



Adolescent girl working in a recycling plant, Dhaka, Bangladesh © Nathalie Bertrams / GAGE 2019



## Adolescent health, nutrition, and sexual and reproductive health in Dhaka, Bangladesh

### Policy and programming implications from the GAGE baseline findings<sup>1</sup>

Authors: Farhana Alam, Sabina Faiz Rashid, Laura Camfield, Maheen Sultan and Jennifer Muz<sup>2</sup>

#### Overview

Bangladesh has made substantial progress toward the Millennium Development Goals related to health and nutrition, including increased rates of immunisation and reduced rates of infant under-nutrition, under-five and maternal mortality, and communicable diseases (BBS and UNICEF, 2015). The country now aims to achieve universal health coverage by 2032 on the basis of these successes (World Bank, 2018). However, many of these improvements are missing the specific needs of many adolescents, particularly younger adolescents.

Although improving, and relatively more accessible in urban areas compared to rural areas, inequities and unequal distribution in the provision of health services limits access. The health sector is pluralistic, comprising four key actors: the government, the private sector, non-governmental organisations, and donor agencies (Ahmed et al., 2015). Government run services are poorly resourced, and the private sector is mostly unregulated and expensive (Stavropoulou et al., 2017). Therefore, many people rely on informal sector practitioners, including traditional healers, although the majority are untrained (Ahmed et al., 2009).

Malnutrition is a common problem, and thinness and stunting among adolescent girls is widespread and persistent (Alam et al. 2010; Stavropoulou et al., 2017). Across Bangladesh, 31% of married girls aged 15–19 are undernourished (NIPORT, 2016), and malnutrition is a particular concern in urban areas. A survey of adolescent girls aged 14–17 living in Dhaka found that they have higher rates of severe thinness and lower food consumption than their counterparts living in rural areas (Akhter and Sondhya, 2013). Accordingly, among a sample of adolescent girls working in garment factories in Dhaka, mean intake of protein, calcium, iron, vitamin A, thiamine, riboflavin, niacin, and vitamin C were below the recommended daily allowance (Rahman, Khan, and Ahmed, 2005). There are few programmes offering sexual and reproductive health

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services to adolescents and young people, and their access to services related to sexual and reproductive health remains limited, with adolescent girls having little control over their fertility outcomes. (Kamal, 2012; Sigma et al., 201). Although recent household survey of 320 adolescent girls aged 15–19 in the slums of Dhaka found that 97% knew about the contraceptive pill (Petroni, 2014), this knowledge does not necessarily translate to access and utilisation. Across Bangladesh, only 42% of adolescents aged 15–19 use modern contraceptives, compared to 52% of women aged 15–49 (NIPOORT et al., 2015). In addition, a recent survey among married adolescents in slums around Dhaka found that 15% have an unmet need for contraceptives (Huda et al., 2014). Although induced abortion is illegal in Bangladesh, menstrual regulation is permitted up to 8–10 weeks from a woman’s last menstrual period (Gutmacher Institute, 2012).

Compounding concerns around unmet need for SRH programming, there is a significant difference in the timing of sexual experience between adolescent boys and girls due to early marriage practices. A recent survey of 3,500 urban adolescents finding that 5% of boys had had sex before 15, compared with 24% of girls (Amin, 2015). Moreover, while 91% of boys had no sexual experience, this is only true of 65% of the girls (ibid). This translates to worse sexual and reproductive health outcomes. According to Amin et al. (2014), 50% of married adolescents aged 12–19 have been pregnant and 22% gave birth before they were 15. Whereas, globally, the adolescent birth rate among 15–19 year olds was 44 per 1000 in 2018 (WHO, 2019), Amin et al. (2014) report it to be 98 per 1,000 among adolescents of the same age in urban Bangladesh. High rates of adolescent pregnancy become more alarming when taking into account high rates of maternal and neonatal mortality (Ahmed et al. 2015; WHO et al., 2015), particularly among adolescents, where the maternal mortality ratio for those aged 10–14 was the highest of all age groups in the 2011 Population and Housing Survey (Rahman et al., 2012).

This brief draws on evidence from GAGE (Gender and Adolescence: Global Evidence) – a unique longitudinal mixed-

methods research and impact evaluation study focused on what works to support the development of adolescents’ capabilities during the second decade of life (10–19 years) (GAGE consortium, forthcoming 2019). It explores the health status of adolescents living in slums around Dhaka, focusing on access to health services, nutritional status, sexual and reproductive health, and drug and alcohol use.

## Research methodology

In Dhaka, baseline data collection entailed quantitative interviews with 780 adolescent girls and boys and more in-depth qualitative research involving 36 adolescents and their families and communities. Our sample of adolescents includes two age cohorts, of 10–12 year olds and 15–17 year olds. Baseline data collection took place in late 2017 and early 2018. According to GAGE methodology (Jones et al., 2019), we included adolescents who are involved in adolescent-focused programme interventions as well as non-programme participants so as to better understand the relative contribution of programmes in shaping their well-being and empowerment in the short and longer terms. Participatory research methods were undertaken so as to better understand young people’s experiences, and in particular the role that peer relations play in shaping their identities, priorities and broader well-being. We undertook our primary data collection (in late 2017 and early 2018) with adolescent girls and boys, of younger (10–12 years) and older (15–17 years) age cohorts, in peri-urban and urban contexts and included groups of adolescents who are more at risk of being left behind such as adolescents with disabilities, child brides and adolescent mothers.

## Research sites

The three study sites chosen for the GAGE baseline study in Dhaka are two slum areas, referred to here as Community A and Community C (peri-urban), and one low-income settlement, referred to as Community B. These were chosen to capture variation in how long the settlements had been established and whether residents had been there for a long

**Table 1: Research sites**

Name	Location	Households	Social and physical infrastructure	Access to services
<b>Community A</b>	Dhaka periphery	8,400	Well-developed and stable slum on government-owned land near an industrial area	Excellent access to educational and health institutions, non-governmental organisation (NGO) services
<b>Community B</b>	Central Dhaka	300	Privately owned low-income settlement, high in- and out-migration, many working children, electricity only, poor roads	Poor access to educational and health institutions, NGO services
<b>Community C</b>	Central Dhaka	3,000	Well-developed and stable slum, good road, mostly legal utility connections	Reasonable access to educational and health institutions, NGO services

time or were more transient. Other important differences included access to health and education services and location, as these have been shown to affect the lives of adolescents.


## Key findings: scope and scale of the challenge

### Health status, access to information and access to primary health care/health services

In the quantitative survey, 82% of respondents reported their level of health as good or very good. Older adolescents (-12%) and adolescents with disabilities (-15%) were significantly less likely to report good health. While there were no significant gender differences in the measure of self-reported health, girls were significantly more likely to report having experienced health symptoms in the past four weeks (88% versus 79% for boys). During qualitative interviews, respondents named a number of symptoms that they had experienced. In all three sites, respondents had experienced common diseases, such as jaundice, pneumonia and chicken pox. Some of them had also experienced stomach aches, headaches, chest pains, nose bleeds, urinary tract infections, eye and ear infections and skin diseases. Young adolescent boys and girls mainly described coming down with fevers and catching colds.

Only one in five respondents said they had experienced serious illness or injury in the past year. Of these, 62% had sought treatment. The prevalence of serious illness or injury and treatment increases among increases to one in three and 71% among adolescents with disabilities, respectively. Adolescents with a disability were twice as likely to report a serious illness or injury in the past 12 months. In qualitative interviews, when talking about their own or a family member's health, all respondents talked about medical expenses and how financially constraining these were for them. Adolescents also talked about being worried about their parents' illnesses and the impact of these on the family.

There were differences in the availability of services across the three communities, demonstrated in both the quantitative surveys, where 57% of respondents reported seeking treatment in Community C compared to 65% in Communities A and B, and the qualitative interviews. Neither Community B nor C has hospitals or clinics inside the community, and quantitative health facility surveys identified primary health facilities for these communities that were over 5km away. In qualitative interviews, respondents said they mostly went to different government facilities outside the community, where they could obtain better treatment

 If asked for other medicine, they would give the medicine of jaundice. [Everybody laughs.] Instead of a hundred, they will give medicine that would cost 300, 400 or 500 BDT.

(One community mapping session with older boys)

at a lower cost. Respondents from Community B also mentioned going to the community clinic set up by the government (Rangdhanu) and the Marie Stopes clinic for women's reproductive health needs. In Community A, people mostly go to two NGO clinics (Friends of Bangladesh and Terre des Hommes) in the community.

According to qualitative interviews, the first point of contact with medical care for people in all three sites is the local pharmacy or 'drug seller'. People described the owners of pharmacies as 'doctors', whether they have a formal qualification or not, because they provide diagnoses and prescribe medicines accordingly (e.g. they have doctors' chambers within the shops for consultations). Pharmacy 'doctors' are more accessible than state services. Power imbalances are less noteworthy between customers and drug sellers, who are from the community, which makes it easier for people to trust them. No extra money is spent on doctors' fees and sometimes pharmacies provide treatment and medicines on credit. Respondents stated they mostly go to drug sellers to treat common illnesses such as headaches and fevers; they are particularly popular among respondents with low incomes. A 17-year-old girl from Community C participating in a community mapping said: *'Most people go to the pharmacy for common illness and in serious cases like people who are pregnant, they go to hospitals and if there any other minor problems people go to pharmacies.'*

Not all pharmacies are licensed, and in Communities B and C adolescent boys complained that local pharmacies often cheated people by selling unnecessary and overpriced medicine or the wrong medicine. One community mapping session with older boys described how *'If asked for other medicine, they would give the medicine of jaundice. [Everybody laughs.] Instead of a hundred, they will give medicine that would cost 300, 400 or 500 BDT.'* Adolescent girls did not mention this, although they said they also went to pharmacies when they needed to (adults were not asked about their pharmacy use).

In qualitative interviews in all three sites, male and female respondents of all ages said they went to traditional healers, including *huzurs*<sup>3</sup>, who are often part of their local

<sup>3</sup> A *huzur* in this context is responsible for leading prayers and giving Islamic lessons to children. *Huzurs* also help cure diseases through traditional methods, such as through prayers and amulets. They also help with spirit possession.

## Experiences shaped by intersecting disadvantage

One boy with a disability from Community B aged 15/16 described how, because he was born prematurely, the doctors had to give him injections to prevent infection. They placed the needle for one of these in the wrong place, which had caused problems in his left leg. At first, his family tried traditional practices to make him walk, such as making him stand in a hole filled with water, oil massage, etc. Later, he was taken to hospital and the doctors told his mother to take him to another place for better treatment. His family was not able to afford the cost so stopped his treatment altogether. He stays at home, taking care of the household chores, and feels disheartened because of his inability to lead a normal life. He said many people used derogatory terms and teased him.

mosque, *kabirajs* or *ojhas*<sup>4</sup>. They go to treat jaundice and spirit possession in particular. Ahmed et al. (2009) claim that informal sector practitioners, including traditional healers, are the main providers of health care to the poor in Bangladesh, especially in rural areas, but the majority are untrained. Usually, allopathic doctors are approached first, although one 10-year-old girl from Community B said: *'If the doctor cannot solve our problem, that time we go to traditional healer.'*

Other respondents said they went to traditional healers first before switching to doctors and hospital when their situation worsened.

## Nutritional status, access to information and equitable access to nutritious food

Households with older adolescents reported significantly greater food insecurity than households with younger adolescents, and food insecurity was also significantly higher in Community B than in Community A, perhaps because of its greater poverty. One in three households reported cutting back the food served to boys and girls in the previous 12 months (with no significant differences by gender). However, households with older adolescent girls were 28% more likely to report cutting back food to girls in the HH than those with younger adolescent girls. The scores on the Food and Agricultural Organization Food Insecurity Experience Scale from the quantitative surveys did not indicate severe food insecurity on average.

Height for age z-scores within the GAGE sample, indicative of chronic malnutrition, suggest older adolescents are 1.5 standard deviations below the global average, and younger adolescents 0.58 standard deviations below the average. Height for age z-scores are 61% higher for younger adolescents than for older adolescents. This suggests older adolescents are more likely to be stunted than younger adolescents, which is also consistent with the fact that HHs appear more likely to cutback food to older adolescents, particularly girls, and have greater experience of food insecurity. This could also reflect the fact that older adolescents are further into their 'growth period', so the

full effects of early malnutrition are borne out. Contrary to national trends (NIPORT et al., 2016), boys in our survey have a significantly lower BMI than girls. This may reflect the socio-economic status of the study sites, with boys more likely to have entered the workforce, as well as the greater restrictions placed on girls' mobility.

Qualitative data suggests adolescents thought they followed a well-balanced diet and said they learned about this in their schoolbooks or from teachers. This contrasts with the findings of Alam et al. (2010), where over half of the sample (rural girls aged 13–18) could not name food sources of carbohydrates and protein. Although we did not ask adolescents in Dhaka about knowledge of sources of carbohydrates and protein, we do find that 91% of our sample have heard of vitamin A and 79% have heard of iron, suggesting that knowledge on nutrition may be greater in the city than in rural areas. Adolescent girls in Community B said they learned about vitamins and minerals from the TV.

In all three sites, adolescents said they ate vegetables, fish, meat, rice and lentils on a regular basis. Older girls participating in a community mapping exercise said: *'We are having nutritious food, that's why we are growing up very fast.'* This is confirmed in the quantitative data, where respondents reported that, on average 63% of their meals per day contained some protein.

However, parents disagreed and felt they could not feed their children properly. One female respondent from Community B said: *'Nutrition in our area is mediocre. It is not very high. We feed our children according to our income. Nutrition depends on our income. My child might want to have Horlicks<sup>5</sup>. But it is not possible for me to provide that.'*

While many adolescents did not report food shortages at home, this may owe partly to shame: it could be seen as a sign that they are poor or that their family does not care for them. One older adolescent girl with a disability in Community A said they needed 2kg rice for seven members of the family every day and so faced occasional food shortages. An adolescent boy in Community C mentioned going to work without breakfast so the garage owner gave him money to buy food later.

<sup>4</sup> In this context, both *kabirajs* and *ojhas* are traditional healers who use folk medicine to heal diseases.

<sup>5</sup> Horlicks is considered to be a health drink.





Adolescent boy working in a fruit shop, Dhaka, Bangladesh © Nathalie Bertrams / GAGE 2019

### Access to sexual and reproductive health information, supplies and services

The information male and female adolescents receive in school concerning sexual and reproductive health is limited to menstruation and puberty. When asked about physical changes during adolescence in qualitative interviews, in-school adolescents in all sites mentioned learning about this from their schoolbooks, which have one chapter on adolescence. Adolescent boys said they also learned from the TV, from discussion with peers and by observing their own bodily changes. A 15-year-old boy from Community B said: *'I knew about this (puberty) by reading the Physical Education book in class 6.'*

The information adolescents have about puberty is general; for example, a young girl in Community C described how, when a girl goes through puberty, *'different parts of her body grow bigger'*. In the quantitative surveys, the three most important sources of information on puberty cited were mother (41%), teachers or at school (16%) and friends (12.2%). This varied somewhat across gender. A majority of girls cited their mother as the most important source (55%). Boys were more split between mothers, school and friends (28%, 22%, and 18%, respectively). Older adolescents were more likely (20%) than younger adolescents (7%) to say they got information from friends.

**I knew about this (puberty) by reading the Physical Education book in class 6.**

(A 15-year-old boy from Community B)

Turning to qualitative data, adolescents also said that, when the teacher discussed menstruation in class, boys were asked to leave, which suggests their knowledge is even more limited. Adolescents who had dropped out of school knew very little about sexual and reproductive health. Mothers also said they were comfortable talking to their daughters about changes in their bodies but not their sons.

Some parents said they did not need to inform their daughters about menstruation as the schoolbook already covered it (this view was common across all the sites). However, adolescents said teachers were shy to discuss these topics with students and so these issues remained unclear. The programme director of an organisation providing sexual and reproductive health services, such as workshops on personal hygiene and menstruation, agreed that the chapter on menstruation did not explain much. He said that some NGOs had books on this topic but that teachers were often reluctant to use them and were therefore not able to answer students' questions.


Although there are service providers specifically focused on providing information to adolescent girls about menstruation and personal hygiene (e.g. Terre des Hommes), most girls said they learned through personal experience. Many girls aged 14–16 said their first experience of menstruation had been frightening. Most said that, after menstruating, they talked to a grandmother, sister-in-law or female friend to know the details. They also said they relied on their mother, female relatives and female friends for information regarding sexual and reproductive health issues like white discharge, pregnancy, and child birth.

One 10-year-old adolescent girl in Community C said that, when she started menstruating, her mother bought her underwear and tied her hair with red lace, bought her red bangles and cooked hotchpotch (a traditional dish with lentils and rice). One of the most educated mothers in the qualitative sample, from Community A, who works as a compliance officer of a garment factory, said she had told her daughter that, if her period started, she should not be afraid and should inform her class teacher and come home. An adolescent girl from Community B said she learned about personal hygiene from women health workers. She also mentioned that the local hospital (Rangdhonu) provided girls with iron tablets.

Changing menstrual pads is a source of stress for young girls. One 16-year-old girl from Community B said that, because her school has separate toilets for girls, she faces no problem during menstruation. However, our quantitative survey shows only 39% of adolescent girls report that their schools have facilities for menstruation and 54% of girls said menstruation affected their normal activities.

Adolescent boys said they did not talk about common issues such as night emissions with any of their family members or friends, although they did not perceive this to be problem. Mothers said they felt shy talking to their sons about the changes of adolescence and that it was not necessary to discuss these things as they would learn while growing up. This question did not come up in the interviews with fathers; however, a mother of an adolescent boy from Community C said that: *'A son doesn't say anything about his physical changes during puberty. But when a daughter experiences her first menstruation, a mother will talk to her daughter about that.'*

In all our three sites, households usually have a single room for a family with four to five members. Parents live in the same room with their adolescents and sometimes also their adult children. Privacy is rare. During a community

 **A son doesn't say anything about his physical changes during puberty. But when a daughter experiences her first menstruation, a mother will talk to her daughter about that.**

(A mother of an adolescent boy from Community C)

norms exercise with men in Community B, respondents said that adolescents learn about the act of sex by seeing their parents having sex. Boys participating in the community mapping also said that young people in Community B met discreetly at night.

Participants in the focus groups thought increased access to digital technology, including social media, meant most adolescents and particularly boys had access to different sources of information, including pornography. For example, adult males in Community C highlighted the risk of exposure not only to pornography but also to websites that can influence their thinking: *'Personal phone, what will he do with a personal phone? Now it is being given to them. So what will he do? Curiosity. According to Kazi Nazrul [Bangladeshi poet], '18 year does not know no bounds'. So what will he do about his curiosity? Now wifi is available. Internet is at hand, one day he will enter Al Qaeda's website, one day he will enter Mia Khalifa's website [pornographic film actress], one day he will enter Boko Haram's website, one day he will enter Dr Zakir Nayek's website [popular religious activist]; one day he will enter a website of Quran Telawat [the Holy Quran]. So what will attract him? You have to understand that.'*

Women participating in a similar exercise in Community C highlighted the availability of smartphones and the harmful impacts of social media, such as adolescents being exposed to pornography and developing romantic relationships.

Topics such as family planning, safe sex, sexually transmitted diseases/illnesses, menstrual regulation, and others are not covered in schools and are rarely discussed. Consequently, while nearly 100% of respondents said they had information on puberty in the quantitative interviews, only 17% of boys and 27% of girls could correctly name a method of contraception. This is significantly lower than the finding by Petroni (2014) that 97% percent of adolescents from slums around Dhaka knew about the birth control pill, suggesting that the samples of adolescents across the two studies are quite different. However, it is supported by the 2014 BDHS, which showed that over 20% of births to girls aged less than 20 were unplanned (NIPORT et al., 2016).

In qualitative interviews, a few mothers mentioned using family planning methods (5% of the older girls in the survey sample had begun childbearing) but other adolescents did not discuss these. The majority of comments relating to

### Case study

A married girl in Community C (aged 14–16) became pregnant but was unaware of it for three to four months. Her husband realised at an early stage and took care of her by feeding her nutritious food but refrained from telling her because he did not want to scare her. Later, her mother suspected and had a pregnancy test done and only then was the girl told she was pregnant. Her mother decided her daughter should have a C-section because she was young and might get scared during normal delivery, and took her to hospital before the due date for delivery. The girl said she did not have detailed knowledge about C-sections or vaginal deliveries at the time.

family planning came from providers outlining the different methods and the ways they targeted young mothers. One key informant in Community C said: *'You see that young mother over there. She has got a little kid; so, I asked her to insert the silicon rods under the skin of their upper arm to take the Norplant method. As it is now effective for a three-year plan, her baby can be a little older in three years.'*

### Drug and alcohol use

In all three study sites, both adolescents and adults felt drug and alcohol use was a big problem for young people. However, the survey showed low usage among boys and almost none among girls: 18% of older boys had smoked and 9% had drunk alcohol (this question was not asked to younger adolescents), versus less than 1% of older girls. Of course, social desirability bias may be an influence here. There are few studies on adolescents' use of alcohol and drugs in Bangladesh (Stavropoulou et al., 2017); however, Uddin et al. (2014) suggest regular drug use is common among children and adolescents aged 5–12 in Dhaka who live or work on the streets.

All respondents in the qualitative data said that boys as young as 12 start smoking and take drugs such as marijuana, yaba (methamphetamine), and Phensedyl (cough linctus), and sniffing glue, often to reduce hunger. Marijuana and yaba are the most popular and alcohol is apparently widely used by boys aged 15 and above. While drugs are present in all sites, they seem to be particularly visible in Community C: key informants, parents and adolescents said the sale, purchase and use of drugs was a big problem. They do not feel secure complaining as the drug business is perceived to be carried out under political protection. One father of an adolescent from Community C blamed local political leaders, saying these leaders, often with strong links to politicians and local police, were the ones supplying drugs and making money. Young boys said they were too scared to talk about drugs and crime because they might be targeted. They gave an example of a retired Terre des Hommes NGO official who had tried to take action against drugs. The police came but later his house was bombed and he was advised by people in the community not to take further action. An imam in the same area was wary of being interviewed and recorded on this issue because of this experience.

Men in Community C perceived that the reason for drug addiction was lack of entertainment for adolescents, particularly for male adolescents who have dropped out of school or remain unemployed and are bored. Although most respondents focused on the risks for boys, as both customers of and actors within the drug trade, boys in a community mapping in Community C said girls were also engaged in selling drugs.

## Key actions to accelerate progress

### 1. Increase access to quality health care and health insurance schemes.

Respondents use allopathic and traditional medicine but the cost is a common concern. They said they received poor-quality treatment from government-run medical institutions. Access to quality healthcare in government and NGO services would reduce expenditures on health. Health insurance schemes should be piloted and expanded to reduce expenditures on healthcare for the poor.

### 2. Improve sexual and reproductive health knowledge among adolescents.

It is critical that sexual and reproductive health programming takes into account needs of boy males and females. Improving both boys' and girls' knowledge on sexual and reproductive health is necessary through education (an improved curriculum and teaching methods), health services and community interventions. Education on safe sex and contraception along with access to contraceptives for adolescents should be promoted, not only to girls but also to boys. Programming should also increase focus on male-specific topics, such as night emissions and spontaneous erection that begin to occur during adolescence. The role of teachers in school educating both adolescent girls and boys needs to be further strengthened and their teaching of these subjects should be monitored and facilitated to ensure they are using the training they have received.

### 3. Establish adolescent-friendly clinics and menstrual hygiene management facilities.

Although a few NGOs provide information to adolescent girls about menstruation and personal hygiene, most girls are not well informed and said they found out about menstruation after menarche. Better services for adolescents and access to such services are critical if the government is to meet targets in its National Adolescent Health Strategy 2017–2030. Improved menstrual hygiene management facilities in community latrines should also be introduced.

### 4. Implement community mechanisms to combat drug and alcohol abuse.

Drug and solvent abuse was identified as a problem in all the communities. Community mobilisation to restrict the sale and purchase of drugs should be encouraged. Some informants emphasised the need to give adolescents alternative recreation facilities.



## References

- Akhter, N. and Sondhya, F.Y. (2013) 'Nutritional status of adolescents in Bangladesh: Comparison of severe thinness status of a low-income family's adolescents between urban and rural Bangladesh'. *Journal of Education and Health Promotion* 2(27)
- Ahmed, S. M., Hossain, M.A. and Chowdhury M.R. (2009) 'Informal sector providers in Bangladesh: How equipped are they to provide rational health care?', *Health Policy and Planning* 24(6): 467–478
- Ahmed, S. M., Alam, B. B., Anwar, I., Begum, T., Huque, R., Khan, J., Nababan, H. and Osman, F. (2015) 'Health systems in transition' *Bangladesh Health System Review* 5(3)
- Alam, N., Roy, S. K., Ahmed, T. and Ahmed, A. S. (2010) 'Nutritional status, dietary intake, and relevant knowledge of adolescent girls in rural Bangladesh' *Journal of Health, Population, and Nutrition* 28(1): 86–94
- Amin, S. (2015) *Urban adolescents' needs assessment survey in Bangladesh*. New York: Population Council
- Amin, S., Ainula, S., Akter, F., Alam, M.M., Hossain, M.I., Ahmed, J. and Rob, U. (2014) 'From evidence to action: results from the 2013 baseline survey for the Balika Project'. New York: Population Council
- BBS – Bangladesh Bureau of Statistics and UNICEF – United Nations Children's Fund (2015) 'Bangladesh: Multiple Indicator Cluster Survey 2012-2013: Progotir Pathay'. Final Report. Dhaka: BBS and UNICEF
- Guttmacher Institute (2012) Menstrual Regulation and Induced Abortion in Bangladesh, September 2012. Fact Sheet, Guttmacher Institute. Available at: <https://www.guttmacher.org/sites/default/files/pdfs/pubs/FB-Bangladesh-MR.pdf>
- Huda, F.A., Chowdhuri, S., Sarker B.K., Islam, N. and Ahmed, A. (2014) *Prevalence of unintended pregnancy and needs for family planning among married adolescent girls living in urban slums of Dhaka, Bangladesh*. Dhaka: Icddr,b.
- Jones, N., Baird, S. and Lunin, L. (2018) *GAGE research design, sample and methodology*. London: Gender and Adolescence: Global Evidence
- Kamal, M. (2012) 'Childbearing and the use of contraceptive methods among married adolescents in Bangladesh' *The European Journal of Contraception and Reproductive Health Care* 17(2): 144–154
- NIPORT – National Institute of Population Research and Training, Mitra and Associates and ICF International (2016) 'Bangladesh Demographic and Health Survey 2014'. Dhaka and Calverton, MD: NIPORT, Mitra and Associates and ICF International
- Rahman, M. N., Kamal, G. M., Rahman, M. M., Rahman, M. M., Sultana, S., Abdullah, H. P., Parvin, A., Mondal, S. R. and Alam, M. D. (2012) *Population and Housing Census 2011: socio-economic and demographic report*. Dhaka: Bangladesh Bureau of Statistics
- Sigma, A., Bajrachrya, A. and Reichenbach, L. (2016) 'Adolescents in Bangladesh: programmatic approaches to sexual and reproductive health education and services'. Situation Analysis Brief. Dhaka: Population Council, Evidence Project
- Stavropoulou, M., Marcus, R., Rezel, E., Gupta-Archer, N. and Noland, C. (2017) 'Adolescent girls' capabilities in Bangladesh: the state of the evidence on programme effectiveness'. London: Gender and Adolescence Global Evidence (GAGE)
- Petroni, S. (2014) *Paving the Path to Improved Adolescent Sexual and Reproductive Health Bangladesh*. New York: ICRW.
- Uddin, M. J., Sarma, H., Wahed, T., Ali, M. W., Koehlmoos, T. P., Nahar, Q. and Azim, T. (2014) 'Vulnerability of Bangladeshi street-children to HIV/AIDS: a qualitative study' *BMC Public Health* 14(1): 1151
- World Bank (2018) *Bangladesh development update: building on resilience*. Dhaka: World Bank
- World Health Organization (2019) *Global Health Observatory (GHO) data: Adolescent birth rate*. Available at [https://www.who.int/gho/maternal\\_health/reproductive\\_health/adolescent\\_fertility/en/](https://www.who.int/gho/maternal_health/reproductive_health/adolescent_fertility/en/).