan1, | 2015 | Pakistan  |  ever-married women of ages 15-49 years from PDHS, 2012-13 | 11,761 | cross sectional | socio-demographics, women’s autonomy, fertility control preferences and access to maternalhealthcare. | The main purpose of this study was to determinewhether women’s autonomous status and accessto maternal health care will independently orafter interaction predict women’s fertility controlpreferences. Findings from multivariate analysisshowed that women’s younger age, having less thanthree number of children and independent or jointdecision-making (indicators of high autonomy)remained the most significant predictors for accessto better quality maternal healthcare and betterfertility control preferences when other variableswere controlled. Findings also revealed thatquality of ante-natal healthcare accessed by womensignificantly influence women’s choice for idealnumber of children independently and even afterinteraction with other variables. | Findings strongly suggest thatjoint decision-making in couples maximize access tobetter quality ante-natal and post-natal healthcarewhich lead to positive outcomes in fertility control.To achieve success in fertility control, programsshould target young, less educated women livingin rural areas of Sindh, Balochistan and GiglitBaltistan. It is recommended to conduct furtheranalysis by including other variables from PDHS2012-13 data such as media exposure, contraceptiveuse patterns, and experience of domestic abuseand women’s and men’s attitudes towards wifebeating which may explain role of other factors indetermining women’s fertility preferences. |
| 7 | Determinants of family planning useamong married women in bale eco-region,Southeast Ethiopia: a community basedstudy | Alemayehu Gonie | 2018 | Southeast Ethiopia |  women | multistage sampling technique was employed- 567 |  community-based cross-sectional study design (both quantitative and qualitative methods) | Spousal (husband’s) opposition (38.8%), religious beliefs(17.7%), concern and fear of side effects (14.8%), and distance of family planning service- AOR  |  Spousal (husband’s) opposition (38.8%), religious beliefs(17.7%), concern and fear of side effects (14.8%), and distance of family planning service (5.9%) were the reasons for notusing contraceptive methods. |  Having more than seven deliveriesandhaving birth interval less than 24 months between the last two childrenwere significantly associated with utilization of contraceptive methods. |
| 8 | Knowledge and utilization of sexual andreproductive healthcare services amongThai immigrant women in Sweden | Eva Åkerman | 2016 | Sweden | Migrants women from Thailand to Sweden between 2006 and 2011. | 804 women |  cross-sectional study using a postal questionnaire | Age/ Married/cohabitingEducation level/Immigration year/Participation in Swedish language School/Lacking cash reservesa/Trust in othersBonding vs. bridging trust/Dominant bonding trust Dominant bridging trust /Bonding vs. bridging relationshipsDominant bonding relationships/Dominant bridging relationships/Social participation | This study shows that the majority of Thai women hadpoor knowledge of where to turn when they neededsexual and reproductive healthcare services. Socialcapital, measured in terms of trust in others and bonding vs. bridging relationships, was of importance forsuch knowledge. The majority also had a low utilizationof sexual and reproductive healthcare services. |  |
| 9 | Community influences on moderncontraceptive use among young women inlow and middle-income countries: a crosssectional multi-country analysis | Massy Mutumba | 2018 | 52LMICs  |  |  | : Grounded in the socio-ecological framework | Community mean age at marriageCommunity mean age at first birth Community mean age at sexual debutCommunity mean ideal number of children Community mean mass media exposure score Community mean household decision-making autonomy score Community mean attitudes towards intimate partner violence score Community mean years of completed education Community mean household wealth score | First, they highlight the potential mechanism through which community level factors mayshape young women’s contraceptive use.Second, they underscore the need for tailoring and audience segmentation in family planning programs. As indicated, they findings suggest that community level factorsmay shape contraceptive use in younger and older womendifferently. Audience segmentation is an important healthtool that allows programs to identify relativelyhomogenous sub-populations with similar characteristicsand needs that can be targeted through tailored messagesand programs that meet these needs. Lastly, these findings underscore the need for longitudinal studies to enhance our understanding how the dynamic interactions between space and time may shapecontraceptive use during the transition to adulthood. |  |
| 10 | Trends and Determinants of Antenatal Care ServiceUse in Ethiopia between 2000 and 2016 | Tensae Mekonnen | 2019 | Ethiopia/ The Federal Democratic Republic of Ethiopia has nine regional states, two city administrations, 611weredas (districts) and 15,000 Kebeles. |  reproductive age women with a live birth 12 months | 30,643 |  data from the EDHS for the years 2000, 2005, 2011 and 2016 | Maternal ageMarital status Currently Mother’s educationHousehold Wealth indexMother’s employmentPartner educationPartner occupationHealth knowledge factorsFrequency of reading newspaper or magazineNeed factorsContraceptive use Intention to become pregnant | Factors that significantly influenced the use of ANC inEthiopia include urban residence, high and middle household wealth index, secondary and above levelof education, history of contraceptive use before pregnancy and plans not to have any more childrenin the future.  |  |
| 11 | Contextual determinants of inducedabortion: a panel analysis | Mar Llorente-Marrón | 2016 | Espania  |  |  a sample of 22 countries in Europe for the 2001-2009 period. |  econometric analysis with panel data | national income/ female employment, civil status, migration | The differences in the nationaldevelopment of the regulatory laws of induced abortion explain most of the resultsobtained. Some examples of the differences in such effects are: information disseminationprograms within the regular processes of sexual and reproductive health care; restrictionsfor abortion of pregnancies over 12 weeks; sexual information programs for young womenand immigrants; number and geographical distribution of family planning centers; andpeculiar behaviors related to cultural and religious aspects. |  |
| 12 | Long acting reversible contraception(LARC) use andassociated factors among married women ofreproductive age in Nepal | Rajan Bhandari | 2019 | Nepal | All married women aged 15–49 who were either permanent residents of the selected households or visitors who stayed in the households the night before the survey were eligible to beinterviewed by DHS. | two-stage stratified cluster sampling in rural areas and three-stage stratified cluster sampling technique in urban areas, 13,089 women aged 15–49 were identifiedfor individual interview; interviews were completed with 12,862 women, yielding a responserate of 98% | cross sectional | Age/number of live children/Education of womenEducation of Husband/Religion/Ethnicity/Occupation of women/Occupation of Husband /Wealth index/Media access with FP message/Future desire of Children/Knowledge about fertility | younger age women, those with low parity,having uneducated husband and, being in the household with low wealth quintile were lesslikely to use LARC |  |
| 13 | Racism, African American Women,and Their Sexual and Reproductive Health:A Review of Historical and ContemporaryEvidence and Implications for Health Equity | Cynthia Prather | 2018 | USA |  African American Women | peer-reviewed sources and books publishedin English only | REVIEW | This overview of historical healthrelated experiences of African American women is afirst step in describing how the historical impact of racism links past events to present sexual and reproductivehealth outcomes.  |  |  |
| 14 | Socioeconomic Disadvantageas a Social Determinant ofTeen Childbearing in the U.S. | Ana Penman-Aguilar | 2013 | USA | teen girls | Medline, ERIC, PsychLit, andSociological Abstracts databases for articles published from January 1995 toNovember 2011.  | systematic review |  lowsocioeconomic status, underemployment, low income, low education levels,neighborhood disadvantage, neighborhood physical disorder, or neighborhood-level income inequality  | This review suggests that unfavorable socioeconomic conditionsexperienced at the community and family levels contribute to the high teenbirth rate in the U.S. |  |
| 16 | Inequality in fertility rate and moderncontraceptive use among Ghanaian women from1988–2008 | Asamoah | 2013 | Ghana |  Ghanaian women |  Ghana Demographic and HealthSurvey (GDHS) 1988, 1993, 1998, 2003 and 2008 | cross sectional survey | rural–urban residence/ education and income | Equality in use of modern contraceptives increased from 1988 to 2008. In contrast, inequality in fertilityrate increased from 1988 to 2008. It was also found that rural–urban residence gap in the use of moderncontraceptive methods had almost disappeared in 2008, while education and income related inequalities remained. |  |
| 17 | Determinants of change in fertility patternamong women in Uganda during theperiod 2006–2011 | Paulino Ariho | 2018 | Uganda |  women aged 15–49 years | 2006 and 2011 Demographic and Health Survey data for Uganda.. The samples were obtained using atwo-stage cluster sampling process beginning with theselection of clusters, or enumeration areas, followed bythe selection of households from each cluster .  | cross sectional survey | Age/ Education level/Place of residence/ Religion/ Wealth quintile/Sex of household head/Current working status/Exposure to family planning messages/ Source of modern family planning methods/Age at first sex/Family size preferenceAge at first marriage/ Contraceptive use | Thekey contributors to the change in fertility were; changesin age at first marriage, age of women, education levelattained, ideal number of children, exposure to familyAriho et al. Fertility Research and Practice (2018) 4:4 Page 10 of 11planning messages, age at sexual debut, place of residence, wealth index and contraceptive use. |  |
| 18 | Modelling the proximate determinants of fertility for Brazil: The advent of competing preferences | Coutinho, R. Z. | 2018 | Brazil | women | Brazilian Demographic and Health Survey (DHS) of 1986 and 1996 and from the Pesquisa Nacional de Demografia e Saude (PNDS) of 2006. sample sizes: 12612 and 15575. | cross-sectional, | The proximate determinants of fertility are the biological and behavioral factors throughwhich social, economic and environmental variables, the so-called “indirect” or ‘distal’determinants, affect fertility |  |  |
| 20 | Women’s reproductive health decisionmaking: A multi-country analysis ofdemographic and health surveys in subSaharan Africa | Eugene Kofuor Maafo Darteh | 2018 | subSaharan Africa | women of reproductiveage (15–49 years) | Demographic and Health Survey (DHS)conducted from January 1, 2010 and December 31, 2016 in 27 countries in sub-Sahara African.N = 210,536 | cross sectional  | Residence/Age/ Wealth status/ Education/ Religion/ Occupation/ Partner’s education/  | Residence, age, level of education, religion, occupation and partner’s education were found tobe associated with women’s decision-making about sexual intercourse, condom use and reproductive health decision-making index |  |
| 21 | Socio – economic determinants of abortionamong women in Mozambique and Ghana:evidence from demographic and healthsurvey | Kwamena Sekyi Dickson | 2018 | n Mozambique and Ghana | women in theirreproductive ages (15–49) |  data from the 2014 Ghana and 2011 Mozambique Demographic and HealthSurvey for the study | cross sectional  | Age-Wealth status-Level of education -Religion- Birth history- Frequency of reading newspaper or magazine- Frequency of listening to radio- Frequency of watching television- Marital status- Residence- Occupation |  the odds of pregnancy termination were high amongwomen with primary education, those in the older age groups, women who were Christians and women who wereemployed. Similarly, higher odds of pregnancy termination were found among ever married women, those who lessthan four births or more and those who have had access to social media (radio and television). |  |
| 24 | Magnitude and trends of inequalities in antenatalcare and delivery under skilled care amongdifferent socio-demographic groups in Ghanafrom 1988 – 2008 | Benedict O Asamoah | 2014 | Ghana | women in fertility age |  Ghana Demographic and Health Surveys (DHS) 1988,1993, 1998, 2003, and 2008 | cross sectional survey |  rural–urban gap - education- income- parity- | The increased income-related inequalities seen in the use of antenatal care and skilled birth attendance |  |
| 25 | Socioeconomic variations in femalefertility impairment: a study in a cohortof Portuguese mothers | Sofia Correia | 2014 | Portugal - Porto Metropolitan Region | Portuguese mothers | 8647 babies and 8495mothers assembled between April 2005 and August 2006 | population-based cohort | Age- Education (years)-Single women -Monthly income- Occupational level- Employment status- Planned pregnancy- Previous pregnancies- Age at menarche- Age at first sexual intercourse- Regular menstrual cycles- Self-reported health status before pregnancy- Pre-pregnancy body mass index -Smoking status 3 months before pregnancy |  educationmight be important in understanding female fertilityimpairment, particularly among first-time pregnantwomen. the association isnot totally explained by other socio-demographicand lifestyle characteristics that have beenpreviously found to be important to disclose thisrelation. |  |
| 26 | Reproductive health service use and socialdeterminants among the floating population: aquantitative comparative study in Guangzhou City | Huan Liu | 2014 | P.R.C: Guangzhou City | floating population | 453 members of the FP and 794 members of the residential population (RP) aged 18 to 50 years | cross sectional survey | Personal monthly income (RMB)- Educational level- Occupation- Age- Marital status- Minimum livingguarantee enjoyment- Social insurance- Commercial insurance- SES- Average annual household income |  aneed still exists to help the FP with low SES to improve their RH knowledge and skills through access to public RHservices |  |
| 27 | Analysis of economic determinants of fertility in Iran: a multilevelapproach | Maryam Moeeni | 2014 | I.R.Iran | monogamousmarried couples | data sources: 1) the 2010 HEIS, 2) the2010 IrMIDHS, 3) the National Census of Population andHousing, and 4) the Iran statistical year books provided byStatistical Center of Iran. 13952 households containing living within thirty provinces. | cross sectional survey | Number of children in each household- Age \_Years at risk of fertility Literate Both spouses are literateEmployed Gender composition of childrenIncome deciles | t three groups of determinants influence fertility behaviorof Iranian households. The first group consists of economicfactors either at the micro or at the macro levels. Especiallythe findings reveal that: 1) preferences of parents has shiftedtowards fewer but more qualified children, which confirmsthe Becker’s theory of “quality and quantity of children”, and2) economic conditions at the macro level such as house rentprices and value added in manufacturing establishmentsare related to the number of children. Second, distributionof intra-household bargaining power has a strong influence Moeeni et al.142 International Journal of Health Policy and Management, 2014, 3(3), 135–144on fertility in Iran. Spouses exercise their power, measuredthrough extra-household indices of gender gap to achievetheir desired number of children. As gender gap indices atprovincial level increase, wives’ power in household decisionmaking falls, resulting in larger number of children whichimplies that Iranian women have stronger preference forfewer children than their husbands. Finally, although there isno difference between the number of children among urbanand rural households, the findings yield a support for theeffective role of the other demographic determinants suchas literacy, social norms of household size, and religion infertility behavior of Iranian households. |  |
| 28 | Inequity in India: the case of maternal andreproductive health | Linda Sanneving | 2013 | India |  |  7,071 articles-peer-reviewed, published literature wasconducted using the electronic databases, PubMed andPopline- | systematic review |  Economic status, gender, education, social status(registered caste or tribe), and age (adolescents). | This review shows that there is an overlap in howeconomic status; gender and social status interact wheninfluencing use of and access to maternal and reproductive health care. |  |
| 29 | Inequities in utilization of reproductive andmaternal health services in Ethiopia | Firew Tekle Bobo | 2017 |  Ethiopia | women in reprodutive age | Data from Ethiopia demographic health survey 2014 | cross sectional survey | Wealth index- Levels of education- Urban/rural- Use of moderncontraceptive methods- Antenatal care by skilledprovider- Skilled birth attendance- Birth at health facility- Postnatal care | Equity of reproductive and maternal health services wereassessed in terms of four socio-economic determinants;wealth quintile, maternal education, administrative region and place of residence. Strategically targeting social determinants ofhealth with special emphasis to women education andeconomic empowerment will significantly contribute foraltering the current situation favourably. |  |
| 30 | Use of modern contraceptives among married womenin Vietnam: a multilevel analysis using the MultipleIndicator Cluster Survey (2011) and the VietnamPopulation and Housing Census (2009) | Lan Thi Hoang Vu | 2016 | Vietnam |  married womenin Vietnam | Data from different national surveys (Vietnam Population and Housing Census, Vietnam LivingStandard Survey, and Multiple Indicator Cluster Survey)N=8,341 | Cross sectional  | EthnicityResidenceAge Education Having any living son Number of living children 3Use of contraceptive |  |  |
| 31 | Evaluating the social determinants of teenagepregnancy: a temporal analysis using a UK obstetricdatabase from 1950 to 2010 | Stephen J McCall | 2014 | united kingdom |  women aged less than20 years | data from the Aberdeen MaternityNeonatal Databank (AMND) | a population-based study  | Social Class based on Occupation Marital status Ethnicity Smoking status Scottish Index of Multiple Deprivation model | Teenage pregnancy is known to have a strong association withdeprivation |  |