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EMBODYING THE FUTURE: HOW TO IMPROVE THE NUTRITION STATUS OF ADOLESCENT GIRLS IN PAKISTAN?

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List of acronyms

ACF	Action Against Hunger (Action Contre La Faim)
AJK	Azad Jammu Kashmir
CMW	Community Midwives
DFAT	Department for Foreign Affairs and Trade (Australian aid program)
DFID	Department for International Development (UK aid program)
DHS	Demographic Health Survey
FAO	Food and Agriculture Organization
FATA	Federally Administered Tribal Areas
FDGs	Focused Group Discussions
FP	Family Planning
GEP	Aurat Foundation's Gender Equity Program
HANDS	Health and Nutrition Development Society
HICs	High Income Countries
ICRW	International Centre for Research for Women
IFPRI	International Food Policy Research Institute
IRD	International Relief and Development
KAP	Knowledge Attitudes and Practices
KP	Khyber Pakhtunkhwa Province
LHW	Lady Health Workers
MICS	Multiple Indicator Cluster Survey
MIYCN	Maternal Infant and Young Child Nutrition
MNCH	Maternal Newborn and Child Health
NFA	National Fortification Alliance
NNS	National Nutrition Survey
OECD	Organization for Economic Cooperation and Development
PEFSA	Pakistan Emergency Food Security Alliance
PINS	Pakistan Integrated Nutrition Strategy
PLW	Pregnant and Lactating Women
PSSP	Pakistan Strategy Support Program
RAF	Research and Advocacy Fund
RHPS	Rural Household Panel Survey
RHSP	Rural Household Support Program
SBCC	Social Behaviour Change Communication
SDGs	Sustainable Development Goals
SRH	Sexual Reproductive Health
SUN	Scaling Up Nutrition
UN	United Nations
UNFPA	United Nations Population Fund
SAID	United States Aid
WFP	World Food Program
WEG	Women's Empowerment Group
WHO	World Health Organization
WPF	Rutgers World Population Fund
WRA	Women of Reproductive Age

EXECUTIVE SUMMARY

Girls and young women embody our future. Girls become mothers who bear, nourish and raise the next generation. The health, wealth and wellbeing of that generation depends directly on their own position and health status.

Adolescence is the period where physical and mental development accelerates, and when norms and attitudes are set. It is a critical phase of the human lifecycle, impacting future families, communities and, ultimately, society. Adolescence is also a period where humans need high nutritional requirements for growth, but adolescent food consumption patterns are often inadequate due to cultural and environmental influences (WHO, 2005).

Improving the nutrition status of adolescents is vital for future economic growth. Adolescents are our future human capital: they are future entrepreneurs, future employees, future parents and future carers. All these roles are negatively affected by poor nutrition status.

Targeting nutrition interventions to an adolescent girl offers a window of opportunity to improve her health, her educational attainment and her economic opportunities, as well that of her children to come – thereby disrupting the intergenerational cycle of malnutrition.

Yet, data on the nutrition status of this population group are limited, evidence for nutrition-specific interventions is scarce (Bhutta et al., 2013a). Not enough is known about the underlying drivers and motivators of adolescent girl health, nutrition and food consumption behaviour or, indeed, the best channels to communicate with them about this behaviour.

In Pakistan, as in many countries, we do know that adolescents suffer poor nutrition. Data from literature review and secondary data analysis, presented in this report, point to relatively high levels of stunting (22%) and overweight (16%) among adolescent girls aged 15-19 years (DHS, 2013).

Levels of micronutrient deficiencies are especially alarming, with more than half of adolescent girls 15-19 years suffering from anaemia; 21% are iron deficient; 49% are folic acid deficient; 42% are zinc deficient; and 40% vitamin A deficient (NNS, 2011). Underlying socio-economic determinants of malnutrition in the areas of education, literacy, early marriage and early pregnancy are also cause for concern (DHS, 2013). Food consumption is inadequate. For example, only 15% of adolescent girls aged 10-19 years reported having consumed any green leafy vegetables in the previous day (Food Consumption Survey, 2014-15).

We have good evidence on what works to address these problems, via micronutrient supplementation, deworming and large scale food fortification (Bhutta et al, 2013). But these are a limited set of interventions, which are not specifically targeted to adolescents and, while important, are not nearly enough.

The program landscaping exercise conducted for this report shows that there are few programs in Pakistan that target nutritional status of adolescent girls specifically. While limited, these programs nevertheless offer opportunities to design, test, evaluate and scale integrated approaches to try to improve adolescent nutrition outcomes. For example, programs on sexual reproductive health (SRH) and family planning can be made more adolescent friendly.

The health system is an important potential source of support for adolescents, but they face barriers to accessing these services. These barriers need to be lowered or removed. Also, working within the health system is not enough. Examples of other delivery platforms that can be leveraged for improved adolescent nutrition include schools, community-based programs, and social marketing approaches:

- Schools can provide a good entry point to reach adolescents, with counselling on sexual reproductive health rights and diet choices. Incentives are needed to keep girls in schools, as currently one-third of all adolescent girls are illiterate, with much higher rates (up to 70%) in the poorest quintile group (DHS, 2013).
- Community-based programs can target socio- economic empowerment of adolescent girls through vocational skills or livelihood development.
- Social marketing approaches can help to improve access to products and services for adolescent girls, while social and mass media contribute to empowerment around social issues.

A first step is for all stakeholders to make it a priority to tackle the alarming levels of (micronutrient) malnutrition in adolescents. Using an adolescent lens, a national strategy needs to be developed and include the following:

a) Evidence generation using upcoming surveys for primary data collection on adolescent nutrition, and investment in formative research on adolescent food and nutrition behaviours and determinants.

b) Cross-sector alliance building to integrate and strengthen targeted nutrition interventions into economic livelihood, education, gender, and life skills development programs.

c) Review and formulate sectoral policies to identify gaps in addressing adolescent nutrition, and allocate budget for specific interventions targeting adolescent girls.

d) Design and test nutrition interventions to reach adolescents through existing cross-sectoral platforms, as well as developing new platforms (community clubs, social media).

Adolescents embody the future – figuratively and, in the case of mothers, literally. If their nutrition status is poor, then nutrition throughout the lifecycle will be fragile.

This report aims to address this issue in three ways. First, to fill the knowledge gap of Pakistani girls in their late adolescence (15-19 years). Second, to provide a detailed situational analysis and mapping of existing programs addressing the nutritional and socio-economic needs of adolescent girls in the country. Third, to point to practical steps that can be taken to better understand and remedy this situation, and unlock the potential of adolescent girls and young women.

While the nutrition status of adolescents is vital in its own right, the knock-on effects of this poor nutrition status will be long lasting. The wellbeing and productivity of future mothers, babies, workers and entrepreneurs will be undermined, and the very economic security of the nation will be compromised.

SUMMARY OF FINDINGS on: Health, nutrition and social wellbeing of Pakistani adolescent girls

- Strong evidence suggests the nutritional status of Pakistani girls in late adolescence (aged 15-19 years) is worrying, with stunted linear growth during childhood (22%), and very high rates of micronutrient deficiencies, such as anaemia (54%), folic acid (49%), zinc (42%) and vitamin A (40%) (DHS, 2013; NNS, 2011).
- A recent survey in the areas of Sindh and Punjab indicates that the typical diet of adolescent girls is of poor dietary quantity and quality (low in iron), which can lead to micronutrient deficiencies (Food Consumption Survey, 2014-15).
- Prevalence of overweight among adolescents varies by wealth quintile (3% for the poorest and 15% for the richest quintile) (DHS, 2013).
- Around half of Pakistani women, aged 25-49 years, are married between 15-19 years, and median age at first marriage is 19 years (though median age is 18 in Balochistan and KP). Early pregnancy is a consequence of early marriage: 17% of the 19-year-old girls interviewed had already given birth or were pregnant (DHS, 2013).
- The proportion of pregnant adolescents, aged 15-19 years, having had four or more antenatal care visits varies greatly by wealth quintile; with 18% in the poorest quintile and 73% in the richest quintile (DHS, 2013).
- Several surveys suggest education is regarded by adolescent girls as an important priority, yet cultural barriers to accessing education, especially secondary and tertiary education, persist (Education for All 2015, UNESCO 2008). The average number of years of education completed by adolescents aged 15-19 years in Pakistan is 3.4 for girls and 3.2 for boys (DHS, 2013).
- Adolescent literacy rates vary widely according to the wealth quintiles; with only 31% literacy for the poorest quintile but 97% literacy for the richest quintile (MICS, 2010-11).

SUMMARY OF FINDINGS on: Programs addressing nutrition for Pakistani adolescent girls

- There are very few programs aiming to reduce the massive micronutrient malnutrition problems of adolescents in Pakistan with nutrition-specific interventions [1].
- Nutrition-specific interventions, such as food fortification or iron-folate supplementation for pregnant women, reach adolescents only as part of a larger target population.
- Programs specifically targeting adolescents exist mainly in areas of education and sexual reproductive health (SRH), but there is limited inclusion of nutrition-specific interventions within these programs, and no evidence of their impact on nutrition.
- Geographical coverage of nutrition-specific and nutrition-sensitive interventions [2] directly targeting adolescent girls is low and limited to a few districts per province.
- Evidence is lacking on the impact of nutrition messages that are integrated in SRH, education and livelihoods, or empowerment programs.

[1] Nutrition-specific interventions or programs are interventions or programs that address the immediate determinants of fetal and child nutrition and development – adequate food and nutrient intake, feeding, caregiving and parenting practices, and low burden of infectious diseases.

[2] Nutrition-sensitive interventions and programs are interventions or programs that address the underlying determinants of fetal and child nutrition and development – food security; adequate caregiving resources at the maternal, household and community levels; and access to health services and a safe and hygienic environment – and incorporate specific nutrition goals and actions.

1. WHY FOCUS ON ADOLESCENT GIRLS?

In the journey leading to the Sustainable Development Goals (SDGs), the importance of investing in adolescent girls' rights, social status, education, and health and nutrition was often highlighted in global platforms. Both the 2030 Agenda and several of the SDGs specifically mention the need to achieve gender equality and highlight the importance of the empowerment of all women and girls (UN, 2015). This is because they seldom have equal access to quality education, economic resources, employment, or decision-making. They are also often discriminated against and violated.

While adolescent girls and young women in developing countries are often perceived as a liability to family resources (e.g. regarding health, education and/or dowry costs), young girls perform very well in schools, often better than boys do (OECD, 2012).

In addition, income earned by women is more often spent on the family, their children's health, food and education, whereas an income increase for men does not translate into improved household outcomes (OECD, 2010; Plan International, 2009).

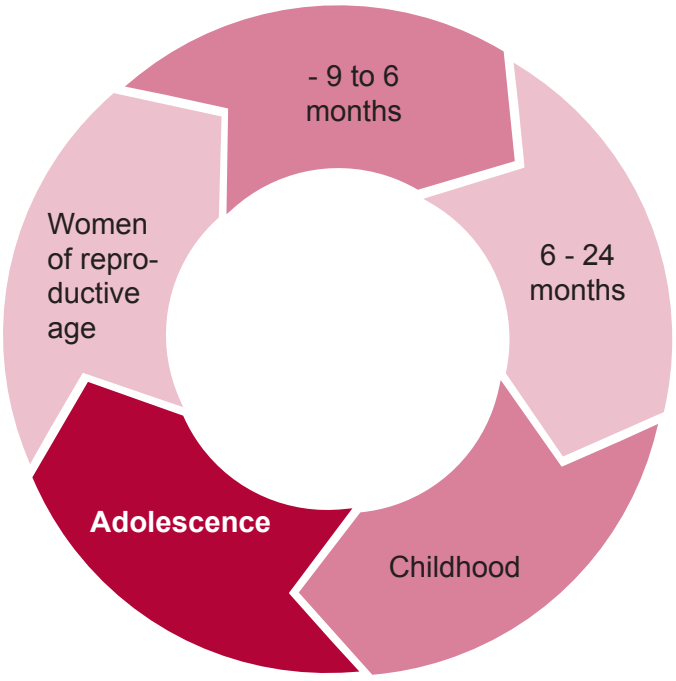
Investing in adolescent girls is important for the economic growth and prosperity of developing countries. Adolescent girls constitute 50% of the world's future human capital, and are therefore an enormous asset and force for both economic and social progress and transformation (UNFPA, 2014). However, to fully utilize this economic and human development potential, investment in improving the nutritional status of adolescent girls is needed.

Adolescence is a critical phase of the human life cycle, during which time physical, psychosocial and hormonal development occurs. Using the UN definition, adolescence is the age between 10-19 years of age (UNICEF, 2011).

This period includes major biological changes, including changes to the sex organs, height, weight, and muscle mass. Almost half of the adult body mass is developed during adolescence, including one-third of adult bone mass, putting a great demand on the dietary requirements for protein, iron, and other micronutrients during this period. The onset of menstruation places girls at a much higher risk of deficiencies than their male peers, particularly for micronutrients such as iron, where requirements are up to twice as high (Beard, 2000).

Any inadequate and poor dietary intake during this period prevents attainment of full physical development and affects the ability of girls to concentrate at school or on daily tasks; limits their learning ability; increases their vulnerability to dropping out of school; causes loss of appetite, resulting in reduced food intake and irregular menstrual cycles; and reduces physical fitness and future work productivity.

Figure 1: Life course approach



Menstruation puts girls at increased risk of nutritional deficiencies. Menstrual irregularities and pains, taboos and lack of knowledge among girls and women, combined with poor access to menstruation products, often results in a lack of menstrual hygiene. This may lead to regular school absence and/or reproductive tract and urinary tract infections, which could result in cervical cancer or infertility.

Given cultural, social and economic factors in developing countries, adolescence is often a period in which girls get married, and are likely to become pregnant shortly after. For these girls, there are long-term consequences for their own health and development, as well as that of their infants. This is because many women have not completed their own physical growth at the time of the birth of their first child. Pregnant adolescents, who are underweight or stunted, are especially likely to experience obstructed labour and other obstetric complications. In addition, there is evidence that the bodies of the still-growing adolescent mother and her baby may compete for nutrients, raising the infant's risk of low birth weight (defined as a birth weight of less than 2,500 grams) and early death. Additionally, children born to anaemic mothers are more likely to die before the age of one year, and be sick, undernourished and anaemic, thus perpetuating the intergenerational cycle of maternal and child malnutrition (Black et al, 2013).

Socially, adolescence is also a period in which girls can face social and cultural pressures to marry and prioritise domestic work, thereby curtailing educational opportunities and limiting prospects for financial independence and self-determination. For boys, during adolescence their world expands with more liberty in expression and conduct, whereas for girls, adolescence is associated with restrictions on speech, expression, thought, mobility and conduct. Girls are often marginalised and discriminated against because of their gender and age, also, in some cases, because of their class, caste and socio-economic status. They have a weaker voice, their rights are denied, and they often have no decision-making power over their own bodies and lives. Due to a range of factors, such as lack of knowledge, education, male dominance, as well as physical, social, economic and cultural barriers, it can be challenging for adolescent girls to access health services, including nutrition interventions delivered through health services. They are also often restricted in their choice of foods, access to personal hygiene products or family planning commodities, all of which is further amplified through poverty (UNFPA, 2013).

2. REPORT OBJECTIVES

Pakistan is home to about 40 million adolescents (aged 10-19), equivalent to 23% of the total population (UNICEF, 2013). With such a large adolescent and youth population, the economic and social progress could be enormous, if investments are made in the right age group, at the right time. Despite the large number of targeted maternal, newborn and child health (MNCH) interventions over the last decade, progress in reducing maternal and child mortality and malnutrition has been slow, as has progress in addressing key social determinants such as poverty, female education and empowerment.

Whereas maternal, infant and young child nutrition has a strong focus in the Pakistan Integrated Nutrition Strategy (PINS), the formal recognition of the importance of policies for adolescent nutrition is absent in practice. There is a growing interest to target adolescents at the provincial level, the Government of Punjab (2013) has launched a strategic plan for adolescents, and other provincial governments are working on youth-specific policies. Specific quantitative and qualitative information about adolescent girls is rare, as they are not categorized as a distinct group, or are often reported on as part of the population group of women of reproductive age.

To stimulate the national discourse on adolescent girl nutrition, GAIN and the Pakistan National Fortification Alliance hosted two consultative round table discussions on this topic in August 2015, one in Islamabad and one in Karachi. The main objective of these meetings was to initiate a dialogue by sharing information between key stakeholders, including the Scaling Up Nutrition (SUN) network. The aim was to identify what is known about the nutritional and socio-economic status of adolescent girls and what the gaps in knowledge are.

The conclusion was that there is a clear gap in the understanding of this target group in Pakistan, with no programs targeting direct nutrition interventions specific to adolescent girls. There was a general agreement that integrating a nutrition component in adolescent health programs could have beneficial effects for the development of future generations. The participants highlighted the need for a comprehensive approach, rather than a single focus on nutrition, and the need to take a gendered approach that also addresses boys and men.

In response, GAIN, in collaboration with Dr. Zulfiqar A Bhutta and his team at the Centre of Excellence in Women and Child Health at the Aga Khan University, undertook a detailed situational analysis, as well as a mapping of existing relevant programs. The results are summarised in this report, which aims to provide evidence that will stimulate further dialogue, advocacy and concerted effort amongst stakeholders including government, donors, civil society and academia. This report provides a first level compilation that will contribute to improving the nutrition status of adolescent girls in Pakistan, which is critically needed to drive sustainable development in the country.

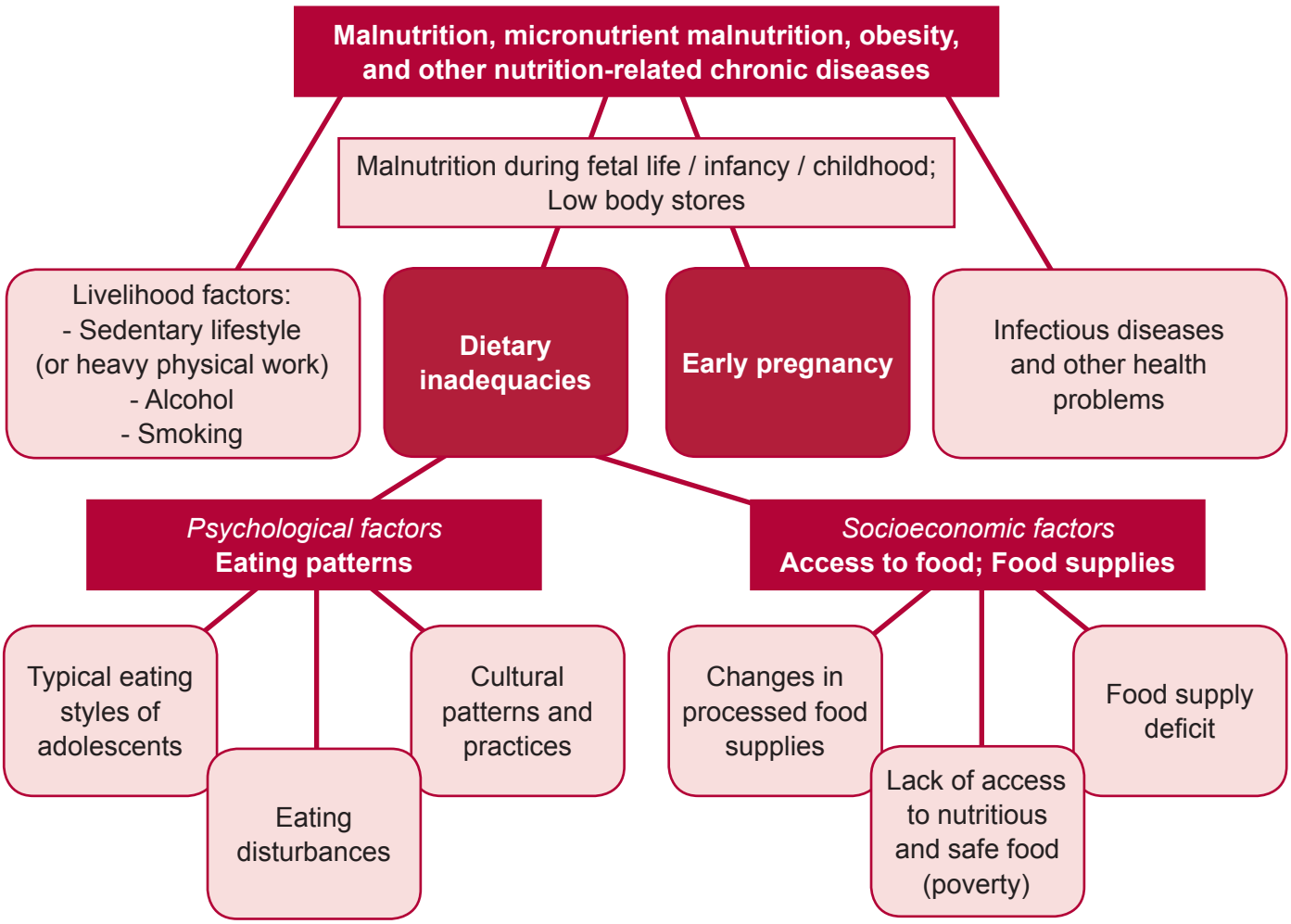
3. A SITUATIONAL ANALYSIS OF HEALTH, NUTRITION AND SOCIAL WELLBEING OF ADOLESCENT GIRLS IN PAKISTAN

The WHO Paper on Nutrition in adolescence (WHO, 2005) proposed the below conceptual framework of nutritional problems and causal factors in adolescence.

This report analysed existing information on malnutrition, micronutrient malnutrition and obesity indicators, as well as dietary inadequacies, early pregnancy, and food consumption (which falls under eating patterns). Moreover, information on socio-economic factors, such as education, literacy and early marriage was analysed. The remaining underlying factors were not included in the scope of work for this report.

Figure 2: Conceptual framework of nutritional problems and causal factors in adolescence (WHO, 2005)

(Data pertaining to the red boxes has been analysed for this report)



Methodology and data limitations

A review of the existing literature was conducted, pertaining to the health, education and socio-economic wellbeing of adolescent girls in Pakistan. Searches of key databases were carried out, including PubMed, Google, Google Scholar and the World Health Organization's regional databases. Local partners and stakeholders were requested to share research and program reports, and relevant qualitative and quantitative data from their studies were extracted to describe the social, nutritional and health situation of adolescent girls in Pakistan.

In addition, a secondary data analysis was undertaken based on a list of defined indicators [1] related to adolescents (15-19 years). This data was extracted from the following surveys: 2012-13 Demographic and Health Surveys (DHS); 2011 National Nutrition Surveys (NNS); and the most recent Multiple Indicators Cluster Surveys (MICS) conducted for the individual provinces (MICS Sindh, 2003-4; MICS Khyber Pakhtunkhwa, 2008; MICS Punjab, 2011; MICS Balochistan, 2010-11). A trend analysis was conducted (where possible) by comparing the recent available data with the previous data from Pakistan or the individual states on selected indicators, namely the 1990-91 and 2006-7 Demographic and Health Surveys and the MICS KP 2001; MICS Punjab 2003; MICS Balochistan 2003 and MICS Punjab 2007-08. A comparison of the data for the selected indicators across wealth quintiles was also made (where available). Further detail on indicators selected for this analysis, including their definition and sample sizes, can be found in Annexes 1a and 1b.

Caution applies to the extrapolation of data from the DHS and NNS since these surveys were not designed to provide outcomes for this demographic age group. For example, the DHS module for women collected data for a representative sample of women aged 15-49 years. A subset of girls and young women, aged 15-19 years, of this larger population group is, however, not a representative sample but only a directional indication. Similarly, the NNS only collected micronutrient status data for one in three women aged 15-49 years, therefore the subset of adolescents (15-19) years is much smaller. This means the data represented in this report are not presented as a comprehensive representation of adolescent girls across Pakistan, but rather indicative and illustrative of their situation.

While differences across various key socioeconomic indicators (wealth, education, urban/rural strata and province) can be seen among women of reproductive age (15-49 years), the data was not sampled to support such a stratified analysis for the narrower target group of girls aged 15-19. It was only in the case of the anthropometric indices that a statistical significant difference, according to wealth quintiles, could be observed.

[1] Anthropometric indicators (stunting, underweight, overweight, obesity); knowledge of HIV/AIDS and other sexually transmitted infections (STIs); contraceptive prevalence; area of residence (urban/rural); literacy; primary and above education; proportion of married adolescents; adolescent pregnancy; age at first marriage and first child; antenatal care (ANC) visits; skilled birth attendance; and newborn indicators (birth weight, low birth rate, neonatal deaths).

Results

SUMMARY OF FINDINGS on:
Health, nutrition and social wellbeing of Pakistani Adolescent Girls

- Strong evidence suggests the nutritional status of Pakistani girls in late adolescence (aged 15-19 years) is worrying, with stunted linear growth during childhood (22%), and very high rates of micronutrient deficiencies, such as anaemia (54%), folic acid (49%), zinc (42%) and vitamin A (40%) (DHS, 2013; NNS, 2011).
- A recent survey in the areas of Sindh and Punjab indicates that the typical diet of adolescent girls is of poor dietary quantity and quality (low in iron), which can lead to micronutrient deficiencies (Food Consumption Survey, 2014-15).
- Prevalence of overweight among adolescents varies by wealth quintile (3% for the poorest and 15% for the richest quintile) (DHS, 2013).
- Around half of Pakistani women, aged 25-49 years, are married between 15-19 years, and median age at first marriage is 19 years (though median age is 18 in Balochistan and KP). Early pregnancy is a consequence of early marriage: 17% of the 19-year-old girls interviewed had already given birth or were pregnant (DHS, 2013).
- The proportion of pregnant adolescents, aged 15-19 years, having had four or more antenatal care visits varies greatly by wealth quintile; with 18% in the poorest quintile and 73% in the richest quintile (DHS, 2013).
- Several surveys suggest education is regarded by adolescent girls as an important priority, yet cultural barriers to accessing education, especially secondary and tertiary education, persist (Education for All 2015, UNESCO 2008). The average number of years of education completed by adolescents aged 15-19 years in Pakistan is 3.4 for girls and 3.2 for boys (DHS, 2013).
- Adolescent literacy rates vary widely according to the wealth quintiles; with only 31% literacy for the poorest quintile but 97% literacy for the richest quintile (MICS, 2010-11).

Nutritional status

The presented evidence of high levels of malnutrition among adolescent girls (aged 15-19) in Pakistan is worrying. The most prevalent problem is micronutrient deficiencies. Over half of adolescents (aged 15-19) are anaemic (53.6%), 49.2% are deficient in folic acid, 42% are zinc deficient, and 40% are vitamin A deficient (see Tables 1 and 2). In Pakistan, 22% of adolescent girls have stunted linear growth, and although a small proportion are too thin (2.9%), a more alarming proportion of adolescent girls are overweight or obese (15.8%) (see Tables 1 and 2). The percentage of girls 10-19 years with short stature for their sex and age is higher among poorer wealth quintiles, whereas the percentage of overweight girls is significantly higher among richer wealth quintiles (see Figure 3). A geographical disaggregation shows that there is a higher proportion of overweight and obesity in urban areas, as compared to rural areas (16% obesity and 24% overweight in urban areas as opposed to 6% obesity and 17.5% overweight in rural areas), and a higher proportion of underweight in rural areas (20%) as compared to urban (14%) (NNS, 2011). The prevalence of obesity and overweight girls and women also increases with age: only 7% of girls 15-19 years old are overweight or obese, as compared to 51% of women aged 40-49 years (see Table 1).

Table 1: Anthropometric characteristics in 15-19 year olds (N=209) (DHS, 2013)*

	Mean (SE)
Height (cm)	153.7 (0.43)
Weight (kg)	50.9 (0.6)
BMI (kg/m2)	21.5 (0.22)
Height-for-age Z score	-1.4 (0.07)
BMI-for-age Z score	-0.05 (0.07)
	%
Stunted (height-for-age Z score <-2)	22.0
Overweight/obesity (BMI-for-age Z score >1)	15.8
Obesity (BMI-for-age Z score >2)	1.4
Thinness (BMI-for-age Z score <-2)	2.9
Severe thinness (BMI-for-age Z score <-3)	0.5

** Further detail on indicators selected for this analysis including their definition can be found in Annex 1a*

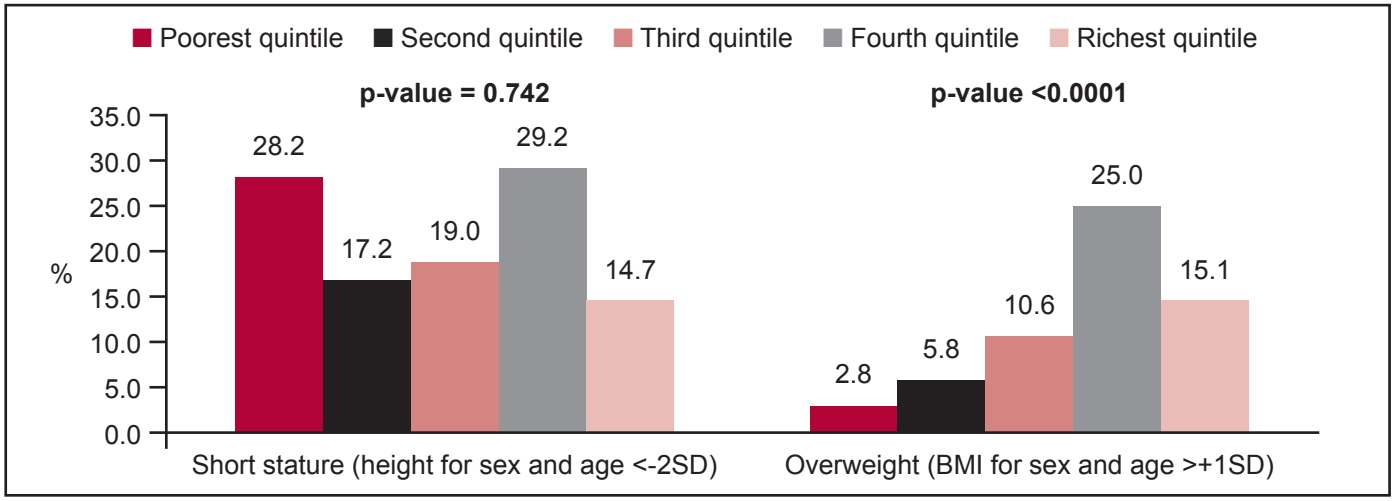
Table 2: Micronutrient status in adolescent girls 15-19 years (NNS, 2011)

Mean haemoglobin concentration (g/L) ± SD	11.55 ± 1.84 (N = 158)
Prevalence of anaemia (haemoglobin <12.0 g/L)	53.6% (N = 158)
Prevalence of Iron deficiency anaemia	21.4 (N = 106)
Mean folic acid concentration (ng/mL) ± SD	8.08 ± 9.54 (N = 131)
Prevalence of folic acid deficiency (<3.0 ng/mL)	49.2 % (N = 131)
Mean zinc concentration (µg/dL) ± SD	69.95 ± 26.5 (N = 101)
Prevalence of zinc deficiency (<60 µg/dL)	41.7% (N = 101)
Mean serum retinol (µmol/L) ± SD	0.93 ± 0.60 (N = 109)
Prevalence of vitamin A deficiency (serum retinol <0.70 µmol/L)	39.7 % (N = 109)

At the provincial level, the prevalence of overweight and obesity among women aged 15-49 years is highest in Khyber Pakhtunkhwa and Islamabad Capital Territory (50% and 59%, respectively), whereas Punjab and Sindh have the highest proportion of underweight women (13.9% and 19.6%, respectively) (DHS, 2013).

The obesity figures in Pakistan are comparable to figures in high income countries (HICs), which can be related to a combination of dietary and lifestyle factors, particularly energy imbalance due to changes in availability and popularly marketed food types, as well as low physical activity (WHO, 2016). However, owing to differences in social and cultural milieu, the factors leading to obesity in HICs cannot be applied to the Pakistani population. A study carried out by Jafar et al. (2007) found that there is growing obesity among school-aged children in urban areas of Pakistan, which is inversely correlated with the amount of physical activity and opportunity for mobility.

Figure 3: Short stature (height-for-age Z score<-2) and BMI-for-age Z score>+1 (overweight/ obese) among adolescent girls aged 15-19 years by wealth quintiles in Pakistan (DHS, 2013)



Dietary inadequacies and food consumption

A major factor influencing dietary intakes across population groups in Pakistan is food security. According to the National Nutrition Survey, 42% of the population is food secure with differences observed according to both socioeconomic and geographical factors (NNS, 2011). Also, various food basket assessments and food consumption surveys suggest that more than half of the population have inadequate calorific consumption (WFP, 2014). In addition, the Pakistani diet is limited in quality, with a great dependence on cereals and a low consumption of fruits and vegetables (which are highly dependent on local seasonal availability), and fish and meats, although intake of dairy products is quite high (FAO, 2013). In rural households, dietary diversity is even more limited, with 24 hour recall reporting that families are most likely to consume wheat flour, sugar, ghee/oil/butter and dairy products (PSSP, 2014 [2]).

A study conducted on poor adolescent girls from four provinces by the Research and Advocacy

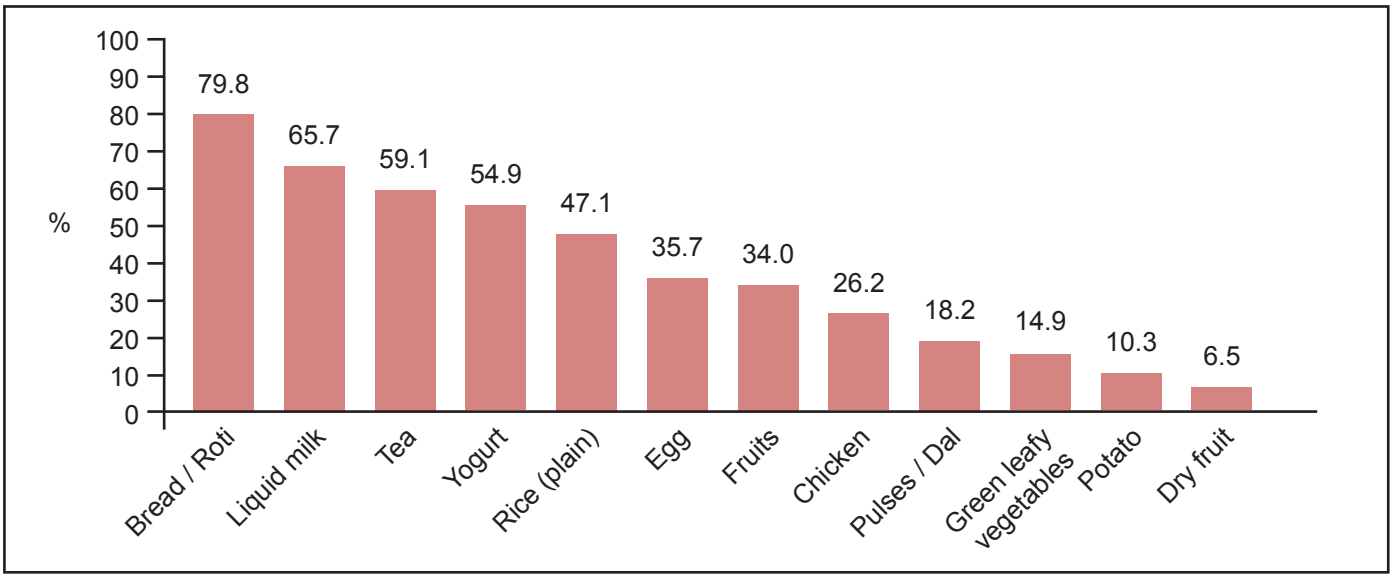
[2] Data yet to be published in a report by the Pakistan Strategy Support Program (PSSP) but available through presentation format here: http://pdf.usaid.gov/pdf_docs/PBAAB565.pdf

Fund (RAF, 2014) found that 25% of married and 30% of unmarried girls, aged 15-19 years, have two meals or less per day, with the highest levels in Punjab and Sindh. Over 60% of both married and unmarried girls said they never have enough food to eat. Breakfast and/or lunch were the meals found to be skipped most frequently (RAF, 2014).

An analysis of a recent (2004-15), and not yet published, food consumption survey conducted in two districts of Pakistan (Hyderabad in Sindh and Faisalabad in Punjab), was undertaken to outline the food consumption of adolescent girls (10-19 years). Further detail on the survey can be found in Annex 2.

Results from this food consumption survey confirm that national trends of poor dietary quantity and quality also relates to adolescent girls. Based on a 24 hour recall, it was found that the consumption of staple foods such as bread/ roti and rice was common amongst adolescent girls, as was the consumption of tea and dairy products, whereas the consumption of eggs, chicken, pulses, and fruit and vegetables was much lower (see Figure 2).

Figure 4: Proportion of adolescent girls, aged 10-19 years, consuming a given food group in the past 24 hours (Food Consumption Survey, 2014-15)

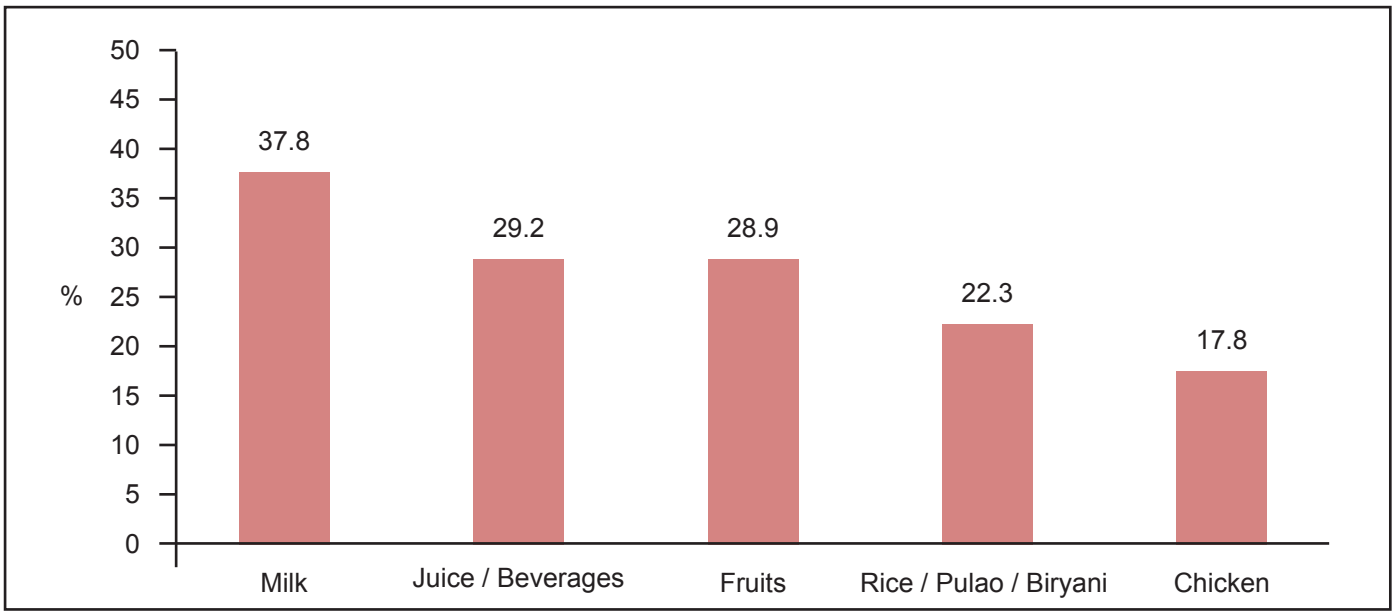


This data indicates that the typical diet of adolescent girls is likely to be low in iron and other key micronutrients essential for their growth and development. This puts them at risk of deficiencies in iron, folate and other micronutrients, which subsequently might affect birth outcomes once they become pregnant. Additionally, 70% of girls reported drinking tea two hours before or after a meal, which compromises iron absorption.

Dietary intake of adolescent girls is influenced by a range of factors. Firstly, it is seldom that the girls themselves have control over household food expenditure, or are involved in intra-household food allocation. The food consumption survey mentioned above found that the principal decision maker for the purchase of packaged food items for adolescent girls are the girls' mothers (84.7%), while fathers and other family members are only the principle decision makers in 9.2% and 6.1%, respectively (Food Consumption Survey 2014-15, see Annex 2).

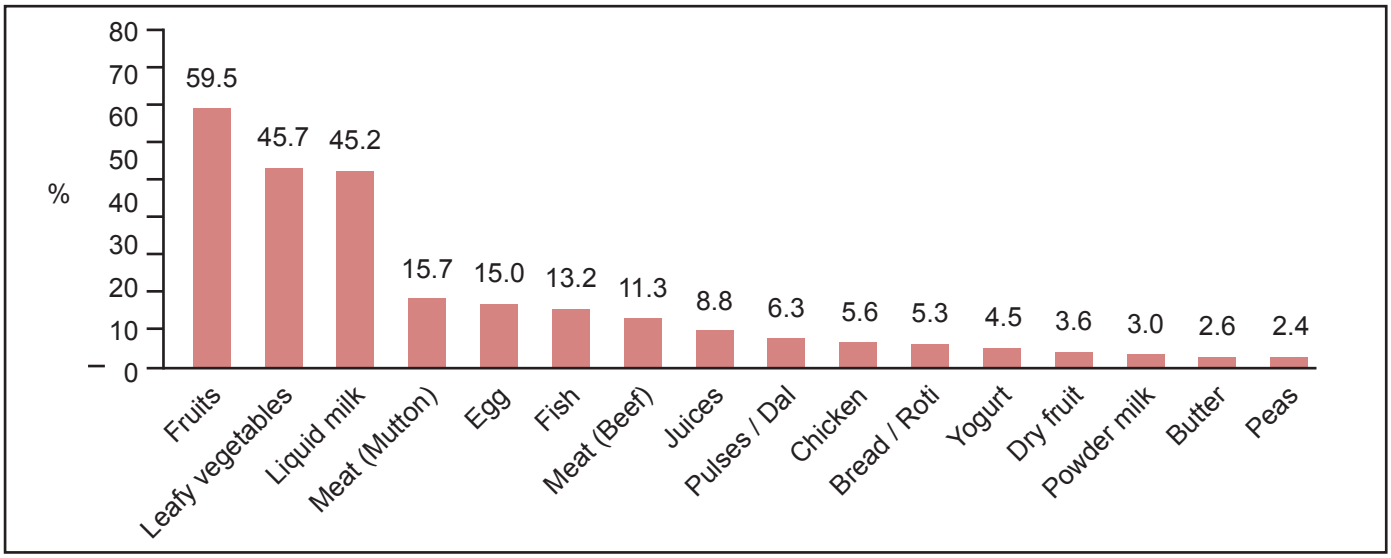
The influence of a mother's purchasing decisions directly reflects what the adolescent girl consumes. For instance, twice as many mothers prefer to purchase milk for their daughters than chicken, which correlates to the same trend in intake with more than twice as many adolescent girls consuming milk than chicken (see Figure 3).

Figure 5: Proportion of mothers listing certain foods as their purchasing priority for adolescent girls (10-19 years) (Food Consumption Survey, 2014-15)



Secondly, the lack of knowledge about nutrition among mothers and girls can also influence purchasing and eating behaviours. The food consumption survey found that there is a very limited understanding of nutritional problems in adolescent girls and their potential causes. For instance, only half of the mothers surveyed had heard of anaemia (54.2%) or iron deficiency (57.3%), while even fewer understood which foods were rich in iron (see Annex 2). Similarly, more than half of all mothers (59.5%) thought that fruits were a good source of iron, with nearly the same proportion citing (liquid) milk or green leafy vegetables (45.2% and 45.7%, respectively) as iron rich foods. Whereas only 15% of the respondents identified meat, eggs and fish as rich in iron (see Figure 4).

Figure 6: Proportion of mothers of adolescents, aged 10-19 years, reporting selected foods as good sources of iron (Food Consumption Survey, 2014-15)



With regards to knowledge about health consequences related to lack of iron consumption, only half (49.8%) of respondents correctly reported that it could lead to lethargy/weakness and anaemia/blood deficiency.

Conversely, RAF's study (2014) found that 88% of adolescent girls, aged 10-19 years, had some knowledge of dietary supplements, and these had been taken by 22% of married girls and 38% of unmarried girls surveyed. Additionally, they found the main source of nutrition information for unmarried adolescents is from parents or siblings, or from in-laws in the case of married girls. Very few girls reported getting nutrition information from health workers (RAF, 2014).

The dietary intake of adolescent girls in Pakistan is complex and therefore is likely to be influenced by a variety of factors. A study conducted in the Chakwal District of Punjab province suggests that 78% of boys, aged 14-16 years, were taking more regular meals as compared to girls (62%). This is because the tendency to skip meals altogether was higher among girls (Adeel et al., 2012). Another research study amongst postgraduate students in Lahore, although not representative of the majority of adolescent girls in Pakistan, found that 59% of normal-weight and 21% of underweight women considered themselves to be overweight, lending itself to distorted perceptions regarding weight among girls and young women (Suhail and Zaib-u-Nisa, 2002). Two multiple regression analyses indicated that greater exposure to Western culture and dissatisfaction with body shape were strong predictors of faulty eating attitudes, whereas unrealistic body shape perceptions could contribute factors of depression.

Studies have also been done on the link between urbanisation and unhealthy eating and their impact on the BMI of adolescents in Pakistan (Aziz et al., 2010; Ahmad et al., 2009; Hakeem et al., 2002). Existing research also shows that eating meals together as a family during the week can improve the quality and diversity of dietary intake of adolescents (Videon and Manning, 2003). However, further insights into the underlying motivations, and influencing social and cultural factors, around food consumption of adolescents in Pakistan is needed.

Early pregnancy and reproductive health

As mentioned previously, early pregnancy is a major risk factor for undernutrition during adolescence, as an adolescent mother who is stunted or still growing herself may be competing for nutrients. Additionally, this puts both her and her baby at risk – for example, through obstructed labour during childbirth.

In Pakistan, although the proportion of teenage pregnancy has declined over the past 20 years, childbearing during adolescence is still prevalent, with 7.9% of girls beginning childbearing between 15-19 years (DHS 2013, Table 3). Childbearing is particularly common in the later years of adolescence, with nearly one in six 19-year-old girls (16.8%) having either given birth or are pregnant with their first child. Early pregnancy is nearly twice as common in rural areas (9.1%) versus urban areas (5.5%). It is also four times more common for girls with little to no education (10.5% and 12.9%, respectively) compared to those with slightly higher levels of education (3.7% and 4.8% for middle and secondary education, respectively) (see Table 3 on page 20) (DHS, 2013). There are also differences observed between different regions in the country, with the highest rate of teenage pregnancies in the province of Khyber Paktunkhwa (10.3%) and lowest in Gilgit Baltistan and Balochistan (6.5% and 6.8%, respectively) (DHS, 2013).

Early pregnancy is a direct result of early marriage, cultural pressure for married women to conceive shortly after marriage, and poor sexual and reproductive services available to young women (WHO, 2011; UNICEF, 2001).

In Pakistan, the median age of first marriage among women, aged 25-49 years, has increased from 18 to 19 and a half (DHS, 2013). This age meets the legal minimum age for girls to marry that some provincial governments, such as Sindh and Punjab, have instated, which is 18 years. However, this remains within the period of adolescence where a girl's body is still developing. Early marriage is more common among girls living in rural areas compared to girls in urban areas, just

like there are differences across socioeconomic status including educational achievement of girls and wealth. Figure 7, on page 21, shows that the median age for first marriage among women, now aged 25-49 years, was 18 in provinces such as Balochistan and Khyber Pakhtunkhwa (KP). The data indicates that among young married women aged 20-24, more than 20% were married before the age of 18, and more than one third were married before age 20 (DHS, 2013).

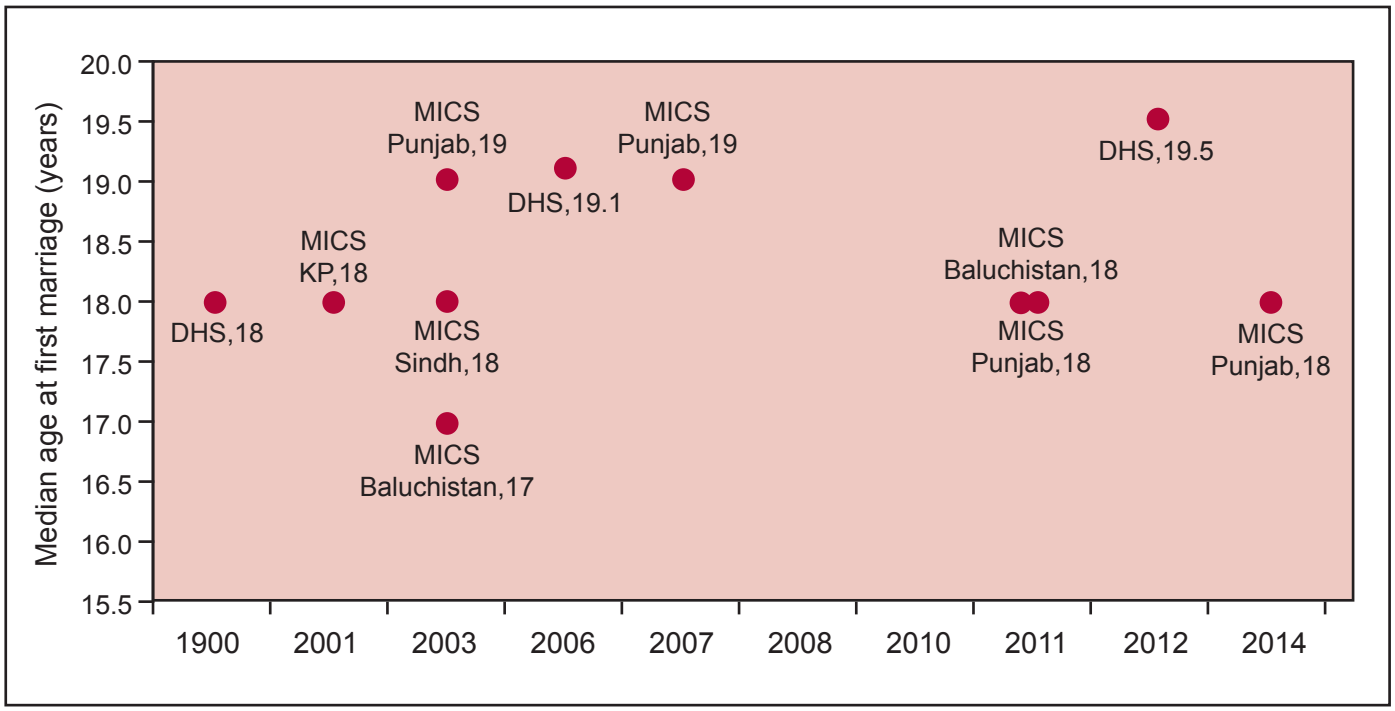
Table 3: Teenage pregnancy and motherhood in Pakistan (DHS, 2013)

Percentage of women (15-19) who have had a live birth or who are pregnant with their first child, and percentage who have begun childbearing, by background characteristics, Pakistan (2012-13)

Background characteristic	Percentage of women aged 15-19 who: Have had a live birth	Are pregnant with first child	Percentage who have begun childbearing	Number of women
Age				
15	0.0	0.0	0.0	641
16	0.4	0.5	0.9	937
17	3.4	4.1	7.5	828
18	8.8	3.7	12.5	1,143
19	13.6	3.2	16.8	720
Residence				
Urban	3.9	1.5	5.5	1,515
Rural	6.2	2.9	9.1	2,776
Region				
Punjab	4.7	2.7	7.4	2,287
Sindh	5.5	2.5	7.9	1,039
Khyber Pakhtunkhwa	8.0	2.2	10.3	660
Balochistan	5.3	1.5	6.8	188
ICT Islamabad	*	*	*	13
Gilgit Baltistan	5.5	1.0	6.5	40
Education				
No education	8.7	4.2	12.9	1,328
Primary	7.7	2.8	10.5	682
Middle	2.4	1.2	3.7	1,102
Secondary	2.8	1.9	4.8	776
Higher	2.9	0.4	3.2	445
Wealth quintile				
Lowest	7.1	4.4	11.5	755
Second	5.9	2.4	8.3	925
Middle	7.6	1.9	9.5	897
Fourth	3.6	2.5	6.1	971
Highest	2.3	1.1	3.3	971
TOTAL	**5.4**	**2.5**	**7.9**	**4,269**

Rutgers World Population Fund (WPF), an international NGO working in sexual reproductive health (SRH), and the Health and Nutrition Development Society (HANDS), a local NGO, have together collated case studies and real life accounts of early marriage among girls under 18 years of age. Their research revealed that child marriage is directly linked with the unequal gender-based power dynamics at the community level, associated with a patriarchal society, where young girls are expected to take on domestic roles, including childbearing, from an early age. They are often denied access to family planning methods by their in-laws, resulting in premature, frequent and unsafe pregnancies (Rutgers WPF and HANDS, 2014).

Figure 7: Median age at first marriage among women aged 25-49 years



> ***"People gossip if a girl visits a doctor, so her parents tend to avoid it."***
>
> A Pakistani girl
> (Warner et. al., 2013, p13)

According to the DHS, 2012-2013, the use of family planning methods remains extremely low across the board even among married adolescents. Only 10% of married adolescents aged 15-19 years [3] use some type of family planning, with condoms (3.4%) and early withdrawal (3.2%) the preferred methods (see Annex 3). Data on women, aged 15-49 years, suggests that married women in urban areas are more likely to use contraception (45%) than their rural counterparts (31%). This also correlated with levels of wealth and education. The regional differences for the use of contraception are pronounced, with highest use in Islamabad Capital Territory (ICT) (59%) and Punjab (41%), and the lowest use in KP (28%) and Balochistan (20%). Urban-rural differences for the use of contraceptives within regions are most pronounced in Sindh. Urban women in this region are two and a half times more likely than rural women to use any contraception (43 % and 17%, respectively) (DHS, 2013).

[3] SHR data only available for ever married adolescents aged 15-19 years

The data uniformly highlights the need for improved availability and accessibility to contraception and family planning services for young married women across the country. However, there are also clear barriers for certain age groups to access reproductive health services in Pakistan, which require consideration.

Only 10% of family planning needs of married adolescents, aged 15-19 years, are met as compared to older age groups, indicating that this age group has greater challenges in accessing family planning services and products than older women (DHS, 2013). Adolescent girls also have lower exposure to family planning methods through media or health services, compared with older women and adolescent boys. They are less likely to know their local health service provider or health worker, or receive services from them than any other age group of women (DHS, 2013).

In 2013, CARE International and Research and Advocacy Fund (RAF) studied the barriers for poor and marginalised adolescent girls and young mothers aged 15-24 years to accessing maternal, neonatal child health (MNCH) and sexual reproductive health (SRH) information and services from government health facilities. They found that for both married and unmarried women the use of these services is low. Looking at the study's hospital-based exit surveys and Focus Group Discussions (FGDs) it was found that this is due to a number of factors. These included: lack of awareness of these services within public health facilities of Pakistan; poor accessibility regarding distance and time of travel; the 'non-cordial attitude' of public health staff; over-crowding and long waiting times; as well as cost. In terms of cost, it was primarily the expense of travelling far to access the hospital service, rather than the cost of the service itself (CARE International and RAF, 2013b). Similarly, the United Nations Population Fund (UNFPA) (2015b) studied knowledge, attitudes and practices (KAP) towards SRH among adolescents. The study found that lack of knowledge about services, feeling shy, or fear of community judgement were the reasons why adolescent girls chose not to seek reproductive health services (UNFPA, 2015b). According to an adolescent girl consultation study, carried out in multiple countries by the International Centre for Research for Women (ICRW), alongside 2CV – an international research agency, and the Nike Foundation – Pakistani girls in particular felt that they lacked support and people they could trust within their communities (Warner et al., 2013).

Besides access to information on family planning, the limited access to information or services relating to SRH by adolescent girls also includes information on menstrual hygiene and care. Again, this is due to sociocultural barriers, such as the perceived shame of discussing these issues. Among unmarried girls, aged 15-24 years, three-quarters of respondents had suffered from menstruation-related health issues in the past. These included amenorrhea (absence of menstruation), dysmenorrhea (menstrual cramps), irregularity of cycles, and leucorrhoea (vaginal discharge) (CARE International and RAF, 2013).

While the UNFPA study found that most respondents had a basic knowledge about puberty changes, when asked to discuss the types of changes occurring during puberty, most respondents only mentioned physical and mental. Only 54% of males and 16% of females also mentioned emotional changes. While the knowledge of problems attained during puberty did not vary significantly between urban and rural settings, the positive responses increased with levels of education and income brackets (UNFPA, 2015b).

"Married at the age of 17, Ghausia was denied access to contraceptives by her in-laws and was therefore continuously conceiving – more than her body could handle. As a result, she had three miscarriages and a stillborn child. Ghausia herself was an extremely malnourished child."

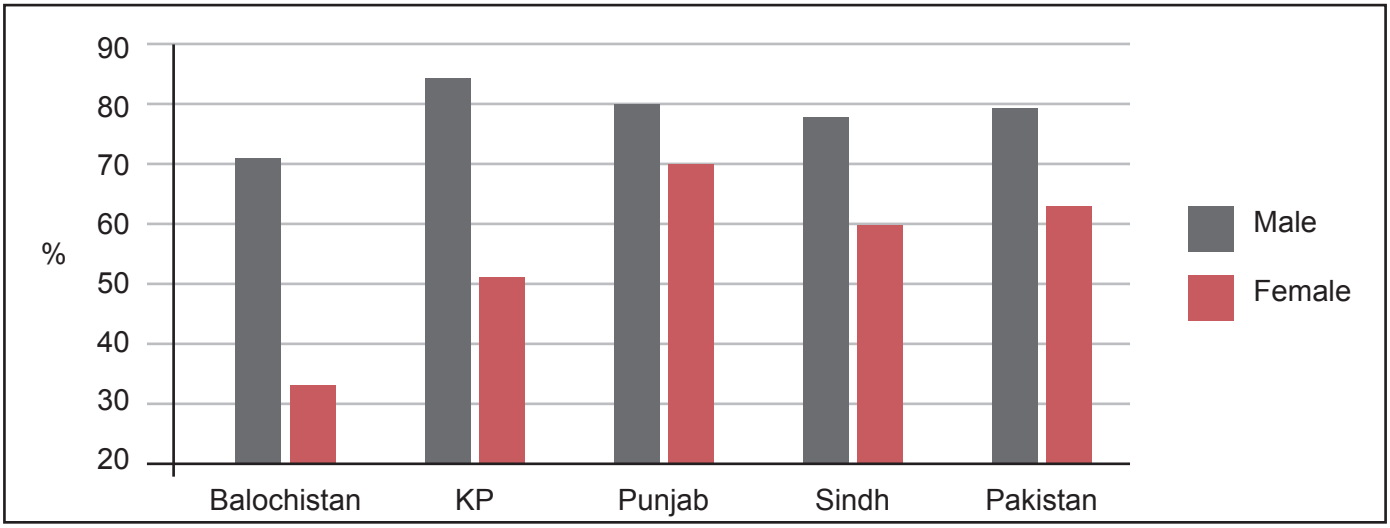
Account from Rutgers WPF and HANDS (2014)

Education, life skills and empowerment

In Pakistan, despite progress over the last two decades, educational outcomes for girls remain low. Nearly one third of all adolescent girls are illiterate. In DHS 2012-13 it was recorded that 28% of girls aged 10-14, and 30% aged 15-19 were illiterate. In DHS 2006-07, this had decreased to 22% and 27%, respectively.

Gender disparities among adolescents are high nationally, with literacy rates 16% higher among boys than girls. Gender disparities in literacy are highest in the areas of Balochistan and KP, which also have power indicators relating to mean age of marriage, early pregnancy, and lack of SRH information and services for girls (see Figure 6).

Figure 8: Youth literacy rates in 14-24 year olds by sex and province, 2012-13 (Education for All 2015 National Review: Pakistan, p25)

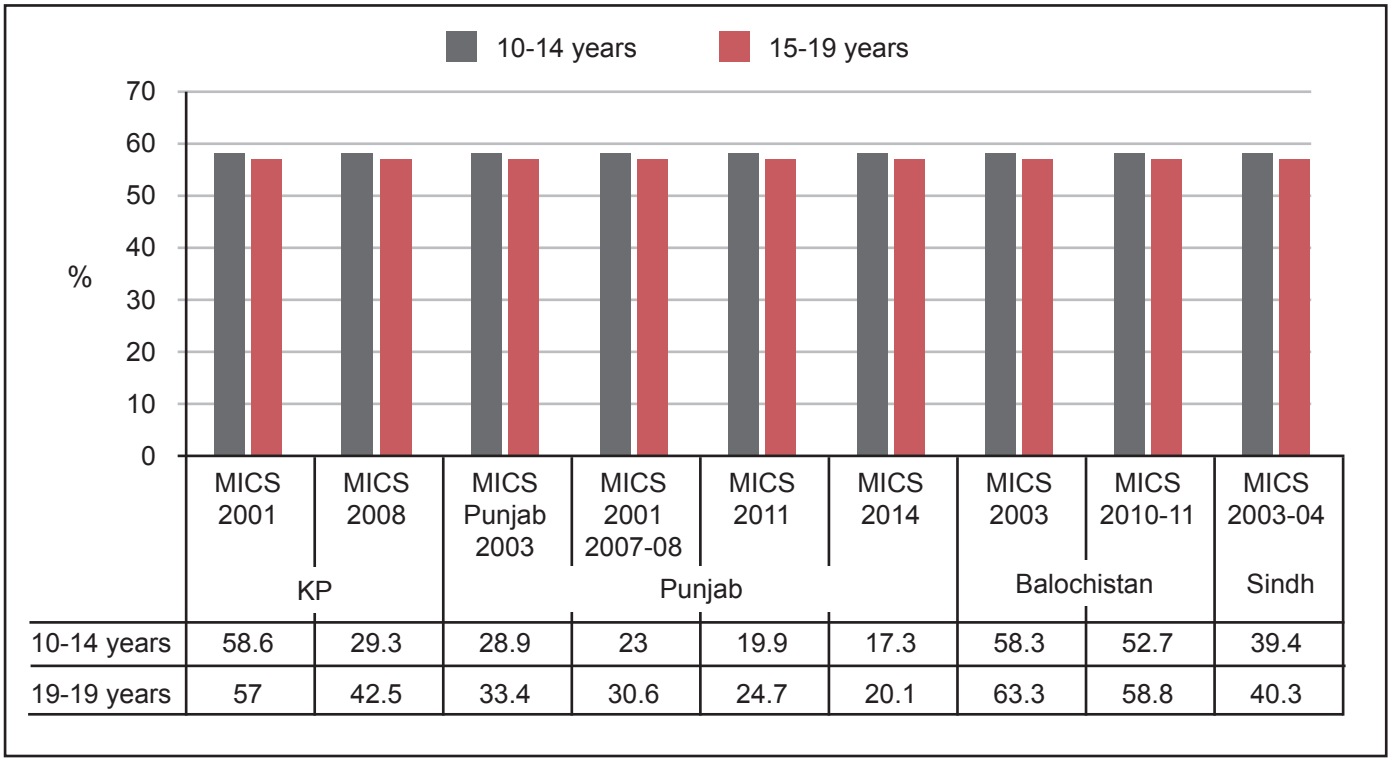


However, a greater difference is seen within different groups of adolescent girls, as literacy is strongly associated with wealth – going from 31% in the poorest quintile, to 80% in the middle quintile, and 97% in the richest quintile. Differences are also observed between different provinces and age brackets, with the highest proportion of illiteracy in adolescents, aged 15-19 years, in Balochistan (Figure 7).

According to the Education for All 2015 National Review (Ministry of Education, 2015), issues with the quality of girls' education is due to lack of physical school facilities, including: a shortage of girls' schools and furniture; a shortage or absence of teachers – particularly a shortage of qualified female teachers, especially in rural areas; and non-availability of suitable learning materials. According to a report by UNESCO, traditional literacy programs for underprivileged women and girls use texts and books reflecting middle class lifestyles, and therefore use themes which are not relevant or relatable to women or girls living in different contexts (UNESCO, 2008).

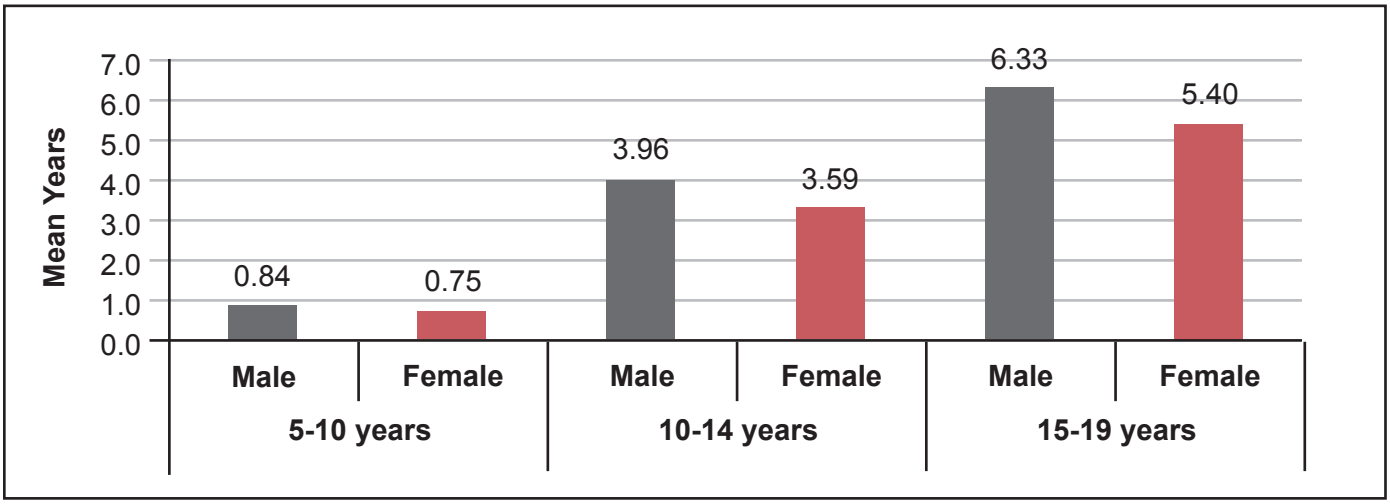
The slow but steady improvement in literacy over time, despite a drop in average number of years of schooling, could perhaps be explained by the fact that those girls dropping out of school early are from lower wealth quintiles. According to the Education for All 2015 National Review (Ministry of Education, 2015), this is because of a number of reasons. Firstly, it is due to a shortage of girls' schools, especially in rural and remote areas of the country. This is combined with a shortage of qualified and trained female teachers. There are also cultural factors, especially among tribal and conservative segments, restricting female mobility. In addition, there are high opportunity costs for a girl to attend school, as opposed to contributing to

Figure 9: Illiteracy among adolescent girls by province and age



	MICS 2001	MICS 2008	MICS Punjab 2003	MICS 2001 2007-08	MICS 2011	MICS 2014	MICS 2003	MICS 2010-11	MICS 2003-04
	KP		Punjab				Balochistan		Sindh
10-14 years	58.6	29.3	28.9	23	19.9	17.3	58.3	52.7	39.4
19-19 years	57	42.5	33.4	30.6	24.7	20.1	63.3	58.8	40.3

Figure 10: Average number of academic years of schooling completed by adolescents in Pakistan by sex and age (DHS, 2013)



household chores. This is the case, despite several initiatives to encourage enrolment and retention of female students, such as the 2004 Free Education initiative [4], Incentives for Girls [5] and the Food for Education initiative [6] (Ministry of Education, 2015).

A UNESCO study in 2008, based on interviews and FDGs with adolescent girls from different areas, makes it clear that girls themselves value getting an education. Most girls expressed the view that educated girls lead better lives and are more aware of their rights and opportunities than uneducated girls. When asked which life skills they considered most important outside the home, 60% of the respondents cited 'education in school', and 47% stated 'interpersonal relations and communications'. Interestingly, 'knowledge about health' was ranked fourth place out of 12 questions (37%), and 'computer literacy' was ranked fifth (35%).

When asked about what educational and training opportunities were available to them, the adolescent girls primarily emphasised in-home skill development – for example, household chores and religious and moral education. According to the study, the institutions the girls have access to outside the home only offered sewing/stitching and cooking training, with very little availability of computer or language skills training. Those attending school also stated that very little emphasis was put on 'girl guide education', with limited information regarding health, menstruation, and social and physical issues during adolescence (UNESCO, 2008).

Based on ICRW's consultations with adolescent girls in Pakistan, Warner et al. (2013) concluded that girls felt their behaviour was restricted to preserving family reputation, with a heavy burden on household chores, which limited their access to education and job opportunities. One girl in the 13-15 age group said: "I wish good teachers were provided in all government schools and those who remain absent should have their positions terminated" (Warner et. al., 2013, p60). This indicates that they are also seeking out a quality education.

The UNESCO study also found that adolescent girls in Pakistan want to:

a) get an education to lead a better life, learn about their rights, become more independent and equal to men in society;
b) become aware of their own rights, particularly their right to choose who to marry, which is denied by their parents;
c) go to work and earn a living, like they see their teachers do, wear nice clothes, eat the foods they want to eat, and live neat and clean lives.

This desire for better opportunities was also found in a study by the Gender Equity Program, which focused on the knowledge, attitudes and practices of young men and women relating to female human rights and empowerment (Aurat Foundation, 2012). This study reported that most respondents believe that women should have equal rights to men, the right to marry a partner of their own choice, and the right to inheritance. It also indicated that there was less support for women's right to demand divorce, to participate in sporting events, or to vote independently. This is because most women vote according to their husbands' preferences. Most women, however, believe they should work to earn a living and make financial decisions, whereas most men do not think it is the woman's role to do so (Aurat Foundation, 2012).

In all, while the socio-cultural and physical wellbeing of adolescent girls varies across Pakistan by province and wealth quintile, there are still serious causes for concern regarding their nutritional and health status, access to services, quality education and underlying cultural barriers.

[4] Abolition of tuition fees and provision of free textbooks to the students of public sector schools (both formal and non-formal). This initiative was launched in 2004 and since then all provinces/areas are following this approach

[5] Female students of middle and high schools in the rural areas of a few selected districts are being given monthly scholarships

[6] Free edible oil for high attendance levels is being given to both girl students and their teachers

4. PROGRAMS AND INTERVENTIONS ADDRESSING HEALTH, NUTRITION AND SOCIAL WELLBEING OF ADOLESCENT GIRLS IN PAKISTAN

To assess which programs and interventions are implemented in Pakistan to address the health, nutrition and social wellbeing of adolescent girls, including which delivery channels or platforms are used to reach this target group, GAIN undertook a mapping of active stakeholders in the country and the range of nutrition-specific and nutrition-sensitive programs implemented.

For the purpose of this report, the definitions of nutrition-specific and nutrition-sensitive interventions follow that outlined in the Lancet Series (Black et al., 2013). Nutrition-specific (direct) interventions and programs are those that address the direct determinants of foetal and child nutrition and development, such as adequate food and nutrient intake, feeding, caregiving and parental practices, and low burden of disease. Whereas nutrition-sensitive (indirect) interventions are those which address the underlying determinants of foetal and child development. These include food security, adequate caregiving resources at maternal, household and community levels, and access to health services and a safe hygienic environment.

Methodology

Based on two round tables discussions on adolescent girl nutrition in Pakistan, hosted by GAIN in August 2015, an inventory of organisations and actors working in the areas of nutrition, health, youth and gender empowerment was made, and subsequently, follow-up interviews and desk research were conducted to gather further program information on interventions/activities, target group, delivery channel and geographic coverage. In addition, information from web searches, or reports provided by program teams, were used to map the types of current or past programs that could directly or indirectly impact the nutritional status of adolescents, along with the delivery channel and geographic coverage.

A limitation of this assessment is the lack of accurate data on reach or uptake of these programs by adolescent girls as a) this is challenging to monitor and b) few programs are designed to target adolescent girls specifically. Moreover, there are few evaluation reports available, as many of these programs are just starting or are ongoing. While this report provides an overview of the prominent programs, interventions and actors addressing nutrition, health and social wellbeing of adolescent girls, it does not provide a systematic review of the effectiveness and impact of these programs.

Nutrition-specific programs

In Pakistan, most nutrition-specific programs target the first 1000 days, with interventions for pregnant and lactating women (PLW) and children under two years of age. Interventions encompass: infant and child feeding promotion and counselling, micronutrient or iron supplementation, and large-scale food fortification (see Annex 4a for an overview of the programs and actors in Pakistan). None of these programs are designed to specifically impact the nutritional status of adolescent girls, though some of them may reach adolescent girls as a subset of their target population.

For example, the Micronutrient Initiative, WFP, UNICEF and Concern Worldwide provide iron-folate supplementation and deworming to mothers, regardless of age, so incidentally also reach pregnant adolescent girls.

SUMMARY OF FINDINGS on: Programs addressing nutrition for Pakistani adolescent girls

- There are very few programs aimed at reducing the massive micronutrient malnutrition problems of adolescents in Pakistan with nutrition-specific interventions.
- Nutrition-specific interventions, such as food fortification or iron-folate supplementation for pregnant women, reach adolescents only as part of a larger target population.
- Programs specifically targeting adolescents exist mainly in areas of education and sexual reproductive health (SRH), but there is limited inclusion of nutrition-specific interventions within these programs, and no evidence of their impact on nutrition.
- Geographical coverage of nutrition-specific and nutrition-sensitive interventions directly targeting adolescent girls is low and limited to a few districts per province.
- Evidence is lacking on the impact of nutrition messages, which are integrated in SRH, education and livelihoods or empowerment programs.

Certain nutrition-specific interventions targeting diet improvement of the general population will also reach adolescents, such as micronutrient fortification of wheat flour, edible oils and salt iodisation. Large-scale food fortification programs are implemented by GAIN, Micronutrient Initiative, UNICEF and WFP, but can only partially fulfill the nutritional requirements of adolescent girls. Furthermore, there is still very little evidence to support the impact of these general interventions on the target group specifically.

Save the Children and UNICEF are delivering nutrition-specific interventions to both boys and girls in middle and high schools at a limited scale. The interventions include micronutrient supplementation, de-worming, education around nutrition, and cooking demonstrations. Currently, these interventions are only reaching a small proportion of the adolescent demographic across Pakistan – three districts in Balochistan and three districts in KP (Save the Children, 2014).

Programs directly targeting adolescents with the distribution or sale of iron-folate supplements to young girls are run by Concern Worldwide, through their Lady Health Worker program in KP and the Federally Administered Tribal Areas (FATA), and HANDS in Sindh, Punjab and KP. By using digital and mass media, a community awareness campaign, launched by WHO and the Women's Empowerment Group (WEG), spread nutrition messages relating to pregnancy and child feeding practices, as well as anaemia, which is a key nutritional problem in adolescent girls. Though the mobile technology and social media networks have the potential to communicate essential nutrition information to adolescents, there is no evidence to show that they are being reached through this program.

Nutrition-sensitive programs

Programs that specifically target youth, adolescents and young women operate mainly in the areas of sexual reproductive health (SRH), education and gender-empowerment. Only a few of these programs have integrated nutrition components within SRH counselling. Others may indirectly impact the nutrition status of adolescents by targeting some of the underlying factors of poor nutrition status, such as delay of first pregnancy, education and literacy, female empowerment, and menstruation management.

The largest cluster of programs targeting young women and girls in Pakistan focuses on SRH and family planning (see Annex 4b). Interventions aim to strengthen and improve access to SRH and

family planning services by capacity building of health workers to counsel women and girls on the use of contraceptive methods. They also raise awareness of SRH rights and gender-based violence (GBV) through schools and community groups. Given the taboo and cultural sensitivities around this topic, young unmarried women or adolescents may not use or access these SRH and family planning services.

A few organisations, such as Plan International and Rutger's WPF, incorporate nutrition messages into their health adolescent programs, linking healthy eating and nutrition to water, sanitation and hygiene (WASH), and menstrual hygiene for girls and young women.

Programs aiming to improve education and skills development of adolescent girls have great potential to integrate nutrition interventions. CARE and Plan International include specific content and messages on health, hygiene and nutrition issues into their programs. These programs aim to improve general knowledge and skills empowerment. WFP is reaching young adolescents, aged 10-15 years, through school feeding programs in FATA. Students are provided with on-site rations of high energy biscuits and take-home rations of fortified vegetable oil, as well as lessons on eating habits, dietary diversity and WASH.

Finally, food security and livelihood programs, run by organisations such as WFP, the Pakistan Emergency Food Security Alliance (PEFSA), and others, provide food rations, cash transfers, or income-support activities, in order to socially and economically empower women. These programs may indirectly impact the nutrition and wellbeing of younger family members, such as adolescents, but they are not directly targeting this age group.

Overall, there are very few programs aimed at reducing the substantial (micronutrient) nutrition problems of adolescents in Pakistan with nutrition-specific interventions. Evidence is lacking on the impact of nutrition messages which are currently being integrated in SRH, education and livelihoods or empowerment programs.

Geographic scope and coverage

Despite some similarities in the issues they face, the context in which adolescent girls in Pakistan live shows stark differences across geographical locations.

Most programs identified in this report (Annex 4) are operating in selected districts in the most populous provinces of Sindh and Punjab, with some in the northern regions of KP, and a few in the northern region of Azad Jammu Kashmir (AJK) and FATA. SRH and education programs are spread across most provinces, whereas nutrition-specific programs are concentrated in Punjab and Sindh.

The mapping exercise demonstrated that Balochistan is the most neglected province for ongoing nutrition interventions, particularly in rural areas and districts. Programs in Balochistan are active in and around the city of Quetta, but less so in the rural areas which are hard to reach due to poor infrastructure and security risks. This is clearly a coverage gap, as health and social indicators outlined earlier in this report show that Balochistan is the most deprived province in terms of adolescent nutritional status, skilled health service provision and illiteracy.

The geographical coverage of most programs reaching adolescent girls is limited to a few districts per province, which equals between 8-30% coverage in Punjab (total of 36 districts) and 10-40% in Sindh (total of 23 districts).

Certain nutrition-specific programs, such as food fortification or nutrition behaviour change campaigns, with a potential benefit for adolescents,

operate at larger sub-national or national scales. These programs generally do not report disaggregated data by age and gender, which makes it a challenge to assess the reach of this age group.

Delivery channels

Identifying suitable platforms or channels to deliver interventions and reach adolescents effectively is imperative given the variation in access to, and uptake of, services by adolescent girls across urban, peri-urban and rural areas, as well as across wealth quintiles and education levels. In the Pakistan context, the following platforms have featured most prominently to deliver interventions: the public health system, the education system, community-based platforms, social marketing and franchises, as well as mass and social media.

Most health and nutrition interventions in Pakistan, including those of local and international NGOs, are delivered through the public health system, which uses three key platforms: (1) the Lady Health Worker (LHW) program, (2) the Maternal, Neonatal and Child Health (MNCH) program, and (3) Community Midwives (CMW) under the MNCH program.

Since the devolution of all public sector services in 2011, the provinces are responsible for budget and implementation of these programs. LHWs cover on average around 60% of the provincial population in rural areas, acting as coordinators who refer their clients to more specialised service providers if needed. Their reach may also include girls and young women before pregnancy, whereas CMWs will only come into contact with adolescents who are pregnant. An evaluation of the LHW program, conducted by the Harvard School of Public Health (Zhu et al, 2014), found the program to be cost effective but also facing challenges, such as high turnover of managerial positions. Moreover, they concluded that despite a rising demand for LHWs, the candidate pool is limited as most women do not meet the educational criteria. Organisations such as UNFPA and Concern Worldwide are integrating youth-focused interventions, such as SRH counselling and iron-folate supplementation, into public health services.

Despite various investments in strengthening the access and quality of health and nutrition services in the country, LHWs may not be best placed to reach adolescent girls. A study by RAF (2014) found that 52% of married adolescents and 58% of unmarried adolescents have access to a nearby health facility (overall, 60% reported having access to a LHW). However, 40% have never visited that health facility. There is additional evidence of poor uptake of existing services by adolescent girls, highlighting important barriers due to negative judgement by service providers, as well as resistance to consult health service providers by the girls' families, especially their fathers, (CARE and RAF 2013). One in four married adolescents are not in favour of visiting a health facility for antenatal care, reporting that they prefer a female doctor (RAF, 2014).

The public and private education system offers a good entry point to reach adolescent girls. Interventions delivered through this channel range from counselling on SRH rights, gender-based violence (GBV), menstruation management, and family planning methods, to interventions aimed at empowering young girls. WFP provides food assistance to encourage parents to keep girls in school. Though schools or vocational training programs have a high potential to reach adolescent girls with nutrition interventions, it is important to recognise that only 65% of girls in Pakistan are enrolled in primary schools, and only 40% in secondary schools, with even lower rates in rural areas and poorer households (UNICEF, 2013). Moreover, girls who have dropped out of school will need to be reached through other channels to prevent early marriage and early pregnancy (Meyers and Harvey, 2011).

Youth or adolescents can be reached through community peer groups or community-based centres with a range of services, including information on SRH and puberty, skill development and other educational and vocational training.

The advantage of community-based interventions is the proximity to reach the most vulnerable girls, who have dropped out of school. However, their coverage is limited in terms of reaching the target at scale. The Reproductive Health for Youth and Adolescents (RHYA) program by UNFPA, and the Reproductive Health Information for Adolescents (RHIA) program by Plan International, both address the health and nutritional needs of adolescent girls, while providing out-of-school girls with educational and vocational opportunities. The success of community-based interventions depends on the capacity of the implementing community-based organisations (CBOs) who also need to convince parents to allow their children to participate.

Social marketing and social franchises can provide a useful platform to increase access to products and services for adolescent girls or to households with girls and young women. HANDS, Marie Stopes International, Greenstar and DKT International have a long social marketing history in Pakistan. While they specifically target underserved women in rural areas, subsets of this target population include adolescents and young women, or their mothers. HANDS implement a community health worker model where MARVIs (lady community health workers) sell goods and services door-to-door to households in their communities. They also set up permanent facilities in their homes. Marie Stopes uses a similar social franchise model as part of a wider partnership scheme involving field staff from 100 different mid-level private-sector providers (PSPs). They sell contraceptive methods, using vouchers to subsidise products for lower-income consumers. However, coverage of these social marketing programs remains limited to certain districts of Punjab, Sindh and KP.

Social and mass media are increasingly used for raising public health awareness, and are particularly important influencing channels for adolescents. A media study by Shabir et al. (2014) of youth in Bahawalpur found that social media is an important source of knowledge and information for 80% of adolescent respondents.

A smaller non-representative study among teenagers in Southern Punjab found that mobile phones have become indispensable tools for interaction, although their use is controlled for girls more than boys (Ali et al., 2014).

There are currently only a few organisations reaching adolescents in Pakistan through social and mass media. The Women's Empowerment Group has developed a television drama series that addresses social issues around puberty and SRH, while the Aurat Foundation's Gender Equity Program uses educational cartoons and TV talk shows to inform children and adolescents about social issues.

Additional insights are needed to better understand suitability of media channels for the communication of potentially sensitive messages across different contexts. For example, one study of adolescents and youth, aged 15-24 years, in the districts of Sargodha (Punjab), Ghotki (Sindh) and DI Khan (KP) found that although a high proportion of respondents watched TV, girls preferred parents, community health workers and teachers as their source of information on issues such as adolescent SRH (UNFPA, 2015).

5. DISCUSSION AND RECOMMENDATIONS TO ADDRESS THE NEEDS OF ADOLESCENT GIRLS IN PAKISTAN

Despite the recognition that adolescence is a critical stage of the human life cycle, both physically and psychosocially, adolescent girls remain a neglected target group for health and nutrition interventions in Pakistan.

The aim of this detailed situational analysis and the mapping of existing relevant programs is to highlight the issue at hand and put adolescent nutrition higher on the agenda of government, donors, civil society and academia.

Secondary data analysis of key national surveys and a review of existing research suggest that levels of micronutrient deficiencies are especially alarming, with more than half of adolescent girls, aged 15-19 years, suffering from anaemia; 21% are iron deficient, 49% are folic acid deficient, 42% are zinc deficient, and 40% are vitamin A deficient (NNS, 2011). There are also relatively high levels of stunting (22%) and overweight (16%) among adolescent girls aged 15-19 years (DHS, 2013).

Data show that early marriage, early pregnancy and low educational attainment constitute important underlying determinants of adolescent girl nutritional status in Pakistan (DHS, 2013).

There is an urgent need for concerted action by government and development partners to improve the nutrition status of adolescent girls at policy and program level.

Policy level

Pakistan does not currently have a specific (provincial or national-level) action plan or programmatic guidance to address the nutrition and health needs of adolescent girls, nor is this target group specifically mentioned in Pakistan's National Nutrition Strategy. Policy development related to adolescents so far has mainly focused on SRH as an entry point, which holds cultural sensitivities in the Pakistani context. While advocating for SRH rights of women and girls is important, such cultural sensitivities could possibly be overcome by taking a nutrition and socio-economic empowerment lens to programs created for girls and young women.

A shift in national and provincial policy and strategy, broadening the target population to include the nutritional, health and socio-economic wellbeing of adolescent girls is essential, with additional financing to follow suit.

Program level

The program mapping exercise suggests that there are no active programs that specifically address the nutritional needs of adolescent girls in Pakistan, and there is only a very limited number of nutrition interventions implemented as part of school, SRH or other programs targeting adolescents.

The direct nutrition interventions for adolescent girls in Pakistan – micronutrient supplementation and behaviour change on health, hygiene and healthy eating – have limited geographical coverage. Other existing nutrition-specific interventions in Pakistan, such as large scale food fortification and maternal, infant and young child nutrition, are only partially or indirectly impacting adolescents. Nutrition-sensitive interventions that theoretically might impact nutritional status are often not set up to demonstrate evidence for their nutritional impact.

The most frequently used channel to reach adolescent girls with relevant services is the health and education system. However, challenges exist with regard to availability, access and uptake of these services by this target group, especially given the low level of decision-making power and autonomy among adolescent girls.

Recommendations

To address the alarming levels of (micronutrient) malnutrition in adolescents, next steps are urgently needed to identify ways to improve the nutritional status of adolescent girls in Pakistan, and contribute to sustainable development.

There are large gaps in the knowledge of the size and scope of the problem. This includes a lack of knowledge of adolescent food consumption, and an insufficient understanding of the intrinsic and extrinsic enablers and barriers affecting adolescent nutrition and health behaviours.

Efforts are needed to explore how to increase access and uptake of existing services, as well as to explore the potential of alternative channels to effectively reach adolescent girls. The approach, delivery platforms, packaging, and amount of nutrition messages targeting adolescent girls should be significantly different from other approaches targeting other women of reproductive age. Though treated for the moment as one, adolescent girls are far from a homogenous group, with large differences across contexts, such as in urban versus rural areas, across different wealth quintiles, and different geographic settings.

To ensure deeper-rooted social change, and to influence current social norms around adolescent girls, interventions should also target adolescent boys, as well as parents and the community at large.

To scale up action to improve national nutrition and health of adolescent girls, we specifically recommend that government, donors and stakeholders work together to:

a) Fill the knowledge gap, by using upcoming surveys for primary data collection on adolescent nutrition, and to invest in formative research addressing adolescent food and nutrition behaviours and determinants.

b) Bring players who target adolescents together in multi-sectoral alliances, to integrate and strengthen targeted nutrition interventions into economic livelihood development, education, and gender and life skills development programs.

c) Review sectoral policies at the national and provincial levels to identify gaps in addressing adolescent nutrition and, in particular, to allocate budget for interventions targeting adolescent girls taking into account the urban/rural divide and differences in income level and educational status.

d) Test potential nutrition interventions to reach adolescents (supplementation, SBCC) through existing cross-sectoral platforms, as well as developing new platforms (community clubs, social media).

Investment in improved nutrition of the adolescent age group will offers tremendous prospects for economic growth and to tackle poverty. Adolescents and youth are integral to achieving Pakistan's economic prosperity within the era of the Sustainable Development Goals.

REFERENCES

Adeel F, Awan MA, Anjum N, Ahmed A, Ahmed Z, Afreen A (2012), Dietary practices amongst adolescents: do boys eat better than girls? Nurture, 6 (1), December 2012.

Ahmad H, Liaqat P, Paracha PI, Qayyum A, Arshad Uppal M (2009), Assessment of nutritional status of adolescents versus eating practices in Islamabad City. Pakistan Journal of Nutrition 8 (8): 1304-1308.

Ali S, Abbas Rizvi SA and Qureshi MS (2014), Cell phone mania and Pakistani youth: exploring the cell phone usage patterns among teenagers of South Punjab. FWU Journal of Social Sciences, Winter 2014, Vol. 8, No. 2, 42-50.

Aurat Foundation (2012) Gender Differences: Understanding Perceptions – National Baseline Study. April 2012.
http://pdf.usaid.gov/pdf_docs/pnaec207.pdf

Aziz S, Umm-e-Rubab, Noorulain W, Majid R, Hosain K, Ahmed Siddiqui I and Manzoor S (2010), Dietary pattern, height, weight centile and BMI of affluent schoolchildren and adolescents from three major cities of Pakistan. Journal of the College of Physicians and Surgeons Pakistan, 2010, Vol. 20 (1): 10-16.

Beard, J.L. (2000), Iron requirements in adolescent females. Journal of Nutrition 130: 440S–442S, 2000.

Bhutta ZA, Das JK, Rizvi A, Gaffey MF, Walker N, Horton S, Webb P, Lartey A, Black RE, The Lancet Nutrition Interventions Review Group, and the Maternal and Child Nutrition Study Group (2013a), Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? The Lancet, 2013, 380: 452-477.

Bhutta ZA, Hafeez A, Rizvi A, Ali N, Khan A, Ahmad F, Bhutta S, Hazir T, Zaidi A, Jafarey SN (2013b), Reproductive, maternal, newborn, and child health in Pakistan: challenges and opportunities. The Lancet, 2013, 381(9884): 2207-2218.

Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R, Uauy R, Maternal and Child Nutrition Study Group (2013), Maternal and child undernutrition and overweight in low-income and middle-income countries. The Lancet, 2013, 380: 427-451.

CARE International Pakistan & Research and Advocacy Fund (2013a), Advocating for improved MNH/SRH policy and practice for adolescent girls and young mothers: key achievements, lessons learned and way forward recommendations. CARE International Pakistan, 2013.
http://insights.careinternational.org.uk/media/k2/attachments/AIMS_Project_learning__way-forward_report_24_july_13.pdf

CARE International Pakistan & Research and Advocacy Fund (2013b), Understanding maternal, neonatal, sexual reproductive health of adolescent girls and young mothers' for advocacy in Pakistan: A research study conducted by CARE International Pakistan and funded by Maternal and Newborn Health Program, Research and Advocacy Fund – Summary Report. October 2013.

Demographic Health Survey Program (2013). Pakistan Demographic Health Survey 2012-2013. National Institute of Population Studies Islamabad, Pakistan. December 2013.
http://dhsprogram.com/pubs/pdf/FR290/FR290.pdf

Food and Agriculture Organisation (2013), Food Balance Sheets – Pakistan.
http://www.fao.org/faostat/en/#data/FBS

Food Consumption Survey (2014-2015). Unpublished data from a survey in Hyderabad (Sindh) and Faisalabad (Punjab) by Aga Khan University. (See Annex 2 for more information).

Government of Punjab (2013) Adolescent Strategy and Strategic Plan 2013-2017, Punjab. Department of Youth Affairs, Sports, Archaeology and Tourism, Government of Punjab.
https://www.punjab.gov.pk/pb_adolescent_strategy

Hakeem R, Thomas J and Badruddin SH (2002), Food Habits and Nutrient Density of Diets of Pakistani Children Living in Different Urban and Rural Settings. Journal of Health, Population and Nutrition, 2002 Sep; 20(3): 255-263.

Jafar T, Qadri Z, Islam M, Hatcher J, Chaturvedi N (2007), Rise in childhood obesity with persistently high rates of undernutrition among urban school aged Indo-Asian children. Arch Dis Child 93(5): 373–378.

Meyers J and Harvey R (2011), Breaking vows: Early and forced marriage and girls' education. Plan UK. http://www.plan-uk.org/resources/documents/Breaking-Vows-Early-and-Forced-Marriage-and-Girls-Education/

Ministry of Education (2014), Education for All 2015 National Review – Pakistan, Trainings and standards in higher education academy of educational planning and management Islamabad, June 2014. http://unesdoc.unesco.org/images/ 0022/ 002297/ 229718E.pdf

Multiple Indicator Cluster Survey – Balochistan (2010). http://microdata.worldbank.org/index.php/%20catalog/1312

Multiple Indicator Cluster Survey – KP (2008). http://kpbos.gov.pk/mics-and-others.php

Multiple Indicator Cluster Survey – Punjab (2011). http://microdata.worldbank.org/index.php/%20catalog/2211

Multiple Indicator Cluster Surveys – Sindh. http://sindhbos.gov.pk/mics/

National Nutrition Survey NNS (2011). Planning Commission, Planning and Development Division, Government of Pakistan. http://pakresponse.info/LinkClick.aspx?fileticket=Ao4s-rwdFVI%3D&tabid=117&mid=752

Organisation for Economic Co-operation and Development OECD (2010), Investing in women and girls: The breakthrough strategy for achieving all MDGs.

Development Co-operation Forum, 4 June 2010. http://www.oecd.org/dac/gender-development/45704694.pdf

Organisation for Economic Co-operation and Development OECD (2012), Education indicators in focus – March 2012. http://www.oecd.org/education/skills-beyond-school/49986459.pdf

Plan International (2009), Girls in the global economy: adding it all up. Because I am a girl: the state of the world's girls, 2009. https://plan-international.org/publications/state-worlds-girls-2009-girls-global-economy

Pakistan Strategy Support Program (2014), Food security, consumption, poverty and nutrition in Pakistan: what do we know and what can we do about it. International Food Research Policy Institute. http://pdf.usaid.gov/pdf_docs/PBAAB565.pdf

Research and Advocacy Fund (2014), A snapshot of poor adolescent girls nutrition and related issues in Pakistan: Studying the knowledge, beliefs and practices of unmarried and married adolescent girls with respect to nutrition and sources of nutrition information. Research report, March 2014. https://issuu.com/ncrp/docs/raf_fmh_research_report

Rutgers World Population Fund and Health and Nutrition Development Society (2014), Adolescent girls empowerment: real life accounts of victims of early marriages. February 2014. http://www.rutgerswpfpak.org/content/pdfs/IEC/AGE/AGE-Early-Marriage-booklet.PDF

Save the Children (2014), School health and nutrition endline survey report. Drafted November 2014 (unpublished).

Shabir G, Yousef Hameed YM, Safdar G, Farouq Shah Gilani SM (2014), The impact of social media on youth: a case study of Bahawalpur City. Asian Journal of Social Sciences & Humanities, Vol. 3 (4), November 2014.

Suhail K and Zain-u-Nisa (2002) Prevalence of eating disorders in Pakistan: relationship with depression and body shape. Eat Weight Disord. 2002 Jun; 7(2):131-8.

United Nations (2015), Transforming our world: the 2030 agenda for sustainable development. United Nations – sustainable development knowledge platform. https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

UNESCO (2008), Needs assessment of out-of-school adolescent girls in Pakistan. Islamabad, December 2008.

UNFPA (2013), UNFPA strategy on adolescents and youth: towards realizing the full potential of adolescents and youth. New York. https://www.unfpa.org/sites/default/files/resource-pdf/UNFPA%20Adolescents%20and%20Youth%20Strategy.pdf

UNFPA (2014) The State of World Population 2014. The Power of 1.8 Billion. Adolescents, Youth and the Transformation of the Future. New York. https://www.unfpa.org/sites/default/files/pub-pdf/EN-SWOP14-Report_FINAL-web.pdf

UNFPA (2015a), Girlhood, not motherhood: preventing adolescent pregnancy. New York. https://www.unfpa.org/sites/default/files/pub-pdf/Girlhood_not_motherhood_final_web.pdf

UNFPA (2015b), Knowledge attitudes and practices survey on adolescent sexual reproductive health, Sargodha, DI Khan and Ghotki Districts of Pakistan. RH-AID. Unpublished.

UNICEF (1990) Strategy for improved nutrition of children and women in developing countries: UNICEF policy review. New York. http://www.ceecis.org/iodine/01_global/01_pl/01_01_other_1992_unicef.pdf

UNICEF (2001), Early marriage: child spouses. Innocent Digest, No. 7 – March 2001. https://www.unicef-irc.org/publications/pdf/digest7e.pdf

UNICEF (2011), The state of the world's children 2011: Adolescence an age of opportunity. New York, February 2011. https://www.unicef.org/adolescence/files/SOWC_2011_Main_Report_EN_02092011.pdf

UNICEF (2013) Pakistan Statistics. Updated: 27 December 2013. https://www.unicef.org/infobycountry/pakistan_pakistan_statistics.html

Videon, TM and CK Manning (2003), Influences on adolescent eating patterns: the importance of family meals. Journal of Adolescent Health, 32: 365-373.

Warner A, Hollingworth G, Thompson L, Petroni D, Sexton M, Song J, Khada J, and Jennings K (2013), I know; I want; I dream: girl insights report. International Centre for Research on Women (ICRW) and 2CV and Nike Foundation. https://www.icrw.org/publications/i-know-i-want-i-dream/

World Food Program (2014), Pakistan Food Security Bulletin. Issue 2, December 2014. https://www.wfp.org/content/pakistan-food-security-bulletins-2014

WHO (2005), Nutrition in adolescence: issues and challenges for the health sector: issues in adolescent health and development. WHO Discussion Papers on Adolescence. Geneva

WHO (2011), Early marriages, adolescent and young pregnancies: report by the secretariat. EB 130/12, 1 December 2011. http://apps.who.int/gb/ebwha/pdf_files/EB130/B130_12-en.pdf

WHO (2016) Report of the commission on ending childhood obesity. Geneva.

Zhu N, Allen E, Kearns A, Caglia J, Atun R (2014), Lady Health Workers in Pakistan: Improving access to healthcare for rural women and families. Harvard School of Public Health. Country Level Programs, 2014. https://cdn2.sph.harvard.edu/wp-content/uploads/sites/32/2014/09/HSPH-Pakistan5.pdf

ANNEXES

Annex 1a: Indicators used to describe the condition of the adolescent girl

Indicator	Description	Age- group
Attended school during current school year	Household respondents were asked whether members in their households age 5-24 years had attended school during the year the survey was administered.	10-14 yrs and 15-19 yrs
Educational attainment	Household respondents were asked about the highest level of education attained among members in their households 5 years of age or older. Members described as never having attended school were categorized under "no education." Those described as having attended primary school but not to completion were categorized under "incomplete primary." Members who reportedly completed primary school were categorized under "complete primary." Those described as having attended secondary school but not to completion were categorized under "incomplete secondary." Members who reportedly completed secondary school were categorized under "complete secondary." Those who attended school beyond secondary school completion were categorized as "higher."	10-14 yrs and 15-19 yrs
Literacy	Women and men's literacy level was measured by asking the respondent to read a sentence written in their language from a card. Respondents who reported attending some secondary school were considered literate; the literacy test was only administered to individuals who attended primary school or less.	15-19 yrs
Highest year of education completed	Household members' highest level of education and highest grade completed were used to calculate the highest year of education completed among members 5 years of age or older.	10-14 yrs and 15-19 yrs
Height	Women's height was measured in centimetres (cm).	15-19 yrs
Weight	Women's weight was measured in kilograms (kg).	15-19 yrs
BMI	Women's BMI was calculated as height divided by weight squared (kg/m2)	15-19 yrs
Height-for- age Z score	Women's height-for-age Z score was calculated based on the WHO growth reference.	15-19 yrs
BMI-for-age Z score	Women's BMI-for-age Z score was calculated based on the WHO growth reference.	15-19 yrs
Stunted	Women with a height-for-age Z score less than -2 were defined as stunted.	15-19 yrs
Overweight/obese	Women with a BMI-for-age Z score greater than 1 were defined as overweight or obese.	15-19 yrs
Obese	Women with a BMI-for-age Z score greater than 2 were defined as obese.	15-19 yrs
Thinness	Women with a BMI-for-age Z score less than -2 were defined as thin.	15-19 yrs
Severe thinness	Women with a BMI-for-age Z score less than -3 were defined as severely thin.	15-19 yrs
Married or union	All women and men were asked whether they had ever been married or lived together with someone as if married.	15-19 yrs
Age at first marriage or union	Women and men who reported having been married or in a union were asked how old they were when they first started living with their (first) partner.	15-19 yrs
Heard about family planning at school	All women and men were asked whether they had heard about family planning at a school.	15-19 yrs
Heard about family planning at cultural animation	All women and men were asked whether they had heard about family planning at a cultural animation.	15-19 yrs

Indicator	Description	Age- group
Heard about family planning on posters or flyers	All women and men were asked whether they had heard about family planning from posters or flyers.	15-19 yrs
Visited by family planning worker last 12 months	Women, in union or married, who were not using any family planning method were asked whether a health worker had visited them in the last 12 months and discussed family planning options	15-19 yrs
Visited health facility last 12 months	Women who were not using any family planning method were asked whether they had visited a health facility within the last 12 months for any reason.	15-19 yrs
Told of family planning at health facility	Women who were not using any family planning method and have visited a health facility within the last 12 months were asked whether during that visit they were informed of family planning options.	15-19 yrs
Ever used family planning	All women and men were asked whether they have ever used anything or tried in any way to delay or avoid getting pregnant or getting their partner pregnant.	15-19 yrs
Currently use family planning	All women and men were asked whether they currently were doing something or using any method to delay or avoid getting pregnant or getting their partner pregnant.	15-19 yrs
Type of family planning currently used	All women and men were asked which method of contraception they were currently using.	15-19 yrs
Currently pregnant	All women were asked if they were currently pregnant.	15-19 yrs
Age at first birth	Of the women who reported having had a live birth, the date of their first birth and the date of birth of the respondent were used to calculate their age at first birth. Men who reported having fathered children were asked how old they were when their first child was born.	15-19 yrs
No of children ever born-all	The mean of the total number of children ever born was calculated among married women.	15-19 yrs
No. of living children (all)	The mean of the number of living children was calculated among married women.	15-19 yrs
No. of ANC visits	Women who reported having had a live birth in the last five years were asked times they received antenatal care during their last pregnancy.	15-19 yrs
Took iron tablets or syrup	Women who reported having had a live birth in the last five years were asked whether they were given or had bought any iron tablets or syrup during their last pregnancy.	15-19 yrs
No. of days of iron tablets or syrup taken	Women who reported having had a live birth in the last five years were asked how many days they took iron tablets or syrup during the whole last pregnancy.	15-19 yrs
≥ 4 ANC visits	Of the women who reported having had a live birth in the last five years, the percent that had at least four visits during their last pregnancy was calculated.	15-19 yrs
Intestinal anti-parasitic drug use	Women who reported having had a live birth in the last five years were asked whether they took any drug for intestinal worms during their last pregnancy.	15-19 yrs
Last birth was protected against neonatal tetanus	Protection against neonatal tetanus was calculated as mothers with two injections during the pregnancy for their last birth, or two or more injections	15-19 yrs
Delivered by a skilled provider	Women who reported having had a live birth in the last five years were asked about the types of persons who assisted with the delivery of their last birth.	15-19 yrs
Delivered at health facility	Women who reported having had a live birth in the last five years were asked about where they delivered their last child.	15-19 yrs

Indicator	Description	Age- group
Low birth weight	Low birth weight (LBW) is defined as a birth weight of a live born infant of less than 2,500 g regardless of gestational age. Only for births with a reported birth weight were included in the data analysis	15-19 yrs
Baby post- natal check- up within 2 months of delivery	Women who reported having had a live birth in the last five years were asked whether in the two months after their last birth, any health care provider or a traditional birth attendant check on the health of her child.	15-19 yrs
Ever heard of STI	All women and men were asked whether they contracted any STI (sexually transmitted infection) in the 12 months preceding the survey.	15-19 yrs
Any STI in last 12 months	All women were asked whether they had ever heard about STIs.	15-19 yrs
Ever heard of AIDS	All women were asked whether they had ever heard of AIDS (acquired immune deficiency syndrome)	15-19 yrs
Knowledge of reduced risk of HIV: always use condoms during sex	Women who had heard of AIDS were asked questions to assess knowledge of reducing risk of HIV (human immunodeficiency virus): can people reduce their chance of getting the AIDS virus by using a condom every time they have sex?	15-19 yrs
Knowledge of reduced risk of HIV: have 1 sex partner only, who has no other partners	Women who had heard of AIDS were asked questions to assess knowledge of reducing risk of HIV: can people reduce their chances of getting the AIDS virus by having just one uninfected sex partner who has no other sex partners?	15-19 yrs
Participation in decision- making according to women	Women and men currently in marriage or union were asked who should have the greater say in each of the following decisions: the husband, the wife or both equally: the wife's health care, major household purchases, purchases of daily household needs, visits to wife's family or relatives. Women participated in decision-making if they made decisions alone or with a husband.	15-19 yrs
Haemoglobin level	Half of all women and men received a haemoglobin test, administered using a finger prick sample and use of a HemoCue machine to read results.	15-19 yrs
Anemia	Cut-offs for anaemia were aligned with WHO recommendations: <12.0g/dl for non-pregnant women and <11.0g/dl among pregnant women. For those who were anaemic, the following definitions were used for: - Mild anaemia: 10-12 g/dl for non-pregnant and 9-11 g/dl for pregnant women - Moderate anaemia: 8-10 g/dl for non-pregnant and 7-9 g/dl for pregnant women - Severe anaemia: <8 g/dl for non-pregnant and <7 g/dl for pregnant women	15-19 yrs

Annex 1b: Survey Sample design and representativeness

Survey	Year	Sample design	Representation	# HH completed	# Ever Married Women, 15-49 years
PDHS	1990-91	Two-stage, stratified, random sample design	National/ Provincial	7193	6611
	2006-07	Two-stage, stratified, random sample design	National/ Provincial	95441	10023
	2012-13	Two-stage, stratified, random sample design	National/ Provincial	12943	13558
NNS	2011	Two-stage, stratified, random sample design	National/ Provincial	27963	24694
MICS Punjab	2003-04	Two-stage, stratified, random sample design	Provincial/ district	30421	28374
	2007-08	Two-stage, stratified, random sample design	Provincial/ district	91075	87279
	2011	Two-stage, stratified, random sample design	Provincial/ district	95238	137938
	2014	Two-stage, stratified, random sample design	Provincial/ district	38405	61286
MICS Sindh	2003-04	Two-stage, stratified, random sample design	Provincial/ district	22828	24491
	2014	Two-stage, stratified, random sample design	Provincial/ district	17014	26647
MICS KP	2001	Two-stage, stratified, random sample design	Provincial/ district	12980	13569
	2008	Two-stage, stratified, random sample design	Provincial/ district	10914	12624
MICS Baluchistan	2003-04	Two-stage, stratified, random sample design	Provincial/ district	10138	13224
	2010	Two-stage, stratified, random sample design	Provincial/ district	11612	17732

# Ever Married Women 15-19 years	# Child, 0-59 months	# HH Members, all ages	# HH Male Members, 10-19 years	# HH Female Members, 10-19 years	Micro-nutrient status, married women, 15-19 yrs
407	6428	52333	6554	6037	--
578	9177	727276	91999	87968	--
567	11763	94165	11567	10929	--
400	20537	187158	18338	18324	158
964	23553	202960	27039	25425	--
2954	71507	594851	74117	70254	--
32120	74126	599617	71511	68184	--
11298	31083	246501	28345	26763	--
1137	21094	164253	21762	19171	--
5739	18108	126389	14671	13604	--
971	12011	96572	13053	12074	--
842	11550	94068	11997	11374	--
750	12238	85471	11599	9586	--
4113	10432	88427	12542	10122	--

Annex 2: Findings from Food Consumption Survey (2014-2015)

The report presents the brief description of findings of relevance to adolescent girls from a survey to evaluate the consumption, buying practices, cost effectiveness and willingness to pay for packaged food items conducted in the two districts of the Pakistan; one was Hyderabad (Sindh) and other was Faisalabad from Punjab. A total of 1680 Households were approached 865 from Hyderabad and 815 from Faisalabad.

Primary objectives

1. To explore the basic household characteristics including demography and socio-economic status.
2. To explore the type, quantity, and frequency of food in adolescent girls
3. To evaluate the Knowledge, attitude and practices of the mothers (of adolescent girls) regarding packaged food items
4. To estimate the Current Consumption and Buying practices of packaged food items and the cost benefit and willingness to pay for packaged food items

Sampling strategy

Sample design

A stratified two-stage sample design will be used for the study. FBS enumeration blocks will be treated as primary sampling units (PSUs). Households within each sample primary sampling unit will be adopted as secondary sampling units (SSUs).

Stratification plan

Each of the study districts will be treated as an independent stratum and within each district the sample size will be stratified into three equal proportions based on socio economic status.

Selection of primary sampling units

A fixed number of sample enumeration blocks (PSUs) i.e. 45 will be selected randomly from each study district/site considering the stratification and using list of villages and blocks of Pakistan Bureau of Statistics. Each block is comprised of 200-250 households.

The achieved sample size was
Hyderabad: 865,
Faisalabad: 815 and
Total: 1680 for adolescent girl

	Faisalabad	Hyderabad
Required Sample Cluster / PSUs	Adolescent Girls – 1100 250-300 Households	Adolescent Girls – 1100 250-300 households
No of households required / PSU	Adolescent Girls – 25	Adolescent Girls – 25
Total PSUs / Clusters required	45 Enumeration blocks 15 from low SES 15 from Middle SES 15 from High SES	45 Enumeration blocks 15 from low SES 15 from Middle SES 15 from High SES

Annex 3: Sexual reproductive health and family planning data

Sexual Practice, Marriage, Family planning use and pregnancy in 15-19 year olds

	Pakistan DHS 2012-13	
	N	**%/ Mean (SE)**
Recent sexual activity : Active in last 4 weeks	556	75.0
Married or union (% who were married between 15-19 years and currently 20-49 years)	12451	52.5%
Age (years) at first sexual intercourse	NA	NA
Age (years) at first marriage or union (20-49 years of age women)	12451	19 (0.04)
Heard family planning on radio last few months	567	2.9
Heard family planning on TV last few months	567	18.5
Heard family planning in newspaper/magazine last few months	567	2.5
Visited by family planning worker last 12 months	315	28.5
Visited health facility last 12 months	567	68.1
At health facility, told of family planning	360	5.1
Ever used family planning	567	13.1
Currently use family planning	567	10.1
Current using modern method	567	6.8
Type of family planning currently used	567	
Not using		89.9
Pill		0.5
IUD		0.7
Injections		1.1
Condom		3.4
Periodic abstinence		0.2
Withdrawal		3.2
Lactational amenorrhea (LAM)		0.5
Other modern method		0.5
Currently pregnant	567	21.2
Age at first birth (years) – married or union (20-49 years of age women)	12451	20.9 (0.04)
Proportion of women who already gave birth (within past 5 years)	567	38.0
No. of children ever born (married/union)	559	0.51 (0.03)
No. of children dead (married/union)	559	0.03 (0.01)
No. of living children (married/union)	559	0.48 (0.03)

Annex 4a: Nutrition-specific programs impacting adolescents

Nutrition-specific programs	General target group	Organisations/ institution	Geographic area
School Nutrition	Primary and middle/ high school students, including girls aged 5-19 years	Save the Children	Balochistan, KP
		UNICEF	Balochistan, KP
Infant and Young Child Feeding / stunting reduction	Pregnant and lactating women, children under 5 years	UNICEF, World Food Program, WHO	Almost national – presence in all provinces
		Concern Worldwide	Sindh
		Micronutrient Initiative	KP, Punjab, Sindh
		World Bank	Sindh, Balochistan
		Merlin and Save the Children	Sindh
Community Management of Acute Malnutrition (CMAM)	Pregnant and lactating women, children under 5 years	UNICEF, World Food Program, WHO, HANDS	Almost national – presence in all provinces
		Concern Worldwide	Sindh
		Action Against Hunger (ACF)	Sindh, Punjab
		Merlin and Save the Children	Sindh
Anemia reduction	Mothers and/or children under two years	UNICEF	Almost national – presence in all provinces
		Micronutrient Initiative	Punjab, Jammu and Kashmir
National food fortification program (wheat flour, oil/ghee, salt)	General population through family pot, with focus on women of reproductive age	World Food Program	Nationally
		UNICEF	
		Micronutrient Initiative	Nationally
		GAIN	Punjab
MIYCN communication and behaviour change	Women and children, including adolescents	WHO and Women's Empowerment Group	Targeted programmes in Sindh, Punjab and AJK, with national reach through electronic media

Annex 4b Nutrition-sensitive programs impacting adolescents

Program	Organisation/ institution	Target group	Geographic area
SEXUAL REPRODUCTIVE HEALTH AND FAMILY PLANNING			
Hamara Kal – Education on SRH and Family Planning	Rutgers WPF	Adolescents and youth, both boys and girls	Sindh, Balochistan, Punjab
Reproductive Health Information for Adolescents (RHIA)	CARE International Pakistan	Adolescent and youth, boys and girls	Sindh, Punjab, AJK, Gilgit Baltistan
Advocating for improved maternal newborn health (MNH) and sexual reproductive health (SRH) policy and practice for adolescent girls and young mothers (AIMS)	CARE International Pakistan	Advocacy to impact young girls 15-24 years	Punjab, Sindh, KP, Balochistan
Women and Reproductive Health Initiative (WARHI)		WRA, pregnant women and mothers, mothers-in-law	Punjab
Supporting Access to Family Planning and Post Abortion Care Phase 2 (SAFPAC)		Marginalised women in rural areas	Punjab
Maa aur Maamta kay Liye ik Naveed (MUMKIN)	CARE International Pakistan and Health and Nutrition Development Society (HANDS)	WRA, pregnant women and mothers 15-49 years	Sindh
Social marketing for family planning products and services	Greenstar	Women and men of reproductive age	KP, Punjab, Sindh, Balochistan
Private family planning/HIV prevention products and services	DKT International	WRA particularly in rural areas	
Rural social franchising programme using vouchers for long-term family planning services	Marie Stopes Society	Married WRA in rural areas	Punjab, Sindh
Health and Behavioural issues with Youth – focus on SRH	Women's Empowerment Group	Youth 10-19 years and key decision-makers	Urban centres: Lahore, Peshawar, Karachi, Quetta, Islamabad
Reproductive Health for Youth and Adolescents (RHYA) / ASHR	UNFPA	Adolescents and youth, both boys and girls	Punjab, Sindh, KP

Program	Organisation/ institution	Target group	Geographic area
INTEGRATED HEALTH			
Health Program	Concern Worldwide	Women and children including adolescent girls	KP, FATA
Maternal and Child Health Integrated Programme (MCHIP)	USAID	PLW, women and children	Sindh, Punjab, KPK, FATA
Health programme – MARWI workers model	Health and Nutrition Development Society (HANDS)	Women and girls in household: children under 5 years, adolescents, PLW, mothers	Sindh, Punjab
EDUCATION			
Child labour education	Save the Children	Out-of-school children, including girls, involved in labour	Sindh, Punjab
School Feeding	World Food Program	Primary and secondary school children	FATA
Community mobilisation and school enrolment	International Relief and Development (IRD)	Primary and high school girls	
Enhancing Quality Access and Learning Project (EQUAL)	CARE International Pakistan	Youth, particularly young women and girls, but also boys and parents	KP
Early Childhood Care and Development	Plan International	1000 Days; children 9-19 years and parents	Punjab, KP, Sindh, Jammu Kashmir Gilgit Baltistan
Girls Education Alliance Pakistan (GEAP)	Plan International, Oxfam GB, Action Aid, Care International and World Vision	Adolescents, particularly girls (indirectly through advocacy)	Punjab and Sindh
Peer Education Program – Y Peer	UNFPA	Youth 15-24 years	
GENDER AND YOUTH EMPOWERMENT			
EHAD – health and nutrition behaviour issues of adolescents	Women's Empowerment Group	Youth, adolescents and parents	National (media)
Gender Equity Program (GEP)	Aurat Foundation	Disempowered women	National (advocacy)
FOOD SECURITY AND SOCIAL PROTECTION			
Emergencies and livelihood support	World Food Program	Men and women of working age and families including children and adolescents	FATA
Emergency food security and nutrition support to disaster affected populations in Pakistan	Pakistan Emergency Food Security Alliance (PEFSA)*	Food insecure households/families – targeting landless households; the prime beneficiaries women	Sindh, Punjab
WASH			
WASH and menstrual hygiene campaign	Water Aid	School children	Punjab and Sindh
Working Children Protection Programme (WCPP)	Concern Worldwide	Street working children	Quetta Balochistan

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