



Improving Adolescent Health: Learnings from Gujarat



INDIAN
INSTITUTE OF
PUBLIC HEALTH
GANDHINAGAR

Promoting Adolescent Health and Empowerment through Demonstration of Convergence of Health Programs in Sabarkantha District, Gujarat

(Funded by John D. and Catherine T. MacArthur Foundation)



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Abbreviations

<i>AEP</i>	<i>Adolescent Education Program</i>
<i>AFHC</i>	<i>Adolescent Friendly Health Clinic</i>
<i>AHD</i>	<i>Adolescent Health Day</i>
<i>ARSH</i>	<i>Adolescent Reproductive and Sexual Health</i>
<i>ASHA</i>	<i>Accredited Social Health Activist</i>
<i>AWW</i>	<i>Anganwadi Workers</i>
<i>AYUSH</i>	<i>Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy</i>
<i>BEO</i>	<i>Block Education Officer</i>
<i>BHO</i>	<i>Block Health Officer</i>
<i>BMI</i>	<i>Basal Metabolic Index</i>
<i>BRC</i>	<i>Block Resource Coordinator</i>
<i>CDHO</i>	<i>Chief District Health Officer</i>
<i>CHETNA</i>	<i>Centre for Health Education, Training and Nutrition Awareness</i>
<i>CRC</i>	<i>Cluster Resource Coordinator</i>
<i>DDO</i>	<i>District Development Officer</i>
<i>DPC</i>	<i>District Program Coordinator</i>
<i>FGD</i>	<i>Focus Group Discussion</i>
<i>FHW</i>	<i>Female Health Worker</i>
<i>GOG</i>	<i>Government of Gujarat</i>
<i>GOI</i>	<i>Government of India</i>
<i>ICDS</i>	<i>Integrated Child Development Scheme</i>

<i>IEC</i>	<i>Information, Education and Communication</i>
<i>IDI</i>	<i>In-depth Interviews</i>
<i>IFA</i>	<i>Iron Folic Acid</i>
<i>IIPHG</i>	<i>Indian Institute of Public Health, Gandhinagar</i>
<i>LHV</i>	<i>Lady Health Visitor</i>
<i>MDM</i>	<i>Mid-Day Meal</i>
<i>MMU</i>	<i>Mobile Medical Unit</i>
<i>MO</i>	<i>Medical Officer</i>
<i>MPHW</i>	<i>Multipurpose Health Worker</i>
<i>MTA</i>	<i>Mamta Taruni Abhiyan</i>
<i>NCD</i>	<i>Non-Communicable Disease</i>
<i>NHM</i>	<i>National Health Mission</i>
<i>NRHM</i>	<i>National Rural Health Mission</i>
<i>OD</i>	<i>Open Defecation</i>
<i>PE</i>	<i>Peer Educator</i>
<i>PEM</i>	<i>Protein Energy Malnutrition</i>
<i>PHC</i>	<i>Primary Health Centre</i>
<i>PP</i>	<i>Private Provider</i>
<i>RBSK</i>	<i>Rashtriya BalSwasthya Karyakram</i>
<i>RCH</i>	<i>Reproductive and Child Health</i>
<i>RCHO</i>	<i>RCH Officer</i>
<i>RKSK</i>	<i>Rashtriya Kishor Swasthya Karyakram</i>
<i>RTIs</i>	<i>Reproductive Tract Infections</i>

<i>SC</i>	<i>Sub-Centre</i>
<i>STIs</i>	<i>Sexually Transmitted Infections</i>
<i>VHND</i>	<i>Village Health Nutrition Day</i>
<i>VHSNC</i>	<i>Village Health, Sanitation and Nutrition Committee</i>
<i>WIFS</i>	<i>Weekly Iron Folic Acid Supplementation</i>
<i>WHO</i>	<i>World Health Organization</i>

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Executive Summary

Globally, and in India, the 10 to 19 years age group or ‘adolescents’ are a significant proportion of the total population. As the adolescent phase is characterised by rapid physical, psychological and behavioural changes, the developmental needs of this group varies with age, and they are further divided into 10 to 14 years and 15 to 19 years age groups. Multiple factors such as gender, schooling, marital status, urban/rural differences and employment add to the diversities among adolescents. Additionally, poverty, gender discrimination, teenage marriage, poor nutrition, experimentation with high risk behaviours, violence and abuse, and limited access to health information and health care increases the vulnerability of this large group. Hence prioritising their multiple needs and influencing their health-seeking behaviour will have a positive impact on their lives, empower them and support India in achieving the Sustainable Development Goals (SDGs).

Recognizing the multiple needs of adolescents, the national and state governments at different time period had initiated various programs under RMNCH+A such as the following:

1. Mamata Taruni Abhiyan (MTA),
2. Menstrual Hygiene Program (MHP),
3. Weekly Iron Folic acid Supplementation (WIFS),
4. Adolescent Reproductive and Sexual Health (ARSH),
5. School Health Program,
6. Rashtriya Kishor Swasthya Karyakram (RKSK).

Despite all these programs, evidence suggests large unmet need for promotive, preventive and curative health services for adolescents. Although government programs recognise the importance of convergent action and seek to adopt a convergence approach, the programs often work in silos resulting in limited outreach.

The Centre for Health Education Training and Nutrition Awareness (CHETNA) and the Indian Institute of Public Health Gandhinagar (IIPHG) therefore partnered in 2013 to work on a three-year project funded by the John D. and Catherine T. MacArthur Foundation, aiming to promote young people’s sexual and reproductive health (SRH) and empowerment in Sabarkantha district, Gujarat. Following launch of RKSK program by GOI in early 2014, the aim and objectives of the project were redesigned to focus on adolescents (11 to 18 years) and include three priority areas of RKSK - SRH, Nutrition

and Substance abuse. The intervention and control blocks were Talod and Idar respectively. The project intervention was evaluated through quasi-experimental design.

The project focussed on building capacity of frontline workers and local-level committees, demonstrating convergence through Adolescent Health Day (AHD) implementation, and developing methodologies and guidelines for effective planning and implementation of adolescent health programs. CHETNA implemented the health intervention and IIPHG provided technical support for development and implementation of convergence strategy, and research support for project evaluation.

A formative research was conducted in 2013 to gain insights into health concerns and needs of adolescents, and barriers to access and utilization of existing SRH programs. Findings of the formative research indicated the following:

1. Limited outreach of existing programs,
2. Lack of convergence between different adolescent health programs,
3. Need for promoting greater community involvement,
4. Neglect of issues like anaemia and substance abuse,
5. Need for mobilizing out-of-school adolescents,
6. Lack of safe spaces for adolescents to interact,
7. Lack of life skill education and career counselling , and
8. Non-functional Adolescent Friendly Health Clinics (AFHCs) in Talod block.

A baseline survey was conducted following the formative research to attain a reference for the final evaluation of intervention activities. The baseline survey showed that:

- There are no programs focussing on out-of school boys,
- Poor care-seeking behaviour for menstrual disorders and urinary tract infections(UTIs) among females,
- Poor outreach activities of AFHC resulted in low awareness and utilization,
- High prevalence of tobacco consumption among adolescent boys,
- Need to engage with parents, school teachers, Accredited Social Health Activists (ASHAs), Anganwadi workers (AWWs) and members of Village, Health Sanitation and Nutrition Committee (VHSNC).

The findings of the formative research and baseline survey were utilized for designing comprehensive adolescent health and empowerment program. The intervention implemented by CHETNA focused on (i) building capacities of frontline workers and local-level committees, for strengthening service delivery and monitoring implementation of services, and (ii) promoting convergence strategy for effective implementation of adolescent health programs in Talod block.

A total of 23 training programs were conducted with 760 participants, which included ASHAs, AWWs, school teachers, multipurpose health workers (MPHWs), Cluster Resource Coordinators (CRCs,) VHSNC members, *preraks* and peer educators. The trainings focused on providing information on adolescent health and development, nutrition, SRH, substance abuse and existing government programs for adolescents. Pre-training and post-training assessment of ASHAs, AWWs and *preraks* indicated an overall increase in knowledge on adolescent health and related issues. Following discussions with state-level and district-level government officials, organization of Adolescent Health Day (AHD), which is an important component of RSKS program, was decided for demonstrating convergence. CHETNA therefore organized 175 Adolescent Health Days in close collaboration with the Department of Health and Family Welfare (DHFV), the Women and Child Health Department (WCDD) and the education department, in all the 72 villages of Talod block, reaching out to 80% adolescents. Additionally, field-level convergence was also planned to be demonstrated through *preraks*, however due to limitations in state funding this could not be pursued.

Process documentation of the AHDs implemented by CHETNA showed that lack of defined frameworks for execution of AHD had led to many technical and non-technical issues during execution of AHD. Hence, at the request of district officials IIPHG developed a successful and sustainable AHD model which was implemented by the health department, with support from ICDS and education department, in 16 villages in Talod block. In the proposed execution framework, the entire AHD activity was planned and conducted in three phases:

1. Pre-AHD to assess the preparedness,
2. During AHD to evaluate and document the process and
3. Post-AHD to evaluate follow-up actions taken by system.

Building consensus for convergence approach with representatives of different government departments was crucial for formulation of the convergence strategy. State-level convergence was planned at organization /system level between DHFW, WCDD and education department, for planning, implementation and monitoring of adolescent health programs. District-level and block-level convergence committees were formed and institutionalised under the chairmanship of District Development Officer (DDO), with

clear roles and responsibilities, composition, and terms of reference (TOR). Based on the projects experience, a framework is also proposed for developing effective convergence.

Following the intervention and implementation of model AHDs, an endline survey was conducted in the intervention block and control blocks in 2016 for evaluating the intervention impact. Overall awareness regarding anaemia was found to be low in both blocks, however there was significant increase in knowledge among boys in intervention block (IB) when compared to control block (CB). In menstrual hygiene practices, use of readymade cloth was reduced by 16% among out-of-school adolescent girls and by 21.3% among school-going adolescent girls in IB. Although, practice of reusing same cloth for next time was found to be high in IB, there was moderation in reuse of the cloth for multiple cycles.

Survey findings also indicated improvement in knowledge on STD and HIV/AIDS in IB. Boys had significantly more correct information and knowledge about STDs and HIV than girls in both the blocks. Out-of-school girls (15-18 years), had comparatively poor knowledge about STDs and HIV. Awareness about contraceptives among boys was also more in IB. Overall addiction to tobacco was more among adolescent boys. Increased substance abuse among school-going boys (11-14 years) and adolescent girls was also documented in endline survey suggesting their vulnerability to addiction.

Documentation of good practices and case studies on selected components of RKSK was also undertaken in the project evaluation phase, to promote shared learning and assist in effective planning and roll-out of RKSK in the state. As the two AFHCs in the IB were found to be non-functional, IIPHG documented AFHC implementation in Meghalaya, as the state has high teenage pregnancy rates and AFHC implementation showed promising results. Further, limited evidence on two other thematic areas (mental health and non-communicable diseases) of RKSK, suggested the need for documentation of risk for developing mental health disorders and prevalence of risk factors for non-communicable diseases (NCDs) among adolescents, to support RKSK program planning and service delivery. Hence documentation of these risks among school-going adolescents in Sabarkantha district was also undertaken. Overall, the project outcomes included the following:

- Increase in knowledge and skills of frontline workers
- Increased utilization of health programs by adolescents
- Demonstration of effective convergence strategy
- Tools and manuals for training of frontline workers and local committees
- Creating tools and manuals for planning and monitoring convergence

The project played an important role in creating a positive environment in the state, district and block for implementation of adolescent health programs. The project also brought about the following important changes in state program implementation:

- Demonstrated convergence and model AHD implementation under RSKK program,
- Helped in capacity building of health and education government functionaries,
- Influenced diagnostic methodology for haemoglobin estimation,
- Influenced research tool used for identifying risk for mental health problems, and
- Increased stakeholder engagement, such as VHSNC members, in promoting adolescent health

Some of the lessons learned for making RSKK more effective includes need for:

- Increased engagement with parents and community for promoting community monitoring and increasing outreach,
- Periodic refresher training and mentoring of frontline workers to sustain knowledge and practice,
- Promoting convergence between the three state departments (DHFV, WCCD and education department) for effectively implementing adolescent programs (RSK and RSKK) and participation of school teachers in implementing adolescent health programs,
- Effective implementation of adolescent friendly services through AFHS,
- Standardization of body mass index (BMI) measurements for adolescents in India
- Increasing awareness on NCDs and mental health, and
- Expanding coverage to address unmet needs of 19 to 24 years cohort.

Chapter 1: Introduction to Adolescent Health

Deepak Saxena and Smitha C Parambath

Some of the key issues regarding adolescent health include disparities in access to health care, lack of information, unmet needs for nutrition, SRH, substance abuse and mental health problems, lack of age-specific and gender-specific data, and vulnerability of adolescent girls to violence and abuse. Promoting strategies that address these issues through increased participation of adolescents is critical for achieving better health outcomes and empowerment of adolescents. A number of programs are being implemented by different government departments for addressing the multiple needs of this group; however evidence shows that there is large unmet need for promotive, preventive and curative health services among adolescents. While government programs recognize the need for convergent action, they often work in isolation of each other and therefore, there is a fragmented approach towards planning and delivering services for adolescents, resulting in very limited outreach.

Background

With around 1.2 billion adolescents (10 to 19 years of age) in the world, this group has enormous socio-economic and health implications. (UNICEF 2011) Road traffic accidents, respiratory infections, complications during childbirth, diarrhoeal diseases, and self-harm, etc. are some of the main causes for morbidity and mortality among adolescents. (WHO 2018) In India adolescents account for 21% and young people (10 to 24 years of age) account for 31% of the total population. *‘Adolescence is defined as a transition phase from childhood to adulthood which is characterised by physical, psychological and behavioural changes’* (WHO). While *‘adolescents’* comprise of the 10 to 19 years age group, they are not a homogenous group. Based on their developmental needs, adolescents are divided further into the following two categories:

- Adolescents between 10 and 14 years
- Adolescents between 15 and 19 years

Gender, education (school-going or non-school-going), marital status (married or unmarried), employment status and residency status (urban or rural) adds to the diversities observed among adolescents. Prioritising the multiple needs of adolescents and influencing their health-seeking behaviour will have positive impact on their lives, and support India’s commitment in achieving the Sustainable Development Goals (SDGs).

India ranks 125 out of 159 countries in the Gender Inequality Index as per the Human Development Report. (UNDP 2016) An adverse sex ratio (940 females to 1000 males) is indicative of gender discrimination in the country. (Census 2011) Poor nutrition, food insecurity and gender discrimination has a negative impact on growth and development of adolescents. In India 41.9% adolescent girls and 44.8% adolescent boys, in the 15 to 19 age group, are underweight with a body mass index less than 18.5 kg /m². (NFHS 4)

Anaemia during adolescence also affects growth and development, and increases risk of infections. 54% adolescent girls and 29.2% adolescent boys in the 15 to 19 years age group are anaemic. (NFHS 4) Anaemia in adolescent girls also increases the risk of complications in pregnancy, low birth weight children, maternal and infant mortality.

Further, as per NFHS 4 data 27% women of 20 to 24 age group are married before 18 years of age. Teenage marriage may result in dropping out of school, early age of pregnancy, and complications during pregnancy and child birth. Among adolescent girls aged 15 to 19 years, 8% had begun child bearing, 5% had live-birth and 3% were pregnant with first child. (NFHS 4) Use of contraception is low as NFHS 4 data shows that 22% married women (15 to 24 years) have unmet needs for family planning.

Menstrual hygiene management is important for adolescent girls to stay in school and promote good health. Around 57% adolescent girls aged 15 to 19 years and women aged 20 to 24 years use hygienic method for menstrual protection. (NFHS 4) There is limited data on sexual behaviours of adolescent boys and girls in India. However there is increasing evidence from studies conducted in various parts of the country that some adolescents engage in pre-marital sex. Lack of information and limited access to contraceptives are some of the reasons for low contraceptive use among adolescents.

HIV prevalence in adults in India is at 0.26 percent. 87.4 percent of the HIV cases in India are transmitted through unsafe sexual practices. (MoHFW, NACO 2015) HIV prevalence among young people is 0.1%, and only around 18.5% adolescent girls and 28.2% adolescent boys aged 15 to 19 years have comprehensive knowledge of HIV and AIDS. (NFHS 4)

Teenage marriages, low economic status and poverty increase the vulnerability of adolescent girls to violence. Violence and sexual abuse of adolescent girls increases their risk of unwanted pregnancy and HIV. 2.8% adolescent girls aged 15 to 19 years and 4.6% women aged 20 to 24 years had experienced sexual violence. Further, 17% adolescent girls aged 15 to 19 years and 24.8% women aged 20 to 24 years had ever experienced physical violence since 15 years of age. (NFHS 4)

Experimenting high risk behaviours such as tobacco and alcohol use also occurs during adolescence. The Global Youth Tobacco Survey 2009 reported 14.6% prevalence of tobacco use among 13 to 15 years adolescents in India. Peer influence is one of the factors that contribute to initiation of tobacco use and alcohol consumption among adolescents. 18.5% adolescent boys and 1.6% adolescent girls aged 15 to 19 years use tobacco, and 0.5% adolescent girls and 8.9% adolescent boys aged 15 to 19 years consume alcohol. (NFHS 4)

Adolescents are also vulnerable to developing mental health problems. Early identification and intervention is important for addressing mental health problems. Poverty and unemployment are some of the risk factors for developing mental health

problems. Stigma towards mental health problems, and limited information and services, contribute to limited access. The prevalence of mental health disorders among 13 to 17 years adolescents is 7.3% as per the National Mental Health Survey 2015-2016.

Government Programs

The rights of adolescents to protect themselves from HIV and AIDS and other illnesses were recognized by World Health Organization (WHO) in the year 2000. Subsequently, a global consultation on adolescent friendly health services was organized by WHO which suggested each country to develop health programs addressing the multiple health needs of adolescents. In India, the Reproductive and Child Health (RCH) program was launched by the Government of India (GOI) in 1997 for reducing infant, child and maternal mortality. The National Rural Health Mission (NRHM) was launched in 2005 by the Ministry of Health and Family Welfare, (GOI) to provide equitable and quality health services to the rural population. Reproductive Maternal New-born Child and Adolescent Health (RMNCH+A), is an important component of NRHM.

Recognizing the increasing needs of adolescents, the national and state governments initiated various programs under RCH and RMNCH+A at different time periods. Adolescent Reproductive and Sexual Health (ARSH) is an important component of GOI's RCH-II programme which aims to reduce Infant Mortality Rate (IMR), Maternal Mortality Rate (MMR) and Total Fertility Rate (TFR). The ARSH program aims to address health needs of adolescents, delay age at marriage, and reduce teenage pregnancy and unsafe sexual behaviour. It also aims to provide menstrual hygiene promotion, counselling and access to SRH services through Adolescent Friendly Health Clinics (AFHCs). The Government of Gujarat (GOG) is implementing many health programs for the adolescent age group 10 to 18 years as listed in table 1.1.

Table 1.1: Various government programs implemented for adolescent age group

Program Name	Year of initiation	Target group	Focus area	Govt. dept.
School Health Program (SHP)	1997	School going children	Screening and health check-ups	DHFW
ARSH	2007	Adolescent boys and girls	Preventive, promotive and curative RSH services	DHFW
Mamta Taruni Abhiyan (MTA)	2010	Out-of-school adolescent girls	Nutrition, health care and counselling	DHFW
Menstrual Hygiene program (MHP)	2011	12 years and above adolescent girls	Menstrual hygiene and practices	DHFW
Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (RGSEAG) – SABALA	2011	Out-of-school adolescent girls	Nutrition, health care, information, counselling and life skills	WCDD
Weekly Iron Folic Acid Supplementation (WIFS)	2012	School-going adolescent boys and girls	Address anaemia through IFA and de-worming, information and counselling	DHFW
Rashtriya Kishor Swasthya Karyakram (RKSK)	2014	Adolescents girls and boys	Nutrition, sexual and reproductive health, mental health, injuries and violence, substance abuse &NCD	DHFW

The RKSK program was launched by the GOI within six months of initiation of this project. The RKSK program expanded the scope of adolescent health programs in India, which was earlier limited to nutrition and SRH. Taking into consideration the multiple unmet needs of adolescents, the RKSK program aimed to improve adolescent health through facility-based and community-based interventions. It advocated convergence with various departments and used strategies to promote health. The program included six thematic areas:

1. Nutrition,
2. Sexual and reproductive health,
3. Mental health,
4. Injuries and violence,
5. Substance abuse and
6. Non-communicable diseases

Despite number of programs implemented by different government departments, evidence shows that there is large unmet need for promotive, preventive and curative health services for adolescents in the country. The programs often work in isolation of each other and therefore, there is a fragmented approach towards creating and delivering services for adolescents. Gaps in service delivery can also be inferred from the NFHS 4 India and Gujarat data on adolescent and young people (refer table 1.2 for Gujarat data).

Table 1.2: Health indicators for adolescents and young people in Gujarat (NFHS 4)

S.No.	Indicator for the population	%
1	Women 20-24 years who were married before 18 years	24.9
2	Men 25-29 years who were married before 21 years	28.4
3	Women 15-19 years who were already mothers or pregnant with first child at the time of the survey	7.0
4	Women 15-19 years who use contraceptives	14.0
5	Married women 15-19 years with unmet need for family planning	32.5
6	Women 15-19 years whose Body Mass Index (BMI) is below normal (BMI < 18.5 kg/m ²)	49.6
7	Women 15-19 years who were overweight or obese (BMI ≥ 25.0 kg/m ²)	5.2
8	Men aged 15-19 years whose Body Mass Index (BMI) is below normal (BMI < 18.5 kg/m ²)	52.5
9	Men 15-19 years who were overweight or obese (BMI ≥ 25.0 kg/m ²)	6.4
10	Women 15-19 years who were anaemic (<12.0 g/dl)	56.5
11	Men 15-19 years who were anaemic (<13.0 g/dl)	31.9
12	Women 15-24 years who have comprehensive knowledge of HIV/AIDS	20.0
13	Men 15-24 years who have comprehensive knowledge of HIV/AIDS	31.5
14	Women 15-24 years who use hygienic methods of protection during menstrual period	60.3

Challenges faced by Health Programs for Adolescents and Young People

Programs that are implemented for improving adolescent health face many challenges such as:

- Increasing access, coverage, outreach and utilization of services;
- Promoting community involvement to improve outreach;

- Creating linkages with other programs to increase scope of services;
- Developing effective IEC (Information Education and Communication) strategy and materials;
- Increasing access to health products such as sanitary pads and contraceptives;
- Addressing issues such as anaemia, substance abuse (tobacco and alcohol), counselling and life skills; and
- Enhancing sustainability of programs.

Supporting Evidences

With support from the John D. and Catherine T. MacArthur Foundation, PHFI created an inventory of innovations on maternal and new-born health (Satia et al, 2014). The resulting directory of innovations had an inventory of 218 innovations. The directory was classified by the route of the impact that each innovation had on maternal health and new-born health. The innovations in the inventory were divided into the following:

- Direct,
- Indirect,
- Distal,
- Crosscutting.

35 percent of the innovations addressed indirect causes of maternal and new-born mortality. These included family planning, community organization, monitoring and evaluation, and outreach camps, etc.

19 percent innovations which were categorized under distal factor for maternal and new-born mortality were Adolescent Reproductive and Sexual Health (ARSH), Behaviour Change Communication (BCC) and Policy and Advocacy related innovations.

One finding from the study (Satia et al, 2014) was that the reach and coverage of youth friendly health services (YFHS) was limited. This suggests that maternal and new born care cannot be significantly improved unless young people's sexual and reproductive health programs were strengthened.

Convergence: A Possible Way Forward

The NRHM framework for implementation document recognises the importance of convergent action and seeks to adopt a convergence approach for interventions under district health action plans. However, programs have largely continued to function with a fragmented approach. This was also reiterated in NRHM review undertaken in 2011, which highlighted that often Village Health and Nutrition Day (VHND) observed in a

village with an aim to provide services through convergence approach remains limited to an immunization session. (Planning Commission, 2011)

The Planning Commission had also established a working group to provide inputs for reviewing the effectiveness of convergence between policies, programs and schemes relating to women, children and nutrition. This working group in its report said that, *“efficient, coordinated and well-targeted approaches bring about positive changes in maternal mortality and child malnutrition. Since there are a number of causative factors that contribute to these outcomes, a well-coordinated approach that brings health, nutrition, gender and education sectors to work together achieves better results”*. The twelfth five-year plan document also reiterates the need to promote convergence at the level of implementation to prevent duplication and create synergies for improving health outcomes. (Planning Commission, 2013)

Further, convergence within health department and with other departments is mentioned as a key to success in implementing RKSK. Possible areas of convergence with other departments such as Education, Integrated Child Development Services (ICDS), WCD, Youth Affairs and Sports, and Social Welfare have also been listed in RKSK guidelines. Within the health department there is need for convergence across Village Health Nutrition Day (VHND), Mobile Medical Unit (MMU) and RBSK programs. RKSK guidelines have also suggested forming convergence committee at state and district level for effective implementation of RKSK.

References

Census 2011, Sex ratio in India, Population Census 2011. <https://www.census2011.co.in/sexratio.php> Accessed 5 July 2018

MoHFW Ministry of Health and Family Welfare (2015), India HIV estimations 2015, Technical Report, NACO and NIMS 2015

MoHFW Ministry of Health and Family Welfare (2015-16), National Mental Health Survey of India 2015-16, National Institute of Mental Health and Neuro Sciences Bangalore

NFHS 4, Ministry of Health and Family Welfare (2015-16), National Family Health Survey NFHS 4 (2015-16) India, Mumbai: International Institute for Population Sciences

NFHS 4, Ministry of Health and Family Welfare (2015-16), National Family Health Survey NFHS 4 (2015-16) Gujarat, Mumbai: International Institute for Population Sciences

Planning Commission 2011, Evaluation study of National Rural Health Mission NRHM in 7 states, Government of India, New Delhi

Planning Commission, 2013, Twelfth year five year plan (2012-2017), Government of India, Sage Publications

Satia J, Misra M, Arora R and Neogi S (eds), Innovations in maternal health: case studies from India, 2014, Sage Publications

UNDP 2016, Human Development Report 2016, UNDP. http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf Accessed 5 July 2018

UNICEF 2011, State of the worlds children 2011, Adolescence An age of opportunity. https://www.unicef.org/adolescence/files/SOWC_2011_Main_Report_EN_02092011.pdf Accessed 20 June 2018

WHO, Adolescent development, Maternal, Newborn Child and Adolescent Health. http://www.who.int/maternal_child_adolescent/topics/adolescence/development/en/ Accessed 20 June 2018

WHO 2009, India (Ages 13-15) Global Youth Tobacco Survey (GYTS) 2009. <http://www.who.int/fctc/reporting/Annexoneindia.pdf> Accessed 5 July 2018

WHO 2018, Factsheets, Adolescents Health risks and solutions. <http://www.who.int/news-room/fact-sheets/detail/adolescents-health-risks-and-solutions> Accessed 5 July 2018

Chapter 2: Project Evolution and Overview

Deepak Saxena

IIPHG and CHETNA partnered in 2013 to work on a project aimed at promoting SRH and empowerment of young people (11 to 24 years) in Sabarkantha district, Gujarat, funded by the John D. and Catherine T. MacArthur Foundation. Based on socio-economic profile and operational feasibility the intervention and control blocks were finalized as Talod and Idar block, respectively. Following the launch of RKSK program by GOI in early 2014, the aim and objectives of the project were redesigned to focus on adolescents (11 to 18 years) and include the three priority areas of RKSK i.e. SRH, nutrition and substance abuse. The objectives of the project included capacity building of frontline workers and local-level committees, demonstration of convergence for Adolescent Health Day (AHD) implementation, and developing methodologies and guidelines for effective planning and implementation of adolescent health programs. The project intervention would be evaluated through quasi-experimental design. Case study documentation on successful AFHC implementation, and vulnerabilities among school-going adolescents to develop NCDs and mental health problems, was also undertaken in the project evaluation phase, to assist in the effective implementation of RKSK in the state.

Project Evolution

Although a large number of programs are being implemented for adolescents, their coverage is limited and the impact has not been carefully evaluated. While the government has often emphasized on convergence, the programs have largely continued to function in silos, with dilution of results compared to what could have been achieved if synergies accruing from their operations had been realized. This has resulted in increasing discussions on need for demonstrating comprehensive health program that improves health and empowers adolescents and young people.

The Centre for Health Education Training and Nutrition Awareness (CHETNA) and Indian Institute of Public Health, Gandhinagar (IIPHG) partnered in 2013, to work on a three-year project, funded by the MacArthur Foundation, for improving SRH and enhancing empowerment of young people in the state of Gujarat. CHETNA, a non-governmental organization (NGO) established in 1984, works primarily on public health, in the states of Gujarat and Rajasthan. The organization has vast experience in implementing sexual and reproductive health programs for adolescents and young people. IIPHG was established in 2008 as India's first public health university, for strengthening health systems, through education, training and policy research. As part of the research initiatives, the institute has been undertaking projects to address health issues of all population segments, including adolescents and young people.

The Government of India (GOI) launched RKSK program in early 2014 to address the multiple health needs of adolescents (10 to 19 years). With changing programmatic scenario at the national and state level, CHETNA and IIPHG discussed the relevance of the project and possibilities for scaling up. After detailed discussions between project partners and other stakeholders i.e. the government and the MacArthur Foundation, the projects aim and objectives were redesigned to focus on adolescents 11 to 18 years of age and roll-out of RKSK with focus mainly on its three components viz. Nutrition, SRH and substance abuse in the intervention block. This would help showcase the implementation model which can then be replicated in other parts of the state and country. Refer figure 2.1 for schematic representation of project evolution through the three year project period, i.e. 2013 to 2016.

Alignment with Rashtriya Kishor Swasthya Karyakram (RKSK) framework

The Government of India's RKSK program for adolescents (10-19 years) focuses mainly on six thematic areas:- Nutrition, Substance abuse, Sexual and reproductive health, Mental health, Non-communicable diseases, and Injuries and violence. The concept of convergence and other activities proposed in this project largely matched with the RKSK program, however, the major difference was in the age group of the beneficiaries, which as per RKSK was 10 to 19 years.

Key features of Rashtriya Kishor Swasthya Karyakram (RKSK)

“Key principles of RKSK are adolescent participation and leadership, equity and inclusion, gender equity and strategic partnerships with other sectors and stakeholders. The program envisages enabling all adolescents in India to realize their full potential by making informed and responsible decisions related to their health and well-being, and by accessing services and support they require.

An important component of RKSK is to develop convergence amongst various ministries and stakeholders of different programs for adolescents. The program focuses on age groups 10-14 years and 15-19 years, males and females, urban and rural, school-going and out-of- school, married and unmarried, vulnerable and under-served.

The program strategies include (1) Community-based interventions i.e. Peer Education (PE), Quarterly Adolescent Health Day (AHD), WIFS and MHP (2) Facility-based interventions i.e. strengthening of Adolescent Friendly Health Clinics (3) Convergence i.e. within Health and Family Welfare (across programs such as Family Planning, Maternal Health, RBSK, National Aids Control Program, National Tobacco Control Program, National Mental Health Programme, NCDs Program, etc.), and with other departments – WCD (ICDS, Kishori Shakti Yojana, SABLA), Human Resource Development (Adolescence Education Program, Mid-Day Meal), Youth Affairs and Sports (Adolescent Empowerment Scheme, national Service Scheme, NYKS, NPYAD) (4) Social and Behaviour Change Communication with focus on inter-personal communication”.

(Ref: Operational Framework RKSK)

RKSK proposes seven critical components for monitoring results, based on health promotion and preventive care approaches. These are Coverage, Content, Communities, Clinics, Counselling, Communication and Convergence, otherwise referred to as the 7Cs. This project will therefore monitor results based on the 7Cs model suggested by RKSK.

Project Aim

Promote adolescent health and empowerment through improved access to information and quality health care services in the state of Gujarat.

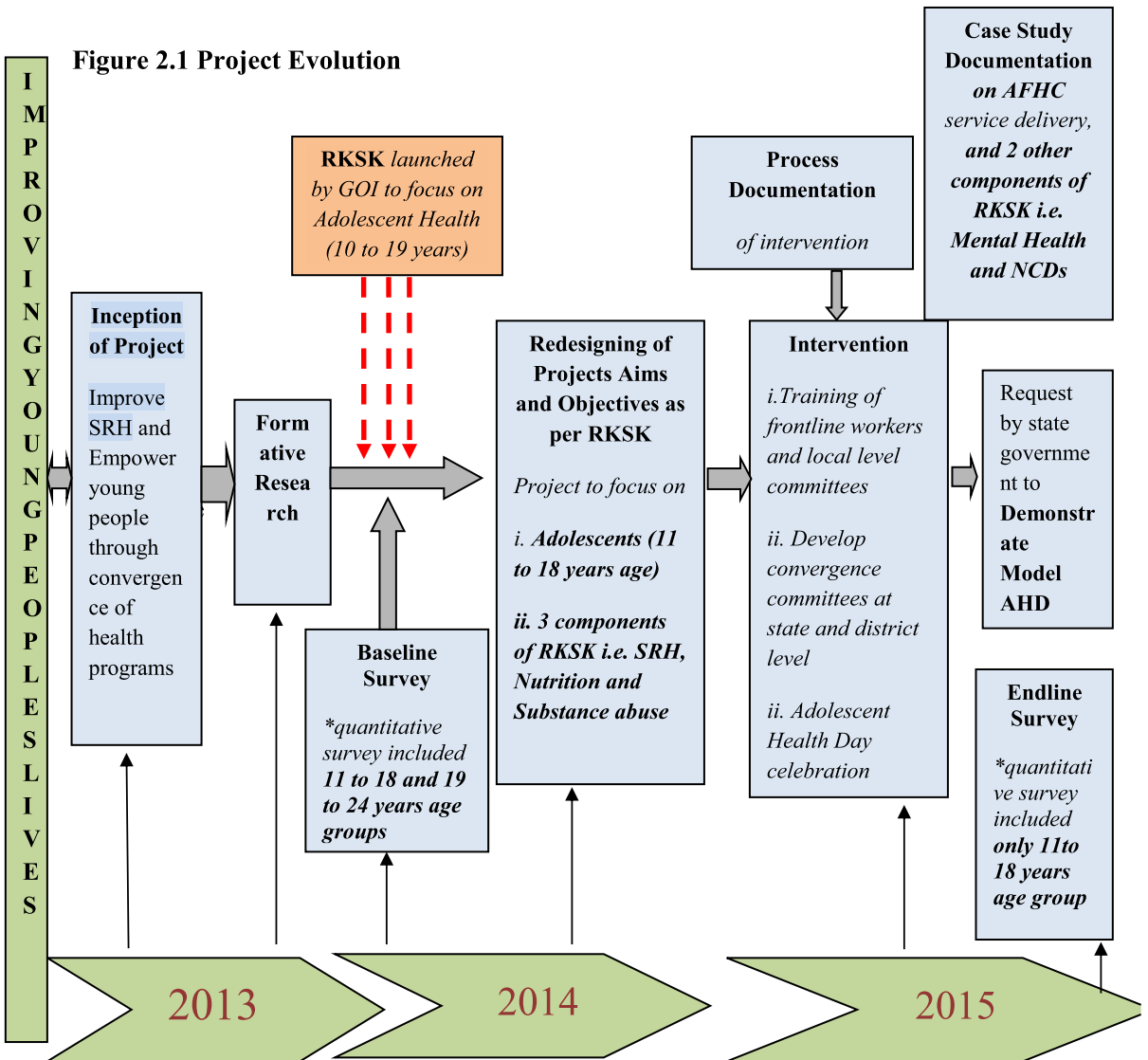
Project Objectives

The four main objectives of the project were:

- i. To build capacities of frontline workers for effective service delivery

- ii. To build capacities of local-level committees for strengthening community monitoring and improving program outreach
- iii. To demonstrate and promote convergence for effective implementation of adolescent health programs
- iv. To develop methodologies, tools and guidelines for effective program planning for adolescent health and empowerment

Figure 2.1 Project Evolution



Scope of Work

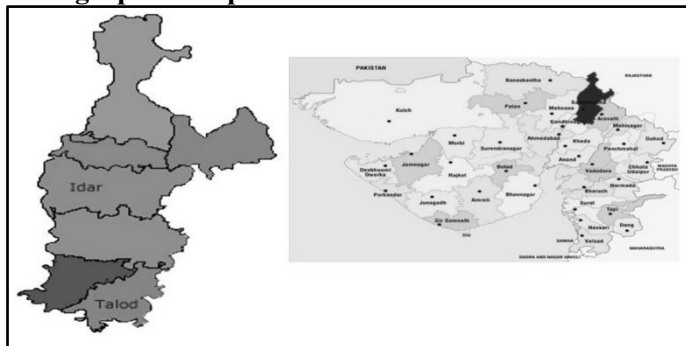
The project would work towards promoting adolescent health and empowerment by increasing access to (i) information on adolescent health and related health programs, and (ii) quality services for sexual and reproductive health, nutrition and substance abuse. Sabarkantha district was selected for project implementation based on socio-economic characteristics and health indicators which to some extent are lower than that of Gujarat as a whole (refer table 2.1).

Table 2.1: Socio-economic characteristics (Census 2011) and health indicators for Gujarat and Sabarkantha district (NFHS 4, 2015-2016)

S. No.	Indicators for the population	Gujarat %	S Dist %
1	Urban population	42.6	14.98
2	Literacy rate	78.03	75.79
3	Male literacy rate	85.75	86.44
4	Female literacy rate	69.68	64.9
5	Workers engaged in agricultural activity	49.6	64.5
6	Sex ratio	919	952
7	Women age 20-24 years married before age 18 years	24.9	37.0
8	Men age 25-29 years married before age 21 years	28.4	33.8
9	Women age 15-19 years who were already mothers or pregnant with first child at the time of the survey	7.0	6.0

Sabarkantha district has seven blocks. Based on operational feasibility and consultations with the government, Talod was made the intervention block and Idar as the control block. Refer figure 2.2 for geographical representation of intervention and control blocks in Sabarkantha district.

Figure 2.2: Geographical representation of intervention and control blocks.



The control block was matched with the intervention block for socio-economic characteristics as shown in table 2.2.

Table 2.2 Socio-economic characteristics for Talod and Idar blocks (2011 Census)

Variable	Talod	Idar
Total Population	154424	257904
Urban	11.8%	16.4%
Literacy rate	68.2%	70.6%
Male LR	77.9%	78.5%
Female LR	57.7%	62.2%
Primary Government Schools	124	117
School Enrolment	91%	94%
Population Density	332 KmS	302 KmS

Organizational Roles

It was mutually agreed that CHETNA would implement the health intervention and IIPHG would provide technical support for development and implementation of convergence strategy, and research support for evaluation of the quasi-experimental design. In order to accomplish the broad objectives of ‘developing a convergence model’ the project was divided into four phases, i.e. formative research, baseline survey, intervention phase, and evaluation and dissemination (refer table 2.3).

Table 2.3: Organizational roles and time line

Project		Coordinating Institution	Timeline
Phase 1	Formative research	IIPHG	2013
Phase 2	Baseline Survey	IIPHG	2013-2014
Phase 3	Intervention	<ul style="list-style-type: none"> ▪ Primarily by CHETNA ▪ IIPHG would provide technical support to develop convergence strategy and demonstrate AHD model, process documentation and program monitoring 	2014-2015
Phase 4	Endline survey and comparative analysis Case Study documentation Dissemination	IIPHG IIPHG IIPHG and CHETNA	2016

Project Description

The project seeks to build capacities and demonstrate convergence for adolescent health programs so as to increase outreach and access to quality services, minimize duplication, create demand for services and enhance program sustainability.

Objective 1

To build capacities of frontline workers for effective service delivery

Strategy 1: Training of frontline workers on adolescent health and related health programs

CHETNA conducted training of frontline workers of three government departments, i.e. WCDD, DHFW and Education Department (refer table 2.4) to improve their knowledge on adolescent health and related government health

programs. CHETNA’s experience has shown that frontline workers need to be trained systematically to ensure communication of standardized health and nutrition messages, provide counselling services and facilitate empowerment of adolescents.

Table 2.4: Frontline functionaries of various government departments

Functionary	Concerned Department
Anganwadi Worker (AWW)	Department of Women and Child Development (WCDD)
Female Health Worker (FHW)	Department of Health and Family Welfare (DHFV)
Accredited Social Health Activist (ASHA)	Department of Health and Family Welfare
Prerak	Department of Education and Literacy
School teacher	Department of Education and Literacy

Objective 2

To build capacities of local-level committees for strengthening community monitoring and improving outreach of government programs

Strategy 2: Training and empowerment of local-level committees to monitor outreach and quality of adolescent health programs

The Village Health Sanitation and Nutrition Committee (VHSNC) is a key component of NHM, which is formed in a village to strengthen community monitoring and take actions on health issues locally. Through this project, CHETNA planned to build capacities and empower VHSNC members to monitor implementation and outreach of adolescent health projects at village level. CHETNA would identify indicators of adolescent health programs that can be monitored by VHSNC members. For optimal representation of adolescents in local committees, CHETNA would also advocate inclusion of peer educators in VHSNCs.

Objective 3

To demonstrate and promote convergence for effective implementation of adolescent health programs

Two strategies were identified for achieving objective 3.

Strategy 3.1: Development and institutionalization of convergence strategy

IIPHG and CHETNA worked together to develop a convergence strategy in close collaboration with the Government of Gujarat (GOG). Meetings with representatives from different government departments (DHFV, WCDD and Education department) were conducted to better understand their views and need for convergence. On completion of formative research, a workshop was conducted with all stakeholders to present the findings, and discuss needs and scope for convergence. Convergence was planned at the level of both the state and community.

For state-level convergence, convergence committees would be formed and institutionalized at the level of the district and the block for better coordination between the different stakeholders (from DHFV, WCDD and Education Department) for effective implementation of RSKS at block level.

For community or village-level, convergence, *Preraks*, who are frontline workers of Education department, were to be used.

Strategy 3.2: Implementation and documentation of Adolescent Health Day

Adolescent Health Day (AHD) is one of the strategies for promoting adolescent health in RSKS program. Implementing AHD would be a starting point to demonstrate convergence and prove to be an important intervention in terms of providing services to school-going and out-of-school adolescent boys and girls. As per RSKS guidelines, AHD will be an independent mandatory activity conducted quarterly in addition to all the activities carried out for adolescents. The project would assist district and block authorities to have better understanding on convergence required for successful implementation of AHD.

Objective 4

To develop methodologies and guidelines for effective program planning for adolescent health and empowerment

Two strategies were identified for achieving objective 4.

Strategy 4.1: Conduct formative research for identifying health needs of adolescents

Formative research was conducted to gain insights into health concerns and needs of adolescents, and barriers to access and utilization of existing health programs.

Both qualitative and quantitative methods were utilized for data collection. In-depth interviews and focus group discussions were conducted with adolescents, parents, school teachers, community leaders, service providers and other stakeholders to assess health needs of adolescents, obtain views about existing services, and take suggestions on actions needed. Existing programs were also analysed in terms of access, utilization, outreach, and current status of convergence of services. The findings of the formative research provided inputs for planning comprehensive adolescent health and empowerment program. On completion of formative research, a workshop was conducted at block level to share findings and develop block-level plan.

Strategy 4.2: Process documentation of intervention

IIPHG undertook process documentation of the intervention to:

- Provide supportive supervision to CHETNA,
- Identify challenges in implementation,
- Provide recommendations and
- Develop guidelines for effective program planning and implementation.

Process documentation of training included pre-and-post training analysis of knowledge gained by the participants before and after the training. Process documentation of AHD implementation by CHETNA was based on various parameters such as logistics, staff availability, activity flow, counselling and referral services, information provided about AFHC services, and exit interview of participants.

Expected Outcomes and Policy Implications

The project input and activities were monitored through periodic progress reports. The project output comprised of training conducted for frontline workers and local community committees, convergence strategy demonstrated for AHD implementation, model AHDs implemented, comparative analysis report of baseline and endline evaluation, and supportive tools and manuals for program implementation. Therefore, success criteria for the project would be:

- Increase in knowledge and skills of frontline workers,
- Increased utilization of health programs by adolescents,
- Demonstration of effective convergence strategy,
- Tools and manuals for training of frontline workers and local community committees,
- Tools for planning and monitoring for enhanced convergence.

The project aimed to advance rights of adolescents and address a major policy issue on how to bring about effective convergence for creating significant impact on adolescent health and empowerment. It also planned to develop tools and

guidelines for planning for adolescent health and empowerment. The project would have direct impact on health outcomes of adolescents and young people in the intervention block, estimated to be around 26,000. Further, the project has scope for large-scale impact through scaling up of convergence model for AHD at state and national level.

Evaluation and Monitoring Plan

IIPHG and CHETNA participated in quarterly monitoring meetings to review program implementation, challenges and lessons from the field. Further, IIPHG planned to evaluate project impact through quasi-experimental design. This involved baseline survey of adolescents and young people, and endline survey of adolescents in the intervention block (Talod) and control block (Idar) in Sabarkantha district, to assess impact of intervention on health information, behaviour change and utilization of services among adolescents.

The project evaluation would have three components:

1. Interviews with adolescents and young people,
2. Focus group discussions with adolescents, and
3. Interviews with service providers and program officials

Functionality of convergence was also evaluated through interviews with program officials and measurement of performance indicators. The following case study documentations were studied:

- Good practices in AFHC implementation in Meghalaya,
- Prevalence of risk factors for NCDs among school-going adolescents, and,
- Identifying risks for developing mental health disorders among school-going adolescents in Sabarkantha district

Learnings from the case study documentations provided valuable inputs for effective roll-out of RKSK in the state of Gujarat.

References

Census of India 2011, Gujarat, District Census Handbook Sabarkantha, Series 25, Part XII B, Directorate of Census Operations, Gujarat

NFHS 4, MOHFW, Gujarat, National Family Health Survey NFHS 4 India (2015-2016), Mumbai: International Institute for Population Sciences

Rashtriya Kishor Swasthya Karyakram (RKSK) 2014, Operational framework, Translating strategy into program, Adolescent Health Division, MOHFW, Government of India

Chapter 3: Formative Research

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Formative research was conducted in 2013 to gain insights into health concerns and needs of adolescents, and barriers to access and utilization of existing sexual and reproductive health programs. Both qualitative and quantitative methods were utilized for data collection. Qualitative methods used were in-depth interviews, focus group discussions and case study documentation. Findings of the formative research indicate very limited outreach of existing programs, lack of convergence between the different adolescent health programs, need for promoting greater community involvement, neglect of issues like anaemia and substance abuse, need for mobilizing out-of-school adolescents, lack of safe spaces for adolescents to interact and lack of life skills education and career counselling . Moreover, AFHCs in Talod block were also found to be not functional. The findings of the formative research were utilized for designing comprehensive adolescent health and empowerment program.

Objectives of the formative research

- (i) To identify critical health concerns of adolescents
- (ii) To understand adolescents perception, access and coverage of various sexual and reproductive health programs
- (iii) To assess unmet needs of adolescents
- (iv) To undertake descriptive review and develop case studies of programs for adolescents in Gujarat, and identify ways to strengthen them

Methodology

Mix methods i.e. both qualitative and quantitative methods were used for the formative research (refer table 3.1). Qualitative methods included conducting in-depth interviews (IDIs), focus group discussions (FGDs), case study documentation, and desk review and observation of existing sexual and reproductive health programs. In-depth Interviews (IDIs) were conducted with service providers, program managers and gate keepers. focus group discussions (FGDs) were conducted with young people. Separate thematic interview guide was prepared for service providers, gate keepers and program managers. Similarly broad themes for FGDs based on age group and gender were also prepared. Quantitative data collection tool included a pre-tested questionnaire that was administered to adolescents. Ethical clearance for the study was taken from the Institutional Ethical Committee (IEC) at IIPHG.

Sample selection and data collection

Qualitative data collection through FGDs was stratified as per gender and schooling status. FGDs with school-going boys and girls were conducted at their respective schools, while FGDs with out-of-school adolescents and

married/unmarried young people were conducted at the nearest anganwadi or sub-centre.

Two AFHCs allotted to Sabarkantha district i.e.at the District hospital at Himmatnagar and Community Health Centre (CHC) at Talod were selected for case study documentation. Documentation of Mamta Taruni session was done at the Ujediya sub-centre which was selected based on operational feasibility. Additionally WIFS was observed at the higher secondary school of Aniyod village. Appropriate permission from state government, district and block officials, and school authorities was obtained before conducting the formative research.

Table 3.1: Research tools and sample frame used for data collection

Qualitative tools				Quantitative tool
In-depth Interviews (n=63)	Focus Group Discussions (n=16)	Case studies	Desk review and observation of existing programs	Structured questionnaire (n=112)
28 service providers 3 program managers 32 gate keepers	2 FGDs each with 11-18 years out-of-school boys and girls 2 FGDs each with 11-18 years school-going boys and girls 2 FGDs each with 19 to 24 years married males and females 2 FGDs each with 19 to 24 years unmarried males and females	2 AFHCs Preraks	MTA at a sub-centre WIFS at a secondary high school	Group of 28 young people from each of the four PHC catchment area

Notes: i) Service providers include ASHAs, AWWs, FHW, MPHWs, MOs, PEs and PPs.

ii) Program managers include State Program Officer ARSH, DPC, and BHO.

iii) Gatekeepers include parents, teachers and community leaders.

Talod block has four Primary Health Centres (PHCs) and one Community Health Centre (CHC). The PHCs are located in Kherol, Aniyod, Antroli and Punsari village whereas the CHC is situated at Talod. For qualitative data collection through In-depth interviews (IDIs), it was decided to conduct IDIs with service providers, program managers and gate keepers, i.e. one from each PHC/Sub-Centre village and other from non PHC/Sub-Centre village. Based on operational feasibility it was also decided that interviews would be conducted with 28 adolescents from each PHC catchment area, stratified on age and gender. Hence qualitative and quantitative responses were collected from eight villages as shown in figure 3.1.

IDIs with service providers and gate keepers were conducted at PHCs or SCs, and school teachers were interviewed at respective schools. IDIs with program managers i.e. Project Officer (PO) ARSH, District Program Coordinator (DPC) and Block Health Officer (BHO) were conducted at State Health office (Old Sachivalaya), Zilla Panchayat Office (Himmatnagar) and Block Health office in Talod, respectively.

The IDIs and FGDs were conducted till all the responses were saturated. Qualitative responses were audio recorded and transcribed in vernacular language, which was then translated in English. The transcript in English was revalidated with the audio and vernacular transcripts. Data was imported in Atlas-ti software, themes were generated and collective inference was drawn from these themes. Qualitative data was subjected to descriptive analysis and percentages were calculated using MS-Excel. Major findings from observation studies were reported as field visit notes.

Quantitative data was collected with pre-tested semi-close ended questionnaire. Both qualitative and quantitative responses were triangulated to frame strategies for collecting baseline data and in deciding the package of the intervention. Case studies of two AFHCs were also documented to get better insight into delivery and performance of programs focusing on adolescents. Descriptive review of MTA and WIFS programs using thematic check-list was also done.

Figure 3.1: Flowchart of sample selection

Qualitative data collection-IDs							
State: Program Officer ARSH (1)							
District: District Program Coordinator (1)							
Block/Taluka: Taluka Health Officer (1)							
PHC: Aniyod		PHC: Kherol		PHC: Antroli		PHC: Punsari	
PHC/SC village	Non PHC/SC village	PHC/SC village	Non-PHC/SC village	PHC/SC village	Non-PHC/SC village	PHC/SC village	Non-PHC/SC village
ASHA (1) AWW (1) FHW (1) MPHW (1) MO (1) PE (1)	Community Leader(CL) (1) Parents (2) Teachers (2) Prerak (2)	ASHA (1) AWW (1) FHW (1) MPHW (1) MO (1) PE (1)	Community Leader(CL) (1) Parents (2) Teachers (2) Prerak (2) PP (1)	ASHA (1) AWW (1) FHW (1) MPHW (1) MO (1) PE (1)	Community Leader(CL) (1) Parents (2) Teachers (2) Prerak (2)	ASHA (1) AWW (1) FHW (1) MPHW (1) MO (1) PE (1)	Community Leader(CL) (1) Parents (2) Teachers (2) Prerak (2) PP (1)
Qualitative data collection-FGDs							
PHC/SC village (1)	Non PHC/SC village (1)	PHC/SC village (1)	Non PHC/SC village(1)	PHC/SC village(1)	Non PHC/SC village(1)	PHC/SC village(1)	Non PHC/SC village(1)
11-18 school-going (Girls)	11-18 out-of-school (Girls)	11-18 out-of-school (Girls)	11-18 school-going (Girls)	11-18 school-going (Boys)	11-18 out-of-school (Boys)	11-18 out-of school (Boys)	11-18 school-going (Boys)
19-24 married (Female)	19-24 unmarried (Female)	19-24 unmarried (Female)	19-24 married (Female)	19-24 married (Male)	19-24 unmarried (Male)	19-24 unmarried (Male)	19-24 married (Male)
Quantitative data collection-questionnaire							
PHC/SC village	Non PHC/SC village	PHC/SC village	Non PHC/SC village	PHC/SC village	Non PHC/SC village	PHC/SC village	Non PHC/SC village
n=14*	n=14*	n=14*	n=14*	n=14*	n=14*	n=14*	n=14*

**Seven males and seven females of adolescent age group*

Observations from Qualitative Analysis

(1) In-depth Interviews

(1.1) In-depth Interviews with service providers

A total of 28 in-depth interviews (IDI) were conducted with service providers, such as MOs, PPs, MPHWs, FHWs, ASHAs, AWWs and PEs who are directly involved in delivering services to adolescents, to know their awareness about different programs for adolescents, coverage, difficulties faced, suggestions for improving existing situation, and their perceptions on possibility of convergence.

ASHAs and AWWs who deliver services at grassroot level are not fully aware about the names of programs but were aware of the activities to be carried out by them. Most of them were aware of only Mamata Taruni Abhiyan. Although they were not aware of the program per se, they were aware of the services to be delivered to adolescents. They felt overburdened with other programs and hence were devoting less time for adolescent health. Their main concerns in rendering optimal sexual and reproductive health services to adolescents were low salaries and low incentive-based remuneration. None of them were aware of referral services and were not practicing referrals. The most common narrated responsibility was to ensure that adolescent girls attend Mamata Divas (Health Day). They were also not aware of the importance and utility of outreach activities. It was difficult for them to comment on the concept of convergence between different programs for adolescents, most probably because they were not able to understand the meaning of convergence and its utility, and hence couldn't give any suggestions.

FHWs were aware of names of various programs, services, and their roles and responsibilities but felt overburdened with implementation of many programs. They too were not providing any referral services. The main difficulty was that girls shy away when talking about SRH. The suggestions and views of FHWs on convergence were constructive. They felt convergence would improve co-ordination and quality of work for adolescents.

Peer educators (PEs) in Mamata Taruni Abhiyaan (MTA) were not very active. They are under-utilized as per their capabilities, as they are only involved in ensuring that adolescent girls attend MTA program. They were not aware of the program under which they were appointed, or about any incentive. They felt the community was non-responsive and girls were reluctant to attend the sessions regularly.

MPHWs felt that adolescent programs were their least priority. As their main responsibility was to control malaria and TB, for them Malaria and Revised

National Tuberculosis Control Program (RNTCP) related work was their main priority. They were aware of the programs for adolescents, but they limit themselves only to helping FHWs in maintaining stock and material. They also felt that participation in ARSH related programs is very low. One of the reasons given for poor coverage of programs related to adolescent boys was poor IEC. They felt that gender sensitivity was a big issue and they did not have the option for talking with adolescent girls on ARSH related issues.

Medical officers (MOs) were aware of the names of programs and services. They were involved in most of the programs either for service delivery (as in School Health Program) or supervision(as in MTA). However, they are mainly providing services from PHCs and hardly do cross referral to higher facilities. They were optimistic on convergence approach and also said that it would improve work with good co-ordination.

To summarize, one of the main reasons for lack of awareness on programs for adolescents is that it has very low priority among all cadres in the public health system. There is need for training and providing orientation to the health functionaries so that they identify themselves as part of the program. Further, no referral or cross referral was reported at any level.

(1.2)In-depth interviews with gatekeepers:

Other gatekeepers like parents, teachers, community leaders, and *preraks*, who are the first point of contact for adolescents, and are possibly their key informants were also included in IDI's. Efforts were made to generate their views, opinions, perception and attitude towards importance of adolescent health, awareness on various programs for adolescents, barriers to utilizing services, unmet needs, and suggestions to improve programs.

Most parents were not aware of the programs in which their children were involved. Most of them were not fully aware of the programs on ARSH and its services. They also do not interact with their children about the services they get. However, a few of them listed some benefits like IFA tablets and premixes that their children receive from school or AWC. Parents were not comfortable in discussing topics related to ARSH with their children; they preferred a professional who could address the issue whenever required.

Teachers are mainly involved in implementing one program, i.e. WIFS. They provide IFA tablets every Wednesday to children and sometimes provide deworming tablets. Very few of them provide some SRH and empowerment related education during their lectures. MOs visits school annually for health check-ups.

Although, community leaders are locally influential persons they are also not active in promoting ARSH issues, and are not directly involved in the promotion of adolescent health. They showed interest and assured that they will be available as and when required. On the topic of convergence, community leaders said it's a great idea but it needed proper co-ordination and implementation.

Preraks are not directly involved in programs related to ARSH. Their main work is to provide informal education to illiterate persons. They also visit schools and interact with school children but they neither discuss nor are required to discuss ARSH issues. Preraks were mostly involved in recreational activities. As there is no scope of referral in the programs they are involved, they don't practice referral.

To summarize, there is some potential in involving gatekeepers. However, service providers and the program needs to take some efforts in this direction through sensitizing them to ARSH related issues.

(1.3) In-depth interviews with program managers:

Three program managers, i.e. the Block Health Officer (BHO), the District Project Coordinator (DPC) and the State-level Project Officer (PO-ARSH) were also interviewed as they represent the nodal points for program delivery at block, district and state level. They were interviewed to understand administrative issues related to implementation of the program, and performance of programs for adolescents in Talod block, visions for individual programs and their views on convergence of programs.

The Block Health Officer (BHO) was fully aware of all programs for adolescents, services and reporting mechanisms. The BHO provides technical assistance and to the field staff mainly during review meetings for implementing programs. According to him, performance of the programs in Talod block was good, and efforts were made to further improve coverage and impact of programs. The BHO said participation by girls in Village Health and Nutrition Day (VHND) was an issue but it was sorted out by rescheduling the VHND timings according to girls' work timings. The BHO informed that convergence was required but more efforts were needed for its effective operationalization. The officer also suggested involving gatekeepers for implementing programs that might help improve their effectiveness.

The District Program Coordinator (DPC) was aware of the programs and services. The DPC said the main reasons for inadequate performance of ARSH programs were paucity of trained staff, poor health-seeking behaviour of community, and lack of co-ordination. Convergence was suggested as a possible method to improve impact of programs.

The Project Officer of ARSH programs was aware of the programs and services. The PO thought that the performance of ARSH programs was good. The main shortfalls were due to the poor awareness of programs and health-seeking behaviour of the community.

To summarize, BHO, DPC and PO-ARSH were well aware of the programs and its services. They said that program performance and coverage can be improved by strengthening co-ordination between different departments. All of them felt there was scope for improvement in the program and convergence could assist in increasing utilization of all programs. The merits and demerits of convergence mentioned by various stakeholders are as shown in table 3.2.

Table 3.2: Summary of merits and demerits of convergence as mentioned by stakeholders

Stakeholders	Merits of convergence	Demerits of convergence
Service providers	<ul style="list-style-type: none"> • Quality of work will improve • Co-ordination will increase • Time will be saved • All will get a chance to improve their knowledge 	None mentioned
Gatekeepers	<ul style="list-style-type: none"> • More young people can be covered • Knowledge will improve if all departments are ready to work together • If everyone comes on board together and deliver services with help of each other it will be beneficial to people because they will receive improved services 	<ul style="list-style-type: none"> • Time allocation and interference in each other's department can hinder quality of service • Problem will be time. If there are additional responsibilities then quality will be compromised • May not get time to coordinate with people from other departments
Program managers	<ul style="list-style-type: none"> • We can make more people aware about SRH • Time will be saved and patient footfall at the centre will increase • Burden on staff can be reduced and we will have standard guidelines 	<ul style="list-style-type: none"> • Coordination with education department will be great challenge • Problems of sharing information with other department • Duplication of work • Making grassroots-level workers understand the convergence strategy will be tough

(2) Focus group discussions

In Talod block, 16 FGDs stratified on gender and age were conducted. The objective was to understand gender-based needs of adolescents and young people. The stratification was based on age group 11 to 18 years, and school-going and non-school going status. The major themes included were awareness, utilization and barriers to utilization of available services, unmet needs and suggestions to improve program.

Most adolescent boys, both school-going and non-school-going, were not aware about the programs and services for adolescents. School-going boys were aware of WIFS (as they get IFA tablets from their schools) but unaware of AFHC clinic. Most adolescent boys were aware of sexual intercourse, masturbation, condoms, paid sex, pre-marital and extra-marital affairs. Their knowledge on unsafe sex was also fair. Most adolescent boys would contact peers and friends for issues pertaining to ARSH. Most school-going boys wanted to pursue further studies and get a job before they marry. Non-school-going boys who are also earning said that they will educate their children so that they can get better opportunities.

Most adolescent girls had concerns on freedom for mobility, particularly for education. They feared that they would not be allowed to pursue further studies (secondary and higher secondary school, or college) if facilities were not available in their own village. Limited access to accurate information on sexual and reproductive health was also a concern. Some concerns were with the limited freedom they had on issues such as when to have a child and choice to not to continue with pregnancy. Most adolescent out-of-school girls were aware of Mamata Taruni Abhiyaan (MTA). School-going adolescent girls were aware of both MTA and WIFS, as they get IFA tablets from schools. They also reportedly availed various services and benefits under these programs. They were not aware of the AFHC centre. According to adolescent girls, peers and friends were the most appropriate persons to talk on issues related to ARSH. Other preferred options were to have discussion with elder sister and sister-in-law. There was a fair reflection on female empowerment in terms of decision to marry and eve teasing.

To summarize, discussions with adolescent boys revealed poor awareness of programs available. They complained that most programs focus on females. The major source of information regarding SRH was friends and internet. The use of mobile was very common. Awareness of condom was high. A few of them stressed on need for information on reproductive health issues. Adolescent girls were aware of MTA. School-going adolescent girls were also aware of WIFS as they get IFA tablets from the schools. They also avail other services and benefits, such as nutrition supplements. None of the participants were aware of AFHC.

(3) Case studies, desk reviews and program observation

To get a better understanding of various programs related to adolescents and young people, we undertook case studies of AFHCs and desk review of MTA and WIFS programs. On the basis of available secondary data, we analysed the status of the program. A case study with "*prerak*" as a possible focal point identified for convergence was also carried out.

We inferred that coverage and utilization of AFHC was low as people are not aware of this centre. AFHC is not a priority due to which outreach and IEC activities for AFHC is very low, resulting in less patient footfall at AFHC. There is strong need to create awareness of AFHC and its importance. The staff meant for AFHC was often deputed elsewhere because the authorities neglected AFHC.

WIFS was reported to be running smoothly and children were given IFA tablets regularly. High coverage of WIFS was attributed to the push of school administrators for providing IFA tablets weekly and de-worming tablets bi-annually. A few schools provide IFA tablets only to girls while other schools provide tablets to both boys and girls. The teachers were focused only on ensuring that the students get the IFA tablets and to an extent comply by consuming it. They were not keen on taking up additional responsibilities for adolescent health programs as they feared it might consume time meant for teaching and other academic activities. Many students, however, are unaware of the IFA tablets and their benefits. There is therefore a need to provide health education and sensitize students on health issues. Proper training of school teachers is needed which will enable them to educate children on health and nutrition issues.

Mamata Taruni Abhiyan (MTA) is the only program which has provision for peer educators but it struggles to attract adolescents. Except IFA, other components of MTA like nutrition counselling, anthropometric measurement, and informal education on menstruation and menarche are not stressed upon. Although it is the only program under ARSH which runs well there is also need to improve services, enhance role of peer educators and motivate adolescent girls to attend sessions. Most of the out-of-school girls are busy in labour work and, therefore, avoid attending Mamata Taruni sessions.

National Literacy Mission Authority of India, under Ministry of Human Resource Development (MoHRD), identified 13 districts of Gujarat under "Sakshar Bharat Program" where female literacy rate is less than 50%. Sabarkantha district is one of the 13 districts included for this program. *Preraks* were appointed in September 2009. As per the program there should be two *preraks* (one male and one female) in each village. *Preraks* should be in the 15 to 35 years age group and should have studied PTC / BEd or graduation or intermediate. The *preraks* are to be involved in

literacy activities at a village and are to be paid a fixed salary of Rs. 2000/ month as per availability of grant.

Results of Quantitative Analysis

A purposive sample of 112 young people (56 male and 56 females) was included in the survey. In the formative study 54% males and 61% females were in the 11-18 years age group (either school-going or out-of-school), while 46% male and 39% females were in the 19-24 years age group (either married or unmarried). Among 11-18 years school-going participants, 76% were girls and 60% were boys. In the 19-24 years group, all females were married but only 15% males were married.

Among the females interviewed, about 46% were aware of various programs for young people, but only 39% of males were aware of such programs. Of the females who were aware of programs for young people, 31% knew about Mamata Taruni Abhiyan (all were out-of-school girls); 62% knew about WIFS program (all were school-going girls) and 8% knew about both the programs. Among males who were aware of programs for adolescents, none were aware of Mamata Taruni Abhiyan and 81% were aware about WIFS only, majority of who were school-going boys. None of those interviewed was aware of AFHC. Among those who were aware about WIFS and MTA, they were further asked questions on services that are provided under these programs. 72% of the boys felt that WIFS program was for providing IFA tablets to girls only as they are in need of it. However 28% felt that IFA tablets were required by both boys and girls. On inquiring with females about the reasons for providing IFA to girls, 77% were correctly aware that IFA tablets are given to combat anaemia.

Observations and Conclusion

The study shows that outreach of ARSH related programs is very limited in Talod block. While the programs are implemented to some extent they are not bringing about the required change. Based on the findings of the formative research the assessment of the three programs - WIFS, AFHC and MTA as per the 7Cs model of RKSY is presented below.

Table 3.3 Observations from formative research as per 7Cs model of RKSK

7 Cs	AFHC (10-19 years Male & Female)	WIFS (6-12 Std. Male & Female)	MTA (10-19 Non- School-Going Female)
Coverage	Poor	Good	Good
Content	Poor SRH & Nutrition absent	Focused only on IFA, No deworming	Focused only on nutrition, SRH Absent
Communities	No Out-reach activities	Not applicable	Good outreach with scope of improvement
Clinics	No dedicated space available	Not applicable	Provision of space & Time but not adhered to
Counselling	No separate counsellors available for AFHC	Untrained teachers for issues related to adolescents	Scope of Improvement
Communication	Absent	Absent	IEC & PE available
Convergence	Not existent	Not existent	Poor convergence

The descriptive reviews and formative research concluded that existing programs with special focus on adolescents and other programs with inbuilt adolescent health component need to be strengthened for a comprehensive approach to address health issues of adolescent girls and boys (both school-going and out-of-school). By comprehensive, we mean those that are designed on the understanding that adolescents have multiple needs that are mutually co-dependent and inseparable from each other. The other important issues that emerge from the formative research are:

- Despite a large number of programs implemented by different departments, evidence shows that they all lack convergence at a common point. There is a need for increasing access, coverage, outreach and utilization of young people's reproductive and sexual health services. The programs also often work in isolation of each other and therefore, there is a fragmented approach towards creating and delivering young people's services. Convergence of efforts undertaken by different programs would increase efficiency of services, improve quality, lower costs, minimize duplication, create demand for young people's health services and enhance sustainability of programs.
- It is very important for organizations to develop community buy in, as it is important to have community trust and support, especially when they want to access and target adolescents. Results from formative research suggests to engage with adolescents, it is essential to have community engagement (especially parents and family members) to gain credibility so that adolescents are able to participate in interventions and engage in the learning that is offered to them, unopposed. Community engagement is also strategic because the community can offer valuable resources to the program. The other stake holders who can critically assist in success of any program pertaining to adolescent are school teachers, community leaders and existing mechanism of service delivery like AWC, SC, PHC or even a tertiary care hospital in case of certain needs of adolescents, like treatment for sexual and reproductive issues.
- One of the important parameter of any adolescent health program is that the adolescent should meet, interact and discuss the issues pertaining to them. Peer-led adolescent education has been a mainstay of successful interventions in adolescent education. But this requires creating safe spaces and making them available for adolescents, where the adolescent can meet, be trained, engage and network with other adolescents. Safe spaces are more than the creation of physical structures; these are strategies through which adolescents have access to collective learning and sharing platforms and avenues, and where they feel comfortable enough to

articulate their voices. In India the group of adolescents who are in school (both boys and girls) have an opportunity to enjoy this space, however for out-of-school girls the safe space is AWC but for out-of-school boys there is no availability of safe spaces. In the recently envisaged RKSK only Adolescent Health Day provides such a space for this cohort.

- The AFHS centres included in the present study also were not as per envisaged by the program, it doesn't have dedicated space, counsellors, staff and strong commitment for providing adequate services. Issues like anaemia and substance are neglected. Most programs, even though involved in providing adolescent education often do not challenge structural issues and power, and often lack components like life skills and career counselling, which are also important unmet needs of adolescents. Hence skills development for challenging socially accepted roles and expectations around sexuality, fertility or work and career opportunities are notably missing.
- Adolescence is a unique stage where biological transitions from pre to post-puberty have significant effects on many aspects of girls' lives. However, most programs in India do not necessarily respond to these varying needs. A universal —one-size-fits-all” approach can dilute the very outcomes that interventions desire, however well executed they may be. The needs of school-going, out-of-school and married adolescent might be different from each other but the programs that are offered in India don't address these differential requirements.

Recommendations

Based on the findings of the formative research, recommendations were formulated for:

- Three specific programs (MTA, WIFS and AFHC) and
- Convergence strategy that can be adopted for improving access and coverage of adolescent health programs.

a) Program specific recommendations for MTA, WIFS and AFHC are as given below:

- MTA: Systematization of functioning of MTA by redistributing role and responsibility of staff. The program is reported to be running well but is also plagued by operational problems and role of peer educators is inadequately emphasized.

- WIFS: Incorporate health education to achieve better compliance. To provide a nodal teacher for health education which can help in enrichment of WIFS.
- AFHC: Conduct outreach activities to increase community awareness on services provided by AFHCs. Proper outreach with various modes of communication can solve the issue of low patient footfall. Providing adequate human resource, including counsellors to these centres. Improve services by training of staff.

b) Service delivery package is also developed (refer table 3.4) outlining the convergence strategies that are to be adopted, through sensitization of school teachers and coordination between education department (teachers, *preraks*), health staff (MOs) and existing program functionaries (ASHAs, AWWs)

Table 3.4: Proposed service delivery package

Indicators	Variables	Se nsi tiz ati on	Tea che rs	WI FS	AF HC	MT A	Pre rak	Conv erge nce	Spec ial atte ntio n to 20- 24 mar ried
Health care access, knowledge and coverage for Young Men / Young Females of age group 13-24 years									
I 1	Access to any services by Government and source	x	x				x	x	
I2	Scientific knowledge about Reproductive and sexual health/ SH/ conception /risk associated with early marriage				x	x	x	x	x
I 3	Access to Contraceptives				x	x			x
I 4	Information about Life Skills		x				x		
I 5	Awareness of HIV & STI, its transmission, methods of prevention		x		x	x	x	x	
I 6	Substance abuse and its harmful effects		x				x		
I 7	Maternal and child care (Pre and post-delivery care)								x
I 8	Need of institutional delivery								x
I 9	Immunization: Self and Child					x			x
I 10	Child care practices								x
Indicators	Variables	Se nsi tiz ati on	Tea che rs	WI FS	AF HC	MT A	Pre rak	Conv erge nce	Spec ial atte ntio n to 20- 24 mar ried

Health care attitudes and behaviour									
I 11	Source of Information								
I 12	Awareness of legal age of marriage, reason for early marriage (<18 years for girls and 21 years for boys), Own Age at marriage and age at first pregnancy					x	x		x
I 13	Use of contraception including Type of contraceptive in use, Decision for use of contraceptives					x			x
I 14	IFA use, its compliance and reason for poor/noncompliance		x	x		x	x	x	x
I 15	Menstrual History: Menarche, Menstrual hygiene practices Menstrual problem and Access to treatment for issues related to menstrual problem related treatment				x	x	x		
I 16	Information about RTI/STI and treatment seeking behaviour for RTI/STI and compliance to treatment				x	x			x
Indicators	Variables	Se nsi tiz ati on	Tea che r	WI FS	AF HC	MT A	Pre rak	Conv erge nce	Spec ial atte ntio n to 20- 24 mar ried
	Health outcomes								
I 17	Prevalence of Anaemia			x		x	x		x

I 18	Reported Prevalence of RTI and STI and access to treatment								
I 19	Contraceptive use					x			x
I 20	Optimal BMI		x			x	x		
I 21	Proportion of Institutional deliveries					x	x		x
I 22	Pregnancy outcomes and Birth weight								x
I 23	Program access and coverage	x						x	
I 24	Empowerment outcomes								
	Age at marriage, Choice in selection of marriage partner, Delay in first pregnancy		x				x		
I 25	Educational attainment		x				x		
I 26	Confidence level on selected life skills		x				x		
I 27	Gender views on women's empowerment		x				x		
I 28	Having their own accounts						x		
I 29	Certain amount of their own income is used as per their wish,						x		
I 30	Say no to unsafe sex				x	x			x

Chapter 4: Baseline Survey

Tapasvi Puwar, Poonam Trivedi and Shital Savaliya

The overall aim of the baseline survey was to attain a reference for the final evaluation of intervention activities. The objectives of the survey were to:

- *assess knowledge on SRH, nutrition and substance abuse,*
- *assess awareness and utilization of public health programs focused on improving adolescent health, and*
- *assess nutritional status and*
- *identify unmet SRH needs among adolescents.*

Quantitative and qualitative methods were used for data collection. The results from the baseline survey show that there is no formal program which focuses on out-of-school boys hence this cohort is lost and difficult to reach. Poor care-seeking behaviour for menstrual disorders and UTIs among females also needs to be addressed by sensitising mothers and health care workers. Poor outreach activities of AFHC have resulted in low awareness and utilization. High prevalence of tobacco consumption among adolescent boys indicates an urgent need for targeted intervention to bring about behaviour change. Schools need to organize health education sessions on SRH, nutrition, addiction, etc. for increasing awareness among adolescents. There is also a need to engage parents, school teachers, ASHAs, AWWs and members of VHSNC for increasing awareness about anaemia, promoting compliance to IFA tablets and identifying adolescents with anaemia.

The baseline survey was conducted in 2013 – 2014 with an objective to get a reference for documenting final evaluation of the intervention. The baseline evaluation had three components:

1. interview with young people,
2. focus group discussions with adolescents, and
3. interviews with service providers and program officials at district and block level.

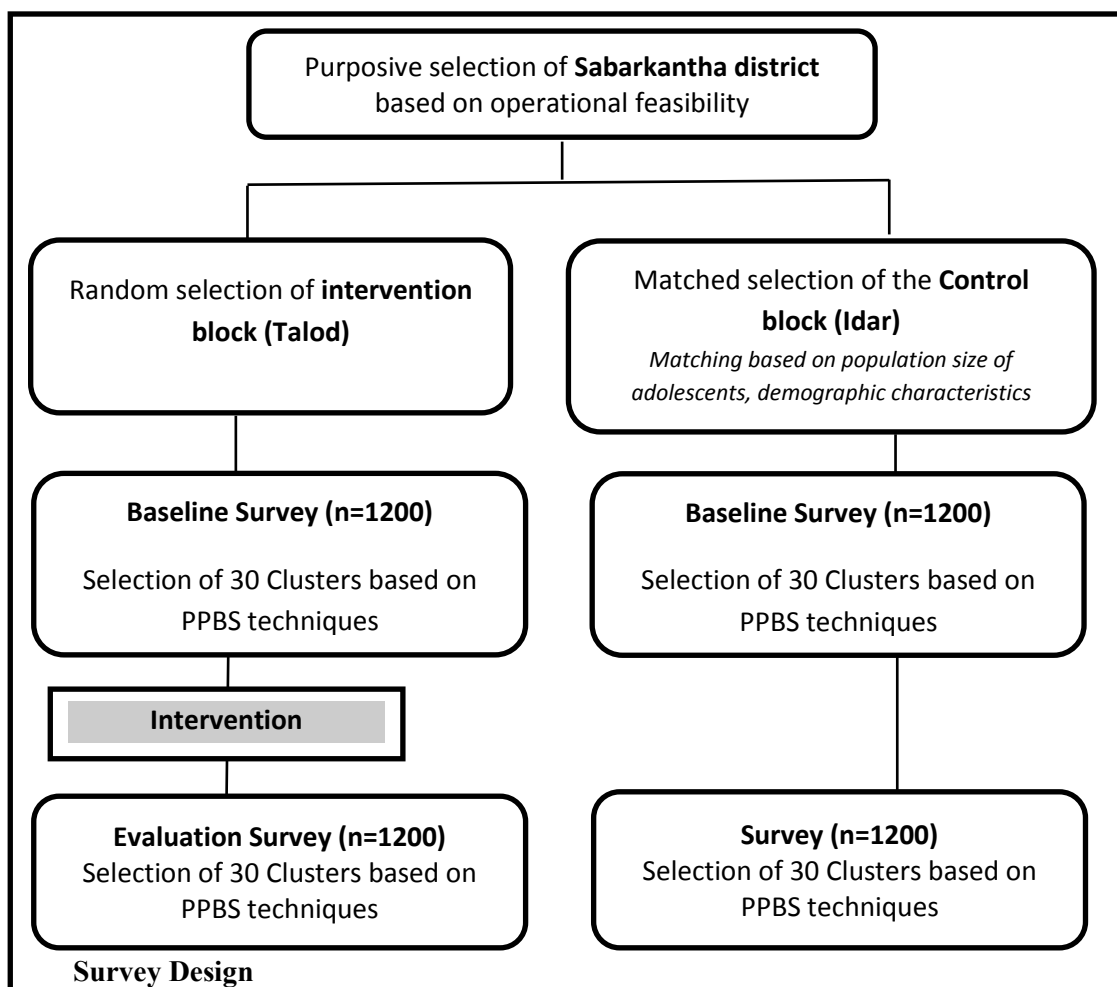
As the entire study was planned as a quasi-experimental design, there was an intervention block (Talod) and a control block (Idar). The control block was matched with the intervention block for various socio-economic and demographic characteristics such as literacy rates, proportion of adolescents, school enrolment and dropout rates, and religion. The proposed framework for evaluation is shown in figure 4.1.

Objectives of Baseline Survey

While the overall objective of the baseline survey was to get a reference for the final evaluation of the intervention activities, the specific objectives were:

1. To document knowledge on sexual and reproductive health issues, nutrition and substance abuse among adolescents
2. To assess awareness and utilization of various public health programs focused on improving health of adolescents
3. To assess nutritional status of adolescents
4. To identify unmet needs regarding sexual and reproductive health.

Figure 4.1: Proposed frame for evaluation



The study utilized both quantitative and qualitative methods. Quantitative data was collected using pre-tested semi-structured quantitative tool. The estimated sample size was 773, which was calculated based on an assumption of at least 10% increase in knowledge level of key indicators after the intervention. However, assuming a 20% non-response rate, the final sample size was 928. To ensure equal gender representation in the sampled population, it was decided to survey 464 adolescent girls and 464 adolescent boys. However, during the pilot testing the non-response rate was higher than expected hence the sample size was further adjusted to 1200 (male =600 and female=600).

Probability Proportional to Size techniques (PPS) was utilized to identify 30 clusters in Talod and in each cluster 20 males and 20 females were interviewed. The selected population was further stratified into different sub-groups according to their age group for better representation. As AFHC is located at CHC Talod, two additional clusters (wards) of Talod were also included. Hence the total sampling units were 32 clusters in each of the blocks.

The sampling frame used for baseline survey in intervention and control blocks is presented in table 4.1, along with stratification based on gender, school going, out-of-school, married and unmarried status.

Table 4.1: Sample frame for baseline survey

Age group (In Yrs.)	Talod block		Idar block	
	Female	Male	Female	Male
11-14 school-going	127	127	128	128
15 -18 school-going	128	128	128	128
15-18 non-school going	126	128	128	128
19-24 Unmarried	127	127	128	128
Married up to 24 years	124	128	128	128
Total	632	638	640	640

As explained in the second chapter on Project Evolution, the RKSK program that largely focuses on 10-19 years of age got functional only after the completion of the baseline survey which covered both 11 to 18 years and 19 to 24 years age group. Hence above table includes both 11 to 18 years and 19 to 24 years age group, and the observations presented below includes the entire study population between 11-24 years age.

Observations from the Baseline Survey

Quantitative Assessment

Observations from the baseline survey are presented below under following sub-headings: socio-demographic profile, nutrition status, menstrual hygiene practices, reproductive and sexual health, substance abuse, program awareness and utilization, and empowerment through life skills.

(i) Socio-demographic profile

Most participants in both intervention and control blocks were Hindu by religion (around 98.7% in Talod and 92.5% in Idar) and belonged to nuclear family (around 76.6% in Talod and Idar). Most boys and girls included in the baseline survey from both blocks had completed their primary education. Among non-school-going boys, highest school dropout rate was seen during the transition phase from secondary to higher secondary level, while in girls the dropout was highest from primary to secondary level. Among out-of-school boys, around 60% were working as labourers in Talod, compared to 37% in Idar. Out-of-school girls, majority were involved in household and agricultural-related activities in intervention block (around 99%) and control block (around 89%).

(ii) Nutritional Status

Anaemia

Anaemia is a major public health issue in India, especially among pregnant women and young children. As per the objective of the baseline survey, knowledge and awareness about anaemia was assessed. Knowledge of anaemia was found to be poor among both the genders (refer table 4.2). In the intervention block, 15 to 18 years school-going boys and girls had comparative knowledge about anaemia. Overall, among all the groups, 15-18 school-going adolescents had better knowledge about anaemia.

Table 4.2: Awareness about anaemia in intervention and control block

Age group (In Yrs.)	Talod (%)	Idar (%)
Girls		
11-14 school-going	20	7.8
15-18 school-going	31	18
15-18 non-school-going	21	7

Boys		
11-14 school-going	36	14.8
15-18 school-going	31	28.1
15-18 non- school-going	9	12.5

Among those who had knowledge of anaemia, most were able to narrate at least two symptoms of anaemia. Out of all possible symptoms of anaemia, pale face and vertigo were the most commonly reported symptoms. While most girls among all age groups considered poor nutrition as a major cause of anaemia, boys considered anaemia as a gender-specific problem and felt it is largely seen in females. Most respondents were unaware of gender / age specific-normal haemoglobin values.

Status of BMI: Underweight

Height and weight of all adolescents were measured to calculate their Body Mass Index (BMI) as proxy of their nutritional status (refer table 4.3). The intervention on nutrition was to focus only on providing knowledge about nutrition requirements in adolescence and its significance. Data collectors were trained to measure BMI with help of validated and calibrated tools for measurement. The BMI was calculated and categorised based on the standard adolescent references as per age proposed by WHO. Importantly, there are no clear guidelines on how to interpret BMI for adolescents. World Health Organization (WHO) and Indian Academy of Paediatrics do suggest adolescent references but the operational guidelines of RSKS suggest using adult BMI standards.

Table 4.3 Underweight among adolescents in intervention and control block

Age group (In Yrs.)	Talod (%)	Idar (%)
Girls		
11-14 school-going	82	86.7
15-18 school-going	60	64.8
15-18 non-school-going	58	60.9
Boys		
11-14 school-going	81	91.4
15-18 school-going	61	40.6
15-18 non-school-going	41	46

Overall underweight (as measured by BMI), was higher among girls when compared to the boys, in both intervention and control blocks.

(3) Menstrual Hygiene

Only female students were enquired about knowledge, awareness and practices pertaining to menarche and menstrual hygiene. Age of menarche amongst menstruating females included in the present study ranged from 12 to 14 years in the various age groups, with mean age being 13.8 years. Most school-going adolescent girls used readymade cloth available in the market, in both the intervention (66%) and control (31.3%) blocks (refer table 4.4). Most school-going adolescent girls also practiced reusing of absorbent in both intervention (88.4%) and control (35.9%) blocks.

Table 4.4: Menstrual hygiene practices (11-18 school going girls) in IB and CB

Variables	Talod (%)	Idar (%)
Absorbent used during menstruation		
Sanitary napkin	12	0.8
Readymade cloth from market	66	31.3
Cloth from home	16	3.1
Other (Cloth from home or market, nothing, Sanitary napkin and cloth from market)	6	3.1
Practice of reusing the absorbent		
Yes	88.4	35.9
Frequency of reusing absorbent		
Within one cycle	13.1	3.1
2 to 3 cycles	73.7	23.5
Till the stage it can be used	7.9	8
Place of drying the absorbent after washing		
Outside at sunlight	89.5	30.5
Inside house	7.9	5.5
Outside but not in sunlight	2.6	8

Similarly, out-of-school adolescent girls, most (around 81%) used readymade cloth available in the market in both the intervention and control blocks (refer table 4.5). Further, practice of reusing the absorbent was also high (86 to 89%) in both the intervention and control blocks.

Table 4.5 Menstrual hygiene practices among 15-18 out-of-school girls

Variables	Talod (%)	Idar (%)
Absorbent used during menstruation		
Sanitary napkin	7.7	6
Readymade cloth from market	80.5	81.7
Cloth from home	9.3	8
Other (Cloth from home or market, nothing, Sanitary napkin and cloth from market)	2.4	4.4
Practice of reusing the absorbent		
Yes	85.7	89
Frequency of reusing absorbent		
Within one cycle	5.2	2
2 to 3 cycles	74	61
4 to 5 cycles	13.5	26.7
Place of drying the absorbent after washing		
Outside at sunlight	87	87.1
Inside house	5.2	5.7
Outside but not in sunlight	7.7	7.1

Further, two indicators – sanitation facility and open defecation - were also documented specifically for girls, to get an overview on sanitation conditions and defecation practices that are known to influence menstrual hygiene practices. It was found that open defecation was practiced by around 46% school-going adolescent girls in Talod and less than 30 % school-going adolescent girls in Idar (refer table 4.6).

Table 4.6: Toilet facility and open defecation practices (girls) in IB and CB

Age group (In Yrs.)	Toilet Facility		Open Defecation	
	Talod (%)	Idar (%)	Talod (%)	Idar (%)
11-14 school-going	53.5	70.3	46.5	29.7
15-18 school-going	53.9	75.3	46.0	24.2
15-18 out-of-school	29.4	50.8	70.6	49.2

(4) Sexual and Reproductive Health

Promoting optimal adolescent health requires ensuring optimal SRH in terms of knowledge, awareness and practices. The observations from the baseline survey in both the blocks are discussed below:

Preferred source of information for SRH

Most female participants reported that their mother was the main source of information on issues related to menstruation, menstrual disorders and other reproductive health disorders. On the contrary, males reported friends or peers as the common source of information regarding pubertal changes. However, on enquiring about ideal choice for receiving information on SRH, for girls the ideal choice was mother but for boys it was either a doctor or a teacher.

Health education sessions in schools

On inquiring about health education sessions being conducted in schools in intervention block, about 40.78% school-going boys and 31.76% school-going girls reported that few education sessions on nutrition and sexual health were organized at their respective schools. However, among those who confirmed about such sessions only 28.62% boys and 26.67% girls had attended the session. Regarding the need for health education, 74.50% school-going boys and 64.31% girls felt that there should be more sessions on reproductive and sexual health issues.

Information about STDs, and HIV and AIDS

Boys were found to have more information on STDs, and HIV and AIDS, when compared to girls, as shown in tables 4.7 and 4.8. Further, among all the three groups, school-going boys and girls of 15 to 18 years have better knowledge about STDs, and HIV and AIDS.

Table 4.7: Adolescents having information about STDs in IB and CB

Age group (In Yrs.)	Talod (%)	Idar (%)
Girls		
11-14 school-going	22.6	10
15-18 school-going	42.2	40.7
15-18 non-school-going	22.2	16.4
Boys		
11-14 school-going	51.2	25.8
15-18 school-going	64.1	74.2
15-18 non-school-going	60.2	50

Table 4.8: Adolescents heard about HIV and AIDS in IB and CB

Age group (In Yrs.)	Talod (%)	Idar (%)
Girls		
11-14 school-going	14.2	12.5
15-18 school-going	69.5	61.7
15-18 non-school-going	41.3	22.7

Boys		
11-14 school-going	49.6	38.3
15-18 school-going	72.7	82.8
15-18 non- school-going	71.9	64

Knowledge on contraception

Boys had more knowledge than girls on contraception in both Talod and Idar blocks. In the intervention block, non-school-going girls (33.3%) had more awareness regarding contraceptives than school-going girls (9.4%) as shown in table 4.9. In the control block school-going adolescents had more awareness than non-school-going adolescents. Among all known contraceptive methods, irrespective of gender and age, information about condoms was highest.

Table 4.9: Knowledge of contraceptive in IB and CB

Age group (In Yrs.)	Talod (%)	Idar (%)
Girls		
15-18 school-going	9.4	25
15-18 non-school-going	33.3	9.4
Boys		
15-18 school-going	41.3	76.6
15-18 non-school-going	45	58

In the baseline, information regarding Oral Contraceptive Pills (OCP) as a choice for contraception was highest among married females (71.8%), however among those who were aware of OCP, the utilization rate was poor (14.84%). Knowledge of condom as a method of contraception was highest among male respondents (92.19%).

Access to SRH services

To study access to services for issues related to reproductive health, prevalence of self-reported UTI as a surrogate indicator for sexual health and care-seeking behaviour was also documented. As per RKSK framework, sexual and reproductive health services are focussed for 15 to 19 years age group, hence in the present study 11 to 14 years age group was not included in the enquiry on UTI prevalence and treatment seeking behaviour for the same.

In 15 to 18 years school-going adolescent girls self-reported prevalence of UTI was found to be around 15% in Talod and 21% in Idar (refer table 4.10). However, treatment-seeking behaviour for UTIs, in the same group was found to be low; 6.2% in Talod and 14.3% in Idar (refer table 4.11).

Table 4.10: Self-reported prevalence of UTI (girls) in IB and CB

Age group (In Yrs.)	Talod (%)	Idar (%)
15-18 school-going	14.8	21
15-18 non-school-going	28.6	25.8

Table 4.11: Proportion of self-reported UTI cases who sought treatment (girls) in IB and CB

Age group (In Yrs.)	Talod (%)	Idar (%)
15-18 school-going	6.2	14.3
15-18 non-school-going	5.6	11.8

5. Substance abuse

Among all age groups, substance abuse and addiction was more among males when compared to females. Among males, it was observed that prevalence of self-reported addiction was highest among non-school-going boys (25% in Talod and 50% in Idar), and the main substance abuse documented was tobacco (refer table 4.12). Most of those who consumed tobacco had initiated the practice after the age of 12 years. One of the common reasons cited for addiction was peer influence. Substance addiction among family members was also reported by adolescent boys in Talod and in Idar.

Table 4.12: Addiction pattern among boys, their peers and family, in IB and CB

Self-reported addiction in adolescent boys	Talod (%)	Idar (%)
11-14 school-going	0.8	1.6
15-18 school-going	7	8.6
15-18 non-school-going	25	50
Peer addiction	Talod (%)	Idar (%)
11-14 school-going	22.1	42.1
15-18 school-going	39.8	61.7
15-18 non-school-going	46.1	80.5
Addiction among family members	Talod (%)	Idar (%)
11-14 school-going	35.4	56.3
15-18 school-going	28.9	52.8
15-18 non-school-going	20.3	53.3

Self-reported addiction among females was found to be negligible. However, addiction among family members was reported by both school-going and non-school-going girls in Talod and Idar, as shown in table 4.13.

Table 4.13: Addiction pattern among girls, their peers and family members, in IB and CB

Self-reported addiction in adolescent girls	Talod (%)	Idar (%)
11-14 school-going	0	0
15-18 school-going	0	0
15-18 non-school-going	1.6	.7

Peer addiction	Talod (%)	Idar (%)
11-14 school-going	0	9.3
15-18 school-going	0	0
15-18 non-school-going	0.8	3.9
Addiction among family members	Talod (%)	Idar (%)
11-14 school-going	42.5	39.1
15-18 school-going	37.5	34.4
15-18 non-school-going	36.5	31.3

Engagement with adolescent health programs and services

Only 50% school-going girls were aware of Weekly Iron Folic Acid Supplementation (WIFS) program. As per the national guidelines WIFS focuses on providing IFA and de-worming tablets to school-going adolescents. Non-school-going adolescents are provided IFA through MTA. Among out-of-school girls around 56% had ever received IFA tablet, whereas among school-going girls it was 90%. On enquiring about the current receipt of IFA, more than 80% school-going girls and 41% non-school-going girls were presently receiving IFA. The compliance of IFA consumption among school-going girls was 67.84%. Only 45% of non-school-going females were aware and attending MTA, however, compliance to regular consumption of IFA was found to be 40%.

Distribution of deworming tablets, which is also a component of WIFS program, was found to be poor, as less than 6% had ever received deworming tables from school and only about 3% were presently receiving deworming tablets. Under MTA the scenario was no different, only 3% either had ever received or were presently receiving deworming tablets.

Around 79% of eligible females were receiving energy dense micronutrient fortified Take Home Ration (THR) in the form of Sukhadi, Sheera and Upma packets. Of these, around 72% reported to consume it regularly. Unmarried females between 19 to 24 years are not eligible or entitled for any of the national health programs except Iron Plus initiative which still needs to be rolled out and become fully functional. Participants of this group expressed the need for nutrition and health education (64%), reproductive and sexual health education (54%) and vocational training courses for financial empowerment (41%).

Among school-going boys 88.23% were receiving IFA tablets; of these only 69.41% were consuming it regularly. Coverage and compliance of deworming tablet was found to be poor among boys as well as only 20.23% had received the deworming tablets, of these only 9.01% had consumed deworming tablets. Further, only 2.21% (n=14) female respondents and 0.63% (n=4) male respondents had ever heard about AFHC. None of them knew the location and timing of AFHC.

Empowerment through life skills

Among the studied population, 52.35% males and 49.52% females had savings account in bank or post office. On enquiring about exercising negotiation skills, 54.38% and 52.82% males stated that they can convince their friends and family, respectively, during any discussion or conflict. However among females, 47.24% and 32.87 % stated that they can convince friends and family, respectively, during any discussion or argument. Further, 73.62% males and 64.56% females felt that they can successfully assert their opinions.

Qualitative Assessment

Qualitative assessment was also conducted among service providers such as ASHA, AWW, FHW/ANM, MPH and teachers. All the functionaries were interviewed about their work profile, involvement in RKSK program and AHD implementation, challenges faced in AHD implementation, experiences and suggestions to improve quality of AHD. They were also asked about challenges faced while conducting sessions with adolescent girls and boys, and involvement of beneficiaries in the programs. In addition to health functionaries, teachers were also interviewed about their experiences and involvement in the program, challenges faced and suggestions to improve AHD. Parents of school-going and non-school-going adolescents were also interviewed to assess their awareness of programs for adolescents and whether their children were availing benefits of these programs.

ASHAs

ASHAs reported poor knowledge on adolescent health and related issues, and hence were not able to provide detailed information and counselling to adolescents. They share whatever information they have on issues such as menstrual health with adolescent girls. They felt that their main work was to mobilise adolescent girls for the health programs.

AWWs

AWWs had limited knowledge of the various programs being implemented for adolescents. However, most AWWs were aware of the Mamta Taruni program. They provided IFA tablets, ready-to-eat food packets and information on menstruation to adolescent girls. They acknowledged that adolescent girls do not openly discuss their health concerns with them. As AWWs are involved with various other activities and programs, they had very limited time for engaging with adolescents. They also reported minimal engagements with school-going adolescent girls.

FHWs /ANMs

FHWs are involved in MTA program for weight and height measurement, BMI calculation, providing TT injection and IFA tablets, haemoglobin testing and at times blood pressure measurement. They revealed that every month (on the first Wednesday) MTA is celebrated at the Sub-centre, and on the second, third, fourth and fifth Wednesday the services are provided at AWC. The MO and other staff members at PHC are involved in the micro-planning of MTA. None of the FHWs were aware of referral services protocols for adolescent girls. They shared that adolescent girls are shy and hesitant to share health concerns with FHWs, and were more open with ASHAs and AWWs in their respective areas. FHWs also shared that most of the registered adolescent girls do not attend the sessions as they may be engaged in other work and may not be able to spare time for the health sessions. As FHWs are engaged in lot of administrative work, they are unable to provide education or counselling to adolescents on SRH.

MPHW

Some of the MPHWs shared that they are mainly engaged in providing services for family planning and malaria. Most of them shared that they conduct home visits and provide counselling for health-related issues. They are to be present at the Sub-centre for helping FHWs conduct health sessions, and assist in carrying vaccines from one village to other. They are also involved in weekly sessions conducted for adolescent-related services in villages. MPHWs are not involved in any referrals for adolescent health issues except if its malaria / fever or TB. Most MPHWs are males and hence they find it difficult to talk to opposite gender on health-related issues.

Teacher

Most teachers were aware of the School Health Program (SHP) and were involved in distributing IFA tablets at school. A few teachers said that they advise adolescents to eat nutritious food, importance of exercising and playing outdoor games, and maintaining menstrual hygiene. IFA tablets are given to adolescents

every Wednesday throughout the academic year. The MO of nearest PHC annually screens children as part of School Health program. School authorities send students to health centre and also advise the respective parent to consult a doctor if there is a need. They also refer students identified during school health check-up, to higher centres for further investigation.

The teachers also revealed that sometimes side-effects of IFA tablet when taken on empty stomach are an issue. If students do not inform the teacher that they have not eaten and take the tablet then they might have side-effects. Once the students have side-effects it becomes very difficult to make them understand that it is not because of the tablet but because it was consumed on empty stomach. All the staff of the school, MO PHC and other staff at PHC are involved in WIFS program. The PHC staff visit the school often to cross check the functioning of WIFS.

Parents

Almost all the parents believed that adolescents are a tender age group. One of the fathers shared that with adolescent boys they had to speak and deal with maturely, as there is a fear that the boys may take an extreme step. Mothers said that irrespective of gender, parents of adolescents need to be cautious and watch over their adolescent children. All the parents shared that they talk with their adolescent child on various topics ranging from movies, politics, news, studies and their performance in class. Some mothers also said that they discussed menstruation and hygiene practices with their daughters. While parents of adolescent girls opposed programs offering education on SRH, they suggested that topics such as menstruation, nutrition and how to get a job should be given priority. Many admitted that they did not want to get their adolescent child (son/daughter) married at an early age. With increasing exposure to TV, media and mobile, mothers were worried that they were unable to control their adolescent boys and girls, and felt that life skills and health education were important for their children.

Some mothers were unaware of the details of the adolescent health programs. They felt that parents were the best source for providing information to adolescents. While some parents saw AIDS as a potential threat to the community they did not think it was a threat for themselves or their sons and daughters. Some suggestions for improving adolescent health included providing adolescents information on hazards of overuse of mobile, watching TV and using computers, harmful effects of smoking and tobacco, how to respect parents and elders, how to lead a healthy life, effects of rash driving, and conditions such as diabetes, hypertension and cancer.

Conclusion

Based on the 7Cs model suggested by RKSK, the observations from the baseline survey are compiled in the below table 4.14.

Table 4:14: Observations of baseline survey

7 C	AFHS (10-19 years Male & Female)	WIFS (6-12 Std. Male & Female)	MTA (10-19 Non- school going Female)	Mamata Diwas (Antenatal/Post natal women)
Coverage	Poor	Good	Good	Good
Content	Poor SRH & nutrition absent	Focused only on IFA, No deworming	Focused only on nutrition, SRH Absent	Focused on ANC, PNC & nutrition, contraceptive
Communi ties	No out-reach activities	Not applicable	Good outreach with scope of improvement	Good outreach
Clinics	No dedicated space available	Not applicable (IFA distributed during assembly)	Provision of space & time but not adhered	Provision of dedicated time & space
Counsell ing	No separate counsellors available for AFHS	Untrained teachers for issues related to adolescents	Scope of Improvement	Scope of improvement
Communi cation	Absent	Absent	IEC & PE available	IEC available
Converge nce	Not existent	Not existent	Poor convergence	Good but with scope of improvement

Recommendations for the intervention

As per the observations from baseline survey, recommendations were formulated and grouped under three main areas: services, program strengthening and program management.

Services

There is no formal program which focuses on out-of-school, unmarried and married boys hence this cohort is lost and is difficult to reach. RKSJK has provision of adolescent day for 11-19 years. Parents, school teachers and doctors (both public and private) should be sensitized and trained to deal with issues related to SRH of adolescents.

Poor care-seeking behaviour for menstrual disorders and UTIs among females also needs to be addressed by involving mothers and other health care workers. This will involve sensitization and training health care workers for management, counselling and referral for reproductive disorders. The existing referral mechanism also needs to be strengthened. A documented high prevalence of tobacco consumption in this survey indicates an urgent need for targeted interventions to bring about behaviour change, by sensitizing adolescents about harmful effects of addiction and motivating them to quit their addiction.

Program strengthening

To impart relevant health education to students, schools should organize health education sessions on SRH, nutrition, addiction, and so on. The school management should ensure maximum student participation. Parents, school teachers, AWWs, ASHAs and members of VHSNC should be involved in increasing awareness about anaemia, promoting compliance to IFA and identifying adolescents with anaemia. If required appropriate training can be organized for these groups. This group can be utilized as important members from community for supporting convergence of all programs related to adolescents.

Poor outreach activities of programs such as AFHC have resulted in low awareness and utilization. Therefore, outreach activities should be initiated to improve awareness about the program and increase utilization of AFHCs. Strengthening of MTA and MD with appropriate health education, regular Hb estimation, RTI/STI screening and referral services is also required.

Program Management

There is a need to strengthen monitoring mechanism to ensure compliance of IFA and de-worming tablets. There is also an urgent need for monitoring and supervision of existing programs, as there is lack of quality data related to these programs. This can be attributed to lack of uniform, appropriate, valid and relevant data collection tools.

Chapter 5: Intervention

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The intervention implemented by CHETNA focused on (i) building capacities of frontline workers and local-level committees, for strengthening service delivery and monitoring implementation of services, and (ii) promoting convergence strategy for effective implementation of adolescent health programs in Talod block, Sabarkantha district. A total of 23 training courses were conducted with 760 participants, which included ASHAs, AWWs, school teachers, MPHWs, Cluster Resource centre Coordinators (CRCs), VHSNC members, preraks and peer educators. Largely the training focused on providing information on adolescent health and development, nutrition, SRH, substance abuse and existing government programs for adolescents. Pre-training and post-training assessment of ASHAs, AWWs and preraks indicated an overall increase in knowledge on adolescent health and related issues. Initially village-level convergence was planned to be demonstrated through preraks, however due to limitations in state funding this could not be pursued. Adolescent Health Day, which is one of RKSKs strategies for promoting adolescent health, was considered as a starting point to demonstrate state-level convergence. CHETNA therefore organized 175 Adolescent Health Days in close collaboration with DHFW, WCDD and Education department, in all the 72 villages in Talod block reaching out to 80% (16,252) of adolescents.

As mentioned in chapters 1 and 2, the state of Gujarat is implementing various health programs such as Mamta Taruni Abhiyan, School Health Program, Menstrual Hygiene Program, Adolescent Friendly Health Clinics and SABALA, for addressing needs of various categories of adolescents i.e. girls/boys, school-going, out-of-school, married and unmarried. Due to the many challenges that these programs face in increasing outreach, coverage and utilization of services, CHETNA and IIPHG planned for a convergence approach to promote adolescent health and empowerment, through improved access to information and quality health care services in Talod block, Sabarkantha district. The three main **objectives** of the intervention were to:

- (i) Build capacities of frontline workers for effective service delivery
- (ii) Build capacities of local-level committees for strengthening community monitoring and improving program outreach
- (iii) Promote convergence strategy for effective implementation of adolescent health programs.

The findings from the formative research and baseline survey were also used for planning the intervention in Talod block. As the Government of India (GOI) launched RKSK program in early 2014 to address multiple health needs of

adolescents (10 to 19 years), it was decided that the intervention would focus on three thematic areas of RKSK:

- Sexual and Reproductive Health,
- Nutrition and
- Substance abuse.

The intervention in Talod block was termed as the ‘SANGAM’ project by CHETNA. The intervention was implemented in close collaboration with three government departments:

- Department of Health and Family Welfare,
- Department of Women and Child Development and
- Department of Education and Literacy.

Intervention strategy

CHETNA's field experiences had shown that existing human resources in villages could be mobilized to provide health education and information to adolescents. CHETNA in 2010-2012 had worked with the state government on Mamta Taruni Abhiyan to improve health and nutrition status of out-of-school adolescent girls. Peer educators who received special training and information on adolescent health and nutrition proved to be excellent focal point for motivating out-of-school adolescent girls and their parents to access services offered through Mamta Taruni Abhiyan. However, it was observed that it was extremely challenging for the peer educators to receive new information on nutrition and SRH, while simultaneously executing their role as health communicators among adolescents. Based on these learnings it was visualised that *preraks* (who are ‘social animators’ appointed by the Department of Education and Literacy) and ASHAs could be mobilized to provide health information to adolescents. A two-pronged strategy was therefore designed for the intervention in Talod Block, which included:

- i. System strengthening by reallocation of roles and responsibilities, and building capacity of frontline workers (ASHAs, AWWs, FHWs and school teachers) and VHSNC members, to improve delivery of SRH services, and monitor implementation of the adolescent health related activities in villages.
- ii. Creating human resource at village level that can provide information on nutrition, SRH and substance abuse among adolescents and counsel them for behaviour change. CHETNA visualized that *preraks* appointed by Department of Education and Literacy could play a lead role in this activity and support in creating an enabling environment at the village and family level, for adolescents to claim their health rights. Involvement of *preraks* was thought to

help in sustaining health education and mobilization of adolescents in villages.

Prior to the implementation of RKSK by the state, CHETNA organized block-level meeting to introduce the program to health officials, ICDS functionaries and Panchayati Raj members, wherein RKSK's thematic areas and 7Cs were explained along with CHETNA's intervention.

Capacity Building of Frontline Workers and Local-level Committees

Capacity building of ASHAs, AWWs, school teachers (nodal person for adolescent health at school), members of VHSNC, peer educators, MPHWS and Cluster Resourcecentre Coordinators (CRCs) was one of the key activities of the intervention. The training was organised at block level and facilitated by trainers who had more than 20 years of work experience in the field of health and education. A total of 23 training workshops were organized in which 760 participants were trained on adolescent health with special focus on SRH, nutrition, counselling, health communication and community monitoring. Table 5.1 provides details of training conducted by CHETNA.

Table 5.1: Training programs conducted by CHETNA in Talod block

Sr. No	Category of Participants	Number of Batches	Number of Days	Total participants
1	Preraks	1	5	30
2	Anganwadi Workers	5	5	183
3	ASHA Workers	4	5	165
4	Members of VHSNC	6	3	183
5	School teachers(Standard 6 to 10)	4	2	141
6	Peer educators	2	1	37
7	MPHWS and Cluster Resource Coordinators	1	3	21
	Total	23		760

Capacity Building of ASHAs and AWWs

Total nine five-day training programs were organized for ASHAs and AWWs in which 348 ASHAs and AWWs were trained on the three components of RKSK. The objectives of the training were to:

- i. Enhance understanding on importance of working with adolescents and young people among service providers
- ii. Enhance communication and counselling skills of service providers
- iii. Improve service providers knowledge on RSKS program and its three components

This was the first time an intensive training was provided to ASHAs and AWWs on adolescents' perspective. The RSKS counsellor's module was used to impart the training. Participatory methods utilised were effective in aiding ASHAs and AWWs to narrate and understand their own life stories during adolescent phase. The training focused on topics such as the need to work with adolescents, role of ASHAs and AWWs to improve access to services, gender equality, communication and counselling, growth and development during adolescence, importance of nutrition in adolescence, prevention of under nutrition, anaemia, SRH, menstrual cycle and problems faced during menstruation, sex and sexuality, RTI/STI, HIV and AIDS, contraception and abortion, adolescent pregnancy, child care and nutrition, communicable diseases and non-communicable diseases, mental stress and adolescent health, violence and its effects on adolescent health, and addiction.

A training kit was provided to all the participants which included a range of IEC and BCC material developed by CHETNA. Each participant was given the following:

- HUM TUM (a resource book for adolescents),
- An apron depicting male and female reproductive organs,
- A poster on AFHS,
- An information folder on various types of contraceptives,
- A booklet on nutrition,
- A pamphlet on different government schemes,
- A pictorial story on anaemia on flex (Rupa Ni Varta),
- A fact sheet on SRH, and,
- A flipchart on gender equality and adolescent health.

Some reflections shared by participants after the training

—During my adolescent phase my mother restricted me from speaking to boys or mingling with them. I did the same thing with my daughter. This training has provided me opportunity to understand the issue from the perspective of adolescents. After I return back home I will teach my daughter about menstruation, safe sex and importance of saying „no“ rather than telling her not

to talk to boys. I would like to be her friend, so that she can share her challenges and confusions with me.”

“During Mamta Taruni Day we discuss about adolescent health with girls, but after this training we realized that it is equally important to work with boys as they have incomplete information and they get into experimental sexual behaviour increasing their risk to STDs.”

“In my village I know that many boys and girls are indulging in sexual relationship before marriage. Since socially this behaviour is not approved I never thought of educating them about the consequences of unsafe sex. I will now ensure that they are aware about it.”

Capacity building of school teachers

Capacity building of school teachers included conducting four training programs in which 144 primary and secondary school teachers from Talod block participated. The school teachers as part of School Health Program (SHP) are assigned to impart health and nutrition education among school children. The teachers are also responsible to implement Weekly Iron Folic Supplementation (WIFS) programme. The current training therefore focused on strengthening the teacher’s role of being a health communicator and counsellor. Four training programs, of two days duration, were organized with the support of the Block Resource Coordinator and Cluster Resource Coordinator. The nodal teacher for SHP and WIF programs were selected from each school. The objectives of the training were to:

- i. Sensitize teachers regarding the importance of focusing on adolescent issues
- ii. Orient teachers on WIFS and Rashtriya Bal Swasthya Karyakram.
- iii. Develop an understanding on life skill education and its relevance to adolescent health and development.

The training programs focused on topics such as the following:

- Changes during adolescence
- Role of the nodal teacher in SHP, WIF and other schemes for adolescent health and development
- Communication and counselling skills
- Teacher-student relationship
- Nutrition and anaemia
- Substance abuse and
- Life skills education for adolescents.

A resource kit was made available in every school library so that students could access it easily. Wherever the nodal teacher was not appointed, the teacher who received training in this project was appointed as the nodal teacher for health interventions in their school. Knowledge about iron deficiency anaemia helped teachers understand the need for children to consume Iron Folic Acid tablets and food rich in iron and protein. The Block Resource Coordinator, present during the training, stated that past experiences showed that teachers were usually not interested in receiving the training, however, use of participatory training methods helped generate greater interest among the school teachers. Following the training, many teachers also indicated their interest in receiving such training. A few feedbacks from the teachers are presented below:

–This was our first ever experience where we have received training apart from the regular curriculum. Such motivational training should be organized twice a year. I have not talked to my children about changes during adolescence, but now I definitely will.”

“Such training should be organised at school level so that most of the teachers can participate. All teachers need to learn about adolescent health”

“Initially I thought why I as a teacher should be trained about adolescent health and that health functionaries need to undergo such training. After the training I realised my role in enhancing adolescent health.”

Capacity building of MPHWs and Cluster Resource centre Coordinators (CRCs)

The three-day training with 41 MPHWs and CRCs was an important step towards convergence of programs related to adolescents at the village level. The training was organized in coordination with the Department of Education and the Department of Health and Family Welfare. The objectives of the training were to:

- i. Provide information to participants about the intervention
- ii. Improve understanding of the priority areas of RKSK i.e. nutrition, SRH, substance abuse, non-communicable diseases, and mental health

Some of the topics the training included were:

- Understanding adolescent health issues
- Information on RKSK and CHETNA’s role
- Importance of organising adolescent health day together by the CRC and MPHw
- Growth and development of adolescents focusing on nutrition, anaemia, SRH, safe abortion (MTP), and RTI/STI

- Mental health and NCDs
- Health communication and counselling.

Capacity building of VHSNC members

CHETNA conducted six three-day training programs for 183 VHSNC members in Talod block. Five out of 11 VHSNC members were invited for the three-days training. Around 50 % of the invited members attended the training. The training was non-residential and organized at the PHC. The training plan was initially shared with the Block Health Officer and the PHC's Medical Officer. The PHC Medical Officer along with the FHWs then invited the participants for the training. Many of the VHSNC members were not aware of their association with their village committee. VHSNC members also stated that they had not attended any training that focused on functioning of VHSNCs. A positive aspect of the training was that the VHSNC members, who did attend, participated on all three days of the training. The objective of the training was to:

- i. Orient VHSNC members on their role in the intervention, and role and responsibilities of ASHAs and AWWs
- ii. Enhance VHSNC members skills to monitor Mamta Taruni and Mamta Day, and adolescents access to health and nutrition services in villages
- iii. Improve communication skills of VHSNC members

The topics included in the training were:

- Information about the intervention
- Goal and objectives of VHSNC,
- Roles and responsibilities of VHSNC members and activities of VHSNC
- Health system and services available for adolescents from government health facilities
- Roles and responsibilities of ASHAs and AWWs
- Information on health and nutrition schemes for adolescents and mothers
- Tool on community monitoring
- Untied fund of VHSNCs and its use
- Communication and decision-making skills
- VHSNC meetings and reporting.

A training kit was provided to all the participants which included a hand-out on VHSNC (formation of VHSNC, activities, and roles and responsibilities of members), government schemes and IEC- BCC material on Adolescent Health. A monitoring tool to evaluate Mamta Taruni Day and Mamta Day services was also introduced to the VHSNC members. One member from each VHSNC was selected to observe the services provided and fill the form. Some of the participants learning's and feedback about the training are presented below.

“First of all after attending this training I came to know that I am a member of VHSNC. I understood my responsibilities as a VHSNC member, understood the role of the VHSNC committee and the activities that VHSNC can perform.”

“I am 43 years old. After many years I went through training where I learnt about leadership qualities and decision-making skills through a game. All the topics during the three days of training were new and we learnt a lot from it.”

“During the training we came to know about the issues and the challenges faced by adolescents. I also came to know about the importance of addressing adolescent health issues. Henceforth we will regularly organize VHSNC meetings and also monitor adolescent programmes in our village.”

Capacity Building of Preraks

CHETNA's experience of implementing the Mamta Taruni program showed that there was a need for local mentors who could be approached by adolescent girls and boys for counselling or clarification of doubts. It is not always possible for the adolescents to travel to the Primary Health Centre to seek counselling services. Hence it was decided that *preraks* could be trained to provide information and counselling to adolescents in village.

CHETNA therefore organized a five-day training for 30 *preraks*. The training provided in-depth information on adolescents SRH and nutrition-related aspects. The training also focused on enhancing the *preraks* skills on health communication and counselling. Initially the *Preraks* were keen to collaborate and actively took responsibilities to implement village-level activities, however irregularities in payments and delay in renewal of contract by Department of Education and Literacy resulted in reduced interest. In the second year of the project the idea of involving *preraks* was therefore shelved and CHETNA recruited field-level personnel to implement the activities.

Capacity Building of Peer Educators

Peer educators are also an important component within the RKSK implementation framework. Since CHETNA could not continue implementation through the *preraks*, the focus shifted to building capacity of peer educators. A five day training program based on the RKSK module was then organised for peer educators. These training programs were either planned on Saturday or Sunday based on the availability of peer educators. Mamta Taruni program of the state government had one peer educator (out-of-school adolescent girl) on board, however when the training was planned it was observed that most of the peer educators selected by FHWs were not active and not interested, and those who were interested were denied permission by their parents to attend the training. As a result CHETNA could organize only one training for peer educators which focused on nutrition needs of adolescents and communication skills.

CHETNA was the national training partner for peer educators training for RKSK. 144 master trainers were trained using RKSK peer educators module of GOI. Five training programs were organized for the states of Gujarat, Rajasthan, Maharashtra, Goa and Diu Daman and Dadra Nagar Haveli.

Assessment of Capacity Building of Frontline Workers

IIPHG carried out process documentation of all the training programs for ASHAs, AWWs and *preraks*. Pre-training and post-training evaluation was used for process documentation of the capacity-building exercises undertaken by CHETNA. Overall knowledge and participation of ASHAs was found to be better when compared to AWWs. After the training, 80% ASHAs were well versed with information related to nutrition and reproductive health. About 65% ASHAs had correct knowledge about physical, mental and emotional changes that occur during adolescence and had a better understanding about multiple factors responsible for adolescents not accessing health services. There was also a significant increase in knowledge regarding complication of early pregnancy and childbirth. Prior to the training only 20% ASHAs believed that masturbation was a normal behaviour which increased to 80% post training. Further, more than 70% ASHAs could give correct answers related to non-communicable diseases.

Similarly, more than 85% AWWs could give correct answers related to nutrition and reproductive health of adolescents. More than 70% AWWs had improved knowledge about non-communicable diseases (NCDs) and 55% mentioned the need to make changes to one's lifestyle to prevent NCDs. Post-training, ASHAs and AWWs mentioned that being warm and non-judgmental were important characteristics of a counsellor. Listening was listed as an important skill for a counsellor. After the training they also believed that providing sufficient time and

privacy during counselling were also prerequisites for an effective counselling process. Before training the knowledge of *preraks* on adolescent health and related issues was poor; after training more than half *preraks* could give correct answers on adolescent health.

Health education sessions at village level

The project team strengthened the knowledge and skills of ASHAs and AWWs by program implementation. Regular health education sessions through one-to-one interaction and group education were also organized with school-going and out-of-school adolescent girls and boys. One-to-one interactions were conducted by the project team, school teachers, ASHAs and AWWs during home visits or when approached by adolescents seeking more information.

AWWs and ASHAs organized group education sessions with out-of-school girls once a month. The field team organized group educational sessions with out-of-school boys when the boys were available, this was usually late in the evenings. School classroom sessions were also organized by the teachers (who participated in the training) at schools. Topics covered during the health educational sessions were nutrition, personal hygiene and environmental hygiene, prevention of illness, know your body, changes occurring during adolescence, reproductive health system, prevention of sexual and reproductive infections, and substance abuse.

Frequent reiteration of these topics was also done to retain knowledge among adolescents. As a follow up to these sessions, parents were contacted during home visits or during parent meetings to inform them about the importance of health and nutrition especially for adolescents. Regular one-to-one meetings with village leaders were organized, especially with the sarpanch, to update them about the program and elicit their support in implementation. Liaison and interaction with PHC staff was also done to organize health education sessions at the Anganwadi centre and during Mamta Taruni Day.

Promoting convergence strategy for effective implementation of Adolescent Health programs

Organizing Adolescent Health Day

IIPHG, CHETNA and government stakeholders agreed that celebrating Adolescent Health Day, which is one of the strategies of RKSK for promoting adolescent health, could be a starting point to demonstrate convergence. Also, celebrating AHD can prove to be an important intervention in terms of providing services to out-of-school boys. As per RKSK guidelines, Adolescent Health Day is a mandatory activity that is to be conducted quarterly in every village. An effective method for adolescent health day celebration was therefore jointly planned by

IIPHG and CHETNA, with CDHO-Sabarkantha, Education Department and Block Health Office. Letters to various departments like ICDS, Education Department and VHSNC of the respective village were issued, with a request to participate actively at the AHD celebration. The format of adolescent health card was designed by CHETNA, with technical inputs from IIPHG, DDO, CDHO and RCHO officials. It was decided that the following services would be provided to adolescents on Adolescent Health Day:

Registration, general health check-up (BMI, anaemia and diabetes) and referral to AFHCs for counselling and clinical services, as required

- 1) Information through appropriate IEC and interpersonal communication on nutrition, SRH and substance abuse, specifically tobacco use.
- 2) Provision of commodities such as IFA and Albendazole tablets

CHETNA organized 175 Adolescent Health Days in all the 72 villages in Talod block reaching out to 80% (16,252) adolescents. Cluster Resource Coordinators (CRC) working under the Department of Education also provided support in planning AHD in schools. Between April 2015 and October 2015, AHDs were organized at the primary and secondary schools in all the villages. AHDs were organized at primary schools for children from 6th to 8th standards, and at secondary schools for adolescents studying in 9th to 12th standards. The CHETNA team supported in facilitating the AHD, and with support from frontline workers, took lead in imparting health and nutrition information to adolescents. In most schools, teachers also played an active role in organizing and carrying out activities of AHD. Body Mass Index (BMI) was calculated and haemoglobin level estimated to determine the nutritional status of each adolescent. The adolescents were provided iron folic tablets and counselled to consume iron folic acid tablets to improve their Hb level. Further immunisation and referral for RTIs and STIs was also done. This was possible with support from Female Health Workers (FHWs), Multi-Purpose Health Workers (MPHWs), AWWs, ASHAs and school teachers.

The information on services received by the adolescents was individually recorded in the Adolescent Health Card. Adolescents also volunteered for Body Mass Index (BMI) calculation, weight measurement and filling up of the Adolescent Health Card. More than 100 adolescents were referred to Adolescent Friendly Health Centres for treatment related to reproductive health and other common illness. Hemoglobin estimation was done using Sahli's method which took a minimum of one and a half minute per adolescent. In a few schools, where the number of students was large, Hb estimation was not conducted as it was practically not possible.

Nutritional Status of Adolescents

Nutritional status data of 8,778 adolescents collected during the AHDs indicated that 85% adolescents were undernourished based on the height versus weight BMI chart. When data was further analysed for school-going (7,370) and out-of-school (1,408) adolescents, under-nutrition was observed more among school-going adolescents (88%) compared to out-of-school adolescents (71%).

Hb estimation revealed that all adolescents were anaemic (lower than 12 gm %). Out of 7,549 adolescents, 55% adolescent's haemoglobin ranged between 8-10 gm%, 16% adolescents Hb ranged between 10-12gm% and 28% adolescents were severely anaemic with Hb between 5-8 gm%. Further out of 1,371 adolescents, 34% of the out-of-school adolescents had haemoglobin levels between 10-12 gm% as compared to 18% school going (N =6,178).

The poor nutritional status of school-going adolescents' raises many questions. Since the children who come to school get Mid-Day Meals the parents may not be focusing on providing breakfast, and they may be getting only two meals a day. It also raises questions regarding the quality, quantity and regularity of the Mid-Day Meal and regularity of WIF programme.

Partnership and Collaboration with Government of Gujarat

The intervention was implemented in close collaboration with the state, district and block level government officials. CHETNA shared observations and challenges in implementation at regular intervals at the block and district level. During the intervention cycle, Adolescent Health Days were organised twice (once in three months) in each of the villages. This was possible through meticulous planning and complete support of MO-PHC and para-medical team, along with the Block Reproductive and Child Health Officer.

At the end of the intervention, the district-level dissemination meeting was organized with District Development Officer (DDO), Chief District Health Officer (CDHO), Taluka Health Officer (THO) and other concerned officials and staff of Sabarkantha district, to present the activities of the intervention, findings of the AHD celebration, share experiences and discuss roll-out strategy at district level. CHETNA was invited by the state government during the launch of RSKS in Gujarat state for providing orientation to government officials. CHETNA was also invited to organise training of medical officers of Sabarkantha district, for conducting educational sessions at school level focusing on aspects to be taken under RSKS. The behaviour change materials used by CHETNA were also provided to the medical officers for use in school sessions. Currently, medical officers are actively involved in facilitating sessions in schools.

Learnings from the intervention

Adolescents are a mobile and diverse population, hence one size does not fit all or one program does not suit all. Different strategies should be planned for adolescents who are school-going, non-school going, married, unmarried, living in rural and urban areas, or are migrants. As non-school-going adolescent girls are mostly working during the day, it cannot be assumed that they would be available for training during the day. Based on local requirements, there is a need to develop different strategies for increasing outreach to non-school-going adolescent girls and boys. Certain non-negotiable approaches are one-to-one contact, group discussions and educational classes. There is also a need to bring in flexibility within the program to address the multiple needs of adolescent girls and boys.

Further as school enrolments are increasing there would be more number of children in schools. It is therefore imperative that adolescent programs include school-going adolescents and to ensure their active participation training of teachers becomes critical. Conducting or organizing health awareness program after the school for school-going adolescents is not practical, and it needs to be institutionalised in the school through active involvement of teachers.

There is also a need to make information and services accessible to adolescents by allocating designated human resource in villages. It has been observed that peer educators approach may not be ideal to disseminate information in villages. In this project it was thought that building capacity of *preraks* would be a very promising approach, however, due to administrative and financial constraints of the education department, it could not be explored.

Building capacity of frontline workers and other young leaders can also help promote access to health information and counselling in villages. However, capacity building of frontline workers would need to be done on a regular basis and strategically, along with mentoring support. Financial allocation and human resource for the training should be a priority for the state and cannot be a one-time event as it needs to be planned on a regular basis. There is also a need to integrate the component of empowerment and gender equality within the health education program, and promote community and stakeholder participation for improving effectiveness of programs.

Adolescent Health Day is an effective platform and needs to be systematically and regularly organised. As there are age group overlaps in RBSK and RKSK programs there is a need for convergence of these two programs by reallocating the role of village-level stakeholders and the structure of service delivery. Our experience in program implementation has shown that inter-departmental convergence is crucial for successful implementation of adolescent health programs.

Challenges in implementation

CHETNA had envisaged that *preraks* would be the key human resource to demonstrate convergence in villages. *Preraks* are paid workers and the role proposed for them in the intervention i.e. provide health and nutrition information to adolescents in villages, matched with their mandate. However due to irregularity and long gaps in receiving remuneration from the Department of Education and Literacy, many *preraks* lost their interest in the intervention and took up jobs elsewhere.

Mobilizing non-school-going adolescent boys for AHD was a major challenge. For RSKS to effectively target non-school-going adolescent boys, there is a need to explore possibility of convergence with livelihood and skill-building programs. It was also observed that adolescents were not very comfortable in accessing services at Adolescent Friendly Health Centres.

Platform Created for Sharing Personal Stories and Learning's by Adolescents

CHETNA organised a three-day workshop (facilitated by World Comics, New Delhi) in December 2015, wherein 49 adolescent boys and girls of the intervention area participated and shared their life experiences. The medium used to share their stories was through illustration - in a "*comic book*" form. World Comics is one of the pioneers for promoting grassroots comics as a tool for development.

For most of the adolescents, travelling from their village to Ahmedabad was a new experience. During the workshop the adolescents discussed their life stories, wrote them and depicted them in the form of comic strips. Stories related to anaemia, substance abuse, pubertal changes, early marriage and gender discrimination were shared by the adolescents. On the last day of the workshop their stories were showcased to the Chief District Health Officer (CDHO) of Sabarkantha district.

A few quotes from the participants stories:

"I wanted to complete my higher education but could not as I was told that girls do not study and they perform household work. My brother could complete his studies. Though I am happy for him I want an answer for why this discrimination between boys and girls." (Adolescent girl)

"My elder sister had a love marriage with a boy of another caste. As a result of this, our caste boycotted us. Our family situation became so tense that my parents married my younger sister at a very young age. I could not see this injustice to my sister. I could not do anything. It affected my studies. I am not able to concentrate." (Adolescent boy)

“My periods had not started even at the age of 17 years. I learnt from the SANGAM program about pubertal changes and the menstrual cycle. I went to an Anganwadi and met ASHA and FHW who counselled on anaemia. I was given IFA tablets. I got my periods after that.” (Adolescent girl)

“I loved one of my classmates. I expressed my love to her many times, but she did not show any interest in me. I was so depressed that I started drinking alcohol and chewing tobacco. The project supervisors counselled me on the consequences of substance misuse and gradually I quit both.” – (Adolescent boy)

“I had so many pimples on my face. Everyone in my class used to tease me and called me ugly. I was so depressed. I could not concentrate on my studies. I got my confidence back after I attended the educational classes in this project” (Adolescent girl)

Chapter 6: Demonstration and Evaluation of Model Adolescent Health Day

Tapasvi Puwar, Manish Fancy, Deepak Saxena, Sandul Yasobant and Krupali Patel

CHETNA's experience of organizing 133 AHDs in Talod block showed that over a period of time it had the potential to reach all the adolescents in the district. However, the process documentation of AHDs implemented by CHETNA showed that building consensus on the methodology and operationalization of AHD with district and block health officials, and demonstrating appropriate methodologies for execution of AHD for various age groups, gender, school-going and out-of-school adolescents, was essential. Additionally, lack of defined frameworks for execution of AHD had also led to many technical and non-technical issues during execution of AHD. On request by district officials, IIPHG therefore developed a successful and sustainable AHD model which was implemented by the health department, with support from ICDS and education department, in 16 villages in Talod block. In the proposed execution framework for successful AHD implementation the entire activity was planned and conducted in three phases:

1. *„Pre-AHD“ to assess the preparedness,*
2. *„During AHD“ to evaluate and document the process and*
3. *„Post-AHD“ to evaluate follow-up actions taken by system.*

Evaluation of the model AHD showed that AHD implementation requires meticulous planning and effective field-level convergence of various stake-holders. Additionally, it also showed that engaging with students and teachers was crucial for successful implementation of AHD.

(I) Process documentation of Adolescent Health Day implemented by CHETNA

CHETNA's pioneering effort of implementing 133 AHDs across all the 72 villages in Talod resulted in coverage of 80% adolescents. CHETNA and IIPHG recruited field-level supervisors to assist in developing the convergence strategy and implementation of various activities in the project including rolling out of AHD in Talod block. IIPHG documented 20 AHDs as part of process documentation, identifying challenges in implementation and developing framework /guidelines for their effective planning and implementation.

Observations from 20AHDs implemented by CHETNA

We made several observations on various parameters of AFHC services, such as logistics, staff availability, activity flow, counselling, and referral services. Overall, AHD implementation by CHETNA indicated feasibility, utility and

methodology for organizing Adolescent Health Day in villages. As it was the first effort of implementing AHD, the process documentation showed that certain technical details needed to be firmed up to further enhance the utility of AHDs. Some of these are listed below: -

- The coverage of out-of-school boys was found to be poor, possibly because most of them were engaged in livelihood activities. In order to target out-of-school boys, AHDs could be conducted on weekends, provided school teachers are available.
- Methodology for height, weight and BMI measurement needed to be finalized. Health workers need to be trained to record height and weight, and record BMI as per the protocols. Plotting of weight on the growth chart and counselling adolescents about the category their BMI falls in, would increase the utility of this activity.
- Sahli's Acid Haematin method was used for testing hemoglobin level. We observed several issues in the haemoglobin test. The test can be invalid due to excessive work load on health worker, improper HCL concentration used to perform the test and inadequate time for RBC lysis. The test may lead to over-reporting of anaemia. We suggested that if more instruments were to be used. There would be adequate time for RBC lysis. This concern was raised with the BHO, following which in the subsequent AHDs the issue was resolved by making more instruments available and ensuring use of freshly prepared 1% HCL solution.
- Potential utility of distributing IFA tablets among adolescents could be increased if health staff recommended IFA tablets dosage as per the adolescents' Hb status.
- Documenting and triangulating the hemoglobin reading and BMI status, simultaneously, during counselling of adolescents and providing referral if required, would also increase the effectiveness of this activity.
- Most teachers and health staff were not comfortable discussing topics such as RTIs, STIs, and menstruation with adolescents. Provision of appropriate promotional material like posters, with key messages in vernacular language could also support health staff in independently conducting health education and counselling sessions. Common topics covered in the health education sessions were found to be anaemia and nutrition. Other nutritional aspects such as obesity, overweight, underweight, micronutrients, iron-rich food, and locally available foods

could also be included to make the sessions more effective. Additionally, providing information or counselling on need for consuming de-worming tablets would also promote its compliance.

- Most teachers trained in RKSK were proactive and took interest in maintaining discipline and flow of students. However their expertise could be better utilized to educate and counsel adolescents. We observed in two AHDs that schools teachers conducted very effective sessions on anaemia and menstrual hygiene.
- Local students who are motivated and have leadership qualities could also be mobilized for promoting ownership of AHD and improving program outreach in villages. More targeted efforts are required for promoting community participation and engagement as it was observed that community leaders, VHSNC members and local NGOs were missing at the AHDs.
- We observed that biomedical waste was not properly managed during the AHDs. While waste was segregated at source, health care workers said that the lancet and blood-soaked cotton would be disposed at a safe place, while the liquid waste would be disposed in the sewage. There was also a need to promote the practice of universal health precautions (such as wearing gloves) by the health care workers.

To summarize, two important observations were noted from the process documentation, for overall strengthening of AHD implementation. These include need for: -

- (i) Building consensus on the methodology and operationalization of AHD with district and block health officials
- (ii) Developing and demonstrating appropriate methodologies for execution of AHD for various age groups, gender, school-going and out-of-school adolescents.

II. Demonstration and evaluation of Model Adolescent Health Day (AHD)

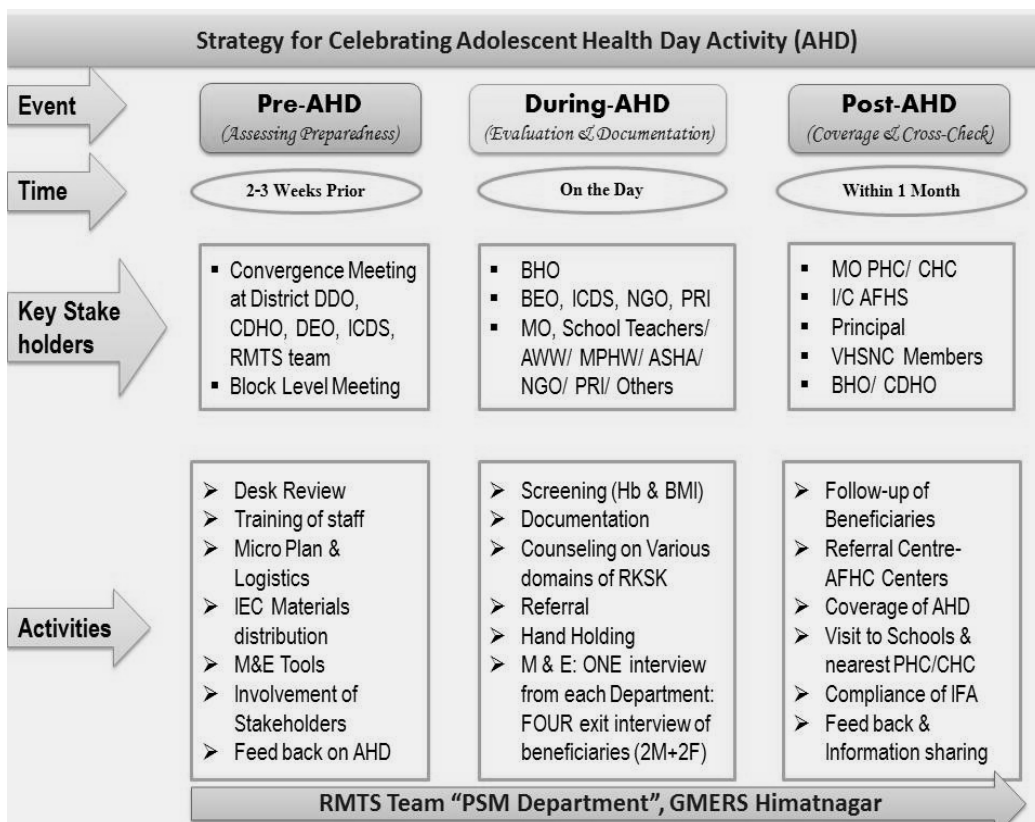
CHETNA's experience of organizing AHDs showed that over a period of time it had the potential to reach all the adolescents in the block and district. However, it being a pioneering activity, lack of defined frameworks for execution of AHD led to many technical and non-technical issues during the execution of AHD. Hence district officials requested IIPHG to demonstrate a successful and sustainable AHD model. For sustainability in implementation of AHD it was also necessary

that the health department implements AHD on its own, in Talod block. The framework and execution of model AHD was therefore based on the observations from process documentation of AHD, and need for effective and sustainable model.

IIPHG proposed an execution framework wherein the entire activity for successful AHD implementation is conducted in three phases: -

1. **Pre-AHD** to assess the preparedness
2. **During AHD** to evaluate and document the process
3. **Post-AHD** to evaluate follow-up actions taken by system

Figure 6.1: Strategy for celebrating AHD



1) Pre-AHD

As per the execution plans developed by IIPHG, pre-AHD activities were pivotal in execution of AHD. The major activities during pre-AHD phase involved:-

1.1 Developing micro-plan at district level convergence meeting

The IIPHG team assisted the district-level convergence committee of Sabarkantha district to develop a feasible micro-plan and convergence of activities. The health department took the lead in implementing various components of RKSK with active inputs and support from education and ICDS department. A meeting was convened by the health department under the guidance of District Development Officer (DDO) to discuss the methodologies for developing a micro-plan. The meeting involved representatives of health, education and ICDS departments. It was also decided in the meeting that the micro-plan will be formed at the block level to ensure better coordination between stakeholders.

1.2 Planning of 16 AHDs by Block Health Office

The IIPHG team also facilitated the block-level meeting of health, education and ICDS departments for clarity on role and responsibilities during AHD celebrations. As per the micro-plan, school teachers were the focal point to encourage students to participate and to assist in execution of activities during AHD. ASHAs and AWWs were to

- Help students to register,
- Measure the height and weight of students,
- Record the height and weight on card, and
- Mobilize out-of-school adolescents.

Teachers, along with ANM/FHWs and MPHws, were identified for providing group counselling to students. Laboratory technicians were to perform haemoglobin estimation of all adolescents. The BHO, in consultation with all four PHC staff of Talod block, prepared a micro-plan for each of them. The micro-plan had names of the schools, village, PHC, date of AHD celebration and estimated numbers of school-going and out-of-school adolescents.

1.3 Training of FHWs, FHS, MPHws, MPHS, school teachers and AYUSH doctors

The IIPHG team, consisting of technical experts in the field of Obstetrics/Gynaecology, Nutrition and Public Health, along with CHETNA team members facilitated the training of school teachers, FHWs, FHS, MPHws, MPHS and AYUSH doctors from all four PHCs, on:

- a) Nutrition
 - i) How to measure height and weight?

A guideline in Gujarati was prepared for frontline workers using WHO SOP on screening of populations for anthropometry. Experts also demonstrated standard methods of height and weight measurements to trainees.

ii) How to calculate BMI?

Trainers explained how to calculate BMI from height and weight. A chart was prepared in Gujarati for finding the BMI from height and weight. It was printed on big flex so that it can be distributed to each session site. This made it easy for anyone to find out his or her BMI directly from their own height and weight.

iii) How to interpret BMI using WHO standard growth charts?

WHO standard BMI charts for adolescent girls and boys were used to interpret BMI calculated for each boy and girl. Based on BMI, adolescents were divided in five categories, that is, severe thinness, thinness, normal, overweight and obese. These charts were also printed on flex for distribution to each session site.

iv) What health messages are to be given while counselling on BMI?

The team explained the messages to be given during counselling based on the BMI value. If an adolescent is thin or severely thin, he/she is counselled for diet. If an adolescent is overweight and obese, he/she is counselled for diet, exercise and life style modifications.

v) Haemoglobin estimation using Sahli's method

Laboratory technicians of CHC-Talod demonstrated the technique of haemoglobin estimation using Sahli's method to all the participants.

vi) Counselling on results of haemoglobin estimation

The IIPHG team explained what messages and treatment, to be given to adolescents based on result of haemoglobin estimation.

b) Substance abuse

Participants were also made aware of various substance abuse prevalent among adolescents and their effects on health. They were told about various counselling methods for substance abuse.

c) RTI and STI

Technical experts from IIPHG team explained various issues related to reproductive health in adolescents. The themes included were menstrual hygiene, prevention of teenage pregnancies, usage of contraceptive methods, basics facts of RTI and STI, and questions to be asked to adolescents for screening of RTI and STI. These topics are covered in high schools, only for the adolescents aged 14 to 19 years of age as per RSKS guidelines.

d) Organization of AHD

The IIPHG team discussed various stations to be organized such as haemoglobin screening station, BMI evaluation station, etc. on AHD at every school, flow of activities, and logistics to be ensured at session site.

e) Supervision

Supportive supervision by health department and other department officials was also discussed using the monitoring tool suggested in RKSK operational framework. Formats of supportive supervision were also distributed to supervisors.

f) Data management

All participants were informed about using reporting format of AHD as suggested in RKSK operational framework. The format was translated to Gujarati language and distributed to all participants.

g) Treatment of identified cases at AHD session site

AYUSH MO, with the support of ANM/MPHW, prescribed treatment of moderate anaemia with IFA and Albendazole, and also for other minor ailments. A plan of logistics was also updated accordingly.

h) Referrals

As per RKSK guidelines, adolescents with severe anaemia, obesity, severely thinness and having other identified ailments have to be referred to a hospital. All participants were informed to generate line listing of referred cases. The cases were referred to AFHC at Talod or at District Hospital Himmatnagar for treatment. Participants were also informed about follow-up of the cases in the community after referral.

i) Exit interview by health department officials of five adolescents per AHD

The format for exit interview of adolescents was also explained to supervisors and AYUSH MOs. It was decided that at least five males and five females would be interviewed to know the quality of activities during AHD, referral and scope for further improvement of AHD.

2) During AHD

Talod block health officials planned for celebrating 16 AHDs, out of which two were organized at high schools. All the 16 AHDs were executed as per plans between 8th and 15th February 2016. School teachers, ANM/FHW, ASHA, AWW, MPHW, FHS, MPHS, Laboratory technicians and AYUSH MOs participated in the AHDs. Medical officers of concerned PHCs also visited the AHDs coming under their PHC area. The AHDs were supervised by block-level health and education department officials.

A total of 821 adolescents participated in 16 AHDs as mentioned in the table 6.1. Most of the out-of-school adolescents (85%) were girls, as boys were engaged in

livelihood activities. As per the line listing by ICDS prior to AHD celebration (as a part of pre-AHD activity), 71.18% of school-going and 46.7% of out-of-school adolescents had been reached. Overall out of all registered adolescents only 65.6% could be covered. Age-specific services offered to 10-14 years and 15-19 years adolescents on AHD are as shown in table 6.2.

Table 6.1: Gender-specific coverage of beneficiaries of 16 AHDs (Data is not representative of district or state)

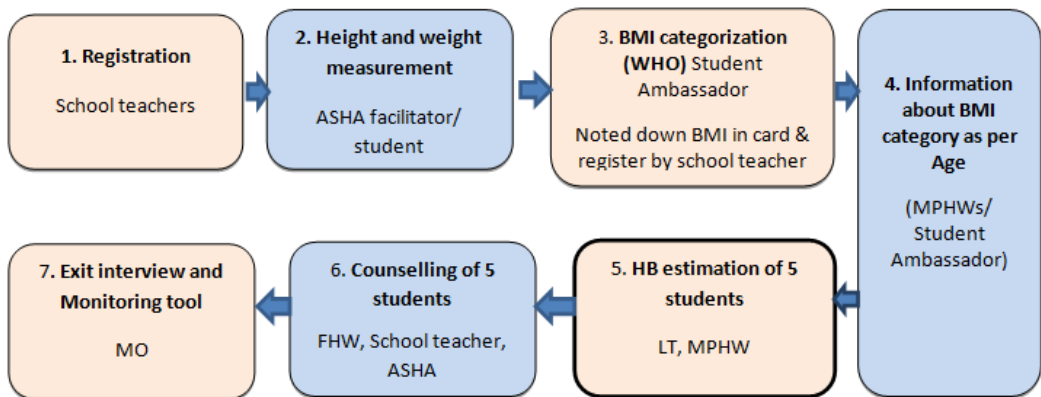
Type	Girls	%	Boys	%	Total
School-going	322	46.8	366	53.2	688 (83.8)
Out-of-school	113	85.0	20	15.0	133 (16.2)
Total	435	53.0	386	47.0	821

Table 6.2: Age-specific services offered on AHD

10-14 years age group	15-19 years age group
<ul style="list-style-type: none"> • Registration • Height, weight and BMI using WHO BMI standards for adolescents • Haemoglobin estimation using Sahli's method • Counselling in groups of five • Treatment and referral 	<ul style="list-style-type: none"> • Registration • Height, weight and BMI using WHO BMI standards • Haemoglobin estimation using Sahli's method • Sessions on menstrual hygiene, teen age pregnancy, RTI and STI • Counselling in groups of five • Treatment and referral

Seven stations were organized on each AHD (as shown in figure 6.2) for the ease of conducting activities in a planned manner to ensure participation by all school-going and out-of-school adolescents present. Each station is described below:

Figure 6.2: Flow of activities and individual roles and responsibilities during AHD



Description of activities:

1) Registration

Adolescent registered using the register developed by CHETNA (with technical support of health department and IIPHG). The objective of registration was to generate panel data and ensure comparison of health status since last AHD. All adolescents were also provided with a health card mentioning services and IEC material during AHD. This activity was carried out by school teachers.



(Photograph 1: Registration process)

2) Height and weight measurement by teachers, students, AWWs and ASHAs

After registration, height and weight of each participant was measured. Adult weighing scale and measuring tapes were used to measure weight and height as per WHO guidelines. The activity was carried out by schools teachers, ASHAs, AWWs and student volunteers. This was a good example of involving school-going adolescents to make AHD vibrant and learning experience for adolescents.



(Photograph 2 and 3: measurement of height and weight)

3) BMI calculation using table on Flex chart by students under supervision of teachers

Students, under the supervision of school teachers, were involved in calculating BMI from flex, which shows table of height, weight and corresponding BMI. The BMI was entered in the register and the card for further steps of interpretation, counselling and referral if required.



(Photograph 4: Finding out BMI from height and weight using chart)

4) Interpretation of BMI using WHO growth curves for BMI-Adolescents

BMI for each participant was interpreted using WHO BMI for age charts for adolescent boys and girls.



(Photograph 5: BMI categorization using WHO BMI charts)

Based on the suggestions from expert round table and as per the BMI, the adolescents were categorized into three colour-coded classifications, RED, YELLOW and GREEN citing the severity, and suggesting the referral and further management. As shown in the tables 6.3 and 6.4, 14.8% boys and 18.9% girls were severely thin. It was observed that obesity is not a problem among rural adolescents. Based on the colour-coded classification for BMI, a total of 217 (26.4%) adolescents out of 821 required referral to AFHC, PHC or CHC.

Table 6.3: Distribution of adolescent boys as per BMI for age WHO standards

(Data is not representative of district or state)

Category	Severe Thinness	Thinness	Normal	Over weight	Obese	Total
School-going	57 (15.5)	126 (34.3)	175 (47.7)	8 (2.2)	1 (0.3)	367 (100)
Out-of-school	0	8 (42.1)	11 (57.9)	0	0	19 (100)
Total	57 (14.8)	134 (34.7)	186 (48.2)	8 (2)	1 (0.3)	386 (100)

**Table 6.4: Distribution of adolescent girls as per BMI for age WHO standards
(Data is not representative of district or state)**

Category	Severe Thinness	Thinness	Normal	Overweight	Total
School-going	70 (21.7)	94 (29.1)	157 (48.6)	2 (0.6)	323 (100)
Out-of-school	12 (10.8)	25 (22.2)	75 (67)	0	112 (100)
Total	82 (18.9)	119 (27.4)	232 (53.3)	2 (0.4)	435 (100)

Haemoglobin estimation

Haemoglobin estimation was carried out by laboratory technicians, FHW or MPHWS using Sahli's method. As the method was time consuming, the IIPHG team provided five Durham tubes to each PHC to accelerate the process, by which five participants' haemoglobin could be estimated simultaneously. Other logistics like N/10 HCL and lancets were provided by the health department.



(Photograph 6: Haemoglobin estimation)

Each participant's reading was entered into the card and the register for further actions like counselling and treatment or referral. Every adolescent was marked on the finger using permanent marker to ensure no adolescent was missed. This also motivated the adolescents and those who may have

missed out approached the testing station on their own. Table 6.5 and 6.6 shows the distribution of adolescent boys and girls with mild/moderate/severe anaemia as per their haemoglobin status. A total of 820 adolescents were tested and as per National Iron Plus Initiative (NIPI) guidelines, 36 (4.4%) boys and girls had severe anaemia meaning haemoglobin less than 8 gm%, and were referred to the CHC Talod for treatment and counselling. Two severely anaemic girls and boys were also found to be severely thin. Most girls (85.3%) and boys (81.8%) were moderately anaemic.

Table 6.5: Distribution of adolescent boys as per their Haemoglobin status

(Data is not representative of district or state)

Hb levels	Severe Anaemia (<8 gm %)	Moderate Anaemia (8-10.9 gm %)	Mild Anaemia (11-11.9 gm %)	No Anaemia (≥12 gm %)	Total
School-going	9 (2.5)	304 (83)	29 (8)	24 (6.5)	366 (100)
Out-of-school	2 (10.6)	11 (57.9)	2 (10.5)	4 (21)	19 (100)
Total	11 (2.9)	315 (81.8)	31 (8.1)	28 (7.2)	385 (100)

Table 6.6: Distribution of adolescent girls as per their Haemoglobin status

(Data is not representative of district or state)

Hb levels	Severe Anaemia (<8 gm %)	Moderate Anaemia (8-10.9 gm %)	Mild Anaemia (11-11.9 gm %)	No Anaemia (≥12 gm %)	Total
School-going	20 (6.3)	279 (87.4)	13 (4.1)	7 (2.2)	319 (100)
Out-of-school	5 (4.5)	89 (80.1)	12 (10.8)	6 (5.4)	111 (100)
Total	25 (5.9)	367 (85.3)	25 (5.8)	13 (3)	430(100)

5) Group Counselling for Hb, BMI and substance abuse

School teachers counselled adolescent girls and boys in group of five on nutrition according to their BMI and haemoglobin status. Those with moderate and mild anaemia were treated by AYUSH MO, FHWs or MPHVs as per national guidelines with IFA and Albendazole. Cases of severe anaemia and thinness were referred to CHC or District Hospital. Although group counselling may not be the ideal method, individual counselling was not possible due to large number of adolescents participating in AHD.



(Photograph7: Counselling of adolescent girls using findings of BMI and Haemoglobin)

Teachers/MPHVs/FHWs also counselled adolescent boys and girls for substance abuse, mainly tobacco products, as its consumption is prevalent in the community and among adolescents.

6) Counselling of boys and girls separately in groups by AYUSH MO and supervisors at high schools on menstrual hygiene, contraceptives, RTI and STI

Adolescent boys and girls of high schools (15-19 years of age) were also counselled for RTI and STI as per RKSK guidelines. Initially adolescent boys and girls were counselled in groups of five separately by FHW/MPHV/AYUSH MO. They were counselled on menstrual hygiene, normal physical changes during adolescence, disadvantages of teenage marriages and pregnancy, how to avoid teenage pregnancies using contraceptives, and common RTIs and STIs. This was followed by one-to-one counselling of adolescent boys and girls for their individual queries or problems, if any.

7) Exit interview

Exit interviews using pre-designed close-ended structured format were conducted for five randomly selected adolescents at each of the 16 session sites. A total of 83 exit interviews were conducted by AYUSH MO/Block Health Officer (BHO) /IIPHG team. All formats were submitted to block health office.



(Photograph 8: Exit interviews)

8) Supportive supervision reporting of the activity

All sessions were supervised by AYUSH MO using supportive supervision format suggested by RSKS guidelines. All the formats were submitted to Block Health Office for further use and analysis, and discussion during the monthly monitoring meeting.

9) Summary report of the activity

A summary report of activities was generated jointly by education and health department staff for all sessions using standard reporting format for AHD using RSKS guidelines. Registers were also filled and maintained for each session site for future follow-up and comparison.

3) **Post-AHD**

1. Analysis of data on referrals

Line listing of adolescents with severe thinness and severe anaemia was prepared under supervision of the IIPHG team, by members of education and health department, and was submitted to Block Health Office for further follow-up.

2. Block-level meeting of stakeholders for further actions based on report

A block-level meeting of health, ICDS and education department officials was held in the end of March 2016 to discuss the findings of AHD reports, follow-up of referral cases and future action plan for AHD. On subsequent follow-up with district officials, the same was done and was documented as Minutes of Meeting. Findings of AHDs were also shared with all stakeholders in a meeting chaired by District Development Officer at district level. Detailed discussions were held to plan scaling up of AHD celebration in all other blocks of the district.

Evaluation of model AHD

The PHC MO and BHO conducted exit interviews independently of the adolescents for validating the information provided by them during the AHD. After the AHD, the validity of the model AHD was also analysed based on discussions with BHO and CDHO. Some of the qualitative observations on quality of services, engaging teachers, data and referral mechanism are presented below:-

- The BHO and CDHO were satisfied with the quality of services provided. They said that both the adolescents and teachers enthusiastically participated in the AHD which was important for success of any program. They said that the adolescents were aware of their Hb level and the Class of Malnutrition they belonged to, in the exit interviews.

"This model is good to engage with students and teachers. Most of the time teachers feel that it is just a routine exercise and hence do not actively participate. However this model is explicable and will be more participatory". CDHO Sabarkantha

- The staff engaged in data evaluation said they now had a list of adolescents who were anaemic and malnourished, which provided them an opportunity for follow up.
- During the AHD, the list of students who required urgent referral was also generated. This was appreciated by the PHC MO as he now had a list of those who needed to be followed up. This was also appreciated by the school principals.

- This model also engaged school teachers to deliver common messages as part of health education and counselling, which was specifically appreciated by the school principals and the CDHO.

Reflections by various stake-holders, such as CHETNA team members, school teachers, principals, RBSK Medical Officer and laboratory technicians, were also recorded. Most stakeholders were satisfied with the quality of service delivery. Some of these reflections are presented below: -

- CHETNA team members engaged in execution of first round of AHDs.
“This model not only saved time but also resulted in better interaction with the students. This is a key factor for success of community engagement initiatives”- CHETNA team member 1
“The best thing I liked about this model was the engagement with the students. Previously, school teachers were most reluctant to undertake this activity as they felt it was a burden for them. However, now the teachers were enthusiastic to engage with the students”- CHETNA team member 2
- School Principal 1: *“This model of AHD implementation resulted in us receiving a list of students who needed referral. This will help us communicate the same to their parents and ensure that they get adequate treatment”.*
- School Principal 2: *“I am happy that all the students with whom I interacted, knew the colour of the BMI grade to which they belonged and that is what is required as young minds are open to novel ideas and are full of curiosity. They even knew which grade they wanted to move to”.*
- Teacher: *–Seeing the Medical Officer interacting with the students and asking about type of service and quality of service availed will make the staff more vigilant. This model creates ownership, and will also increase faith of school and students in engaging in such activities”.*
- RBSK Medical Officer: *“Sucha model builds trust as we interacted with the school teachers / principal from day one for planning i.e. Pre-AHD phase and that was useful as everybody knew what and how we intend to implement AHD. Hence things became easier on the day of execution. I will also ensure that those students who were identified for referral are adequately followed up”.*

- Laboratory technician: *“I am happy to see how simple low cost innovation of using multiple tubes for Hb estimation has reduced time constrain and improve quality of measurement”*.

Overall, the evaluation of model AHD showed that AHD implementation requires meticulous planning and effective field-level convergence of various stake-holders, such as school teachers, AWWs, ASHAs, Medical Officers, PRI members and the students themselves. Further, it also showed that AHD activities should be carried out in various phases to ensure smooth execution. Engaging with students and teachers was crucial for successful implementation of AHD.

Observations and Recommendations for Model AHD Implementation and Sustainability

Regular meetings of District and Block convergence committee should be held for better coordination among all departments. Review of activities under RKSK both at District and Block level should be held regularly and minutes of meeting should be shared with the state. Regular block-level convergence committee meeting for review of AHD are to be held and actions for various departments are to be based on the findings of review. A micro-plan for the next quarter AHD should also be discussed and minutes of meeting should be shared with the district.

The school dropout rate in Sabarkantha district is around 10-15%, hence AHD should be prioritized to be organized at schools and more intense efforts would be required to maximize coverage of adolescents. Although, involvement of out-of-school boys remains a challenge, out-of-school adolescents should be mobilized to schools for AHD by ASHAs, AWWs and peer educators. Based on the learning from AHD implementation, separate sessions on Sundays may be required to cover more out-of-school boys and girls at a community venue. Sports activities should be included in the AHD to make it more fun and attractive to adolescents. Moreover engaging in a sport is also a sign of healthy lifestyle which should be inculcated in early life. Various activities of AHD should also be made participatory for adolescents, to promote ownership and mobilization of adolescents.

During the 16 AHDs executed it was observed that the pivot of AHD activities was the health department. However, based on the observations from the process documentation, ICDS and education department can be a

better choice for pivoting activities under AHD and for supportive supervision of AHD.

Efforts should be made for capacity building of staff from health, education and ICDS departments for conducting counselling sessions on nutrition, substance abuse, RTI and STI, mental health, NCDs and gender-based violence. Participation of male teachers and MPHWS is vital to ensure maximum adolescent boys participation during AHD.

Since counselling is a challenge, counselling on the issues of mental health would require special efforts. Involvement of psychology departments from local colleges can be one of the solutions. Students from this department can be trained and engaged in counselling during AHDs. This will also ensure availability of more human resource for counselling adolescents on AHD, as otherwise it is a huge task for health and education department staff to counsel each adolescent on various health issues on AHD.

Since there are six priority areas to be covered on AHD as per RKSK guidelines, it is difficult to address all six priorities on every AHD. Therefore, thematic AHD should be celebrated, meaning six priorities to be divided amongst four AHDs in a year for that area. Different combinations of themes should be tried based on local need and resources. As demonstrated here, according to the theme various stations should be planned and responsibilities should also be assigned to the staff of health, education and ICDS departments.

It should be emphasized to the staff involved in AHD that age is the criteria for defining adolescent age group and marital status does not affect this status. In fact married adolescent girls are more at risk for teenage pregnancy and should be counselled for avoiding pregnancy in adolescence by using contraceptives.

For BMI estimation, WHO charts for adolescent age should be used, which is not specified in the RKSK guidelines. Further, efforts should be made for treatment of severe thinness in adolescence in coordination with ICDS department. Since the numbers of severe thinness are relatively more, proper referral plan should be made to address the issue in terms of where to refer, who will treat etc. Treatment of severe anaemia cases should be ensured as per National Iron Plus Initiative (NIPI).

Till HMIS introduces entry of data on adolescent health, local data for action should be generated using reporting and supervision formats suggested in RKSK with necessary modifications. As per RKSK all cases

requiring referral should be sent to nearest AFHC, but the AFHC may not have the capacity to address the same. If services of psychiatrist are not available in public sector, a private provider should be identified for providing treatment of mental illness and substance abuse. Similarly, addressing gender-based violence issues would also require special efforts like taking help of social justice, police and judiciary.

Advocacy for AHD and RKSK implementation

Based on the above experiences of demonstrating and testing AHD model, guidelines and program briefs were developed and submitted to state and central RKSK officials. A policy brief on ‘Framework developed for Executing, Monitoring and Evaluation of the activities under AHD’ was developed and shared. Follow-up and reassessment of identified anaemic and malnourished adolescents in previous AHDs was also done. Further investigation of the underlying cause of anaemia among adolescents and need for strengthening peer educator component through training and engagement was also discussed with government officials.

Advocacy for developing model Adolescent Friendly Health Clinic based on the learning from other states like Meghalaya, and findings from the two case studies on mental health and NCD, for effective roll-out of RKSK was also undertaken. Further there is also a need to explore vocational and life skill training for adolescents in coordination with existing systems such as *Sakhi Mandals, Pradhan Mantri Kaushal Vikas Yojana* and *Nehru Yuva Kendra*.

Chapter 7: Formulation and Institutionalization of Convergence

Tapasvi Puwar, Deepak Saxena and Manish Fancy

Building consensus for a convergence approach for implementation of health programs for adolescents, with representatives of different government departments was crucial for formulation of a convergence strategy. Two levels of convergence i.e. at state level and field level were proposed. State-level convergence was planned at organization /systems level between DHFW, WCDD and education department, for planning, implementation and monitoring of adolescent health programs. Field-level convergence was planned to be demonstrated through preraks, which is explained in detail in chapter 5. For system-level convergence, district and block-level convergence committees were formed and institutionalised under the chairmanship of DDO, with clear roles and responsibilities, composition and TOR"s for effective program planning and implementation. Based on the projects experience, a framework is also proposed for developing effective convergence.

Advocacy and Building Consensus for Convergence

As mentioned in chapter 1 various health programs for adolescents are being implemented by the state but they do not realize their full potential for bringing about the desired change. Formative research also showed that the outreach of health programs that focus on adolescents was very limited in the intervention block. Strategically, there was a clear need to adopt convergence approach by the different departments providing health services to adolescents, for improving overall outreach and health outcomes. The concept of convergence and other activities proposed in this project largely matched with the RSKS program.

As a first step IIPHG initiated the process of building consensus for convergence approach, at state, district and block level. IIPHG organized meetings in February and March 2015, at various levels (state, district and block) with program managers and nodal officers from various departments such as DHFW, WCDD, Education Department, State Institute of Health and Family Welfare, UNICEF and CHETNA, to understand their views and needs on convergence approach. The state-level convergence committee meeting was conducted in February 2015 at IIPHG with an objective to share findings from the formative research, invite suggestions for improving existing situation and reflect on perceptions for developing convergence strategy at various levels. Representatives from DHFW shared the challenges in outreach for programs such as MTA and AFHC. The government was keen on building RSKS on the existing base of MTA and ARSH programs, and so were planning to add the additional components of RSKS such

as mental health, injuries and violence, and non-communicable diseases in the larger domain of MTA. Representatives from education department also offered full support and were open to setting an example of active convergence with health department and ICDS department.

It was decided that two levels of convergence, i.e. state level and field level convergence would be required for effective program implementation.

- The state-level convergence would be at organization /systems level between the three departments (DHFV, WCDD and Education Department) for planning, implementation and monitoring of health programs. It would be led by IIPHG.
- The field-level convergence would be demonstrated through *preraks*, who are frontline workers of the Education Department. It would be led by CHETNA.

The Chief District Health Officer (CDHO) from Sabarkantha district suggested the involvement of District Development Officer for promoting ownership and assistance in convergence by various departments at district level. The CDHO offered all possible assistance from the district and block to ensure implementation of all planned activities, as well as the convergence. The health department provided necessary leadership and became the convergence pivot for the entire activity. It was mutually agreed that IIPHG would take lead in developing state-level convergence and CHETNA would take lead in developing field-level convergence.

IIPHG team members also assisted the group in developing a common understanding of the methods and planning required for a successful convergence. It was discussed that Adolescent Health Day (AHD), which is an integral component of RKSK, could be a starting point to demonstrate the actual convergence. How to improve utilization of AFHS centres, effectively monitor, develop tools for data collection and generating information, and promote community engagement was also discussed. It was decided that ICDS, Health and Education Department would develop a micro-plan together; for execution of training, deciding venue for training and identifying individual responsibilities. IIPHG suggested incorporating a monitoring process for implementation of AHD; and, along with CHETNA, offered to provide technical assistance to the entire activity. There was deliberation on content and framework of Adolescent Health Day (AHD) services. Block-level health officials also offered full assistance for developing convergence and ensuring support for the implementation.

IIPHG also presented a model on effective convergence in line with RKSK model. One of the important discussions at the meeting was the need to form convergence committee at village and block level, which could initiate joint planning and

monitoring of various activities. The committee can meet quarterly and discuss if the desired objectives are met. IIPHG along with district health officials would monitor the committees to ensure that they are functional. The CDHO offered that the district can take lead and support such formation. There was detailed discussion on developing indicators for demonstrating effective convergence. The potential indicators, i.e. possible input, output and outcome indicators were also discussed. IIPHG offered to develop indicators in line with what has already been proposed in RKSK guidelines. Representatives from government offered to discuss within the government health system to ensure some of these indicators are incorporated in routine MIS.

It was concluded that IIPHG would:

- Undertake process documentation of all the activities,
- Develop the convergence committee at district and block level, and
- Identify measurable indicators for convergence strategy.

Additionally, field-level convergence would be demonstrated through *preraks*, who would be identified and trained for being peer educators. CHETNA would provide trainings on adolescent health, related health issues and counselling skills to *preraks*, FHOs and MOs.

The district and block-level convergence committee meeting was conducted at Himmatnagar District Office in March 2015, which was attended by the DDO, CDHO, RCHO, BRC and PHC medical officers. The baseline survey of Talod block and proposed convergence strategy was presented to the district and block officials. Developing a micro-plan and monitoring and feedback mechanism at district and block level was strongly recommended. As the aim was to develop organizational convergence and better field convergence for AHD, the presence of ASHA, AWW, ANM, VHSNC members and teachers was stressed upon. It was concluded that a village wise plan for AHD would be developed, with emphasis on ensuring participation of all the stakeholders. Following consensus building with various government stakeholders, IIPHG and CHETNA, in coordination with health department of Sabarkantha district, developed the convergence strategies for implementation of RKSK. It was agreed that district-level and block-level convergence committees would be necessary for better coordination between education, health, ICDS and other departments, to sustain efforts and implement AHD across the district.

Institutionalization of Convergence Committee

Although IIPHG initiated formation of convergence committee at district and block level well ahead of AHD implementation by CHETNA, during the process documentation of AHDs it was observed that formal institutionalization of convergence committee with clear roles and responsibilities, composition and TOR's was crucial for effective program planning and implementation. The

institutionalization of convergence committee was also requested for by state and district health officials to ensure that RKSK activities are implemented effectively across Sabarkantha District and for scaling up to other districts.

A few important suggestions that emerged were that IIPHG should:

- Initiate advocacy to get formal institutionalization of the convergence committee at district level, followed by block level and finally village level,
- Involve and engage the ddo for ownership at district level, and
- Involve and engage block resource centre coordinator (brc) for supportive supervision of ahd.

IIPHG then initiated the institutionalization of convergence committee with assistance from the health department; to assist implementation of various components of RKSK. Although the health department is very active, effective convergence was not possible unless there is adequate support from education department and ICDS. Findings from the formative research and baseline studies suggested that there should be a pivot at district level which can hold all the stakeholders engaged directly or indirectly within the RKSK framework. Hence, the proposed convergence committee was formed under chairmanship of District Development Officer (DDO) and under the administrative leadership of CDHO. A formal meeting was convened under the guidance of DDO to discuss the institutionalization and induction of convergence committee for RKSK, involving representatives of health, education and ICDS departments, at district and block level.

For developing the Terms of Reference (TOR), frameworks suggested in RKSK guidelines and recommendations from the round table with different stakeholders were taken into consideration. CDHO suggested the involvement of DDO at district for promoting ownership and assistance of various departments in convergence. After detailed deliberation and series of follow-up meetings, a convergence committee was formally institutionalized citing composition, Terms of Reference (TOR), activities, tenure and functioning in Sabarkantha district. A mechanism was developed for making the convergence committee sustainable by ensuring allocation of time during the RCH committee meeting held at district level under the supervision of DDO.

Decision was also taken to form similar committees at block level to ensure better coordination between stakeholders. Further, TOR and other details of convergence committee were developed by IIPHG team and submitted to DDO and CDHO of Sabarkantha district. It was agreed that celebrating Adolescent Health Day would be a starting point to demonstrate actual convergence.

Constitution of the Convergence Committee

The convergence committee at district and block level, for Adolescent Health would comprise members as shown in table 7.1 and 7.2

Table 7.1: Constitution of convergence committee at district level

- | | |
|--------------------|-------------------------------|
| • Chairperson | District Development Officer |
| • Member Secretary | Chief District Health Officer |

Other Members:

- Chairperson, *Mahila Bal Vikas Samiti*
- Program Officer, ICDS
- District Education Officer
- District social Welfare Officer
- Chief District Medical Officer
- Reproductive Child Health Officer
- Gynaecologist (preferably professor gynaecology, medical college or gynaecologist at district hospital or private gynaecologist)
- Paediatrician (preferably professor paediatrics, medical college or paediatrician at district hospital or private paediatrician)
- Psychiatrist (preferably professor psychiatry, medical college or psychiatrist at district hospital or private psychiatrist)
- Public Health Professional (preferably professor PSM, Medical College or SRIM for district)
- DACPU-MO or ICTC Counsellor District Hospital
- District Training Team- Senior Medical Officer
- District Public Health Nurse
- District program Coordinator-DHS
- Representative from NGO
- Representative from Police Department

Table 7.2: Constitution of Convergence committee at block level

- CDPO, ICDS
- Block Education Officer
- Block Medical Officer
- Gynaecologist stationed at block level
- Paediatrician stationed at block level

- Psychiatrist (Public/ Private)
- NGO functional at block level
- CHC- Superintendent
- Representative from Police department

Scope of work of convergence committee for adolescent health

The goal of the convergence committee was to meet periodically to guide, monitor and review progress of adolescent health (RKSK), in accordance of relevant national and state guidelines, as well as the best available data and evidence from the field, with the objective of helping programs effectively achieve concrete outcomes.

Broadly, the functions of the convergence committee would be to:

- 1) Provide broad framework and guidance to the district team for planning various components of RKSK (WIFS, AHD, AFHC) and others programs, as per the state guidelines or directives, including supportive supervision by all three departments.
- 2) Provide leadership for RKSK implementation
- 3) Planning of human resources for all three departments, their roles and responsibilities
- 4) Logistics management for various components including distribution plan
- 5) Supportive supervision plan
- 6) Develop data collection plan
- 7) Analyse progress of the implementation of RKSK in the district
- 8) Plan training of various functionaries on adolescent health from all three departments as required by the program
- 9) Review the implementation of various components of RKSK using supportive supervision and routine reports of the program
- 10) Identify and suggest solutions for the issues encountered for effective implementation of RKSK
- 11) Discuss the issues related to roles and responsibilities of various departments in the program and suggest solutions for the same
- 12) Encourage the use of pilots for testing new ideas and approaches, and the use of evidence from sources independent of the MIS, to arrive at alternative solutions
- 13) Guide and review the meetings of block-level convergence committee for adolescent health using minutes of meeting
- 14) Seek guidance from the state on issues to be resolved at the state level

The convergence committee shall be convened at least once in six months, or on request of either department or the chair. When the convergence committee is formally institutionalized at district and block, it is important that all stakeholders take ownership and effectively engage in implementation of RSK. The convergence committee should supervise and monitor the implementation of RSK in the entire district. It should ensure allocation of time to the program in the quarterly RCH meeting organized at district level under the leadership of DDO.

Framework for Developing Effective Convergence

Convergence literally means coming together. In the context of adolescent health programs it referred to departments working together for achieving a common goal, i.e. providing effective coverage and delivery of adolescent health services. It was initially observed that there was limited understanding on coordination and collaboration required for convergence, across the different government departments. Collaborations across organizations, in this case, the three government departments was important for ensuring scale and sustained impact of programs with shared goals. Reflecting on our experience of demonstrating convergence between different government departments for AHD implementation, the following four steps emerge as being crucial for achieving effective convergence.

Step 1 Participants appreciate and get committed to work

State-level and district-level meetings were conducted with representatives from the three departments (DHFV, WCDD and Education Department) to understand their perspectives and need for convergence. The findings of the formative and baseline research were also shared with the government representatives to highlight the usefulness of convergence, build consensus and enhance their commitment.

Step 2 Develop a structure for collaboration

Once the participants were committed, there was a need to formalise the process and develop a structure for the participants to work together. State-level and district-level convergence committees were therefore formed, with clear roles and responsibilities, composition and TOR's for effective program planning and implementation.

Step 3 Engage with positional leaders for promoting ownership and assistance

After the convergence committees were formed, with positional leaders at district level for promoting ownership and active assistance at district and block level were engaged. The convergence committee was formed under chairmanship of DDO and under the administrative leadership of CDHO. A formal meeting was

also conducted under the guidance of DDO with district and block-level representatives of health, education and ICDS departments, for induction of convergence committee for RKSK.

Step 4 Integrate at systems level to facilitate sustainability

For sustainability of the convergence committee and its activities, there was a need to integrate it within the existing health reporting system at district and state level. The convergence committee was therefore made sustainable by ensuring time allocation during the quarterly RCH committee meeting which is held at district level under the supervision of DDO.

Chapter 8: Endline Survey and Comparative Analysis

Deepak Saxena, Tapasvi Puwar, Sandul Yasobant, Poonam Trivedi, Shital Savaliya and Krupali Patel

The endline survey was conducted in the intervention (Talod) block and control block (Idar) of Sabarkantha district in 2016 with the objective of evaluating the intervention impact through comparison of baseline and endline results. The study utilized both quantitative and qualitative methods. The endline survey was conducted only with 11 to 18 years age group due to change in focus of project intervention as per RKSK program. Overall awareness regarding anaemia was found to be low in both blocks, however there was significant increase in knowledge amongst boys in intervention block when compared to control block. In menstrual hygiene practices, the use of readymade cloth was reduced by 16% among out-of-school adolescent girls and 21.3% among school-going adolescent girls in IB. Although, practice of reusing same cloth for next time was found to be high in IB, there was moderation in reuse of the cloth for multiple cycles. Dysmenorrhoea (55%) was the most common health problem during menstruation. Survey findings also indicate improvement in knowledge on STD and HIV/AIDS in IB. Boys had significantly more correct information and knowledge about STDs and HIV than girls in both the blocks. Out-of-school girls (15-18 years) had comparatively poor knowledge of STD and HIV. Further, awareness about contraceptives among boys was also more in the IB. Overall addiction to tobacco was more among adolescent boys. Endline survey also highlights increased substance abuse in school going boys (11-14 years) and adolescent girls suggesting their vulnerability to addiction.

Study Design

The study utilized both quantitative and qualitative methods. Quantitative data was collected using pre-tested semi-structured tool. All the steps for sampling and survey design were the same as the baseline survey. However, the endline survey was conducted only with 11 to 18 years age group. Following the baseline survey, it was reflected that the newly launched RKSK program focused on 10 to 19 years age group and population size for the projects health intervention would have been large if 19 to 24 years was also included. Hence the endline survey was conducted only with 11-18 years age group, keeping the sample size at 1,340 in both the blocks through cluster sampling method. Stratification was based on age group, gender, school-going and out-of-school status. Break-up of the sample size for endline survey is as shown in table 8.1. Same clusters that were included in the baseline were included in the endline survey.

Table 8.1: Sample frame of baseline and endline surveys

Groups	Talod				Idar			
	Baseline		End-line		Baseline		Endline	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
11-14yrs school-going	127	127	256	256	128	128	258	256
15-18yrs school-going	128	128	256	254	128	128	256	257
15-18yrs out-of-school	126	128	158	160	128	128	161	160

For qualitative assessment key informant interviews of stakeholders was also undertaken. This was required to better understand roles of stakeholders, quality of training, challenges faced while implementing adolescent health programs and obtain suggestions to improve program quality. A total of 12 villages were selected for the qualitative study of stakeholders. This included four PHC villages, four sub-centre villages and four non-PHC non-sub-centre villages. ASHAs, AWWs, FHW/ANM, MPHWS and teachers (both those who participated and did not participate in training organised by CHETNA) were interviewed.

Results of the quantitative assessment

Data analysis was carried out using SPSS statistical software version 20. The findings of the quantitative assessment with comparative analysis are presented below.

(i) Socio-demographic profile

Overall, in both the baseline and endline surveys most participants were Hindu by religion (around 95%) and belonged to nuclear family (around 72%). More than 90% boys and girls in both the intervention and control blocks had completed primary education. Among out-of-school boys, highest school dropout was seen during the transition phase from secondary to higher secondary level, whereas in girls the dropout was highest from primary to secondary level.

In the baseline, among out-of-school boys, 60% worked as labourers in Talod, while in Idar 37% worked on their own farm (refer table 8.2). However, in the

endline in Talod block, 52% were not involved in any occupation and 21% were working as labourers. This difference may be a seasonal effect as endline was carried out during the summer months. Among out-of-school girls, most were involved in household and agricultural-related activities in both the blocks, in both baseline and endline.

Table 8.2: Socio-demographic profile in baseline and endline surveys

Socio-demographic profile	Baseline survey		Endline survey	
	Talod (N=764)	Idar (N=768)	Talod (N=1340)	Idar (N=1347)
Characteristics				
Literacy Status	More than 90% in both boys and girls	More than 90% in both boys and girls	More than 95% in both boys and girls	More than 95% in both boys and girls
Occupation (Out-of school going)	Boys = 60% Labourers Girls = 99% HH/Agri	Boys = 37% Own/HH Farm Girls= 89% HH/Agri	Boys = 21% Labourers, 52% at home Girls = 99% HH/Agri	Boys = 46% Labourer Girls= 85% HH/Agri

Mean ages of the different age groups in both baseline and endline surveys are shown in table 8.3 and 8.4. It shows that sample is comparable across age groups between intervention (Talod) and control (Idar) blocks of Sabarkantha district.

Table 8.3 Mean age of study population in Talod

Age groups	Boys		Girls	
	Baseline	Endline	Baseline	Endline
11-14 yrs school going	12.79 ± 1.01	13 ± 1.00	12.27± 1.05	13 ± 1.00
15-18yrs school going	15.98 ± 0.99	15.92± 0.90	15.47 ± 0.95	15.92± 0.90
15-18yrsout-of-school	17 ± 0.90	16.70 ±1.01	16.33 ± 1.00	16.70 ±1.01

Table 8.4 Mean age of study population in Idar

Age group (In Yrs.)	Boys		Girls	
	Baseline	Endline	Baseline	Endline
11-14yrs	12.57± 1.18	12.7±1.14	12.59 ± 1.17	12.62 ± 1.18
15-18yrs school going	16.4±1.1	16.5±1.1	16.11 ± 1.04	16.23 ± 1.0
15-18yrs out-of-school	17.05±1.05	17.13±1.0	16.69 ± 1.25	16.62 ± 1.0

(ii) Nutritional Status

Anemia

Anaemia is one of the most common and intractable nutritional problem globally, affecting both developing and developed countries with major consequences for human health, as well as social and economic development. Iron deficiency anaemia occurs at all stages of the life cycle but is more prevalent in pregnant women and young children. Adolescents, especially girls, are particularly vulnerable to iron deficiency. The highest prevalence is between the ages of 12 and 15 years when requirements are at a peak. Adolescence is an opportune time for interventions to address anaemia. Large numbers of both boys and girls can be reached easily if school attendance or participation in other group activities is high. Hence appropriate interventions need to be designed for achieving better outcomes in this target group.

Knowledge about anaemia was documented in both the blocks in the baseline and endline. It was poor among both boys and girls. Awareness of anaemia was higher in intervention block compared to control block in both surveys as shown in table 8.5. Overall 15-18 year school-going adolescents had better knowledge about anaemia.

Table 8.5: Awareness about Anaemia in baseline and endline in IB and CB

Age group (In Yrs.)	Talod			Idar			
	Girls	Baseline	Endline	% Diff	Baseline	Endline	% Diff
11-14 school going		20	21.9	1.9	7.8	12.1	4.3
15-18 school-going		31	36.3	5.3	18	20.3	2.3
15- 18out-of-school		21	26.6	5.6	7	8	1
Boys	Baseline	Endline	% Diff	Baseline	Endline	% Diff	
11-14 school-going		36	37.1	1.1	14.8	10.9	-3.9
15-18 school-going		31	32.8	1.8	28.1	21	-7.1
15- 18 non-school-going		9	12.3	3.3	12.5	8.1	-4.4

Status of BMI: Underweight

Body Mass Index (BMI) is a person's weight in kilograms divided by the square of height in meters. For adolescents, BMI is age-specific and sex-specific, and is often referred to as BMI-for-age. BMI status is also used as proxy for adolescent nutritional status. In both baseline and endline surveys, height and weight of all adolescents was taken and BMI was calculated. Proportion of underweight was found to be high in both blocks across genders (refer table 8.6). However, post-intervention in Talod, the decline was only documented in age-group 11 to 14 years' school-going girls (19.9%) and in 15 to 18 years school- going boys (2%).

This may be because this projects intervention focused mainly on providing information on importance of nutrition in adolescence and its significance, and two years is a short time for any knowledge-based nutrition intervention to result in nutrition improvement in terms of BMI. Another point for policy debate is that there are no clear guidelines on how to interpret BMI for adolescents. World Health Organization (WHO) and Indian Academy of Paediatrics has adolescent references but the operational guidelines of RKSYP suggest using adult BMI standards. Hence there is lack of clearly defined standards for BMI for adolescents in India.

Table 8.6: Status of BMI: Underweight in baseline and endline in IB and CB

Age group (In Yrs.)	Talod			Idar		
Girls	Baseline	Endline	% Diff	Baseline	Endline	% Diff
11-14 school-going	82	62.1	-19.9	86.7	80	-6.7
15- 18 school-going	60	75.6	15.6	64.8	71	6.2
15- 18 non-school-going	58	59.9	1.9	60.9	72	11.1
Boys	Baseline	Endline	% Diff	Baseline	Endline	% Diff
11-14 school- going	81	88.2	7.2	91.4	48.5	-42.9
15- 18 school-going	61	59	-2	40.6	67.3	26.7
15- 18 non-school-going	41	42.5	1.5	46	55.6	9.6

(iii) Menstrual Hygiene

Menstrual hygiene, a major risk factor for reproductive tract infections, is a vital aspect of health education for adolescent girls. Menstruation and menstrual practices are still clouded by taboos and socio-cultural restrictions, resulting in adolescent girls remaining ignorant of the scientific facts and hygienic health practices, which sometimes result in adverse health outcomes. This study documented menstrual hygiene practices in both baseline and end line survey. Most commonly used absorbent by menstruating adolescent girls in both the blocks was a piece of cloth commonly termed as readymade cloth. The observations for 11 to 18 years school-going and 15 to 18 years out-of-school adolescent girls are presented separately in table 8.7 and 8.8.

Among 11 to 18 years school-going adolescent girls, it was observed that post-intervention there was a significant decline (21.3%) in use of readymade cloth as absorbent in intervention block. Additionally, there is decline in practice of reusing of absorbent by 7.7% and 9.8% in intervention and control block respectively. In terms of frequency of reusing absorbent, there is moderation in reusing absorbent beyond 2 to 3 cycles. The data also suggests the need for appropriate IEC strategies for promoting drying of absorbent in sunlight.

Table 8.7: Menstrual hygiene practices (11-18 school-going girls) - baseline and endline in IB and CB

Variables	Talod			Idar		
	B	E	%D	B	E	%D
Absorbent used during menstruation						
Sanitary napkin	12	18.4	6.4	0.8	20.8	20
Readymade cloth from market	66	44.7	-21.3	31.3	77.1	45.8
Cloth from home	16	36.8	20.8	3.1	1	-2.1
Other (Cloth from home or market, nothing, Sanitary napkin and cloth from market)	6	0	-6	3.1	0	-3.1
Practice of reusing the absorbent						
Yes	88.4	80.7	-7.7	35.9	26.1	-9.8
Frequency of reusing absorbent						
Within one cycle	13.1	24.6	11.5	3.1	17.9	14.8
2 to 3 cycles	73.7	53.5	-20.2	23.5	50.7	27.2
Till the stage it can be used	7.9	0	-7.9	8	0	-8
Place of drying the absorbent after washing						
Outside at sunlight	89.5	76	-13.5	30.5	71.6	41.1
Inside house	7.9	8	0.1	5.5	14.9	9.4
Outside but not in sunlight	2.6	16	13.4	8	13.4	5.4

Among 15 to 18 years out-of-school adolescent girls, it was observed that post-intervention, there was an increase in use of sanitary napkins in Talod and Idar blocks by 9.6% and 14% respectively (refer table 8.8). There is also decline in use of readymade cloth as absorbent in intervention block by 16.1% and in control

block by 7.3%. Additionally, there is decline in the practice of reusing absorbent by 17.1% and 10.2% in intervention and control block respectively. In terms of frequency of reusing absorbent, there is moderation in reusing absorbent beyond 2 to 3 cycles. The endline data also shows that appropriate IEC strategies are required for promoting drying of absorbent in sunlight.

Table 8.8: Menstrual hygiene practices among 15-18 out-of-school girls, in baseline and endline, in IB and CB

Variables	Talod			Idar		
	B	E	%D	B	E	%D
Absorbent used during menstruation						
Sanitary napkin	7.7	17.3	9.6	6	20	14
Readymade cloth from market	80.5	64.4	-16.1	81.7	74.4	-7.3
Cloth from home	9.3	10.2	0.9	8	4.2	-3.8
Other (Cloth from home or market, nothing, Sanitary napkin and cloth from market)	2.4	0.4	-2	4.4	1.5	-2.9
Practice of reusing the absorbent						
Yes	85.7	68.6	-17.1	89	78.8	-10.2
Frequency of reusing absorbent						
Within one cycle	5.2	20.9	15.7	2	7.4	5.4
2 to 3 cycles	74	59.2	-14.8	61	58.6	-2.4
4 to 5 cycles	13.5	11.2	-2.3	26.7	15.6	-11.1
Place of drying the absorbent after washing						
Outside at sunlight	87	69.9	-17.1	87.1	73.8	-13.3
Inside house	5.2	5.3	0.1	5.7	13.7	8
Outside but not in sunlight	7.7	24.7	17	7.1	12.5	5.4

Overall, about 52% girls dispose sanitary napkins with general waste. More than 85% of school- going girls go to school during menstruation. However, 80% do not prefer to change cloth or sanitary napkins in the school. Reasons given for not changing cloth or napkins at schools were:

1. No need to change (88%),
2. Feel shy (10%), and
3. Go home during breaks for changing as home is nearby (5%).

Less than 5% mentioned no toilets in the schools or toilets without water facility in the school as a reason for not changing cloth or napkin in school. About 55% girls reported painful periods or dysmenorrhoea and more than 50% had some or other menstrual disorder. Most common menstrual disorder was short cycles (35%), irregular menses (23%) and heavy bleeding during cycle (12%). Health-seeking behaviour, except for dysmenorrhoea, was very poor, which suggests the need for strengthening Adolescent Friendly Health Clinics (AFHC) in the district.

Further, two additional indicators, sanitation facility and open defecation were also documented specifically for girls to get an overview on sanitation conditions and defecation practices that are known to influence menstrual hygiene practices. Overall open defecation practices had reduced in both intervention and control blocks (refer table 8.9), which may be due to on-going efforts by government and other NGOs under Swachh Bharat Abhiyan.

Table 8.9: Toilet facility and open defecation practices in baseline and endline in IB and CB

Age group (In Yrs.)	Toilet Facility						Open Defecation					
	Talod (%)			Idar (%)			Talod (%)			Idar (%)		
	B	E	%D	B	E	%D	B	E	%D	B	E	%D
11-14 SG	53.5	65.6	12.1	70.3	82.9	12.6	46.5	33.6	-12.9	29.7	16.7	-13
15-18 SG	53.9	78.9	25	75.3	88.3	13	46	20.3	-25.7	24.2	11	-13.2
15-18 NSG	29.4	66.5	37.1	50.8	73.3	22.5	70.6	32.3	-38.3	49.2	23	-26.2

(iv) Sexual and Reproductive Health

Preferred source of information

There was no change in the information received in baseline and endline surveys on who is main source for providing information on SRH and ideal source for providing information on SRH. In both blocks in both endline and baseline surveys, most of females reported that their mother was the main source of information on issues related to menstruation, menstrual disorders and other

reproductive health disorders. On the contrary males reported friends or peers as the common source of information regarding pubertal changes. However, on enquiring about ideal person for receiving information on SRH, it was mother for the girls and it was either doctor or teacher for the boys.

Health education in schools

There was an increase in confirmation of health education sessions on nutrition and SRH, being conducted in schools, by adolescent girls and boys in intervention block. In the baseline 28.6% boys and 26.6% girls who confirmed about health education sessions being conducted also attended the sessions, while in endline 68.8% boys and 83.3% girls confirmed and attended. Both adolescent boys and girls expressed an increased need for sessions on sexual and reproductive health.

Information about STDs, and HIV and AIDS

Post-intervention there was almost no change in awareness on any STIs among 11 to 14 school-going girls and 8.6% increase in 15 to 18 years school-going girls in IB (refer table 8.10). However, there was significant improvement (around 15%) among 15 to 18 years school-going and out-of-school boys in IB. The control block also reflected decline in overall awareness.

Boys were better aware about HIV and AIDS in both the blocks. Knowledge about HIV remained stable in intervention block and declined significantly in control block as shown in table 8.11.

Table 8.10: Awareness about STIs in baseline and endline in IB and CB

Age group (In Yrs.)	Talod			Idar			
	Girls	Baseline	Endline	% Diff	Baseline	Endline	% Diff
11-14 school-going		22.6	22.7	0.1	10	10.1	0.1
15-18 school-going		42.2	50.8	8.6	40.7	36.7	-4
15-18 non-school-going		22.2	20.3	-1.9	16.4	13.7	-2.7
Boys	Baseline	Endline	% Diff	Baseline	Endline	% Diff	
11-14 school-going		51.2	50.4	-0.8	25.8	19.5	-6.3
15- 18 school-going		64.1	79.1	15	74.2	59.9	-14.3
15-18 non-school-going		60.2	73.8	13.6	50	38.8	-11.2

Table 8.11: Awareness about HIV and AIDS in baseline and endline in IB and CB

Age group (In Yrs.)	Talod			Idar			
	Female	Baseline	Endline	% Diff	Baseline	Endline	% Diff
11-14 school-going		14.2	15.6	1.4	12.5	14.8	2.3
15- 18 school-going		69.5	73.4	3.9	61.7	55	-6.7
15- 18 non-school-going		41.3	43	1.7	22.7	24.2	1.5
Male	Baseline	Endline	% Diff	Baseline	Endline	% Diff	
11-14 school-going		49.6	52	2.4	38.3	27	-11.3
15- 18 school-going		72.7	77.2	4.5	82.8	71.2	-11.6
15- 18 non-school-going		71.9	78.7	6.8	64	46.3	-17.7

Knowledge of contraception

Overall boys had better knowledge regarding contraception in both intervention and control blocks. In Talod, non-school-going girls had more awareness regarding contraception than school-going girls (refer table 8.12). This may be because of direct intervention by CHETNA with out-of-school girls, and interventions by AWWs and ASHAs at village level. Knowledge of contraception significantly increased among boys in intervention block and declined in control block.

Table 8.12: Knowledge of contraception in baseline and endline in IB and CB

Age group (In Yrs.)	Talod			Idar		
	Baseline	Endline	% Diff	Baseline	Endline	% Diff
Females						
15- 18 school-going	9.4	25	15.6	25	43.4	18.4
15- 18 non-school-going	33.3	40.9	7.6	9.4	24.2	14.8
Males						
15- 18 school-going	41.3	70.3	29	76.6	65	-11.6
15- 18out-of-school	45	68	23	58	58.1	1

Access to SRH services

Self-reported prevalence of UTIs among 15-18 years school-going adolescent girls increased by 10% in Talod and 4.8% in Idar (refer table 8.13). Although treatment-seeking behaviour for UTIs was found to be low in both blocks; the endline survey shows improvement in this indicator in both intervention and control blocks. There is 20% increase in health-seeking behaviour among 15-18 years school-going girls in the intervention block and 15-18 years out-of-school girls in control block (refer table 8.14).

Table 8.13: Self-reported prevalence of UTI (Girls) in baseline and endline in IB and CB

Age group (In Yrs.)	Talod			Idar		
	Baseline	Endline	% Diff	Baseline	Endline	% Diff
Girls						
15- 18 school-going	14.8	25	10.2	21	25.8	4.8
15- 18 out-of-school	28.6	25.3	-3.3	25.8	28.6	2.8

Table 8.14: Treatment seeking behaviour for UTI (Girls) in baseline and endline in IB and CB

Age group (In Yrs.)	Talod			Idar		
	Baseline	Endline	% Diff	Baseline	Endline	% Diff
Girls						
15- 18 school-going	6.2	26.3	20.1	14.3	21.2	6.9
15- 18 out-of-school	5.6	12.5	6.9	11.8	32.6	20.8

Engagement with adolescent services and schemes

Increase in awareness about WIFS was observed in the endline in the intervention block. Overall, there was also significant increase in compliance to IFA in intervention block compared to control block. Distribution of de-worming tablets, which is also a component of WIFS program, was found to be poor. Issues in supply of IFA and de-worming tablets were also reported. There was improved awareness regarding MTA program in the intervention block and decline in awareness in the control block.

Decline in IFA compliance and THR (Take Home Rations) utilization was also documented in both the intervention and control blocks. There was poor knowledge and access to Adolescent Friendly Health Clinic (AFHC) in both the intervention and control blocks, in the baseline and endline. Further, AHD is reflected only in the endline in the intervention block. 73% school-going and 46% out-of-school adolescents participated in the AHD in Talod.

(v) Substance abuse

The main substance abuse documented was tobacco. Among all age groups, substance abuse was higher among males. Among males, it was observed that self-reported substance abuse reduced among 15 to 18 year boys in both the blocks (refer table 8.15). One or two out-of-school adolescent boys were also addicted to alcohol. One of the common reasons cited for addiction was peer influence; hence, addiction amongst peer group is used as a proxy indicator. Overall there is reduction in peer addiction as well in both intervention and control block.

Table 8.15: Addiction pattern among boys and peers in baseline and endline in IB and CB

Self-reported Addiction	Talod (%)			Idar (%)		
	Baseline	Endline	% Diff	Baseline	Endline	% Diff
11-14 school-going	0.8	3.5	2.7	1.6	1.6	0
15- 18 school-going	7	2	-5	8.6	7.4	-1.2
15- 18 non-school-going	25	16.3	-8.7	50	22.5	-27.5
Peer addiction						
11-14 school-going	22.1	13.7	-8.4	42.1	18.4	-23.7
15- 18 school-going	39.8	17.7	-22.1	61.7	36.1	-25.6
15- 18 non-school-going	46.1	33.1	-13	80.5	42.6	-37.9

Substance abuse among females was very low when compared to boys. Addiction was only found in out-of-school girls in the baseline in both the blocks. However, endline survey shows increase in self-reported substance abuse among both school-going and out-of-school girls in intervention block (refer table 8.16). Overall, addiction in peer group of school-going and non-school-going girls was also found to have increased to around 10% in the intervention block. This demands focused intervention regarding tobacco addiction even for adolescent girls.

Table 8.16: Addiction pattern among girls in baseline and endline in IB and CB

Self-reported Substance Abuse	Talod (%)			Idar (%)		
	Baseline	Endline	% Diff	Baseline	Endline	% Diff
11-14 school-going	0	4.7	4.7	0	0	0
15- 18 school-going	0	1.6	1.6	0	.4	0.4
15-18 non-school-going	1.6	4.4	2.8	7	4.4	3.7
Peer addiction						
11-14 school-going	0	12.5	12.5	9.3	3.9	-5.4
15- 18 school-going	0	7	7	0	5.1	5.1
15- 18 non-school-going	0.8	11.4	10.6	3.9	6.2	2.3

Findings of qualitative assessment

Some of the main observations of the qualitative assessment are given below: -

ASHA/AWW

All ASHAs were trained on adolescent health by CHETNA. There was significant improvement in knowledge on topics such as changes that take place during adolescence, anaemia, and menstrual health and hygiene. However, very few ASHAs mentioned legal age of marriage, consequence of early marriage, teenage pregnancy, HIV and AIDS, and contraception as topics that need to be covered while conducting sessions with adolescent girls. Very few ASHAs were confident to take sessions independently for adolescent girls. This shows need of hand holding by supervisors. All of them aid that adolescent girls feel very shy when talking to them on SRH issues and it was difficult to mobilize adolescent girls for various activities as most of them were in schools. None of the ASHAs/AWWs talked about conducting health education sessions with adolescent boys.

Female Health Worker (FHW)/ Auxiliary Nurse Midwife (ANM)

All the FHWs/ ANMs were trained on adolescent health by CHETNA. Most of them said that it was difficult to conduct sessions with adolescent girls on sensitive issues as they are shy and hesitate to speak. Even after many efforts and rapport building, they said that adolescent girls do not attend health sessions. FHWs felt that pressure from parents and community may be the reason that they do not attend the sessions. When FHWs were asked about the ability of ASHAs and AWWs for conducting health education sessions with adolescent girls, few stated that ASHAs were capable of conducting these sessions. They also felt that AWWs knowledge was limited to certain topics and hence would not be able to conduct these sessions. Most FHWs felt that health programs would help adolescents in gaining knowledge about changes in their body and other health-related issues. Some FHWs stated that activities like AHDs or sessions on adolescent health should be organized at every six months. They felt that there would be no noticeable changes in height, weight and haemoglobin in less than six months duration.

Teachers

The teacher's trained by CHETNA included topics such as pubertal changes, menstruation practices and nutrition in the health education sessions they conducted in schools. Topics that were given minimum focus were contraception and STIs. Most of the trained teachers were males, who found it difficult to impart knowledge to adolescent girls, on menstruation, problems related to unhygienic menstruation practices, and other reproductive health and sexual health issues. Another observation was that most teachers who were trained were language teachers, and they found it difficult to talk with students on reproductive health and issues related to adolescence. Also as they were language teachers they were not aware if adolescent health related topics were incorporated in the school curriculum for 8 to 10 standards, and if it was being taught in schools.

Further enquiry with schools showed that very few schools (8-10 standards) taught the chapters in curriculum that focused on adolescence. Teachers had prefixed and strict perceptions on contraception and adolescents, and would require reinforcement training. It was perceived that participation was out of force and not out of choice. There was strong reservation and reluctance in carrying forward the learning from the training.

For **VHSNC members**, the training focused more on their roles and responsibility in *Gram Sanjeevni Samiti (GSS)* and how to monitor *Mamta Taruni day* and *Mamta Divas*.

Impact of the intervention

The observations from quantitative and qualitative assessment and possible impact have been summarised in four thematic areas, i.e., nutrition, menstrual hygiene, sexual and reproductive health and substance abuse, which were the focus areas of intervention by CHETNA.

Nutritional status including anaemia

Over-all awareness regarding anaemia was found to be low in both blocks and genders, however there was some increase in awareness after post-intervention in intervention block. There was significant increase in knowledge among boys in intervention block when compared to control block. Proportion of underweight adolescents was high in both blocks across gender. Post-intervention in IB, the proportion of underweight declined only in 11-14 school-going girls (19.9%) and 15-18 school-going boys (2%). There are no clear cut guidelines to interpret BMI among adolescents in India. The operational guidelines of RKSK suggest use of adult BMI standards which is debated as adolescent growth cannot be compared with adults for physiological reasons. It is being debated on whether World Health Organization (WHO) adolescent references or the references by Indian Academy of Paediatrics for Indian adolescents should be adopted at ground level.

Menstrual hygiene practices

Most girls in both blocks used readymade cloth available in the market, however use of readymade cloth reduced by 16.1% among 15-18 years out-of-school adolescents and 21.3% among 11-18 years school-going adolescents in IB after intervention. Although, the practice of reusing same cloth for next time was found to be high in IB, there was moderation in reuse of the cloth for multiple cycles. An increase in use of sanitary napkins among 15-18 years out-of-school adolescents by 9.6% in IB and 14% in CB was documented during the endline survey. There were issues on knowledge about disposal of sanitary napkins as 52% treated it as general waste. The most common health problem during menstruation was dysmenorrhoea (55%). The most common menstrual disorder was short cycles (35%), irregular menses (23%) and heavy bleeding (12%). However, the health-seeking behaviour for menstrual disorders was poor in both blocks.

Knowledge about HIV/STDs

Survey findings indicate improvement in knowledge on STD and HIV/AIDS in IB when compared to CB. Boys had significantly more correct information and knowledge about STDs and HIV than girls in both the blocks. Out-of-school girls of 15-18 years had comparatively poor knowledge about STD and HIV. RKSK roll out should also have targeted out-of-school adolescents to ensure that roll out of RKSK is effective and complete. Overall awareness about contraceptives among boys was more in IB than CB. Post-intervention the knowledge of contraception

among non-school going girls and boys also increased when compared to school-going girls and boys. Around one in four adolescent girls in the age 15-18 years reported symptoms of UTI. This proportion increased during endline survey that could be possibly attributed to intervention led increase in knowledge.

Substance Misuse

Overall, the addiction to tobacco (most common) in IB was more among boys, which reduced by 5% and 8.7% among school-going and non-school-going adolescent boys in IB. However similar pattern of reduction was also observed in CB. Present survey also highlights increased substance abuse in 11-14 years school-going boys suggesting their vulnerability to addiction at younger age and hence the need for interventions in younger age groups. Although reported addiction rates was very low among girls, largely restricted to only out-of-school girls, the endline survey reported increase in addiction among school-going and out-of school girls, hence intervention for reducing tobacco addiction should also focus on adolescent girls. The use of alcohol and drugs among adolescents is associated with physical violence, risky sexual behaviour, depression and suicide, as well as irregular school or work attendance and other negative outcomes. Tobacco use and alcohol consumption are also known risk factors for NCDs such as cardiovascular diseases and stroke in adult life, hence adequate focus on this component will give long lasting dividends.

Dissemination of Project Findings

IIPHG and CHETNA shared projects experiences and findings at various platforms organised by UNICEF and GOG, and at national workshops on adolescent health. Observations and policy briefs were also prepared and shared with various states. A total of five publications including three policy briefs and two publications in peer reviewed journals were published from the observations during the project.

Project findings were shared at plenary events of National Conference of Indian Association of Preventive and Social Medicine (2016), All India Congress of Obstetrics and Gynaecology (2017), National Workshop on challenge of 21st Century (2016), and Society of Adolescent Health and Medicine (SHAM) (2016). Besides this, experiences and findings were also shared with state UNICEF (2016), 32nd National conference of Sexology (2016) and Consultation of Road Map for Adolescent supported by UNICEF. There was considerable interest in the Model AHD and Convergence committee, including field experiences from state of Gujarat, at various scientific platforms.

IIPHG also organized a national dissemination workshop with various stakeholders at IIPHG campus to share project observations and seek inputs. The objective was to reflect on status of adolescent health and adolescent health program in India, including the challenges and opportunities, and need of convergence for adolescent health programs. Program Managers engaged with RKSK from seven states including Madhya Pradesh, Orissa, Himachal Pradesh, West Bengal, Gujarat, Rajasthan, Chhattisgarh and Delhi participated and presented RKSK activities in their respective states. The workshop was also attended by NHSRC, New Delhi, to provide information on national perspective of RKSK. Other participants included members of academia, members from NGO or civil societies working on adolescent health in India. Representatives from Education, ICDS and Health and Family Welfare departments, and adolescents from the intervention village also participated in the consultation.

Suggestions that emerged from the National Consultation include need for

1. Convergence between various departments – Health, Education and WCD, and also for convergence between RKSK and RBSK programs, for proper roll out of both the programs;
2. Integration of counsellors of Integrated Counselling and Testing Centre (ICTC), RKSK, Rashtriya Bal Swasthya Karyakram (RBSK) and Reproductive Maternal Newborn and Child Health plus Adolescent (RMNCH+A) as a much needed speciality;
3. Engagement with school teachers for successful implementation of adolescent health programs, and
4. Robust recording mechanism for documenting the health profile of adolescent within the existing HMIS.

As one of the key concerns shared was about how to effectively roll out Adolescent Health Day (AHD), representative from GOG and IIPHG shared their own experience of roll out of AHD in Talod block.

Chapter 9: Case Studies on Adolescent Health and Services

Tapasvi Puwar

The objective of documentation of good practices and case studies on selected components of RSKS was to assist in effective planning and roll-out of RSKS in the state and country. Effective and efficient Adolescent Friendly Health Clinics (AFHCs) are vital for providing adolescent friendly services under the RSKS program. As two AFHCs in the intervention block (Talod), Sabarkantha district were found to be non-functional, it was decided that IIPHG would undertake documentation of AFHC implementation that showed promising trends or results, to promote shared learning of good practices. Further, the project intervention covered three (nutrition, sexual and reproductive health, and substance abuse) of the six thematic areas of RSKS program. Limited evidence on two other thematic areas (mental health and non-communicable diseases) of RSKS, suggested the need for documentation of risk for developing mental health disorders and prevalence of risk factors for non-communicable diseases (NCDs) among adolescents, to support RSKS program planning and service delivery. Three case studies were therefore documented during the project evaluation phase in 2016. These include:

- 1. Documentation of Adolescent Friendly Health Clinic (AFHC) implementation in Meghalaya,*
- 2. Documentation of risk for developing mental health disorders among school-going adolescents in Sabarkantha district, Gujarat*
- 3. Prevalence of risk factors for non-communicable diseases (ncds) among school going adolescents in Sabarkantha district, Gujarat.*

Case study 1:- Roll out of Adolescent Friendly Health Clinics in Meghalaya

Summary

Case study documentation of AFHCs in Meghalaya suggests the following contribute significantly to effective AFHC implementation:

- Felt need for adolescent friendly services,*
- Strong commitment of state in providing necessary services,*
- Motivated and trained counsellors,*
- Provision of adequate space and infrastructure,*
- Community outreach,*
- Locally appropriate promotional materials,*
- Adequate financial resources, and*
- Good systems for data recording and reporting.*

We observed and documented three Adolescent Friendly Health Clinics (AFHCs) in the state of Meghalaya. Due to high rates of teenage pregnancy and substance abuse among adolescents in Meghalaya, there was a felt need for providing adolescent friendly services. Hence AFHCs were implemented by the state in 2006-07 under the National Health Mission (NHM) at seven out of 11 district hospitals. Under RKSK this was further scaled up to a total of 121 AFHCs at DHs, CHCs, PHC) and UHCs. All the AFHCs visited had one counsellor and a nodal doctor in-charge. The counsellors are also engaged in community outreach activities wherein group discussions on SRH are usually conducted with adolescent boys and girls, which have led to increase in client load at the AFHCs. It was also observed that necessary funds were available for salaries, logistic and mobility support. Interaction with clients at the AFHCs showed that they were satisfied with services and facilities available at the AFHC. Overall the outreach and functioning of all the three AFHCs was found to be good.

Background

Meghalaya is one of the seven states in north-east India with a population of more than 2.9 million as per 2011 census. The state has 11 districts and 6,839 villages. Literacy rate of Meghalaya is 74.4% and female literacy rate is at 72.9%. Most of the population is Christian (74.6%) and tribal (85.3%). More importantly, one fifth (0.6 million) of the total population of Meghalaya are adolescents. The sex ratio is 989 females per 1000 males. Meghalaya has birth rate of 24.1 and death rate 7.5 per 1,000 population. The state also has second highest infant mortality rate of 46 per 1,000 live births among the north-eastern states. Some of the other health indicators of Meghalaya as per NFHS 4 (2015-16) are listed in the below table 9.1.

Table 9.1: Some health indicators of Meghalaya as per NFHS 4 (2015 -16)

S. No.	Indicator for the population	Value %
1	Women age 20-24 years married before age 18 years	16.5
2	Men age 25-29 years married before age 21 years	19.6
3	Women aged 15-19 years who were already mothers or pregnant at the time of the survey	3.0
4	Women aged 15-19 years who are anaemic	46.2
5	Men age 15-19 years who are anaemic (<13.0 g/dl)	22.5

6	Women aged 15-24 years who have comprehensive knowledge of HIV/AIDS	12.7
7	Men aged 15 to 24 years who have comprehensive knowledge of HIV/AIDS	14.2
8	Women age 15-24 years who use hygienic methods of protection during their menstrual period	63.7

NFHS 4 data suggests high teenage pregnancy rates, which is highest among all the north-eastern states. Routine reports of labour room and counsellor's registers also suggest high rate of teenage pregnancies. Substance abuse is also reported among adolescents in the state. Although the state has recorded increasing improvements in education, data on tobacco and alcohol addiction, and nutrition indicators suggest need for strengthened efforts in these areas.

Public health infrastructure and personnel

Rural health infrastructure of the state includes 428 Sub-Centres (SC), 110 Primary Health Centres (PHC), 27 Community Health Centres (CHC), 1 Sub-District Hospital and 12 district hospitals (DH). Four districts do not have a single DH while three districts have more than one DH. As per population and Indian Public Health Standard (IPHS) norms, Meghalaya is short of 331 SCs, four PHCs, and one CHCs. Number of medical and paramedical staff available at government health facilities are as shown in table 9.2. Additionally, there are 67 AYUSH doctors at PHCs and four PHCs are without a medical officer. The state has only one teaching medical institute which is run by the central government.

Table 9.2: Medical and paramedical staff availability at government facilities

No.	Category	Required	Sanctioned by Government	Filled	Sanctioned but vacant	Required-Filled
1	Female Health worker/ANM	538	1118	959	159	-
2	MPHW-Male	428	84	183	-	245
3	Health Assistant (Supervisor)-Female	110	67	65	2	45
4	Health Assistant (Supervisor)- Male	110	81	74	7	36
5	Nursing staff at PHC and CHC			413		
6	Doctors at PHC	110	128	114	14	-
7	Doctors at CHC			91		
8	Physician at CHC	27	0	0	0	27
9	Obstetrician at CHC	27	3	3	0	24
10	Paediatrician at CHC	27	0	0	0	27
11	Surgeon at CHC	27	0	0	0	27
12	Doctors at DH (12)		266	265	1	
13	Doctors at SDH (1)		11	10	1	
14	Paramedical staff at DH		646	630	16	
15	Paramedical staff at SDH		11	11	0	

AFHC implementation in Meghalaya

High rates of teenage pregnancy and substance abuse among adolescents resulted in a felt need for adolescent friendly services in the state. The state therefore initiated Adolescent Health Clinics under National Health Mission (NHM) in 2006-07 in seven DHs out of total 11 DHs. Under RKSK this was scaled to 121 AFHCs, i.e. at nine DHs, 29 CHCs, 81 PHCs and two UHCs. The distribution of AFHCs across DHs, CHCs, PHCs and UHCs, in high priority and non-priority districts for RMNCH+A, is as shown in table 9.3. Further, in the supplementary state program implementation plan (PIP), the state has also suggested initiating AFHCs at Urban PHCs as per the requirement.

Table 9.3: AFHCs in Meghalaya (Source: RKSK state office Meghalaya)

District	DH	CHC	PHC	UPHC	Total
High Priority Districts					
West Khasi hills	1	4	16	-	21
South-West Khasi Hills	0	2	3		5
East Jaintia Hills	0	2	6		8
West Jaintia Hills	1	3	12	2	18
West Garo Hills	2	5	9		16
South-West Garo Hills	0	2	6		8
South Garo Hills	1	1	6		8
Non-High Priority Districts					
East Khasi Hills	2	5	11		18
RiBhoi	1	3	7		11
East Garo Hills	1	1	3		5
North Garo Hills	0	1	2		3
Total	9	29	81	2	121

Counsellors have been appointed under NHM at nine DHs and 12 CHCs in the high priority districts. Appointment of counsellors in additional seven CHCs in the high priority districts (HPDs) was under process. At the DHs the timing for the AFHC is 10 am to 4 pm and at CHC it is from 10 am to 2 pm. In addition to the counsellor, each AFHC has a nodal doctor in-charge. These doctors are trained in RSKS and are overall in-charge of the AFHC. However, due to lack of doctors in the state, the appointed doctors have multiple responsibilities and are not fully available for managing AFHC services. Thus the counsellor becomes responsible for overall functioning of the AFHC. The state government also decided to appoint counsellors at AFHCs up to CHC level, hence the DHs and CHCs in HPDs for RMNCH+A, have counsellors at AFHCs (refer table 9.4). So far 21 counsellors have been appointed and seven positions for counsellors remain vacant in the state.

Table 9.4: Counsellors at AFHCs (Source: State RSKS Office Meghalaya)

District	DH		CHC	
	Total	Counsellor	Total	Counsellors
High Priority Districts (HPD)				
West Khasi hills	1	1	4	2
South-West Khasi Hills	0	-	2	2
East Jaintia Hills	0	-	2	1
West Jaintia Hills	1	1	3	2
West Garo Hills	2	2	5	3
South-West Garo Hills	0	-	2	1
South Garo Hills	1	1	1	1
Non-High Priority Districts				
East Khasi Hills	2	2	5	0
RiBhoi	1	1	3	0
East Garo Hills	1	1	1	0
North Garo Hills	0	-	1	0
Total	9	9	29	12

AFHC infrastructure, equipment and supplies

AFHCs at DHs and CHCs have two rooms, wherein one room is dedicated for counselling and the other is used as a waiting room. The counselling room has a table, chairs for counsellor and client, examination table, curtains for privacy and two cupboards. One cupboard is used for stocking medicines and the other for

stationary. Weighing scales and measure tapes for BMI measurement were also available. The AFHCs also had supplies of contraceptives, pregnancy testing kits and medicines. The clinics have flexibility to purchase medicines which are not supplied by the health system. However, there are no guidelines from the state for purchase of medicines at AFHCs. Usually the clinics purchase iron syrups and tablets, anti-pimple creams and vitamin syrups. Registers and recording formats are also provided which are kept in the stationary cupboards. The ambience of the waiting room is also made adolescent friendly with sofa sets, chairs, TV, DVD and drinking water facility.

AFHC service delivery

In Meghalaya, 108,423 adolescents visited the AFHCs during April 2015 to March 2016 (refer table 9.5). On an average the yearly client load per AFHC is around 900. It was observed during the case study visits that counsellors of all three AFHCs were proactive, implementing new initiatives and managing the AFHC well. IEC materials like posters, flip charts, models and pamphlets were also displayed in the counselling and waiting rooms.

The counsellors are also required to do community outreach, for around eight days a month with schools, AWCs and youth groups in villages, for increasing awareness on adolescent health. The counsellors also visit clubs and special schools for underprivileged adolescents. Various promotional (IEC) materials are utilized by the counsellors for the outreach activities, some of which are developed by the counsellors themselves in the local dialect. As the counsellors have direct contact with schools, students are referred directly from the schools to the AFHC. Overall the counsellors felt that the outreach activity was mainly responsible for increasing client load at AFHCs. However, in AFHCs which have high client load, for example AFHCs at DHs, it was not possible for the counsellor to undertake outreach visits from 10 am to 4 pm.

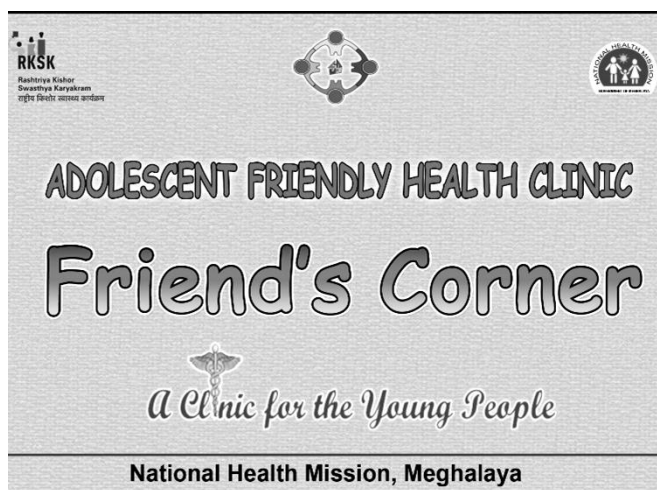
The counsellors are paid a monthly remuneration of Rs 16,000. Fund for mobility support for the outreach activity is Rs 1,200 per month i.e. Rs 150 per visit. Additionally, every AFHC is given Rs 12,000 per year as maintenance cost, with a flexibility to decide on what they would spend. We were told that AFHCs usually utilized this fund for developing IEC materials.

At the Primary Health Centres (PHCs), the MOs and ANMs are trained on RKSK program. Additionally, the ANMs are also trained to provide counselling. The AFHC operates as weekly OPD for two hours, usually on Saturdays.

Table: 9.5: AFHC service delivery - quarterly and annual status

AFHC Clinic Quarter Status						
Quarters	Services provided	Male	Female	Male	Female	No. of outreach conducted
		10-14 yrs	10-14 yrs	15-19 yrs	15-19 yrs	
1 st Qtr (Apr - Jun 2015)	Clients registered	2331	2775	3589	8413	1610
	Counselling	2310	2775	3479	8403	
	Referred	39	89	78	352	
2 nd Qtr (Jul - Sep 2015)	Clients registered	1492	2321	2338	8112	1154
	Counselling	1455	2286	2292	6467	
	Referred	7	60	31	196	
3 rd Qtr (Oct - Dec 2015)	Clients registered	1394	1892	2200	6519	1141
	Counselling	1385	1887	2171	6517	
	Referred	13	58	32	188	
4 th Qtr (Jan - Mar 2015)	Clients registered	1325	1969	1876	6313	1096
	Counselling	1253	1889	1869	5608	
	Referred	20	54	55	256	
TOTAL		13,024	18,045	20,010	57,344	5001

As part of the case study documentation, it was decided that AFHCs in different settings would be visited. Hence three AFHCs at DH, CHC and PHC were selected for the study.



Observations from the visits to AFHCs at CHC and MCH hospital are presented below.

AFHC at a CHC

The AFHC, CHC Ummangnom(West Jantiya hills district) was one of the clinics selected for study and observation. This block has five PHCs which do not have counsellors. The AFHC at the CHC was started in September 2014. The AFHC is managed by the Medical Officer and is open from 10 am to 2 pm daily. Prior to the appointment of the counsellor, adolescent health services were provided by the LHV and trained ANM.

Outside the complex there was a signboard for AFHC counselling room but no signboard was seen on the rooms. The AFHC ambience was adolescent friendly. It had two rooms, one for the counsellor and one for the use as a waiting room. The counsellor room had chairs for client and counsellor, table, examination table, cupboard for storing registers and records, weighing scale, and measure tape for height measurement. It was observed that it was possible to maintain privacy during counselling session. The counsellor room also had posters, pamphlets, flip books and IEC material in local language. The waiting room was well maintained and had comfortable chairs, TV-DVD set, IEC material and drinking water facility. Counsellor Ms Joy Mercia Muksor, who has MSW degree, joined the centre in March 2015. In December 2015 she attended a five-day training (ToT) at Guwahati for RKSK counsellors, which was organized by Himalayan Institute and supported by UNFPA. The content of the training was based on the operational framework of RKSK.

The counsellor provides counselling services for four days at the facility and conducts community outreach activities for two days per week. Average work load / target as reported by the counsellor is 55 adolescents per month. In the weekly community outreach, the counsellor covers government and private schools, AWCs and youth clubs. She makes monthly plans for the community visits and informs the schools. The visit is carried out as per convenience of the schools. On an average she is able to do four or five visits a month. Budget of Rs 1,200 per month is provided for these visits. The visits vary as per the terrain of the CHC catchment area.

As part of community outreach activities, she conducts group discussion with adolescent boys and girls on teenage pregnancies, nutrition, substance abuse, growth and changes during adolescence, menstrual hygiene, WIFS etc. She maintains separate register for these visits. Pamphlets are provided to adolescents during the sessions. The counsellor also distributes condoms. She maintains stocks for medicine and condoms purchased under RKSK fund. The counsellor was creative and had developed quite a few IEC materials. She was also using IEC

material available on the internet. Although videos are not provided by the state, the counsellor had developed video which was also used as promotional material.

Pictures 9.1 and 9.2 are waiting room and counselling rooms of AFHC at CHC.



The doctor refers adolescents from the OPD and ANC clinic. ANMs also refer adolescents from the immunization clinic. The common health issues/problems for 15-18 years adolescent girls as reported by the counsellor was teenage pregnancies, being a single mother, school drop-out, gutkha consumption and menstrual problems. Similarly, common health issues / problems for boys as reported by the counsellor was contraception, substance abuse especially alcohol, tobacco, drug addiction and crime.

The CHC also has FP counsellor along with RSKSK counsellor. PPTCT and ICTC centres are at the DH. All boys are referred to ICTC centre for HIV counselling and the pregnant mothers are referred to the PPTCT. Severe substance abuse cases are referred to the DH AFHC counsellor. Girls are referred for MTP, RTI and STI, menstrual disorders, white discharge and complicated teenage pregnancy. No records or register for referred cases are maintained. There is no mechanism for follow-up. Many times follow-up is also not possible as they have to maintain confidentiality of client.

The AFHC maintains all the NHM registers:

1. Client registration register,
2. Service delivery register,
3. Outreach service delivery register and
4. Stock register were maintained at the facility.

The counsellor had also created additional registers for ease of work, identification of follow-up cases and reporting. These include:

1. Records of client visits
2. Client counselling service registers for reporting
3. Attendance register for programs organized at various levels for RKSK like orientation, and,
4. Awareness for WIFS, poster-making competition for RKSK.

The AFHC counsellor was also responsible for collecting block monthly report for WIFS from social welfare and education departments and submits the same to DHS.

Reports generated monthly by the counsellor include:

1. Consolidated monthly report for AFHC
2. Monthly progress report for AFHC
3. WIFS report from education and social welfare department

It was observed that all the registers and records were updated till date, during the visit and well maintained by the counsellors. Records and registers were stored in the cupboard given to the counsellor. The counsellor also said that she was getting her salary regularly every month. The Rs 12,000 annual maintenance fund for AFHC for 2014-2015 was spent completely on purchasing medicines and printing pamphlets.

As there was no client referred to the centre during the visit it was not possible to observe the counselling process. The counsellor said the following were challenges:

- Counselling out-of-school boys during outreach as they are usually at work,
- Lack of IEC materials like pamphlets,
- Inadequate mobility fund for outreach,
- Time taken for recording and reporting,
- Absence of linkage between AFHC and community workers, especially ASHAs, ANMs as they hardly get any referrals from the field.

The counsellor suggestions the following for further improvement of AFHC services:

1. Need for free supply of sanitary pads to the centre for supplying to the clients,
2. Provision of more IEC material,
3. Training counsellors on nutrition counselling, measuring BP, checking pallor and other general check-up of clients.

MOIC was overall in-charge of the centre but neither he or nor other trained doctor was available at centre for interview during the visit. The State RKSK manager supervises the centre along with district RCH officer. The counsellor also participates in the monthly meeting of counsellors at the district headquarters.

Model AFHC at Women and Child Government Hospital, Shillong

The AFHC at Ganeshdas Women and Children hospital Shillong, District East Jantiya hills, was also selected for study and observation. This AFHC was started in 2007 and is now a model AFHC. The AFHC had an adolescent friendly ambience. The clinic is open from 10am to 4 pm. The counsellor, Ms Christie P Najjar, who was also an MSW, joined the centre in October 2012. She was provided training for AFHC counsellor in 2013. She provides weekly counselling for six days at the facility. She said that outreach activity was difficult to perform as the AFHC is attached to a big hospital which gets good referrals and client load. The peripheral centres also refer teenage pregnancies to this centre. However, on average she manages 4 to 5 visits per month by doing morning or evening visits. Budget of Rs 1,200 per month is given to counsellors for the outreach visits.



Picture 9.3 Storage facility for registers

In the community outreach visit she does group discussions with boys and girls on teenage pregnancies, nutrition, substance abuse, growth and changes during adolescence, menstrual hygiene, WIFS etc. She also maintains register for these visits. She covers private and government schools, and also distributes pamphlets to the adolescents. Condoms are also distributed. Stock of medicines and condoms purchased under RKSK and distributed is also maintained.

The doctors refer all adolescents visiting the OPD and ANC clinics. The hospital also had PPTTCT Centre. The AFHC also gets referrals from periphery and teenage pregnancy cases from Civil Hospital, Shillong. The counsellor also visited maternity wards and provides counselling to 8 to 10 teenage mothers every day. Her average workload was about 150 adolescents per month. The counsellor said the common health issues / problems for adolescent girls (15-18 years) were:

- teenage pregnancies,
- being single mother,
- school dropouts,
- gutka consumption,
- menstrual problems,

The counsellor said the common health issues / problems for adolescent boys were:

- Contraception,
- Substance abuse especially alcohol,
- Tobacco,
- Drug addiction
- Crime

As per the counsellor and local doctors 30% pregnancies reported at centres were teenage pregnancies. The adolescent girls were referred to the centre for MTP, RTI and STI, menstrual disorders, white discharge, and complicated teenage pregnancies.

The annual maintenance fund of Rs 12,000 for the AFHC for 2014 - 2015 was utilised for purchasing medicines and printing pamphlets. The counsellor was getting her salary regularly every month. The MOIC was overall in-charge of the centre and was providing supportive supervision as and when required. However, the counsellor was managing the day-to-day functioning of the centre. As the centre was in the Shillong, it is also visited frequently by State RKS Manager and other guests.

Picture 9.4: Signboard of AFHC



Picture 9.5: Waiting room of AFHC



References

NFHS 4, Ministry of Health and Family Welfare (2015-16), National Family Health Survey NFHS 4 (2015-16) Meghalaya, Mumbai: International Institute for Population Sciences

Case study 2 - Documentation of mental health status of school-going adolescents in Sabarkantha district in Gujarat

Summary

The case study aims to determine risk for developing mental health problems among adolescents. The prevalence of emotional and behavioural problems among school-going adolescents was documented in Sabarkantha district in Gujarat. To assess the mental health status, 235 participants each from 11-14 years and 15-19 years age groups were asked to fill the Strengths and Difficulties Questionnaire (SDQ). Total abnormal score of mental health was higher among boys (15%) than girls (13%) but composite score of abnormal and borderline mental health was higher among girls (35%) compared to boys (30%). Emotional score and hypersensitive score was significantly high among girls while boys have comparatively high score in conduct and peer problem. Parental marital discord, financial difficulties in the family, physical punishment by parents, and occupation and education of parents were significantly associated with low mental health scores among school-going adolescents. Although RKSK guidelines include mental health as one of the six main thematic areas, it doesn't suggest methods on how to assess mental health status among adolescents. Based on the present study it is recommended to utilize SDQ screening tool (in Gujarati) for screening adolescents in the state of Gujarat and promote referral of adolescents with abnormal scores to psychiatrists and counsellors at Adolescent Friendly Health Clinics, for further diagnosis and treatment.

Background

According to World Health Organization, mental health is defined as *“not just the absence of mental disorder, but the state of wellbeing in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make contribution to his or her community”* (WHO 2007). Poor mental health has been strongly linked with health and development concerns in adolescence, for example low self-confidence, depression, dropping out of school, poor social behaviours, engaging in risk behaviours.

Mental health problems account for 14% of disease burden globally (WHO 2011). The prevalence of mental disorders among adolescents is increasing in the last 20 to 30 years due to growing unemployment in families, disruption of families, unrealistic educational and vocational aspirations of parents from their children, etc. It is estimated that around 20% of world's adolescents have mental health or behavioural problem and about half of the mental disorders begin before 14 years of age (UNICEF 2011). As per the National Mental Health Survey 2015–2016 of India, the prevalence of overall psychiatry disorder among 13-17 years adolescents was 7.3%; however, a systematic review indicates that prevalence of psychiatric disorders among adolescents ranged from 0.48% to 29.40%.

Aims and objectives

This case study aims to generate population-based data on risks of developing mental health problems among school-going adolescents in Sabarkantha district, Gujarat, India. The objective of this documentation is to analyse the prevalence of emotional and behavioural difficulties among school-going adolescents in Sabarkantha district, Gujarat.

Study design and sampling

The study was conducted in Sabarkantha district, which was selected purposefully based on administrative feasibility. The cross sectional school-based study was conducted with school-going adolescents in August-September 2016. The sample size estimated for this study was 470 based on

- a) Reported prevalence of mental health problems among adolescents in India
- b) 20-25% reported dropout rate from schools, and
- c) Response rate of 80%.

As most out-of-school adolescents were not able to read or understand the tool which is a self-reporting tool, they were not included in the case study. RKSK categorizes adolescents into two main groups based on their age, i.e. 11-14 years and 15-19 years. Hence in the present study 235 adolescents were included from each age group. Considering an average class size of 30, ten schools each from primary schools and secondary/higher secondary schools were randomly selected from the list of schools obtained from the district education office. The study was conducted in government schools. All the primary schools were in rural area, and secondary and higher secondary schools were in urban area.

Study instrument

The self-assessment format of Strengths and Difficulties Questionnaire (SDQ) in vernacular language was used to assess the mental health of the adolescents. The SDQ is a user-friendly screening questionnaire, which can be used to assess behavioural problems and mental health disorders. The questionnaire is subdivided into five categories and 25 characteristics or attributes are assessed utilizing the SDQ format.

- Conduct problems: Attributes include frequent temper tantrums, fights with or bullies other children, dishonest, obedient, cheating and stealing habits
- Hyperactivity: Attribute include restless and overactive, constant fidgeting, easily distracted and attention span
- Peer problems: Attributes include bullied by other children, solitary, has friends, liked by other children and gets on well with adults than children
- Emotional symptoms: Attributes include frequent complaints of headache and illness, unhappy, nervous, worried, scared, and low confidence
- Pro-social behaviour: Attributes considerate of others feelings, shares with others children, helpful and kind nature and volunteers to help others

Each of the five categories is given a score ranging from 0 to 10. The scores for four categories i.e. emotional symptoms, conduct problems, hyperactivity and peer problems are added to give the total difficulties score, which ranges from 0 to 40. The pro-social score is not included in the total difficulties score as pro-social behaviours are opposite to emotional and behavioural problems. The scores are used to make predictions for conduct-oppositional disorders, hyperactivity-inattention disorders, and anxiety-depressive disorders. The SDQ cut-off points were derived by classifying approximately 10% of the normative sample with the most extreme scores in the abnormal banding, the next 10% in the borderline banding and the remaining 80% in the normal banding categories. In this study, the percentile score was also calculated to compare with original cut off.

In addition to the SDQ, relevant socio-demographic details were also recorded. Perceptions of difficulties in the family domain; e.g. physical punishment, parental marital discord, death of a parent, excessive alcohol/drug use by a family member, financial difficulties in the family were documented through a pre-validated questionnaire in vernacular language.

Permission to conduct the study was obtained from Institutional Ethical Committee of IIPHG. Verbal consent was also obtained from each adolescent before the test. List of adolescents with abnormal SDQ scores would be submitted to the school management for further referral.

Results

Data analysis was carried out using SPSS version 20. The results of the study are presented below.

Socio-demographic profile

60% adolescents were in the 11-14 years age group and 62% participants were boys (refer table 9.6). The mean age of study population was 14.2 years \pm 1.4 years, the mean age of boys was 14.3 years and the mean age of girls was 14.1 years. Most participants were Hindus. As per census 2011, Talod has only 2% Muslim population. Around 45% participants were living in nuclear family.

Table 9.6: Study participants as per age group and gender

Age group (In Yrs.)	Gender		Total %
	Boys	Girls	
11-14	170	115	285 (59.7)
15-19	124	68	192 (40.3)
Total	294 (61.6)	183 (38.4)	477

72% participants belonged to other backward class (OBC) and 14.5% belonged to general category as shown in table 9.7

Table 9.7: Caste and gender-wise distribution

Caste	Gender		Total %
	Boys	Girls	
Other Backward class	212	134	346 (72.5)
Schedule caste	26	21	47 (9.9)
Schedule tribe	14	1	15 (3.1)
Others	42	27	69 (14.5)
Total	294	183	477

Around 20% mothers of participants were illiterate while most mothers 46% had education up to primary level (refer table 9.8).

Table 9.8: Mother’s education and gender-wise distribution

Category	Gender		Total
	Boys	Girls	
Illiterate	60	46	106
	22.2%	26.0%	23.7%
Primary (1-7 std)	129	77	206
	47.8%	43.5%	46.1%
Secondary (8-10 std)	67	44	111
	24.8%	24.9%	24.8%
Higher Secondary (11-12 std)	8	7	15
	3.0%	4.0%	3.4%
College	6	3	9
	2.2%	1.7%	2.0%
Total	270	177	447

Nearly 8% fathers of participants were illiterate while most fathers 43% had education up to secondary level (refer table 9.9).

Table 9.9: Father’s education and gender-wise distribution

Category	Gender		Total
	Boys	Girls	
Illiterate	21	12	33
	7.8%	7.1%	7.6%
Primary (1-7 std)	53	33	86
	19.8%	19.6%	19.7%
Secondary (8-10 std)	114	74	188
	42.5%	44.0%	43.1%
Higher Secondary (11-12 std)	60	40	100
	22.4%	23.8%	22.9%
College	14	9	23
	5.2%	5.4%	5.3%
Graduate	3	0	3
	1.1%	0.0%	.7%

Category	Gender		Total
	Boys	Girls	
Post-graduate	3	0	3
	1.1%	0.0%	0.7%
Total	268	168	436

Nearly 50% fathers of participants work as labour while 9% were unemployed. Most mothers 43% were housewives and 23.9% work as labourer (refer table 9.10).

Table 9.10: Occupation of parents

Mother's Occupation	Frequency	Percent	Father's occupation	Frequency	Percent
Housewife	201	42.9	Unemployed	41	9.0
Service—Government	13	2.8	Service-Government	21	4.6
Service-Private	4	9.0	Service-Private	52	11.4
Self-employed	138	29.5	Self-employed	119	26.0
Labourer	113	23.9	Labourer	225	49.1
Total	468	100.0	Total	458	100.0

Out of all study participants, three participants reported demise of their parents, six reported demise of mother and 16 reported demise of father. Eleven (2.3%) participants reported that their parents were separated or divorced. Around 7% boys and 8.2% girls reported history of excessive alcohol consumption by father or grandfather. 16% boys and 3% girls reported living in hostels away from their family. The reported daily use of mobile phone among boys was on an average 80 minutes compared to an average of 40 minutes among girls. On inquiring about family financial condition, around 11% boys and 13% girls reported financial problems in the family. While 72% participants believed that physical punishment is necessary if children do not study properly, 5.6% participants reported receiving physical punishment daily.

Mental Health Scores

The study utilized SDQ to assess various aspects of mental health of adolescents. Table 9.11 indicates that 14.6% boys and 12.6% girls had abnormal Total SDQ score, and 15.3% boys and 21.9% girls had borderline SDQ score. Overall, 70.1% boys and 65.6% girls had normal SDQ score. The difference between mean of total SDQ score of boys and girls was statically significant at the level of $p<0.05$.

Table 9.11: Gender and total SDQ score

Categories	Gender		Total
	Male	Female	
Abnormal	43	23	66
	14.6%	12.6%	13.8%
Borderline	45	40	85
	15.3%	21.9%	17.8%
Normal	206	120	326
	70.1%	65.6%	68.3%
Total	294	183	477

SDQ score of five sub-categories emotional problem score, conduct problem score, hyperactivity score, peer problem score and pro-social score are as shown in table 9.12a and 9.12b. 40% girls had abnormal or borderline emotional problem score (EPS), compared to less than 30% boys. The difference in mean EPS among boys and girls is statistically highly significant ($p=0.000$) as shown in table 9.13. Almost 38% of boys and 33% girls had abnormal or borderline Peer Problem Score. However, this observed difference is not statistically significant.

Table 9.12a: Gender and different SDQ sub-categories

Categories	Emotional Problem Score			Conduct Problem Score			Hyperactivity score		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Abnormal	49	39	88	53	25	78	9	7	16
	16.7%	21.3%	18.4%	18.0%	13.7%	16.4%	3.1%	3.8%	3.4%
Borderline	31	32	63	33	24	57	18	14	32
	10.5%	17.5%	13.2%	11.2%	13.1%	11.9%	6.1%	7.7%	6.7%
Normal	214	112	326	208	134	342	267	162	429
	72.8%	61.2%	68.3%	70.7%	73.2%	71.7%	90.8%	88.5%	89.9%
Total	294	183	477	294	183	477	294	183	477

Table 9.12b: Gender and different SDQ sub-categories

Categories	Peer Problem Score			Pro-Social Score		
	Boys	Girls	Total	Boys	Girls	Total
Abnormal	32	13	45	28	9	37
	10.9%	7.1%	9.4%	9.5%	4.9%	7.8%
Borderline	78	45	123	22	7	29
	26.5%	24.6%	25.8%	7.5%	3.8%	6.1%
Normal	184	125	309	244	167	411
	62.6%	68.3%	64.8%	83.0%	91.3%	86.2%
Total	294	183	477	294	183	477

Table 9.13: Mean scores and gender

Category	Gender	Mean	Std. Deviation	Significance (independent sample t test)
Emotional problem score	Boys	3.70	2.601	
	Girls	4.73	2.316	0.000
Conduct problem score	Boys	2.53	2.119	
	Girls	2.43	1.940	0.621
Hyper sensitivity score	Boys	3.05	1.862	
	Girls	3.42	1.730	0.029
Peer Problem Score	Boys	3.01	1.801	
	Girls	2.74	1.660	0.094
Total	Boys	12.29	5.980	
	Girls	13.32	5.054	0.05
Pro-Social Score	Boys	7.68	2.268	
	Girls	8.57	1.868	0.000

Girls have higher mean SDQ score (refer table 9.13) compared to boys in Emotional Problem Score (EPS), Hyper Sensitivity Score (HS), Total SDQ score and Pro-Social Score (PSS) and all these differences are statistically significant.

Boys had higher mean score in Conduct Problem score and Peer Problem Score (PPS), however these differences were not statistically significant. On application of hierarchical regression model, a statistically significant difference in mean total SDQ score was observed for gender, mother's education, occupation of mother, occupation of father, type of family, living in the hostel (away from family), severe addiction to alcohol in the family, receiving physical punishment daily and financial problems in the family.

Table 9.14: Associated factors and mean SDQ scores

Name of variable	Significance
Gender	0.05
Mother's education	0.00
Mother's occupation	0.00
Father's occupation	0.008
Type of family	0.016
Living in the hostel	0.07
Addiction to alcohol	0.00
Daily Physical punishment	0.00
Financial problem in the family	0.008

Discussion

Applying adult-based mental health definitions to adolescents and identifying mental health problems in young people can be difficult, given the substantial changes in behaviour, thinking capacities, and identity that occur during the teenage years. Changes in behaviour and priorities also make it difficult to define mental health and mental health problems in adolescents. Adolescents may be affected more broadly by mental health problems through difficulties and burdens that interfere with adolescent development and adversely affect quality of life emotionally, socially and vocationally. There are limitations in available community-based data of mental health among adolescent, as published studies largely focus on measures of individual disorder and dysfunction, without consideration of contextual factors that shape mental health and well-being. Studies have identified contextual factors that place adolescents at greater risk of mental health problems (Knopf et al 2008).

This case study was undertaken to document mental health vulnerability of school-going adolescent in Gujarat. The study reveals that 14% of school-going adolescents were vulnerable to mental health problems. More than 18% adolescents have internalizing (emotional) and more than 16% have externalizing (conduct) manifestations. However, only 3% had hyperactivity manifestations as per the study.

Bhola et. al 2003, in a study using SDQ tool among pre-university college students at Bengaluru, reported 10.1% adolescents had total difficulty levels in the abnormal range. The break-up of the adolescent were as follows:

- 9% at risk for emotional symptoms,
- 13% for conduct problems,
- 12.6% for hyperactivity/inattention and
- 9.4% for peer problems.

The observed difference between two studies may be due to difference in the age of the study participants where the mean age of study population was 16.4 years compared to 14.2 years in the present study.

Similar to other studies using SDQ (Reddy et al 2011, Greadly et al 2010, Svedin et al 2008, Van Roy et al 2006) , this study also shows that emotional symptoms were predominant among girls and peer problems were predominant among boys, however the observed difference was statistically significant for emotional symptoms and not for peer problems. We also observed that adolescent girls were more social in comparison to boys. Kharod et al in a study in rural Gujarat reported 33% adolescents with abnormal SDQ scores, and highest abnormal score was for peer problems and lowest for pro-social category (Kharod et al 2005).

Interestingly, in contrast to other research, the findings from Bhola et al 2003 study and the present study shows that there was no gender difference for conduct problems and hyperactivity problems. This may be due to narrowing gender gap for these problems. The present study also showed significant higher total difficulty scores where mother is illiterate, occupation of parents, nuclear family, severe addiction to alcohol in the family, financial problem in the family, and adolescent getting daily physical punishment. These factors may suggest increased vulnerability to mental health problems in adolescents and may help in identifying those at risk in the community. However, they were not the predictor of low SDQ score as suggested by very low R^2 value of regression models tried in the study, which indicates need of larger scale study to predict such vulnerabilities.

The existing guidelines of RKSK does include mental health issues, however it doesn't suggest methods on how to assess mental health status among adolescents. Limitations of the present study is that it has used self-reported SDQ screening and

not matched it with parents or teacher version as suggested by studies that utilized SDQ beyond Europe, and it could not examine adolescents with abnormal scores with other diagnostic tools used in psychiatry (Worner et al 2004).

Conclusion

The present study reported one-seventh of adolescents included in the study to be vulnerable to developing mental health problems. About one-fifth adolescents have internalizing (emotional) and about one-sixth have externalizing (conduct) manifestations; however very few (3%) had hyperactivity manifestations. Most common risk factors for self-reported emotional and behavioural issues were illiterate mother, occupation of parents, nuclear family, severe addiction to alcohol in the family, financial problem in the family and adolescent getting daily physical punishment. Based on the present study it is recommended to utilize SDQ screening tool (in Gujarati) for screening adolescents in Gujarat, under RKSK and RBSK, and referral of adolescents with abnormal scores to counsellors and psychiatrists at Adolescent Friendly Health Clinics, for further diagnosis and treatment.

References

Adolescent Mental Health: An Urgent Challenge for Investigation and Investment, UNICEF; 2011. Available from: <https://www.unicef.org/sowc2011/pdfs/Adolescent-mental-health.pdf> 16. [Last accessed on 29 Aug 20].

Bhola P, Kapur M. Child and adolescent psychiatric epidemiology in India. *Indian J Psychiatry* 2003; 45:208-17.

Census. Office of Registrar General & Census Commissioner, India; 2011. Available from: <http://www.census2011.co.in/census/district/186-sabarkantha.html>. [Last accessed on 17 Jan 20].

Ghaemi SZ, Khakshour A, Abasi Z, Golchin NA. Effectiveness of school-based program to preventing mental disorders in school age children: review article. *Rev Clin Med* 2015;2:118-24.

Goodman R. The strengths and difficulties questionnaire: A research note. *J Child Psychol Psychiatry* 1997;38:581-6.

Greally P, Kelleher I, Murphy J, Cannon M. Assessment of the mental health of Irish adolescents in the community. *RCSI Stud Med J* 2010;3:33-5.

Kharod N, Kumar D. Mental health status of school going adolescents in rural area of Gujarat. *Indian J Youth Adolesc Health* 2015;2:17-21.

Knopf D, Park MJ, Mulye TP. The Mental Health of Adolescents: A National Profile. San Francisco, CA: National Adolescent Health Information Centre, University of California; 2008.

Murthy RS. National mental health survey of India 2015-2016. *Indian J Psychiatry* 2017;59:21-6.

Nair S, Ganjiwale J, Kharod N, Varma J, Nimbalkar SM. Epidemiological survey of mental health in adolescent school children of Gujarat, India. *BMJ Paediatr Open* 2017;1:e000139

Patel V, Flisher AJ, Hetrick S, McGorry P. Mental health of young people: A global public-health challenge. *Lancet* 2007;369:1302-13.

Reddy BK, Biswas A, Rao H Assessment of mental health of Indian adolescents studying in urban schools. *Malays J Paediatr Child Health* 2011;17:1-10.

Sivagurunathan C, Umadevi R, Rama R, Gopalakrishnan S. Adolescent health: Present status and its related programmes in India. Are we in the right direction? *J Clin Diagn Res* 2015;9:LE01-6.

Stratton KJ, Edwards AC, Overstreet C, Richardson L, Tran TL, Trung LT, *et al*. Caretaker mental health and family environment factors are associated with adolescent psychiatric problems in a Vietnamese sample. *Psychiatry Res* 2014;220:453-60.

Svedin CG, Priebe G. The strengths and difficulties questionnaire as a screening instrument in a community sample of high school seniors in Sweden. *Nord J Psychiatry* 2008;62:225-32.

Van Roy B, Grøholt B, Heyerdahl S, Clench-Aas J. Self-reported strengths and difficulties in a large Norwegian population 10-19 years: Age and gender specific results of the extended SDQ-questionnaire. *Eur Child Adolesc Psychiatry* 2006;15:189-98.

Varma J, Nair S, Ganjiwale J, Nimbalka S, Kharod N. Cross cultural adaptation, into Gujarati, of the English version, strengths and difficulties questionnaire. *J Clin Diagn Res* 2018;12: VM01-3.

World Health Organization. Mental Health: Strengthening our Response. World Health Organization Fact sheet; 2016. Available from: <http://www.who.int/mediacentre/factsheets/fs220/en/>. [Last accessed on 2016 Aug 29].

World Health Organization. Mental Health Atlas; 2014. Available from: http://www.apps.who.int/iris/bitstream/10665/178879/1/9789241565011_eng.pdf. [Last accessed on 2017 Jul].

World Health Organization. Mental Health Atlas; 2014. Available from: http://www.apps.who.int/iris/bitstream/10665/178879/1/9789241565011_eng.pdf. [Last accessed on 2017 Jul].

Worner W, Fleitlich B, Martinussen R, *et al.* The strength and difficulties questionnaire overseas evaluations and applications of SDQ beyond Europe. *Eur Child Adolesc Psychiatry* 2004;13:47-54.

Case study 3: Documentation of Prevalence of Risk Factors for Non-Communicable Diseases (NCDs) among School-going Adolescents in Sabarkantha district in Gujarat

Summary

The case study aims to determine the prevalence of risk factors for non-communicable diseases (NCDs) among school-going adolescents in Sabarkantha district, Gujarat. A cross-sectional school-based study was conducted with 484 school-going adolescents from September to December 2016. Data was collected using WHO's STEP survey format which was translated to vernacular language. The adolescents were screened for body weight, height, blood pressure, lifestyle factors, socio-demographic characteristics and family history. Various studies use different standards for measuring BMI for adolescents. This study also provides an insight to three BMI standards and their differences in BMI measurement for adolescents. Overall 85% of boys and 91% of girls had normal blood pressure (BP). Around 7% were in pre-hypertensive stage and 2.5% had high blood pressure. Practice of regular physical activities was high (around 75%). 80 % adolescents were aware that tobacco can cause disease and 51% adolescents were aware that alcohol addiction can cause disease. Although addiction among enrolled adolescents was low (2%), 83% adolescents reported passive smoking. The study reported unhealthy diet i.e., not having fruits daily) and physical inactivity i.e. not undertaking physical activities daily, as two main risk factors for NCDs among school-going adolescents of Sabarkantha district. This study recommends promoting healthier practices among school-going adolescents for prevention of NCD risk factors and standardization of BMI measurements for adolescents in India.

Background

Developed and developing countries are currently facing the disease burden of non-communicable diseases (NCDs), which encompass cancers, heart disease, stroke, chronic lung disease and diabetes. NCDs were the leading cause of death in 2015 i.e. 70% of 56.4 million deaths that occurred worldwide were caused by NCDs (WHO 2018). The risk factors for NCDs are mainly behavioural, nutritional and metabolic factors. Behavioural factors include tobacco use and physical inactivity. Nutritional and metabolic factors include unhealthy diet, overweight/obesity, high blood pressure (hypertension), high cholesterol and high blood glucose levels (diabetes mellitus).

Most of these risk factors are associated with behavioural and lifestyle changes. Lifestyle associated risk factors among adolescents are increasing throughout the world. Further, adolescents with low levels of physical activity have a higher risk of hypertension (Taylor et al 2008) and sedentary adolescents have a higher risk of obesity (Silvas et al 2009). Unhealthy diet, i.e. low consumption of fruits and vegetables and /or high intake of foods rich in sugars can cause diabetes mellitus type II (Pronk et al 2004). Additionally, excessive alcohol consumption may be a cause of depression among adolescents.

As per a systematic review (Sunitha et al 2014) the prevalence of different NCDs among adolescents in India is 10 to 20%, 50% adolescents are underweight, 15 to 20% adolescents use tobacco, 3 to 15% adolescents consume alcohol, and 5 to 10% adolescents are hypertensive. Few studies also suggest that 3 to 5% adolescents have type 1 and type 2 Diabetes Mellitus, and 5 to 7% suffer from asthma. Hence identification of NCD risk factors and their quantification is vital for framing effective strategies for NCD prevention and treatment among adolescents.

Aim

The case study aims to document the prevalence of risk factors for Non-Communicable Diseases (NCDs) among school-going adolescents in Sabarkantha District, Gujarat.

Study methodology

A cross-sectional school based study was conducted for determining the prevalence of NCD risk factors among school-going adolescents in Sabarkantha district, from September to December 2016. The sample size for this study was estimated to be 390 based on reported prevalence of NCDs among adolescents in India and 80% response rate. As per RKSK there are two categories of adolescents as per their age group, i.e. 11-14 years and 15-19 years. Hence 200 adolescents

were taken from each age group. Considering average class size of 30, 14 schools were randomly selected from the list of schools obtained from the DEO. WHO's STEP approach on NCD risk factors was adapted and utilized for data collection. Information on behavioural risk factors such as tobacco use, alcohol use, physical activity level, dietary habits and road traffic accidents was obtained utilizing STEP survey format of WHO, which was translated in vernacular language and administered by trained researchers.

Height and weight measurement, and BMI calculation

Height, weight and blood pressure of each adolescent was measured. After removing belts and shoes, all children were weighed using a standardized spring balance scale nearest to 500 gms and maximum capacity of 125 kg. The machine was regularly checked using test weights. Each child was made to stand still and upright with weight evenly distributed between the two feet. Zero was readjusted after each reading on the scale. For measuring height a standard measure tape was used to make calibrations on a wall nearest to 1 cm. All adolescents were made to stand against the wall after removing shoes and their heels touching the wall. Height was measured using flat scale with the adolescent looking straight ahead. Based on the weight and height, the Body Mass Index (BMI) was calculated as per the formula Body Mass index (BMI) = Weight (kg) /Height (m²).

Adolescents were classified as underweight / thin, normal, overweight and obese, based on their BMI, using the following three methods for BMI measurement:

- WHO's BMI classification for Asian adults (Indians),
- WHO's reference for adolescents,
- Indian Academy of Paediatrics (IAP) standards

Blood pressure measurement

Adolescents were screened for hypertension by a team of four supervisors and eight volunteers who were trained by a doctor for measuring blood pressure using digital sphygmomanometer. Blood pressure was determined in right arm in sitting position after sufficient rest, by standardized method using standard digital sphygmomanometers with a set of different sized cuffs. The cuff bladder was wide enough to cover at least 2/3 of arm and long enough to encircle arm completely. Height percentile of each adolescent was determined using IAP growth charts. IAP reference for blood pressure (BP) using height percentile was used to define hypertension.

- Normal: The BP level <90th percentile.
- Pre-hypertension: systolic or diastolic blood pressure or both between 90th and 95th percentile, for height for age and sex.
- Hypertension: The BP level >95th percentile.

The two stages of hypertension are:

Stage 1: BP levels that range from the 95th percentile to 5 mm Hg above the 99th percentile.

Stage 2: BP levels that are 5 mm Hg above the 99th percentile.

Students found to have hypertension or pre-hypertension on first visit were contacted to undergo a second set of blood pressure measurement after 10 minutes. Adolescents diagnosed having hypertension were referred to nearest government hospital for further evaluation and management. Family history of hypertension, diabetes and cancer, and relevant socio-demographic details were also recorded.

Permission to conduct the study was obtained from Institutional Ethical Committee (IEC) of IIPHG. Written consent was obtained from adolescents before the test. List of adolescents suffering from or having high risk of NCDs was submitted to the school management for further referral.

Results

Data analysis was carried out using SPSS version 20. Descriptive statistics and univariate analysis was conducted to understand the difference between the genders and expressed in the form of p-value at the level of 95% CI. The findings of the study are presented below.

The study sample comprised of 56% boys and 44% girls, while 58% participants were 10-14 years of age and 42% were 15-19 years of age (refer table 9.15). The mean age of the boys was 13.9 years \pm 1.9 years, while the mean age of girls was 14.3 years \pm 1.9 years. Overall mean age of the population was 14.1 years of age \pm 1.9 years. Most of the study population belonged to Other Backward Caste (OBC) category (refer table 9.16).

Table 9.15: Age and gender-wise distribution of study population

Age group	Gender		Total
	Boys	Girls	
10 to 14	167	112	279
	61.9%	52.3%	57.6%
15 to 19	103	102	205
	38.1%	47.7%	42.4%
Total	270	214	484

Table 9.16: Caste and gender-wise distribution of study population

Caste	Gender		Total
	Boys	Girls	
General	25	20	45
	9.3%	9.3%	9.3%
Other Backward Class	180	148	328
	66.7%	69.2%	67.8%
Schedule Caste	45	43	88
	16.7%	20.1%	18.2%
Schedule Tribe	20	3	23
	7.4%	1.4%	4.8%
Total	270	214	484

Lifestyle related factors

Findings on lifestyle factors such as diet, exercise, and addiction related behaviours are presented below.

Diet related behaviour

For this study we defined junk food, salty food, fast food and food with high fat content as per their local availability and use by the community. Various diet related healthy behaviours are described in table 9.17.

Table 9.17: Diet-related behavioural factors among study population

Healthy behaviours	Gender		Total	p- value
	Boys	Girls		
Eating fruits daily	7.4	16.8	11.6	0.001

Healthy behaviours	Gender		Total	p- value
	Boys	Girls		
Eating vegetables daily	74.1	69.2	71.9	0.2
Taking milk daily	68.5	59.3	64.5	0.03
Occasional consumption of junk food (Once in 15 days, a month, sometimes, never)	40.7	41.6	41.1	
Occasional consumption of empty calories (carbonated drinks) (Once in 15 days, a month, sometimes, never)	65.5	61.7	62.8	0.4
Occasional consumption of food with high salt content (Once in 15 days, a month, sometimes, never)	27.4	11.4	26.7	0.6
Occasional consumption of food with high fat content (Once in 15 days, a month, sometimes, never)	13.7	14	13.8	

No diet survey was conducted and results presented are as reported by adolescents. As shown in table 9.17 only 11.6% study population consume fruits daily. The difference between boys and girls for consumption of fruits daily is statistically significant. Around 60% boys and girls consume one or two fruits per serving. More than 70% of study population consumed vegetables daily. Almost 80% consume one or two bowls of vegetables per serving.

Almost 69% boys and 59% girls consumed milk daily. The difference between boys and girls in consumption of milk daily was found to be statistically significant. Over 60% boys and girls consumed one glass of milk daily. Occasional eating was defined as eating that food once in two weeks or once in a month or never. More than 40% of study population consumed junk foods occasionally. Similarly, more than 60% consumed carbonated drinks occasionally. Only 27% and 14% adolescents consumed high salt and high fat diet occasionally. Further 77% adolescents reported that advantages of eating vegetables and fruits were explained to them in the school.

Physical activity related factors

More than 88% adolescent reported that advantages of physical activities were explained to them in the school (refer table 9.18). 87% of boys and 60% of girls reported doing some or other physical activity daily as shown in the table 9.20. This difference in daily physical activity between boy and girls was statistically significant ($p= 0.000$). Types of physical activities undertaken by boys and girls are shown in table 9.19. Most common physical activity among boys and girls is cycling and walking. Average duration of daily cycling is 30 minutes for boys and 26 minutes for girls. Average duration of physical activities, such as various types of sports, is 40 minutes among boys and 55 minutes among girls.

Table 9.18: Advantages of eating healthy diet and physical activity explained in the school

Advantages of eating vegetables and fruits explained in school	Frequency	Percent	Advantage of Physical activity explained in the school	Frequency	Percent
Yes	373	77.1	Yes	428	88.4
No	86	17.8	No	42	8.7
Do not know	25	5.2	Do Not Know	14	2.9
Total	484	100.0	Total	484	100.0

Table 9.19: Physical activities among study population

Type of physical activity	% of boys	% of boys doing that exercise daily	Average duration per spell of physical activity in minutes by boys (Mean \pm SD)	% of girls	% of girls doing that exercise daily	Average duration per spell of exercise in minutes by girls (Mean \pm SD)
Cycling	91.3	73.3	30.3 \pm 17.7	72.9	54.3	26.4 \pm 14
Walking	86.8	74.8	29.6 \pm 18.6	70.8	55.8	27.2 \pm 18.7
Cricket	71.1	29.7	38.6 \pm 21.1	44.8	40.9	16 \pm 13.8
Running	65.7	64.8	24.9 \pm 15.9	40.1	33.8	35.3 \pm 14

Kabbadi	49.6	17.5	37.1 ± 17.5	7.3	0	33.9 ± 15
Volley/Foot ball	38.4	48.8	37.8 ± 15.9	4.7	0	33.6 ± 20.1
Swimming	11.2	14.8	42 ± 19.2	1.0	0	15 ± 7.1

Table 9.20: Practice of regular physical activity among study population

Doing daily physical activity	Gender		Total
	Boys	Girls	
Yes	235	129	364
	87.0%	60.3%	75.2%
No	35	85	120
	13.0%	39.7%	24.8%
Total	270	214	484

Addiction related factors

Around six boys (2.2%) and one girl reported addiction to chewing tobacco. No adolescent reported to have smoking or alcohol addiction. However, 83% reported exposure to passive smoking in last one week out of which 21% reported exposure to passive smoking every day in last one week. 60% boys and 35% girls reported that someone in the family (mainly father) was addicted to tobacco and/or alcohol. 13.3% boys and 1.9% girls reported addiction among peers, which was mainly chewing tobacco.

Almost all adolescent (97%) reported that they would not taste tobacco or alcohol under pressure from friends. More than 80% of adolescents reported that ill effects of tobacco were explained to them in the school. 80% adolescents knew that tobacco can cause disease while 51% knew that alcohol addiction can cause disease. However, knowledge about which are the diseases that are caused by tobacco use and alcohol consumption was very low.

Body Mass Index (BMI)

BMI of adolescents was classified using WHO BMI standards for Asians adults, WHO adolescent reference for BMI, and IAP BMI standards as shown in table 9.21.

- *As per WHO-BMI standards for Asian adults (Indians)* most adolescents were under-nourished. 1.2% adolescents were overweight and 1.4% adolescents were obese. This standard is used to define obesity and under-nutrition in RKSK.
- *As per WHO-BMI standards for adolescent* most of adolescents were normal. While 3.7% were overweight and 1.7% adolescents were obese. However, WHO recommends country specific standards for BMI.

- In India, Indian Academy of Paediatrics (IAP) has published standards for various growth parameters of children and adolescents including BMI. *As per IAP-BMI standards, most adolescents were having normal BMI. Only 0.8% adolescents were obese and 4.5% were overweight.*

Table 9.21: Differential BMI scores of the study population as per three different BMI standards

WHO BMI (Asian Adults)	Total N (%)	Boys N (%)	Girls N (%)	WHO BMI	Total N (%)	Boys N (%)	Girls N (%)	IAP BMI	Total N (%)	Boys N (%)	Girls N (%)
Severe Under weight (score range)	248 (51.2)	155 (57.4)	93 (43.5)	Severe thinness	95 (19.6)	29 (13.6)	66 (24.4)	Severe thinness	91 (18.8)	49 (18.1)	42 (19.6)
Moderate Under weight	64 (13.2)	31 (11.5)	33 (15.4)	Thinness	105 (21.7)	60 (22.2)	45 (21)	Thinness	111 (22.9)	68 (25.2)	43 (20.1)
Mild Under weight	87 (18)	38 (14.1)	49 (22.9)	Normal	258 (53.3)	130 (48.1)	128 (59.8)	Normal	256 (52.9)	139 (51.5)	117 (54.7)
Normal	72 (14.9)	35 (13)	37 (17.3)	Over weight	18 (3.7)	10 (3.7)	8 (3.7)	Over weight	22 (4.5)	10 (3.7)	12 (5.6)
Over weight	6 (1.2)	4 (1.5)	2 (0.9)	Obese	8 (1.7)	4 (1.5)	4 (1.9)	Obese	4 (0.8)	4 (1.5)	0
Obese	7 (1.4)	7 (2.6)	0								

Blood Pressure

IAP has also published standards for interpreting the levels of blood pressure among adolescents. 85% boys and 91% girls had normal blood pressure (refer table 9.22). 7% boys and 6.6% girls were pre-hypertensive. 7.5% boys and 2% girls had high blood pressure (hypertension). The mean Systolic Blood Pressure for boys is 110, for girls is 111 and overall is 110.3 mmHg; whereas mean Diastolic Blood Pressure for boys is 69.7, for girls is 69.9 and overall is 69.7 mmHg.

Table 9.22: Blood pressure status among study population:

Category of blood pressure	Gender		Total
	Boys	Girls	
High blood pressure (Diastolic)	7	1	8
	2.6%	.5%	1.7%
Normal	227	193	420
	85.3%	91.5%	88.1%
Pre-Hypertensive	19	14	33
	7.1%	6.6%	6.9%
High Blood Pressure (Systolic)	9	3	12
	3.4%	1.4%	2.5%
High Blood Pressure (Systolic and diastolic)	4	0	4
	1.5%	0.0%	.8%
Total	266	211	477

Discussion

This case study estimated the most prevalent risk factors for NCDs among school-going adolescents were:

- Not eating fruits daily ($p=0.001$),
- Not undertaking daily exercise ($p=0.000$) and
- Having high blood pressure ($p=0.005$).

Review of selected studies from 2001 to 2012 showed prevalence of overweight among adolescents aged 10-19 years to be 9.9% to 19.9%. The studies also indicated early onset of obesity (Goyal et al. 2011, Kotian et al. 2010, Aggarwal et al. 2008) affecting (3.4 to 6.5%) urban school-going adolescents more (Laxmiah et al 2007, Mehta et al. 2007, Khadilkar et al. 2004, Kumar et al. 2007) when compared to (0.6 %) rural adolescents (Aggarwal et al. 2008) with significant gender variations. Further, a STEP survey from Northern India also reported higher obesity among adolescent girls (Thakur et al. 2016); however, in this study overweight was found to be higher among adolescent boys.

Previous studies on dietary pattern among adolescents have also reported inadequate intake of fruits and vegetables, and high consumption of fast food (Jain et al 2012, Kumar et al 2017), which was also reported in this study. Further, various studies have reported the range of physical inactivity to be huge (10% to 90%) with gender variations (Mahmood et al 2017, Parsekar et al 2015, Singh et al 2012). In this study as well, lack of daily exercise and inadequate duration of activity were found to be one of the prevalent risk factors for NCDs among school-going adolescents. A limitation of the study was that it cannot be generalized for all adolescents of the block or district of Gujarat, as it only included school-going adolescents in Sabarkantha district.

Conclusion

Two risk factors for NCDs, i.e. inadequate physical activity and unhealthy diet among school-going adolescents, were highlighted in this case study. Specifically, not consuming fruits in the daily diet and not undertaking physical activity daily was reported among school-going adolescents in Sabarkantha district. Though the case study also identified high BMI as one of the major risk factors, it was not possible to conclude the same because of different standards for BMI, with different outcomes. The study provides an insight to three major BMI standards and their differences in measurement for school-going adolescents. It recommends promoting healthier practices for prevention of NCD risk factors among school-going adolescents and standardization of BMI measurements for adolescents for India.

References

Aggarwal T, Bhatia RC, Singh D, Sobti PC. Prevalence of obesity and overweight in affluent adolescents from Ludhiana, Punjab. *Indian Pediatr* 2008;45:500-2.

Currie C, Gabhainn SN, Godeau E, Roberts C, Smith R, Currie D, *et al.* Inequalities in young people's health: Health behaviour in school-aged children international report from 2005–2006. Copenhagen: World Health Organization; 2008.

da Silva KS, Nahas MV, Peres KG, Lopes Ada S. Factors associated with physical activity, sedentary behaviour, and participation in physical education among high school students in Santa Catarina state, Brazil. *Cad Saude Publica* 2009;25:2187-200.

Esmailnasab N, Moradi G, Delaveri A. Risk factors of non-communicable diseases and metabolic syndrome. *Iran J Public Health* 2012; 41:77-85.

Goyal JP, Kumar N, Parmar I, Shah VB, Patel B. Determinants of overweight and obesity in affluent adolescent in Surat city, South Gujarat region, India. *Indian J Community Med* 2011;36:296-300.

Hazreen MA, Su TT, Jalaludin MY, Dahlui M, Chinna K, Ismail M, *et al.* An exploratory study on risk factors for chronic non-communicable diseases among adolescents in Malaysia: Overview of the Malaysian health and adolescents longitudinal research team study (The myHeARTstudy). *BMC Public Health* 2014;14 Suppl 3:S6.

Indian Academy of Pediatrics Growth Charts Committee, Khadilkar V, Yadav S, Agrawal KK, Tamboli S, Banerjee M, *et al.* Revised IAP growth charts for height, weight and body mass index for 5- to 18-year-old Indian children. *Indian Pediatr* 2015;52:47-55.

Jain A, Dhanawat J, Kotian MS, Angeline R. Assessment of risk factors of non-communicable diseases among high school students in Mangalore, India. *Int J Health Allied Sci* 2012;1:249-54.

Khadilkar VV, Khadilkar AV. Prevalence of obesity in affluent school boys in Pune. *Indian Pediatr* 2004;41:857-8.

Kotian MS, S GK, Kotian SS. Prevalence and determinants of overweight and obesity among adolescent school children of South Karnataka, India. *Indian J Community Med* 2010;35:176-8.

Kumar S, Mahabalaraju DK, Anuroopa MS. Prevalence of obesity and its influencing factor among affluent school children of Davangere city. *Indian J Community Med* 2007;32:15-7.

Kumar S, Ray S, Roy D, Ganguly K, Dutta S, Mahapatra T, *et al.* Exercise and eating habits among urban adolescents: A cross-sectional study in Kolkata, India. *BMC Public Health* 2017;17:468.

Laxmaiah A, Nagalla B, Vijayaraghavan K, Nair M. Factors affecting prevalence of overweight among 12- to 17-year-old urban adolescents in Hyderabad, India. *Obesity (Silver Spring)* 2007;15:1384-90.

Mahmood SE, Khan KM, Agrawal AK. Study of lifestyle disease risk factors among school going adolescents of urban Bareilly, Uttar Pradesh, India. *Int J Community Med Public Health* 2017;4:516-21.

Mehta M, Bhasin SK, Agrawal K, Dwivedi S. Obesity amongst affluent adolescent girls. *Indian J Pediatr* 2007;74:619-22.

Misra A, Chowbey P, Makkar BM, Vikram NK, Wasir JS, Chadha D, *et al.* Consensus statement for diagnosis of obesity, abdominal obesity and the metabolic syndrome for Asian Indians and recommendations for physical activity, medical and surgical management. *J Assoc Physicians India* 2009;57:163-70.

Parsekar SS, Ashok L, Monteiro AD, Singh MM, Bhumika TV. Modifiable life style associated risk factors for non communicable diseases among students of pre-university college of Udupi Taluk. *GJMEDPH* 2015;4:1-7.

Pronk NP, Anderson LH, Crain AL, Martinson BC, O'Connor PJ, Sherwood NE, *et al.* Meeting recommendations for multiple healthy lifestyle factors. Prevalence, clustering, and predictors among adolescent, adult, and senior health plan members. *Am J Prev Med* 2004;27:25-33.

Sunitha S, Gururaj G. Health behaviours & problems among young people in India: Cause for concern & call for action. *Indian J Med Res* 2014;140:185-208

Singh AK, Maheshwari A, Sharma N, Anand K. Lifestyle associated risk factors in adolescents. *Indian J Pediatr* 2006;73:901-6.

Singh AP, Misra G. Adolescent lifestyle in India: Prevalence of risk and promotive factors of health. *psychology and developing societies.* 2012;24:145-60.

Swasthya Karyakram RK. Operational Frameworks and Strategy Guidelines. Adolescent Health Division Ministry of Health and Family Welfare Government of India; January, 2014.

Taylor RM, Gibson F, Franck LS. The experience of living with a chronic illness during adolescence: A critical review of the literature. *J Clin Nurs* 2008;17:3083-91.

Thakur JS, Jeet G, Pal A, Singh S, Singh A, Deepti SS, *et al.* Profile of risk factors for non-communicable diseases in Punjab, Northern India: Results of a state-wide STEPS survey. *PLoS One* 2016;11:e0157705.

World Health Organization. NCD Mortality & Morbidity; 2015. Available from: http://www.who.int/gho/ncd/mortality_morbidity/en/. [Last accessed on 2018 Jan].

Chapter 10: Conclusion and Way Forward

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The project played a significant role in creating a positive environment for discussion of programs related to adolescent health between various stakeholders including program managers and policy planners at state, district and block level. This chapter discusses some of the important changes brought about by the project in state program implementation, challenges faced in project implementation and lessons learned for effective roll out of RKSK program.

Changes and influences in state program implementation

A few important changes in RKSK implementation, capacity building of government functionaries, influences in diagnostic methodologies and research tools used, and stakeholder engagement were documented during the course of the project, which are presented below.

RKSK: Convergence and AHD implementation

Formation and institutionalization of convergence committees at district and block level led to better coordination between various stakeholders (from DHFW, WCDD and Education Department) for smooth roll-out and better implementation of RKSK at block level. The district health authorities are now prepared to effectively implement the model AHD as discussed in Chapter 6. They have initiated planning for next round of AHDs along with Health, Education and ICDS department officials at village, block and district level, as per RKSK guidelines.

The project assisted district and block authorities to have better understanding on convergence required for conducting AHD and provided TOR for individual roles and responsibilities for successful implementation of AHD. It also assisted in ensuring follow up of adolescents who were identified during AHD for expert assistance and prompt referral. Further, intense advocacy efforts at district level also resulted in RBSK (Rashtriya Bal Swasthya Karyakram) teams' engagement in the roll out of RKSK in the intervention block. The projects observations were also shared at the national consultation which further resulted in replication of this model in the state of Orissa.

Capacity building and mentoring of government functionaries

There has been significant improvement in knowledge on major issues related to adolescent health among frontline workers, especially ASHAs. However to sustain this knowledge and practice, hand-holding will be required through periodic

refresher training and assistance. During the project it was documented that MOs and BHOs can be a good resource for hand-holding of frontline workers. Health officials at district and block level have shown willingness to mentor health care workers for roll-out of RKSK. Although knowledge regarding RKSK and adolescent health also improved among school teachers, it was observed that they have pre-fixed and strict perceptions on topics such as contraception. This might require reinforcement training and engagement with them over longer period of time.

Influences in diagnostic methodologies and research tools used

A cost-effective method for Hb estimation, by using multiple Durhams tube, using the conventional Sahli's Acid haematin method was also demonstrated to frontline workers. This method decreases the turn-over time for Hb estimation and hence more number of tests can be conducted without affecting validity. The same model was replicated by district health officials on Mamta Day which was attended by ANC mothers for routine examination / check-ups. Further, the SDQ tool in vernacular language, used to identify risks for developing mental health disorders, among adolescents, is being replicated by the state government through a pilot test in a district before roll out to the entire state.

Engagement with other stake holders / community

The role of VHSNC members are not clearly defined in the RKSK operationalization framework. Process documentation of the intervention suggested that training of VHSNC members should focus more on their roles and responsibility, and that they should be involved in organizing AHD, and monitoring Mamta Taruni and Mamta day. Post-intervention the district officials have started recognizing the importance of VHSNC members and initiated their involvement for improving adolescent health. Additionally, an adolescent was included as an additional member in the VHSNC for optimal representation in the intervention block. Post-intervention it has been observed that engagement with adolescents have improved in the intervention block. The district and block officials have also revealed that post-intervention the enrolment of adolescents has improved in various programs like Mamta Taruni.

Challenges in Project Implementation

There were a few unanticipated challenges during the project and efforts were made to address them effectively. The main challenges faced during project implementation are presented below.

The age group between 10 to 24 years was included in the formative and baseline survey as per the intervention planned by CHETNA. However during the initial stage of the project, GOI launched RKSK in the entire country. Following this the

intervention by CHETNA was restricted to 10-19 years age group with a focus on three priority areas of RKSK i.e. Nutrition, Sexual and Reproductive Health, and Substance Abuse. These changes required lot of efforts in process documentation of intervention and change in the sampling framework in the endline for endline assessment.

As there are no standards proposed by GOI for assessing nutritional status of adolescents using BMI, IIPHG used all three methods of assessing BMI i.e. WHO BMI standards for Asians adults, WHO adolescent reference for BMI, and IAP BMI standards. Based on the project findings, IIPHG is engaged in advocacy for standardization of BMI measurements for adolescents in India. Further, the methods for measurement of height, weight and estimation of Hb were not standardized and hence the readings during the initial intervention phase were not valid. No standardized guideline was available within RKSK operational module for the same. Evidence-based training for height and weight measurement, and estimation of Hb was provided by IIPHG team prior to execution of AHD by GOG.

Lack of defined frameworks for execution of AHD led to many technical and non-technical issues during first round of execution of AHD although it showed their feasibility and utility and potential coverage. This resulted in urgency for development of model AHD. The proposed sustainable model AHD was successfully implemented in 16 villages by GOG with technical support from IIPHG. Additionally, non-functional AFHCs in the intervention block (Talod) were a real and unexpected challenge. There were no protocols for when to refer and how to refer in the standard guidelines, hence IIPHG developed evidence-based referral protocol in consensus with experts on adolescent health.

Making RKSK more effective: Lessons from the project

Some of the lessons learned from the adolescent health and empowerment project that can be applied for making RKSK program more effective are listed below.

Engagement with parents and community

It is important to have community buy in especially for interventions that target adolescents. Results from formative research suggest that to engage with adolescents, it is essential to have community engagement, especially parents and family members, to gain credibility so that adolescents are able to participate in interventions and engage in the learning that is offered to them, unopposed. Community engagement is also strategic because the community can offer valuable resources to program implementation and monitoring. Capacity building and engagement with VHNSC members, and including adolescents as additional

member in VHSNCs for their optimal representation, is beginning to show results in the intervention block, with improved enrolment of adolescents in programs like Mamta Taruni.

Reflections on training of frontline workers

Knowledge and skill of frontline workers are known to significantly impact service delivery, hence the design and delivery of training, and continuum of learning while in-service gains importance. In this project classroom-based participatory training methodology was utilized for building capacity of frontline workers. Although there has been significant improvement in knowledge on adolescent health (specifically, sexual and reproductive health, menstrual hygiene and substance abuse) among frontline workers, especially ASHAs; there is a need to sustain knowledge and practice. This will require periodic refresher training and assistance in terms of hand-holding and mentoring by MOs and BHOs, at village and block level.

Translating the learning from training into improved service delivery is largely dependent on individual practice, work priorities, and mentoring and hand-holding support from supervisors. Additionally, while classroom-based training has been the classical method for providing training to frontline workers, newer methodologies using technological advancements such as e-learning are also gaining momentum. A combination of training tools and methods, such as classroom-based training, e-learning and on-field observational training can be explored for increasing effectiveness of training of frontline workers.

Promoting convergence and AHD implementation

Need for convergence strategy between the three state departments (DHFV, WCDD and education department) for effective implementation of adolescent health programs was collectively agreed by representatives from these departments. Representatives from education department had offered full support for the activity at district and block level, and were interested to set an example of active convergence with DHFV and WCDD, for implementing adolescent health programs. Hence it was planned to demonstrate convergence at grassroots through *preraks*, and efforts were made to identify and train *preraks* as peer educators. However due to limitations in state funding for *preraks* we were unable to pursue this link for demonstrating convergence, which is viewed as a missed opportunity.

As school teachers can also critically assist in the success of programs pertaining to adolescents, it was envisaged that building capacity of school teachers in RKSK would also be beneficial for providing health education and counselling to adolescents. However we perceived reluctance among teachers in carrying forward the learning's of the adolescent health training, as their participation in RKSK was

largely by force and not by choice. For the education department to provide effective support in convergence and implementation of AHD, the concerns of the teachers would need to be addressed and necessary hand-holding be provided by BEOs and DEOs as and when required.

Effective implementation of AFHC services

The following are crucial for providing effective adolescent friendly services through AFHCs:

- Felt need for adolescent friendly services.
- Strong commitment of state in providing necessary services,
- Motivated and trained counsellors,
- Provision of adequate space and infrastructure, and
- Adolescent friendly ambience at the clinics.

The case study documentation of AFHCs reveals that weekly community outreach activities undertaken by counsellors, improves access to services and increases footfall at the clinic. Developing locally appropriate promotional materials is also important for providing education and counselling to adolescents. Further implementing good systems for data recording and reporting are also important to effectively monitor services provided through the AFHC. Adequate financial resources for personnel and program support are also important for sustaining activities through AFHC.

Convergence for RSKS and RBSK implementation

Rashtriya Bal Swasthya Karyakram (RBSK) launched by GOI in February 2013 aims at early detection and management of the following 4Ds in children 0 to 18 years:

- defects at birth,
- development delays,
- deficiencies, and,
- diseases.

Urgent need for convergence between DHFW, WCDD and education department for effective implementation of both RSKS and RBSK program was highlighted by the participants at the national consultation. Integration of counsellors of RSKS, RBSK, Integrated Counselling and Testing Centre (ICTC) and RMNCH+A as a much needed speciality was also suggested. Engaging and motivating school teachers also emerged as an important strategy for successful implementation of RSKS and RBSK programs at the national consultation.

NCD and Mental health

Inadequate physical activity and unhealthy diet among school-going adolescents were the two NCD risk factors that were reported in the case study documentation. Specifically, not consuming fruits in the daily diet and not undertaking physical activity daily was reported among school-going adolescents in Sabarkantha district.

Findings of the case study and endline survey suggest:

- there was increasing awareness of NCDs among adolescents,
- parent and community were sensitized on healthy lifestyle and dietary habits,
- monitoring of the behavioural risk factors,
- strengthening AFHC services and creating linkages with RBSK for school screening and check-ups,

Additionally, standardization of BMI measurements for adolescents for India would also be essential for assessing nutritional status of adolescents.

The case studies documentation also reported one-seventh of school-going adolescents were vulnerable to developing mental health problems. About one-fifth adolescents have internalizing (emotional) and about one-sixth have externalizing (conduct) manifestations; however very few (3%) had hyperactivity manifestations. Based on the case study it is recommended to utilize SDQ screening tool (in Gujarati) for screening adolescents under RKSK and RBSK program, and referral of adolescents with abnormal scores to counsellors and psychiatrists at AFHCs for further diagnosis and treatment.

Unmet needs of 19 to 24 years cohort

There is an urgent need to expand the focus and coverage of program to young people as well (i.e. including 19 to 24 years age group). The formative research and baseline survey findings suggest that awareness of nutrition and SRH was low among married and unmarried females in the 19 to 24 years age group. Awareness of contraception and family planning methods was also limited among married and unmarried males in 19-24 years age group. Married and unmarried young males were completely unaware of ARSH programs implemented by government and services provided by AFHC. They also had concerns on limited access to accurate information on SRH.

Further, there was limited knowledge of antenatal care (ANC) and postnatal care (PNC) among married females. It was observed that 38.46% nulliparous women, 22% postnatal women and 20% primiparous women do not know about ideal month for antenatal registration. Knowledge of frequency of optimal antenatal

check-ups was also low, with 40% married females stating that ANC check-ups should be done every month. Less than 60% married females knew what was the prescribed dose and schedule of TT for pregnant females. Knowledge regarding appropriate weight gain during pregnancy was also poor among all married females. Knowledge about danger signs and ‘at risk’ pregnancy was also very poor. However knowledge about institutional deliveries and its advantage was very high.

Knowledge about early initiation of breast feeding was poor; however, it was highest amongst primiparous married females (50%). Knowledge about vaccination schedule as per the national immunization schedule, for an infant less than one year, was very poor as only few of the primiparous, multiparous or nulliparous females had correct information regarding vaccination.

Among the married cohort, only ANC and PNC females are entitled to be covered and get benefit of various services. The unmet nutrition and SRH needs of 19-24 years males and females also need to be prioritised. This cohort also needs to be sensitized for utilization of family planning methods and improving their health care practices. While the Iron Plus initiative includes other females, this program is yet to be rolled out. Such new initiatives should also have a convergence strategy with existing programs.

Annexures

- i) Publications**
 - a) Research Articles
 - b) Policy briefs

- ii) Tools**
 - a) Referral card
 - b) Height and weight measurement
 - c) Exit Interview format

- iii) Photo Collage**

Publications


Research articles

1. Puwar T, Saxena D. (2016). Use of IAP BMI standards for measuring nutritional status of adolescents in India. *National Journal of Community Medicine*, 7 (6): 545.
2. Trivedi P, Saxena D, Puwar T, Yasobant S, Savaliya S, Fancy M. (2016) Assessment of nutritional status of adolescents: Field experience from rural Gujarat, India. *National Journal of Community Medicine*, 7(12): 926-930.
3. Saxena D, Yasobant S, Puwar T, Fancy M, Trivedi P, Savaliya S. (2017). Revelling Adolescent Health Day: Field experience from Rural Gujarat, India. *Annals of Medical and Health Sciences Research*, 7:355-358.
4. Puwar T, Yasobant S, Saxena D. (2018). Are school-going adolescents mentally healthy? Case study from Sabarkantha, Gujarat, India. *Indian Journal of Community Medicine*, 43: S23-27.
5. Puwar T, Saxena D, Yasobant S, Savaliya S. (2018). Non-communicable diseases among school-going adolescents: A case study on prevalence of risk factors from Sabarkantha district of Gujarat, India. *Indian Journal of Community Medicine*, 43: S33-37.
6. Kansara K, Saxena D, Puwar T, Yasobant S, Trivedi P, Savaliya S, Fancy MJ. (2018). Convergence and outreach for successful implementation of RashtriyaKishorSwasthyaKaryakram. *Indian Journal of Community Medicine*, 43:S18-22.
7. Patel P, Puwar T, Shah N, Saxena D, Trivedi P, Patel K et al. (2018). Improving adolescent health: Learnings from an interventional study in Gujarat, India. *Indian Journal of Community Medicine*, 43:S12-17.

b) Policy Briefs

1) Modelling of Adolescent Health Day implementation under RSKS, Experiences from Sabarkantha district, Gujarat


About RSKS
The Rashtriya Kishor Swasthya Karyakram (RSKS) was launched on 7 January, 2014 in India addressing adolescent health needs. RSKS expands the scope of adolescent health programming in India - from being limited to sexual and reproductive health, it now includes in its ambit nutrition, injuries and violence (including gender based violence), non-communicable diseases, mental health and substance misuse.



About us
MacArthur funded Project was started in collaboration with CHETNA & Govt. of Gujarat, one of the aims is to develop convergence strategy for various health and empowerment program related offered by government to adolescents and young people.


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DRAFT



Policy Brief

Modeling of Adolescent Health Day Implementation under RSKS: Experiences from Sabarkantha District, Gujarat



Frame work developed "Executing , Monitoring & Evaluation of the activities under AHD"

What is AHD?
Adolescent Health Day (AHD) under Rashtriya Kishor Swasthya Karyakram (RSKS), which was launched on 2014 in India addressing adolescent health needs; is one of the strategies to achieve the objectives of the adolescent health program to improve preventive services and increase the awareness.

Who should participate in AHD?
Adolescent (10-19 years) age group, both school going and out-of-school; it envisions enabling all adolescents in India to realize their full potential by making informed and responsible decisions related to their health and well-being and by accessing the services and support they need to do so.

How to organize an AHD?
To organize an AHD, one should follow three easy steps:
Step-1: Pre-AHD activities to assess the preparedness, through convergence
Step-2: On-AHD to evaluate and document the process- BMI screening/ Hemoglobin estimation, counseling etc.
Step-3: Post-AHD activities targeted to crosscheck the coverage

Pre-AHD Activities
This exercise should takes place 2 - 3 weeks prior to AHD and should involve a) Convergence meeting at district HQ (DDO, CDHO, ICDS, DEO & Experts from Medical College), Zilla

Panchayat which include: Desk review, Training of staff, Micro plan (staff deployment, mobility, assigning target population), IEC (receipt & disbursement of IEC materials, channels used), Receipt & disbursement of Essentials drugs, Weighing Scales, Haemoglobinometer , Forms (enrollment & referral) and other logistics, Discussion on the lessons learnt from the past & remedial measures should be included b) Similar kind of convergence meeting at block level should be planned followed by district convergence meeting.

On-AHD Activities
AHD to be celebrated with BHO, BEO, ICDS, NGO, PRI, MO, School Teachers/ AWW/ MPH/ ASHA/ NGO/ PRI and following activities to be evaluated; Screening of all adolescents (Hb& BMI), Process Documentation and recording essential details, Counseling on Various domains of RSKS, Referring the abnormal adolescents to the respective departments with appropriate referral note, Hand Holding activities, M&E: ONE interview from each Department: SIX exit interview of beneficiaries (3 Male+3 Female) to understand the supply & demand side issues, satisfaction levels and further needs.

Post-AHD Activities
Coverage and compliance of referral activity should be conducted followed by AHD with MO/PHC/ CHC, I/C AFHS, Principal, VHSNC Members, BHO/ CDHO. Data reported by PHC after compilation of all AHD on Coverage - referred, Follow-up of Beneficiaries who referred during AHD and ensuring them for availing the required services, Visit to Schools and Nearest PHC / CHC to validate regarding the uptake of services, Compliance of IFA to diagnosed anemic adolescent by School, by mobile/phone verification.

2) Institutionalising of convergence committee: Experiences from Sabarkantha District

Functions:


1. Provide broad framework and guidance to the district team for planning various components of RKSK (WFS, AHD, AFBC) and others as per the state guidelines or directives including supportive supervision by all three departments.
2. Provide leadership for RKSK implementation
3. Planning of human resources for all three departments, their roles and responsibilities
4. Logistics management for various components including distribution plan
5. Supportive supervision plan
6. Data collection plan
7. Analyze progress of the implementation of RKSK in the district
8. Training of various functionaries on Adolescent Health from all three departments as required by the program
9. Review the implementation of various components of RKSK using supportive supervision and routine reports of the program
10. Identify and suggest solutions for the issues encountered for effective implementation of RKSK.
11. Discuss the issues related to roles and responsibilities of various departments in the program and suggest solutions for the same
12. Encouraging the use of pilots for testing new ideas and approaches and the use of evidence from sources independent of the MIS, to arrive at alternative solutions
13. Guide and review the meetings of Taluka level convergence committee for Adolescent Health using minutes of meeting
14. Seek guidance from the state on issues to be resolved at the state level

Frequency of Convening:
The Committee shall be convened at least once in six months, or on request of either department or the chair.

Way Forward:
When the convergence committee is formally institutionalized at district and block, it is important that all stake holders should take ownership and should effectively engage in implementation of RKSK. Convergence committee should supervise and monitor the implementation of RKSK in the entire district. They should ensure allocation of time to the program in the Quarterly RCH meeting organized at district level under the leadership of DDO.


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DRAFT



Policy Brief

Institutionalization of Convergence Committee: Experiences from Sabarkantha District Gujarat



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Institutionalization of Convergence Committee

Background:
Government of India has launched the *Rashtriya Kishor Swasthya Karyakram (RKSK)* on 7th January, 2014 for ensuring health and well-being of adolescents in the country. Convergence within and with other departments is mentioned as a key to success for implementing RKSK strategies. Possible areas of convergence with other departments such as Education, ICDS, WCD, Youth Affairs and Sports/Social Welfare have also been listed in RKSK guidelines. There is also need for convergence within health department, which includes VTIND, MMU and REISK. RKSK guidelines have also drawn attention towards forming convergence committee at state and district level for effective implementation of RKSK.

Need for Development of convergence model:
IIPHG and CHETNA in coordination with Health department of Sabarkantha district in Gujarat developed the convergence strategies for implementation of RKSK. Such efforts are required to sustain the effort and to scale up the adolescent health day celebration across the district, a district level convergence committee is necessary for better coordination between Education, Health, ICDS and other departments. The formative and the baseline studies conducted in the process reflected that there should be a pivot at district level which can hold all the state holders engaged directly or indirectly within the RKSK framework. Hence, the proposed convergence committee was formed under chairmanship of District Development Officer and under the administrative leadership of Chief District Health Officer of Health (CDHO).

The process for institutionalization involved :

1. Induction and Institutionalization of District level convergence meeting: IIPHG initiated the institutionalization of convergence committee with assistance from Health department, to assist implementation of various components of RKSK. Although the health department is active but effective convergence is not possible unless there is an adequate support from education department and ICDS. A formal meeting was convened under the guidance of District Development Officer (DDO) to discuss the institutionalization and Induction of convergence committee for RKSK involving representatives of health, education and ICDS.

After detailed deliberation and series of further follow up meetings, a convergence committee was formally institutionalized citing composition, TOR, activities, tenure and functioning in Sabarkantha district. It was also decided that similar committees can be formed at the taluka level to ensure better coordination between stakeholders. Further Terms of reference and other details of convergence committee were developed by IIPHG team and submitted to District Development officer and CDHO of Sabarkantha.

2. Constitution of the convergence committee: The Convergence committee for Adolescent Health (CC-AH) shall comprise the following members:

- **Chairperson:** District Development Officer
- **Member Secretary:** Chief District Health Officer

Other Members

Chairperson, Mahila Bal Vikas Samiti	Program Officer, ICDS
District Education Officer	District social welfare officer
Chief District Medical Officer	Reproductive and Child Health Officer
Gynecologist (Preferably Professor Gynecology, Medical College or Gynecologist at district hospital or Private)	Pediatrician (Preferably Professor Pediatrics, Medical College or Pediatrician at district hospital or Private Pediatrician)
Psychiatrist (Preferably Professor Psychiatry, Medical College or Psychiatrist at district hospital or Private Psychiatrist)	Public Health Professional (Preferably Professor PSM, Medical College or SRIM for district)
DACPU/MO or ICTC Counselor District Hospital	District Training Team- Senior Medical Officer
District Public Health Nurse	District Program Coordinator- DHS
Representative from NGO	Representative from Police department

3. Scope of Work of Convergence Committee for Adolescent Health: The Committee will meet periodically to guide, monitor and review progress of Adolescent Health (RKSK), in accordance of relevant national and state guidelines as well as the best available data and evidence from the field, with the objective of helping both programs effectively achieve concrete outcomes.

Tools

a) Referral card

કિશોર/કિશોરીનુંનામ: _____

સરનામું: _____

રેફરલનુંકારણ:

૧. કિશોર/કિશોરીનુંBMI: વધારે (>૨૫) કેઓછું (<૧૮.૫)

૨. વધારેઅનેમધ્યમએનીમિયા: વધારે (HB <૮ gm/dl), મધ્યમ- (HB- ૮થી૧૦.૯ gm/dl)

૩. કિશોર/કિશોરીમાંજાતીયઅનેપ્રજનનરોગનાલક્ષણોહતા

૪. અન્યકોઈપણપ્રકારનીગંભીરબીમારીહતી _____ (સ્પષ્ટકરો)

જ્યાંરીફરકરવામાંઆવેલછેએકેન્દ્રનુંસરનામું:

યુવામૈત્રીકેન્દ્ર _____

અન્યસ્વાસ્થ્યકેન્દ્ર _____

જેનેરીફરકરેલછેએસ્વાસ્થ્યકાર્યકર્તાનુંનામઅનેસહી: _____

કેન્દ્રનુંનામ: _____



Office use only

કિશોર/કિશોરીનુંનામ: _____

સરનામું: _____

રેફરલનુંકારણ:

૧. કિશોર/કિશોરીનુંBMI: વધારે (>૨૫) કેઓછું (<૧૮.૫)

૨. વધારેઅનેમધ્યમએનીમિયા: વધારે (HB <૮ gm/dl), મધ્યમ- (HB- ૮થી૧૦.૯ gm/dl)

૩. કિશોર/કિશોરીમાંજાતીયઅનેપ્રજનનરોગનાલક્ષણોહતા

૪. અન્યકોઈપણપ્રકારનીગંભીરબીમારીહતી _____ (સ્પષ્ટકરો)

જ્યાંરીફરકરવામાંઆવેલછેએકેન્દ્રનુંસરનામું:

યુવામૈત્રીકેન્દ્ર _____

અન્યસ્વાસ્થ્યકેન્દ્ર _____

b) Height and weight measurement

ઉચાઇ કેવી રીતે માપશો ?

ઉચાઇ માપવા માટે યોગ્ય માપ પટ્ટી (ટેપ) ની જરૂર હોય છે.

૧. સૌ પ્રથમ વ્યક્તિને તેના પગમાં પહેરેલ સ્લીપર/ચંપલ/ગુટ/મોજડી અને માથે પહેરેલ પાઘડી,ટોપી,સાફો ઉતારવા જણાવો.
૨. વ્યક્તિને ભીત પાસે તમારી તરફ મોં રાખી ઉભા રહેવા જણાવો.
૩. વ્યક્તિ ઉભો રહે ત્યારે તેના પગ એકબીજાને અડેલા હોવા જોઈએ,તેના પગની પાની ભીતને અડતી હોવી જોઈએ અને તેના પગ ટટાર / સીધા હોવા જોઈએ.
૪. વ્યક્તિને સામે જોવાનું કહો ઉપર કે નીચે જોતા વ્યક્તિની ઉચાઇ ઓછી કે વધુ આવે છે.
૫. આંખ અને કાન આ રીતે ઉભા રહેતા એક જ લાઇનમાં જણાશે.
૬. માથા પર એક લાકડાની કુટપટ્ટી મુકો અને વ્યક્તિને શ્વાસ અંદર લઈ ઉભા રહેવા જણાવો.
૭. પેન્સીલ વડે દિવાલ પર નિશાન બનાવો (જ્યાં કુટપટ્ટીનો નીચેનો ભાગ દિવાલને નળે છે ત્યાં)
૮. માપપટ્ટી વડે દિવાલ પર નિશાનથી નીચેના તળીયા સુધીની ઉચાઇ માપો.માપતી વખતે ધ્યાન રાખો કે માપપટ્ટી ઘરે વળી ન જાય તથા નીચે તળીયાને બરાબર અડે.
૯. ઉચાઇ સેન્ટીમીટરમાં નોંધો.

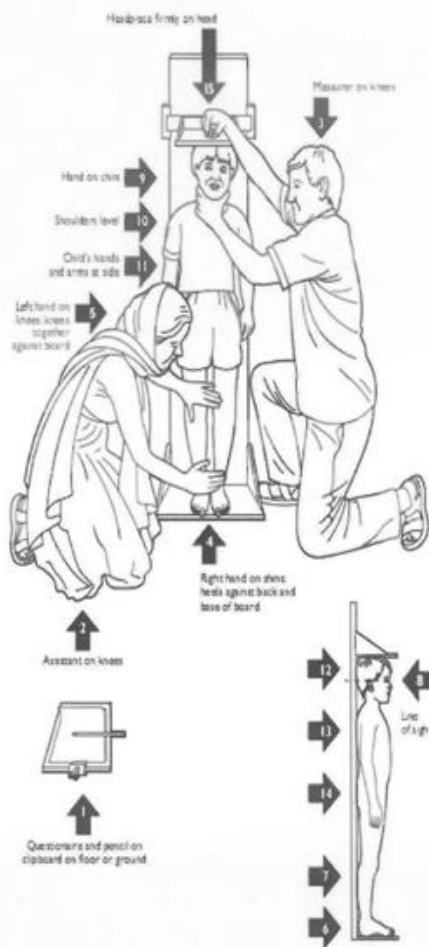
વજન કેવી રીતે માપશો ?

આ માટે આપને એક વજનકાંટાની કરૂર પડશે.

૧. સૌ પ્રથમ વજનકાંટાને એક સપાટ સીધા અને સખત જગ્યાએ મુકો. વજન કાંટાને લીપણ કરેલી જગ્યાએ અથવા માટીમાં ના મુકો. જો માટી પર કે લીપણવાળી જગ્યાએ વજનકાંટો મુકવો જ પડે તેમ હોય તો તેને લાકડાના પાટીયા પર જ મુકો.
૨. ત્યાર બાદ વજનકાંટામાં ૦ (શુન્ય) બરાબર ગોઠવો.
૩. વ્યક્તિને તેના ચંપલ /સ્લીપર/ગુટ અને મોજા હોય તો તે પણ કાઢવા જણાવો.
૪. વ્યક્તિને તેના પગ વજનકાંટાની બંને બાજુ રહે તેમ ઉભા રહેવા જણાવો.
૫. વ્યક્તિને સીધા ઉભા રહેવા જણાવો. વ્યક્તિને સામે જોવા અને કહો નહીં ત્યાં સુધી ના ઉતરવા જણાવો.
૬. વ્યક્તિનું વજન વજનકાંટામાં જોઈ કીલોગ્રામમાં નોંધો.



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GANDHINAGAR



Procedure:

1. Both the assistant and measurer should be on their knees (arrows 2 and 3).
2. The right hand of the assistant should be on the shins of the child against the base of the board (arrow 4).
3. The left hand of the assistant should be on the knees of the child to keep them close to the board (arrow 5).
4. The heel, the calf, buttocks, shoulder and occipital prominence (prominent area on the back of the head) should be flat against the board (arrows 6, 7, 14, 13 and 12).
5. The child should be looking straight ahead (arrow 8).
6. The hands of the child should be by their side (arrow 11).
7. The measurer's left hand should be on the child's chin (arrow 9).
8. The child's shoulders should be levelled (arrow 10).
9. The head piece should be placed firmly on the child's head (arrow 15).
10. The measurement should be recorded on the questionnaire (arrow 1).

c) Exit Interview

સુચના: જેતરુણી/તરુણનીતપાસ/કાઉનસેલિંગપતિગયુડોયતનેપૂછો.

Basic Information	૧. કિશોર ૨. કિશોરી ૧. શાળાએજતાર. શાળાએનાજતા	૧. કિશોર ૨. કિશોરી ૧. શાળાએજતાર. શાળાએનાજતા	૧. કિશોર ૨. કિશોરી ૧. શાળાએજતાર. શાળાએનાજતા	૧. કિશોર ૨. કિશોરી ૧. શાળાએજતાર. શાળાએનાજતા	૧. કિશોર ૨. કિશોરી ૧. શાળાએજતાર. શાળાએનાજતા	૧. કિશોર ૨. કિશોરી ૧. શાળાએજતાર. શાળાએનાજતા
૧ શુતમનેખબરછેકેત મારુંહિમોગ્વોબીન (લોહીનાટકા) કેટલુંચાવ્યું?	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____
૨ શુતમનેતેનાવિષેવ ધારેમાહિતીઆપવા માંઆવીહતી?	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____
૩ શુતમનેખબરછેકેત મારુંBMAકેટલુંછે?	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____
૪ શુતમનેતેનાવિષેવ ધારેમાહિતીઆપવા માંઆવીહતી?	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____	હા/ના, જોહાતોશું _____
૫ તમારામતે, આતરુણ/તરુણીદિ વસનીઉજવણીકેવી હતી?	૧. ખુબસારી ૨. સારી ૩. બરાબર ૪. ખરાબ ૫. બહુખરાબ	૧. ખુબસારી ૨. સારી ૩. બરાબર ૪. ખરાબ ૫. બહુખરાબ	૧. ખુબસારી ૨. સારી ૩. બરાબર ૪. ખરાબ ૫. બહુખરાબ	૧. ખુબસારી ૨. સારી ૩. બરાબર ૪. ખરાબ ૫. બહુખરાબ	૧. ખુબસારી ૨. સારી ૩. બરાબર ૪. ખરાબ ૫. બહુખરાબ	૧. ખુબસારી ૨. સારી ૩. બરાબર ૪. ખરાબ ૫. બહુખરાબ

ક	તમારાતે, આતરણ/તરણીદિ વસનીઉજવણીથ વીજોઈએ?	હા/ના, જોહાતોકેટલાંઅં તરેઉજવણીથ એ? 1. દરમહિને 2. દરરમહીને 3. દર૩મહીને 4. દર૫મહીને	હા/ના, જોહાતોકેટલાંઅંતરે ઉજવણીથએ? 1. દરમહિને 2. દરરમહીને 3. દર૩મહીને 4. દર૫મહીને	હા/ના, જોહાતોકેટલાંઅંતરે જવણીથએ? 1. દરમહિને 2. દરરમહીને 3. દર૩મહીને 4. દર૫મહીને	હા/ના, જોહાતોકેટલાંઅંતરે ઉજવણીથએ? 1. દરમહિને 2. દરરમહીને 3. દર૩મહીને 4. દર૫મહીને	હા/ના, જોહાતોકેટલાં અંતરેઉજવણી થોઈએ? 1. દરમહિને 2. દરરમહીને 3. દર૩મહીને 4. દર૫મહીને
હાઈસ્કૂલનાબાળકોનેનીચેનાપ્રશ્નોપુછવા.						
૭	શુંતમનેખબરછોકેલ ગ્રહવાનીકાનૂનીઉ મરહોવીજોઈએ?	હા/ના જોહાતોછોકરો____ છોકરી____	હા/ના જોહાતોછોકરો____ છોકરી____	હા/ના જોહાતોછોકરો____ છોકરી____	હા/ના જોહાતોછોકરો____ છોકરી____	હા/ના જોહાતોછોકરો____ છોકરી____
૮	શુંતમનેકોઈમુજવ ણ (જાતીયરોગમાટે) હોયતોતેદુરકરવામાં આવી?	હા/ના	હા/ના	હા/ના	હા/ના	હા/ના

iii) Photo Courtesy : IIPHG



Photo Courtesy : CHETNA



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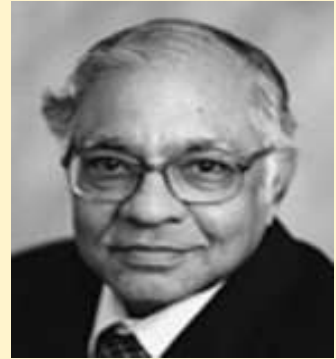
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