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Navrang

JOGS CHRONICLE

CHALLENGES OF ADOLESCENCE

THEME

"Dil Chahta Hai Har Naari Ho Swasth Aur Safal...
Banaye Apna Surakshit Ewam Ujjwal Kal... Har Pal"

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प्रेम की पाती

Dear Members of the Jabalpur Obstetrics and Gynecology Society,

It gives me immense joy to extend my warmest wishes and heartfelt congratulations on the launch of your very first magazine, **NAVRANG**, on the special occasion of your installation ceremony. Under the able leadership of President Dr. Rakhi Bajpayee, Secretary Dr. Komal Jain, and the editorial vision of Dr. Ranu Jain and Dr. Nandita Bhartiya, this vibrant magazine is sure to reflect the spirit, strength, and aspirations of your dynamic society. The chosen theme, "Challenges of Adolescents," is both timely and critical. Adolescence is a transformative phase that shapes future health and well-being. As gynecologists, our role in empowering this age group with knowledge, guidance, and care is essential for building a healthier tomorrow. As President of FOGSI, I am proud to lead with the vision:
"Ek Rashtra, Ek Mission – Swasth Nari, Samruddha Vatan" with the unifying call of **"Har Ghar FOGSIAN."** This mission underscores our collective resolve to reach every woman in every home, ensuring health, dignity, and prosperity for all. Our national initiatives are crafted to echo this vision:

- **"Do Ti Ke Zindagi Ke" –** promoting cervical cancer vaccination for adolescent girls aged 9 to 14, safeguarding their future.
- **Project Sampoorna –** a call for pre-conceptional care that ensures safe and healthy motherhood, aiming to reduce maternal and neonatal mortality.
- **Swastha Janma Abhiyaan –** creating awareness among couples to plan pregnancies responsibly, focusing on hemoglobin, nutrition, and hormonal balance.
- **Know Your Numbers –** a powerful data-driven movement to assess and improve the health metrics of 10 crore women across the nation. May NAVRANG become a beacon of inspiration, knowledge, and empowerment for all.With warm regards and blessings,

DR. SUNITA TANDULWADKAR

National President

FOGSI 2025-26

Greetings to My Esteemed Members.

I wish you all a very healthy and prosperous year.It fills me with tremendous happiness to see the thoughtful efforts and creative commitment invested in this edition of the magazine. This issue, centered around adolescence, brings to light one of the most critical and delicate phases of human development—a time where the foundations of health, identity, and values are laid. **Adolescence is not merely a passage of age, but a profound journey of transformation—physical, emotional, and spiritual.** The theme, with its intricacy and promise, has been addressed with care, depth, and professionalism by the editorial team and writers.To the young minds and skilled hands who have brought this publication into being—I extend my best wishes. May your efforts never stop shedding light on minds, warming hearts, and inspiring cure. May this magazine not only be a mirror of knowledge, but a light of loving service in the medical world.
With divine grace and goodwill.

DR. SWARNA KHADILKAR

National Secretary

FOGSI 2025-26

प्रेम की पाती

"As I stand before you, humbled and honored, I embrace my role as President of JOGS for 2025-26. Our theme, '***Dil chahta Hai har nari hoo swasthya aur safal... Banaye Apna Surakshit Evam Ujjwal kal... Har pal,***' embodies our collective aspiration for a healthier, empowered nation.

I invite you to join me in driving this vision forward, built on the foundation of women's health and well-being. Together, we'll unlock our strength, unity, and potential.

My promise as President is threefold:

1. **Elevate academic and professional excellence**
2. **Support personal growth, mental health, and societal protection**
3. **Foster an environment where every JOGSIAN feels valued, protected, and empowered**

Expect exciting initiatives, publications, and programs throughout the year (April25-March26). I encourage your active participation and look forward to achieving incredible strides in women's healthcare, contributing to a stronger, healthier India.

With dedication and commitment.

DR. RAKHI BAJPAI
President
JOGS 2025-26

Dear Jogsians we are very much excited to present you our **1st magzine on adolescence ."Adolescence: A Journey of Self-Discovery"** Adolescence is a pivotal phase of life, marked by transformation and growth. As young minds navigate the complexities of identity, emotions, and relationships, they begin to forge their own paths. It's a time of exploration, experimentation, and learning through which adolescents can unlock their potential and shape their futures, they can thrive and become confident . As they transition from childhood to adulthood, adolescents can hold the key to a brighter tomorrow. Let's being a gynecologist nurture and support them every step of the way.

DR. KOMAL JAIN
Secretary
JOGS 2025-26

प्रेम की पाती

मैं युवा हूँ, कुछ उलझी सी,
कुछ सुलझी सी।
मैं युवा हूँ,
कुछ नन्ही सी, कुछ तरुणी सी।
मैं युवा हूँ।
तुम हाथ थाम लेना मेरा,
हर पथ पर साथ देना मेरा।

कोरी है मेरी सपनों की किताब,
नव पल, नव सोच, नव ज्ञान के
नवरंग से भर दूँ मैं।
तुम नव कलम दे देना।
मैं युवा हूँ, मैं युवती बनकर मिसाल बन जाऊँ,
हर नन्ही आशा की ढाल बन जाऊँ।

– डॉ. रानू जैन

Adolescence marks a major and transformative phase in a woman's life.

This editorial is a tribute to that journey, addressing the critical challenges faced during this period. It highlights key issues encountered by clinicians, such as PCOS, puberty, menarche, menstrual irregularities, trauma, and anxiety, along with their management strategies.

I sincerely thank President Dr.Rakhi and Secretary Dr.Komal for giving us the opportunity to contribute to this important chronicle on adolescent health.

I hope this editorial adds valuable knowledge and wisdom, empowering readers to manage challenges effectively and build a brighter future.

Happy Reading!

DR. RANU JAIN
Chief Editor
JOGS 2025-26

"Great things are never done by the person

They are done by a team of people" -Steve Jobs

Greetings and Namashkar to all the members of obstetrics and gynaecology society.

It gives me great pleasure to write this message.Our first JOGS publication for this year caters to Adolescent health as as adolescence is a challenging stage of women's life in respect to both physical and mental health. Our eminent gynaecologist and experts in various field from different places in country will be sharing their knowledge , thoughts and their views about adolecent health.

Lets join hands and understand that teenage are keen to physical and mental trauma and need to be taken care as they are half teen and half adult. "Adolecent is just one big walking pimple"

"Cater it with tender love and care."... happy reading

DR. NANDITA BHARTIYA
Co-Editor
JOGS 2025-26

ADOLESCENT NUTRITION: MY PERSPECTIVE

Dr. Rakhi Bajpai (MBBS MS), President JOGS

As a Gynaecologist & as a mother, I have seen firsthand the importance of proper nutrition during adolescence. This critical phase of development, which spans from ages 10 to 19, is marked by rapid growth and change. Adequate nutrition is essential to support optimal growth, development, and overall health.

The Importance of Nutrition During Adolescence

During adolescence, the body undergoes significant changes, including:

1. Rapid growth and development: Adolescents experience a growth spurt, with boys growing up to 12 inches in height and girls growing up to 10 inches.
2. Development of secondary sex characteristics: Boys develop facial hair, deepened voices, and increased muscle mass, while girls develop breast tissue and begin menstruating.
3. Brain development: The adolescent brain undergoes significant changes, including the development of new neural connections and the pruning of unnecessary ones.

Proper nutrition is essential to support these changes. A well-balanced diet provides the necessary energy, protein, and essential nutrients to support growth, development, and overall health.

Nutritional Requirements for Adolescents

Adolescents have unique nutritional needs. The following are some of the key nutritional requirements:

1. Calories: Adolescents require adequate calories to support growth and development. Boys require 2,500-3,000 calories per day, while girls require 2,000-2,500 calories per day.
2. Protein: Protein is essential for muscle growth and development. Adolescents require 0.8-1.2 grams of protein per kilogram of body weight per day.
3. Iron: Iron is essential for healthy red blood cells. Adolescents require 8-15 milligrams of iron per day.
4. Calcium: Calcium is essential for bone growth and development. Adolescents require 1,300 milligrams of calcium per day.
5. Vitamin D: Vitamin D is essential for bone health and immune function. Adolescents require 600-800 International Units of vitamin D per day.
6. Fiber: Fiber is essential for healthy digestion and bowel function. Adolescents require 25-30 grams of fiber per day.
7. Healthy fats: Healthy fats, such as omega-3 fatty acids, are essential for brain function and hormone production.

Common Nutritional Challenges During Adolescence

Adolescents often face unique nutritional challenges, including:

1. Inadequate fruit and vegetable intake: Many adolescents fail to consume the recommended daily intake of fruits and vegetables.
2. Excessive sugar and saturated fat intake: Adolescents often consume high amounts of sugary drinks, fast food, and processed snacks.
3. Inadequate hydration: Many adolescents fail to drink enough water, leading to dehydration and decreased athletic performance.

4. **Disordered eating:** Adolescents are at risk of developing disordered eating habits, such as anorexia nervosa, bulimia nervosa, and binge eating disorder.
5. **Nutrient deficiencies:** Adolescents are at risk of developing nutrient deficiencies, particularly in iron, calcium, and vitamin D.Strategies for Promoting Healthy Nutrition Habits

As a Gynaecologist, I recommend the following strategies for promoting healthy nutrition habits in adolescents:

1. **Model healthy eating habits:** Parents and caregivers should model healthy eating habits, including consuming a balanced diet and limiting unhealthy foods.
2. **Encourage mindful eating:** Encourage adolescents to pay attention to hunger and fullness cues, eat slowly, and savor food.
3. **Provide healthy food options:** Provide adolescents with healthy food options, including fruits, vegetables, whole grains, lean proteins, and healthy fats.
4. **Limit unhealthy foods:** Limit adolescents' access to unhealthy foods, including sugary drinks, fast food, and processed snacks.
5. **Encourage physical activity:** Encourage adolescents to engage in regular physical activity, including sports, dance, or simply playing outside.

Conclusion

Adolescent nutrition is a critical aspect of care. I recommend that parents and caregivers prioritize nutrition education and provide adolescents with healthy food options. By promoting healthy nutrition habits, we can support optimal growth, development, and overall health during adolescence and beyond.

Recommendations for Parents and Caregivers

1. **Consult with a pediatrician or registered dietitian:** Consult with a pediatrician or registered dietitian to develop a personalized nutrition plan for your adolescent.
2. **Keep healthy snacks on hand:** Keep healthy snacks, such as fruits, nuts, and whole grain crackers, on hand for your adolescent to grab and go.
3. **Encourage mealtime routines:** Encourage mealtime routines, including eating together as a family and turning off screens during meals.
4. **Monitor food intake:** Monitor your adolescent's food intake, including the types of foods they are consuming and the portion sizes.
5. **Support healthy Hydration:** Encourage adolescents to drink plenty of water around 3-4 liters throughout the day.

   In this way,we can promote healthy nutrition habits among adolescents, support optimal growth & development and reducing the risk of chronic diseases.

MANAGEMENT OF ANAEMIA IN ADOLESCENT

Dr. Jagrati Kiran Naagar (MBBS, MS, FICOG), Associate Prof. BMC Sagar M.P.

Anemia is still a major cause of maternal mortality in our state thatwhy management of Anemia should begin right from adolescent is need of hour action to prevent these maternal deaths.

If we detect Anemia in school & colleges by screening camps and manage that time only child will give better treatment of society as later on , as all these girls become healthy women & mothers.

We can prevent Anemia is adolescent by these action plan :-

- Screening Camps in Schools & Colleges
- Deworming
- If we find Hb less then10 then other causes of anemia to be ruled out ,further investigation to be done to rule out right cause.
- In adolescents, mainly anemia is nutritional deficiency so if there is iron deficiency then give iron tablets, not corrected orally then give i/v iron and iron stores to be checked out.
- Screening for sickle cell anemia and thalassemia also to be done for it to be ruled out before hand as they are also prevalent in certain belts of our state in tribal areas.

Anemia in young girls is mostly due to worm infestation also so deworming should be done. Faulty dietary habits are also leading cause of anemia in our society , so iron rich foods like green leafy vegetables , spinach, date3s are to be taken and along with the vitamin C rich like Amla, Lemon etc. to be taken for better absorption & food rich in phytates like egg etc. should be avoided with iron diet.

DOSE AND REGIME FOR DEWORMING

Age group	Dose and regime
Children 6-59 months of age	Biannual dose of 400 mg Albendazole (½ tablet to children 12-24 months and 1tablet to children 24-59 months)
Children 5-9 years of age	Biannual dose of 400 mg Albendazole (1 tablet).
School-going Adolescent Girls and Boys, 10-19 years of age Out-of-school Adolescent Girls, 10-19 years of age	Biannual dose of 400 mg Abendazole (1 tablet).
Women of Reproductive Age (non-pregnent, non-lactating) 20-49 years (Under Mission Parivar Vikas)	Biannual dose of 400 mg Abendazole (1 tablet).
Pregnant Women and Lactating Mothers (of 0-6 months child)	One dose of 400 mg Abendazole (1 tablet), after the first trimester, preferably during the second trimester.

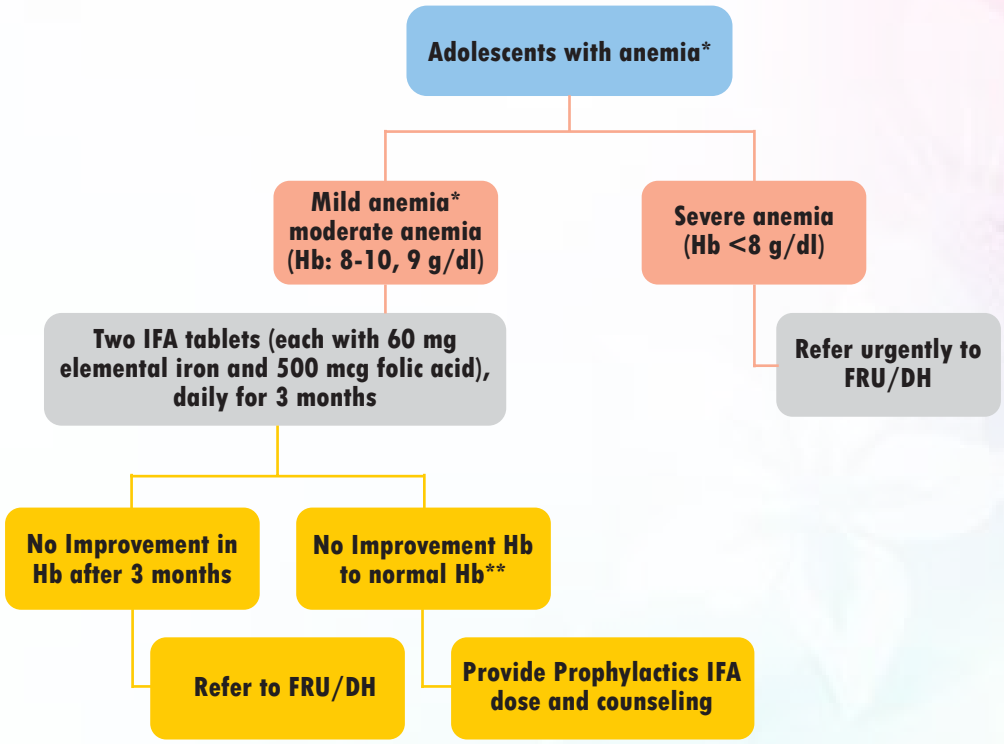
Population	No Anemia (gm/dL)	Mild Anemia (gm/dL)	Moderate Anemia (gm/dL)	Severe Anemia (gm/dL)
Children 6-59 months of age	≥11.0	10-10.9	7.0-9.9	<7.0
Children 5-11 years of age	≥11.5	11.0-11.4	8.0-10.9	<8.0
Children 12-14 years of age	≥12.0	11.0-11.9	8.0-10.9	<8.0
Non-pregnant women (15 years of age and above)	≥12.0	11.0-11.9	8.0-10.9	<8.0
Pregnant women	≥11.0	10.0-10.9	7.0- 9.9	<7.0
Men (15 years of age and above)	≥13.0	11.0-12.9	8.0-10.9	<8.0

Source: (WHO 2011)

Prophylactic dosage for iron and folic acid supplementation

Age group	Dose and regime
Children 6-59 months of age	Bi-weekly 1ml iron and folic Acid syrup through ASHAS, Each ml iron and folic Acid syrup containing 20 mg elemental iron + 100 meg of Folic Acid. Bottle (50ml) to have an 'auto-dispenser' and information leaflet as per MoHFW guidelines in the mono-carton
Children 5-9 years of age	Weekly, 1 iron and Folic Acid tablet, Each tablet containing 45 mg elemental iron + 400 mcg Folic Acid, sugar-coated, pink-colour.
School-going Adolescent Girls and Boys, 10-19 years of age Out-of-school Adolescent Girls, 10-19 years of age	Weekly, 1 iron and Folic Acid tablet, Each tablet containing 60 mg elemental iron + 500 mcg Folic Acid, sugar-coated, blue-colour.
Women of Reproductive Age (non-pregnent, non-lactating) 20-49 years (Under Mission Parivar Vikas)	Weekly, 1 iron and Folic Acid tablet, Each tablet containing 60 mg elemental iron + 500 mcg Folic Acid, sugar-coated, red-colour.
Pregnant Women and Lactating Mothers (of 0-6 months child)	Daily, 1 iron and Folic Acid tablet starting from the fourth month of pregnancy (that is from the second trimester), continued throughout pregnancy (minimum 180 days during pregnancy) and to be continued for 180 days, post-partum Each tablet containing 60 mg elemental iron + 500 mcg Folic Acid, sugar-coated and red-colour.

Treatment of anemia amongst adolescents (10-19 years)



आज की स्वस्थ बालिका
कल बने स्वस्थ माता
खून की अल्पता को हराना
एम एम आर को हमने कम करने की है ठाना ।

CONTRAINDICATIONS

I. Patients with evidence of iron overload

II. Patients with known hypersensitivity to iron preparation or any of its component

III. Patients with anemia not caused by iron deficiency

IV. Liver disorder like jaundice, cirrhosis or renal failure

V. Acute cardiac failure

VI. Known case of thalassemia, sickle cell anemia or hemolytic anemia

IRON SUCROSE ADMINISTRATION: DOS AND DON'TS

Iron sucrose is available in 5 ml vial, with 20 mg of elemental iron per ml of iron sucrose.

IV iron sucrose should be administered as a slow infusion of 200 mg/dose in 100 ml 0.9% saline administered over 20-30 minutes.

During the first five minutes, infusion should of 20-30 drops/minute and then increased t drops/minute.

Subsequent doses can be given over a period of 20 to 25 minutes. It is important to administer the drug at this rate since Ad slow or too fast rates have been associated with side errects.

INDICATIONS

Intra-venous Iron Sucrose (IVIS) may be considered as the first line of management in individuals identified with the following conditions:

I. Moderate anemia during pregnancy (after the first trimester of pregnancy) and during postpartum period if:

- Oral iron is not tolerated

- Non-compliance to oral iron

-No improvement in hemoglobin level or improvement less than 1gm/dL after one month of oral IFA treatment

II. Severe anemia (Hb 6.9 to 5 gm/dL) during 13 to 34 weeks of pregnancy

IRON SUCROSE FORMULATION

Iron sucrose is the most common formulation used for parenteral iron therapy.

Iron sucrose is a non-dextran intravenous iron formulation with a complex of polynuclear iron (III) - hydroxide core bounded by sucrose.

It has short half-life of 5-6 hours, which is responsible for relatively rapid erythropoiesis and can provide quick rise in hemoglobin within 5 to 7 days.

DOSAGE CALCULATION OF IRON SUCROSE:

- Iron requirement for intravenous administration of iron sucrose can be calculated using Ganzoni's formula.
- **Total iron deficit (mg) = Body weight* (kg) x (target Hb in gm/dL**– actual Hb in gm/dL) x 2.4 + 500*****

**Pre-pregnancy weight. If pre-pregnancy weight is not available, weight recorded during the first visit of first trimester can be used*

***Target Hb for pregnant women = 11.0 gm/dL*

****500 mg for replenishing iron stores in the body of women weighing 35 kg*

- If the pregnant women's weight is less than 35 kg, allowance for iron store = 15mg/kg body weight)

ADOLESCENT DYSMENORRHEA: UNDERSTANDING, DIAGNOSIS AND MANAGEMENT

Dr Alka Agrawal , President Jabalpur Menopause Society, Chairperson Adolescent Committee JOGS

Introduction

Dysmenorrhea affects up to 90% of adolescent girls, with a significant proportion experiencing moderate to severe symptoms that can lead to absenteeism and diminished academic performance. Despite its prevalence, it often goes underreported and undertreated.

Classification of Dysmenorrhea

1. Primary Dysmenorrhea (PD):

Begins within 6 to 12 months of menarche.

No identifiable pelvic pathology.

Typically begins a few hours before or at the onset of menstruation and lasts 48–72 hours.

Pain is usually crampy, located in the lower abdomen, and may radiate to the back or thighs.

Associated symptoms include nausea, vomiting, diarrhea, fatigue, and headache.

2. Secondary Dysmenorrhea (SD):

Occurs later, often after years of painless menstruation.

Associated with underlying pelvic pathology, such as endometriosis, pelvic inflammatory disease (PID), müllerian anomalies, or ovarian cysts.

Pain may begin before menstruation and persist beyond the menstrual period.

Less responsive to NSAIDs or hormonal therapy.

Epidemiology

Globally, the prevalence of dysmenorrhea in adolescents ranges from 60% to 90%. Factors associated with increased severity include early menarche, heavy menstrual flow, smoking, obesity, and a positive family history of dysmenorrhea.

Pathophysiology

In primary dysmenorrhea, the pain is primarily due to increased production of uterine prostaglandins, especially prostaglandin F2 (PGF2), which causes intense uterine contractions, vasoconstriction, and ischemia.

Secondary dysmenorrhea involves mechanical or pathological etiologies such as retrograde menstruation in endometriosis, uterine outflow obstruction, or chronic inflammation in PID.

Clinical Evaluation

A thorough history and physical examination are pivotal. Important aspects include:

History:

- Age at menarche. Onset, duration, timing, and character of pain.Response to NSAIDs or hormonal treatment.
- **Impact on daily activities.**
- Other associated symptoms like dyspareunia, bowel or bladder symptoms, Sexual activity and contraception.
- Family history of endometriosis or other gynecological disorders.

Physical Examination:

Often Normal in Primary Dysmenorrhea.

Pelvic examination may be deferred in non-sexually active adolescents.

If indicated, a bimanual or rectoabdominal examination may be done with consent.

If indicated, a bimanual or rectoabdominal examination may be done with consent.

INVESTIGATION

Most adolescents with typical primary dysmenorrhea do not require imaging initially. If secondary dysmenorrhea is suspected, consider:

- Pelvic ultrasound – first-line for structural anomalies
- MRI – for Müllerian anomalies or deep infiltrating endometriosis
- Laparoscopy – gold standard for endometriosis diagnosis

Management Strategies

Management depends on the severity, etiology, and impact of symptoms.

1. Non-Pharmacologic Management

- Education and Reassurance

Many adolescents believe that menstrual pain is normal and unchangeable. Education improves adherence to treatments.

- Lifestyle Modifications
- Exercise – Regular aerobic exercise reduces pain perception
- Dietary changes – Low-fat vegetarian diets, omega-3 fatty acids
- Heat therapy – Local application of heat can be as effective as NSAIDs
- Behavioral Interventions
- Cognitive-behavioral therapy (CBT)
- Stress management techniques
- Yoga and mindfulness

2. Pharmacologic Treatment

NSAIDs are the first-line treatment for primary dysmenorrhea. They inhibit prostaglandin synthesis and are most effective when started 1–2 days before menstruation.

- Common NSAIDs: Ibuprofen, Naproxen, Mefenamic acid
- Adequate dosing and timing are critical; underdosing is a common reason for failure.

Hormonal Therapy

For those unresponsive to NSAIDs or with contraindications:

- Combined oral contraceptives (COCs) – Suppress ovulation and reduce endometrial proliferation
- Progestin-only methods – Include pills, injectables, implants, and the levonorgestrel intrauterine device (LNG-IUD)

Newer Options:

- Transdermal patches and vaginal rings
- GnRH analogs – Reserved for refractory cases, particularly in endometriosis

3. Management of Secondary Dysmenorrhea

- Endometriosis: Requires a tailored approach – hormonal suppression and potentially surgical management via laparoscopy
- Anatomical anomalies: May necessitate surgical correction
- Infections: PID or STIs must be treated promptly with antibiotics

Challenges and Considerations

Delayed Diagnosis

Many adolescents suffer for years before receiving a proper diagnosis, especially in the case of endometriosis. Clinicians should maintain a high index of suspicion when symptoms are severe or unresponsive to standard therapy.

Stigma and Communication Barriers

Menstrual health is often a taboo topic in many cultures, leading to underreporting. Adolescents may also hesitate to discuss menstrual issues due to embarrassment or lack of knowledge.

Conclusion

Adolescent dysmenorrhea is a prevalent yet under-recognized condition with significant impact on quality of life. primary dysmenorrhea and respond well to NSAIDs and lifestyle interventions, persistent or severe cases warrant evaluation for secondary causes like endometriosis.

Non-medical management of adolescent dysmenorrhea offers safe, empowering, and holistic options for improving menstrual health. A multimodal, adolescent-friendly strategy combining education, lifestyle changes, and supportive therapies often yields the best outcomes.

ADOLESCENT POLYCYSTIC OVARY SYNDROME (PCOS)

Dr. Chaitanya Ganphule, Chairperson Endocrinology Committee, Pune

Introduction

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder with lifelong implications for reproductive, metabolic, and psychological health. Although often diagnosed in adulthood, PCOS frequently begins in adolescence, where its early manifestations can be mistaken for normal pubertal changes. Recognizing and managing PCOS in this age group is crucial to preventing long-term complications and improving quality of life.

Epidemiology and Pathophysiology

PCOS affects an estimated 6–10% of women of reproductive age globally, and symptoms frequently first emerge during adolescence (Ibáñez et al., 2017). It is characterized by a combination of hyperandrogenism, ovulatory dysfunction, and polycystic ovarian morphology. The pathogenesis is multifactorial, involving genetic predisposition, insulin resistance, and intrauterine and postnatal environmental influences.

Androgen excess is the central endocrine feature, often exacerbated by hyperinsulinemia due to insulin resistance. Elevated insulin levels stimulate ovarian theca cells to produce more androgens and inhibit hepatic synthesis of sex hormone-binding globulin (SHBG), increasing free testosterone (Arslanian & Lewy, 2020).

Clinical Features in Adolescents

Menstrual Irregularity

Menstrual irregularities, including oligomenorrhea and amenorrhea, are hallmark features. However, irregular cycles are physiologically common within two years of menarche, complicating diagnosis. Persistent irregularity beyond this window warrants evaluation for PCOS (Teede et al., 2015).

Hyperandrogenism

Clinical signs of hyperandrogenism include hirsutism, moderate to severe acne, and, less commonly, androgenic alopecia. Biochemical evidence may reveal elevated serum testosterone or androstenedione levels. Hirsutism, though variable by ethnicity, is often measured using the modified Ferriman-Gallwey score.

Metabolic Manifestations

Obesity, especially central adiposity, is common and may exacerbate insulin resistance. Adolescents with PCOS are at increased risk for type 2 diabetes, dyslipidemia, and non-alcoholic fatty liver disease (NAFLD).

Diagnosis

Diagnosis in adolescents is nuanced and differs from adult criteria. Current recommendations suggest using the following criteria:

- Clinical and/or biochemical hyperandrogenism
- Persistent menstrual irregularity >2 years post-menarche

Polycystic ovarian morphology on ultrasound is not considered a reliable diagnostic criterion in this age group due to the normal variability of adolescent ovarian structure (Ibáñez et al., 2017).

Differential diagnoses to consider include hypothyroidism, hyperprolactinemia, congenital adrenal hyperplasia,

Cushing's syndrome, and androgen-secreting tumors.

Psychological Impact

Adolescents with PCOS report higher rates of anxiety, depression, body dissatisfaction, and disordered eating behaviors compared to their peers (Karjula et al., 2017). Physical symptoms such as acne, weight gain, and hirsutism contribute significantly to psychological distress. Mental health assessment should be part of routine PCOS care.

Management

Management of adolescent PCOS is aimed at alleviating symptoms, restoring hormonal balance, preventing long-term complications, and supporting psychosocial well-being. A multidisciplinary and individualized approach is essential.

Lifestyle Intervention

Lifestyle changes, including dietary modification and increased physical activity, are first-line interventions. Even modest weight loss (5–10%) can improve metabolic and reproductive outcomes (Legro et al., 2013).

Pharmacological Management

When lifestyle changes are insufficient, pharmacologic therapy is indicated. The choice of medication depends on the patient's dominant symptoms and individual risk profile.

1. Combined Oral Contraceptives (COCs)

COCs are first-line pharmacologic treatment in adolescents with PCOS, particularly when irregular cycles, acne, and hirsutism are present. They suppress gonadotropin secretion, reduce ovarian androgen production, and increase SHBG, thereby lowering free testosterone (Teede et al., 2015). Low-androgenicity progestins (e.g., drospirenone) are often preferred.

Caution: COCs may exacerbate insulin resistance and are contraindicated in patients with specific risk factors (e.g., migraines with aura, thromboembolic disorders).

2. Metformin

Metformin, an insulin sensitizer, is useful in adolescents with metabolic dysfunction. It improves insulin sensitivity, may promote modest weight loss, and can help normalize menstrual cycles. Metformin is especially beneficial in overweight or obese teens and may be used alone or in combination with COCs (Ibáñez et al., 2017).

3. Anti-Androgens

Spironolactone, a potassium-sparing diuretic with anti-androgenic properties, is effective for hirsutism and acne. It should be used in combination with COCs to prevent irregular bleeding and to mitigate teratogenic risk in case of pregnancy.

Other agents like finasteride or flutamide are rarely used in adolescents due to concerns about hepatotoxicity and long-term safety.

4. Dermatologic Treatments

Topical agents such as benzoyl peroxide, clindamycin, and retinoids can be added to systemic therapies for acne management. Severe or treatment-resistant acne may warrant dermatology referral.

5. Emerging Therapies

Inositols, particularly myo-inositol and D-chiro-inositol, are being studied for their insulin-sensitizing effects and potential to improve ovulatory function. While preliminary results are promising, adolescent-specific data are limited.

Fertility Considerations

Although PCOS is associated with anovulatory infertility, it is important to counsel adolescents that fertility can often be restored with treatment. Early education on reproductive health and menstrual tracking can help normalize conversations around fertility, reduce anxiety, and promote future planning.

Long-Term Monitoring

PCOS is a lifelong condition. Adolescents diagnosed with PCOS should receive regular follow-up to monitor for the development of:

- Metabolic syndrome
- Type 2 diabetes
- Cardiovascular risk
- Mental health issues

Annual assessments of BMI, waist circumference, blood pressure, lipid profile, and glucose tolerance are recommended (Teede et al., 2015).

Conclusion

PCOS in adolescence presents a complex clinical challenge requiring careful differentiation from normal pubertal development. Early recognition and holistic management—incorporating lifestyle change, pharmacologic treatment, and emotional support—can significantly alter disease trajectory and improve quality of life.

Ongoing research into adolescent-specific diagnostic criteria and treatments is essential. With personalized care and continued support, adolescents with PCOS can lead healthy, fulfilling lives.

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NAVIGATING THE COMPLEXITIES: CHALLENGES IN THE MANAGEMENT OF MÜLLERIAN ABNORMALITIES IN ADOLESCENTS

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Müllerian abnormalities are congenital malformations of the female reproductive tract arising from the incomplete development, fusion, or canalization of the Müllerian ducts, present a unique set of challenges when diagnosed and managed in adolescents. This developmental period is characterized by significant physical, emotional, and social transitions, adds layers of complexity to conditions that can already impact fertility, sexual function, and overall well-being. Effectively addressing these abnormalities requires a multidisciplinary approach that considers not only the anatomical variations but also the psychological and social ramifications for the young patient. This article will delve into the multifaceted challenges encountered in the management of Müllerian abnormalities in adolescents, encompassing diagnostic hurdles, treatment complexities, psychological impact, and the crucial role of patient-centered care.[1]

The Diagnostic Odyssey: Unveiling the Hidden Variations

One of the primary challenges lies in the timely and accurate diagnosis of Müllerian abnormalities. Many of these conditions remain asymptomatic until puberty or the initiation of sexual activity, often presenting with non-specific symptoms such as primary amenorrhea, dysmenorrhea, chronic pelvic pain, or recurrent pregnancy loss (if sexual activity has commenced). This delay in presentation can lead to increased anxiety and frustration for the adolescent and their family.[2]

Furthermore, the spectrum of Müllerian anomalies is broad and diverse, ranging from subtle uterine septa to complete agenesis of the uterus and vagina (Mayer-Rokitansky-Küster-Hauser syndrome). This heterogeneity necessitates a high index of suspicion and the utilization of appropriate diagnostic modalities. Initial evaluation often involves a thorough medical history and physical examination, including a careful external genital examination. However, internal examination can be challenging and distressing for adolescents, particularly those who are not yet sexually active.[3]

Advancements in imaging techniques have significantly improved diagnostic accuracy. Transabdominal ultrasonography is often the first-line imaging modality, providing valuable information about the presence and morphology of the uterus and ovaries. However, its limitations in visualizing subtle uterine anomalies or the vagina necessitate the use of more advanced techniques such as transvaginal ultrasonography (if age-appropriate and acceptable to the patient), magnetic resonance imaging (MRI), and occasionally, laparoscopy or hysteroscopy. MRI is particularly useful for delineating complex Müllerian anomalies, assessing the presence and functionality of a rudimentary uterus, and evaluating associated renal anomalies, which occur in a significant proportion of patients.[4]

The challenge lies not only in accessing these advanced imaging modalities but also in interpreting the findings accurately. Radiologists and clinicians need specialized expertise in recognizing the subtle variations and classifying the anomalies according to established systems, such as the American Society for Reproductive Medicine (ASRM) classification. Misdiagnosis or delayed diagnosis can have significant implications for the adolescent's future reproductive potential and psychological well-being.[5]

Treatment Conundrums: Balancing Anatomical Correction with Functional Outcomes

Once a Müllerian abnormality is diagnosed, the decision regarding treatment is often complex and depends on the specific anomaly, the patient's symptoms, and her future reproductive desires. Surgical intervention may be indicated for certain anomalies, such as obstructing vaginal septa, bicornuate or septate uteri associated with recurrent pregnancy loss, or in cases of Mayer-Rokitansky-Küster-Hauser syndrome to create a neovagina.[6]

However, surgical management in adolescents presents unique challenges. The emotional maturity of the patient, the potential impact on future fertility, and the risks associated with anesthesia and surgery in this age group must be carefully considered. For instance, while surgical correction of a uterine septum may improve pregnancy outcomes later in life, the immediate risks and the psychological burden of surgery need to be weighed against the potential benefits.[7]

In cases of vaginal agenesis, the creation of a neovagina is crucial for sexual function. Several techniques exist, including the Frank non-surgical dilation method, surgical vaginoplasty using skin grafts, bowel segments, or peritoneal flaps, and laparoscopic Vecchietti procedure. Each technique has its advantages and disadvantages in terms of success rates, potential complications, recovery time, and long-term functional outcomes. Choosing the most appropriate method for an adolescent requires a thorough discussion with the patient and her family, taking into account her preferences, lifestyle, and the expertise available.[8]

Furthermore, the management of associated conditions, such as endometriosis or pelvic pain, which can be more prevalent in certain Müllerian anomalies like uterine outflow obstruction, adds another layer of complexity. A holistic approach that addresses all aspects of the adolescent's gynecological health is essential.[9]

The Psychological Landscape: Navigating Identity, Body Image, and Future Concerns

The diagnosis of a Müllerian abnormality can have a profound psychological impact on an adolescent. This is a time of heightened self-awareness, body image concerns, and the development of sexual identity. Learning that one's reproductive anatomy is different can lead to feelings of inadequacy, anxiety, depression, and social isolation.[10]

The potential impact on future fertility is a significant concern for many adolescents, even if they are not currently thinking about starting a family. The realization that they may face difficulties conceiving or carrying a pregnancy can be emotionally distressing and can influence their future relationships and life choices.[11]

Furthermore, the need for intimate examinations, imaging procedures, and potential surgical interventions can be particularly anxiety-provoking for adolescents. Open and honest communication, a supportive and empathetic healthcare team, and access to psychological counseling are crucial in helping these young patients cope with the emotional challenges associated with their condition.[12]

Addressing issues related to body image and self-esteem is also paramount. Adolescents with visible differences or those undergoing surgical procedures may struggle with their body image. Providing them with accurate information, normalizing their experiences, and connecting them with support groups can be invaluable in fostering a positive self-perception.[13]

The Crucial Role of Patient-Centered Care and Multidisciplinary Collaboration

Effective management of Müllerian abnormalities in adolescents necessitates a patient-centered approach that prioritizes the individual needs and concerns of the young patient. This involves open and honest communication, active involvement of the patient and her family in decision-making, and a focus on providing age-appropriate

information in a sensitive and understandable manner.[14]

Building trust and rapport with the adolescent is essential. Healthcare providers need to create a safe and supportive environment where the patient feels comfortable discussing her fears and anxieties. Explaining the diagnosis, treatment options, and potential long-term implications in a clear and empathetic way is crucial for empowering the patient and promoting adherence to treatment plans.[15]

Given the multifaceted nature of Müllerian abnormalities, a multidisciplinary team approach is ideal. This team may include pediatric and adolescent gynecologists, reproductive endocrinologists, radiologists, psychologists, genetic counselors, and social workers. Collaboration among these specialists ensures comprehensive care that addresses the anatomical, functional, psychological, and social aspects of the condition.[16]

Genetic counseling plays a vital role in providing information about the etiology of the anomaly, the risk of recurrence in future offspring, and the possibility of associated genetic syndromes. This information can help the adolescent and her family understand the condition better and make informed decisions about future family planning.[17]

Long-Term Management and Transition to Adult Care

The management of Müllerian abnormalities often extends beyond adolescence into adulthood. Long-term follow-up is necessary to monitor for potential complications, assess functional outcomes, and address any ongoing concerns related to fertility, sexual function, or psychological well-being.18

The transition from pediatric and adolescent care to adult reproductive health services is a critical phase that requires careful planning and coordination. Ensuring a smooth transfer of medical records, providing the young woman with the necessary information about her condition and ongoing management, and connecting her with appropriate adult specialists are essential for continuity of care.19

Conclusion: Embracing a Holistic and Compassionate Approach

The management of Müllerian abnormalities in adolescents presents a complex interplay of diagnostic, therapeutic, and psychosocial challenges. Timely and accurate diagnosis requires a high index of suspicion and the judicious use of advanced imaging techniques. Treatment strategies must balance anatomical correction with functional outcomes and consider the unique needs and emotional maturity of the adolescent. Addressing the psychological impact, fostering a positive body image, and providing comprehensive support are integral to the overall well-being of these young patients.[20]

Ultimately, successful management hinges on a patient-centered approach that prioritizes open communication, shared decision-making, and a collaborative effort among a multidisciplinary team of healthcare professionals. By embracing a holistic and compassionate approach, we can empower adolescents with Müllerian abnormalities to navigate their unique challenges, achieve optimal physical and psychological well-being, and look forward to a fulfilling future. Continued research and advancements in diagnostic and therapeutic modalities will further enhance our ability to provide comprehensive and individualized care for this vulnerable population.[21]

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ADOLESCENT SEXUALITY MYTHS AND MISCONCEPTIONS

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Adolescence is a time of great change and exploration, both physically and emotionally. This includes the development of sexuality, which can be a source of confusion and anxiety for many young people. Unfortunately, there are many myths and misconceptions surrounding adolescent sexuality that can make this process even more challenging.

As a gynecologist with years of experience, I have seen first-hand how common myths and misconceptions about adolescent sexuality can have harmful effects on young people's health and wellbeing. It's important to understand that sexual feelings and behaviors are normal and natural parts of growing up.

Myth 1: Adolescent sexuality is immoral and unnatural

One of the most damaging myths about adolescent sexuality is the belief that it is immoral and unnatural. This belief is often based on cultural or religious teachings, but it is not supported by scientific evidence. In fact, sexuality is a normal and natural part of human development. Encouraging young people to view their sexual feelings and behaviors as shameful or wrong can lead to feelings of guilt, anxiety, and even depression. This can also discourage young people from seeking help or information about their sexual health. It is important to provide accurate information and support to help young people normalize their sexuality and develop a healthy relationship with it. As healthcare providers, we need to encourage open conversations about sexuality and provide accurate information so that young people can make informed decisions about their sexual health.

Myth 2: Masturbation is harmful and can lead to health problems.

Another common myth about adolescent sexuality is that masturbation is harmful and can lead to health problems. This myth is often based on outdated or incorrect information and can lead to feelings of shame or guilt for young people who engage in this behavior. In reality, masturbation is a safe and healthy way for young people to explore their sexuality. It can also have several physical and emotional benefits, such as reducing stress and anxiety, improving sleep quality, and enhancing sexual health and pleasure. As long as this habit does not interfere with a person's day to day activities it is considered safe.

Myth 3: Contraception is only for married couples

One of the most dangerous myths about adolescent sexuality is the belief that contraception is only necessary for married couples. This myth can have serious consequences for young people's sexual health and wellbeing. It is crucial to provide young people who are sexually active with access to a range of contraception options to protect their sexual health and prevent unintended pregnancy. This includes condoms, hormonal methods such as the pill or the patch, and long-acting reversible methods such as intrauterine devices (IUDs) or implants. It is important to provide accurate information about contraception and help young people understand how to use it effectively.

Myth 4: Comprehensive sex education is not necessary for young people

Finally, there is a myth that comprehensive sex education is not necessary or even harmful. Unfortunately, sex education is often neglected in schools due to cultural and religious taboos. This can leave young people without the information and support they need to make informed decisions about their sexual health. Comprehensive sex education should include information about puberty, anatomy, contraception, healthy relationships, consent, and sexual orientation and gender identity. By providing accurate information and support, comprehensive sex education can promote healthy sexual behaviors and prevent unintended consequences of sexual activity.

Myth 5 : Using two condoms at once is more effective than one.

Many people believe that using two condoms at once will provide extra protection against sexually transmitted infections (STIs) and unintended pregnancies. However, this is a myth that can actually increase the risk of both. Using two condoms at once can cause friction and increase the likelihood of tearing or breaking, which can lead to STIs or unintended pregnancy. Using one properly fitted and lubricated condom is the most effective way to protect against both STIs and unintended pregnancies.

Myth 6: Birth control pills cause weight gain.

Weight gain is a common concern for people who use birth control pills, but studies have shown that there is no significant link between the two. While some people may experience weight gain while using birth control pills, this is likely due to other factors such as diet and lifestyle. In fact, some types of birth control pills can actually help reduce acne and regulate menstrual cycles, which can improve overall health and wellbeing.

Myth 7: You can't get an STI if you only have oral sex.

Many people believe that oral sex is a safer alternative to vaginal or anal sex and that they cannot contract STIs through oral sex. However, this is a myth that can have serious consequences. STIs such as herpes, gonorrhea, chlamydia, and syphilis can be transmitted through oral sex. It is essential to use protection such as dental dams or condoms to reduce the risk of transmission.

Myth #8 You can't get pregnant if you have sex during your period.

This is a common myth that can have serious consequences. While the chances of getting pregnant during your period are lower than other times of the month, it is still possible. Sperm can survive in the body for up to five days, which means that if you have sex towards the end of your period, the sperm may still be alive when you ovulate. It is essential to use contraception if you do not wish to become pregnant, regardless of where you are in your menstrual cycle.

Myth #9: You can't get an STI if you've only had sex with one person.

Many people believe that if they have only had sex with one partner, they cannot contract an STI. However, this is a myth that can have serious consequences. STIs can be contracted through any sexual contact, including oral, vaginal, and anal sex. It is essential to use protection and get tested regularly, even if you have only had sex with one partner.

Myth #10: The morning-after pill is the same as an abortion pill.

This is a common myth that can cause confusion and misinformation. The morning-after pill, also known as emergency contraception, is not the same as an abortion. The morning-after pill works by preventing ovulation or fertilization, while an abortion terminates an existing pregnancy. It is important to understand the difference between the two and to have access to all options when making decisions about reproductive health.

Myth #11: You can't get pregnant if you have sex standing up or wash yourself immediately afterwards.

This is a myth that has been around for a long time but has no scientific evidence to support it. The position in which you have sex does not affect the likelihood of becoming pregnant. Sperm can still reach the egg regardless of the position you are in. It is essential to use contraception if you do not wish to become pregnant, regardless of the position in which you have sex. Similarly washing immediately afterwards or douching may not prevent pregnancy as sperms can quickly climb up inside within a few minutes of release.

In conclusion, there are many myths and misconceptions surrounding sexual health that can have serious consequences for adolescents. It is important to separate fact from fiction and to educate ourselves and others on the truth about sexual health. By understanding the facts and taking appropriate measures to protect ourselves, we can promote our overall health and wellbeing. Don't let myths and misconceptions hold you back from enjoying a fulfilling and healthy sex life. Educate yourself, stay safe, and enjoy all that life has to offer!

CHALLENGES IN MANAGEMENT OF TEENAGE PREGNANCY: AN URGENT CALL FOR MULTIDIMENSIONAL SOLUTIONS

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Introduction

Teenage pregnancy, defined as pregnancy occurring in girls aged 10 to 19 years, is a significant global health and societal issue with deep-rooted medical, economic, and psychosocial consequences. According to recent estimates, approximately 12 million girls aged 15–19 years and at least 777,000 girls under 15 years give birth each year in developing regions[2]. Despite efforts to reduce its incidence, teenage pregnancy rates remain alarmingly high in many parts of Africa, Latin America, and South Asia, and disparities persist even within high-income countries[10].

The public health implications of teenage pregnancy extend beyond the individual to entire communities. Adolescents are biologically, emotionally, and socially immature to handle the demands of pregnancy and childbearing, leading to higher rates of adverse maternal and neonatal outcomes[5]. Furthermore, teenage mothers frequently experience educational disruption, social marginalization, economic hardship, and exposure to intimate partner violence[7][8]. The children born to adolescent mothers often face greater risks of low birth weight, stunted growth, poor educational achievement, and intergenerational poverty[6].

Despite global commitments, gaps persist in the delivery of adolescent-centered reproductive healthcare services, particularly in low-resource settings[9][14]. Sociocultural barriers, stigma, and systemic deficiencies further complicate timely access to antenatal care, safe delivery, postpartum support, and mental health services[12][13].

This review critically examines the epidemiological trends, medical risks, psychosocial barriers, health system challenges, and preventive strategies related to teenage pregnancy management. By synthesizing recent evidence, it aims to identify key gaps and offer a roadmap toward more effective, empathetic, and integrated responses to this enduring public health challenge.

Epidemiology and Scope

Teenage pregnancy remains a global concern, but its distribution and trends vary widely across regions and populations. In sub-Saharan Africa, teenage pregnancy rates are among the highest globally, with some countries reporting adolescent birth rates exceeding 100 per 1,000 girls aged 15–19 years[2]. In contrast, countries in Western Europe and East Asia report rates as low as 5–10 per 1,000, reflecting the impact of comprehensive sexual education and accessible reproductive health services[10].

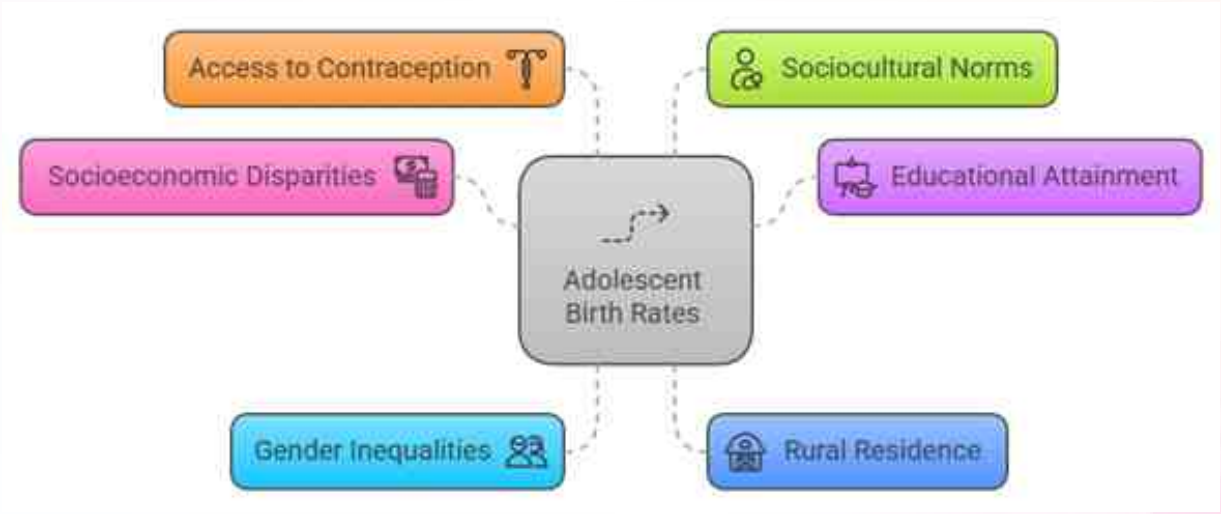
Over the past two decades, notable progress has been made globally, with adolescent birth rates declining by about 30%[10]. However, certain settings, particularly resource-limited regions and marginalized communities within high-income countries, have witnessed either stagnation or even reversals in this trend[2][9]. Factors influencing these patterns include socioeconomic disparities, lower educational attainment, gender inequalities, rural residence, lack of access to contraception, and sociocultural norms favoring early marriage[8][12].

In many countries, adolescents with disabilities, from ethnic minorities, or living in conflict-affected zones face disproportionately higher risks[4]. Studies from Uganda highlight that disability status and low family support

independently increase vulnerability to early childbearing[4]. Similarly, teenage mothers in urban slums and rural hinterlands often experience compounded challenges due to systemic neglect, cultural stigma, illiteracy and poverty[2][7].

The persistent burden of teenage pregnancy underscores the need for tailored, context-specific interventions. Epidemiological trends reveal that while national averages may suggest improvement, pockets of high vulnerability persist, demanding localized and equity-driven approaches to prevention and care[6][14]. Figure 1

Figure 1: Factors influencing adolescent birth



Medical and Obstetric Challenges

Adolescent pregnancy poses substantial medical and obstetric risks, reflecting the physiological immaturity and inadequate healthcare access experienced by this vulnerable group. Complications such as anaemia, preterm labour, hypertensive disorders including preeclampsia and eclampsia, postpartum haemorrhage, and puerperal sepsis are significantly more common among teenage mothers compared to their older counterparts[5][6]. These complications not only threaten maternal survival but also increase the likelihood of long-term reproductive health issues.

Neonatal outcomes are similarly compromised. Babies born to adolescent mothers are at higher risk for low birth weight, prematurity, intrauterine growth restriction, and increased perinatal mortality[5]. In a comparative cohort study from Poland, adolescents were found to have a substantially higher incidence of obstetric complications such as caesarean section due to cephalopelvic disproportion and neonatal intensive care admissions[5].

Late initiation of antenatal care remains a pervasive problem among pregnant adolescents. Due to stigma, lack of awareness, and fear of disclosure, many teenagers seek medical attention only in the second or third trimester[3][8]. This delay limits opportunities for early detection and management of maternal and foetal complications, nutritional counselling, and psychosocial support[3].

Furthermore, adolescents may have lower adherence to antenatal care regimens due to competing demands such as school, domestic responsibilities, or lack of familial support[9]. Limited understanding of pregnancy danger signs, coupled with constrained autonomy in decision-making, often prevents timely healthcare-seeking behaviours[8].

The cumulative effect of these challenges is a higher burden of maternal and neonatal morbidity and mortality in adolescent pregnancies, perpetuating cycles of poor health outcomes across generations[10]. Addressing these medical and obstetric challenges requires early engagement, tailored antenatal strategies, and culturally sensitive counselling to empower young mothers. Ref : Table one and Table two

Table 1: Major Medical and Obstetric Complications in Adolescent Pregnancy

Complication	Description	Increased Risk (%)	Reference
Anemia	Reduced maternal hemoglobin due to poor nutrition and rapid growth	25–40% higher	**[5]**
Preterm Labor	Birth before 37 weeks gestation	30% higher	**[5]**
Preeclampsia/Eclampsia	Pregnancy-induced hypertension	20–25% higher	**[6]**
Postpartum Hemorrhage	Excessive bleeding after delivery	15% higher	**[5]**
Puerperal Sepsis	Postnatal infections due to poor	20–30% higher	**[5]**
Low Birth Weight Infants	Neonates <2,500 grams at birth	40% higher risk	**[5]**

Table 2: Psychosocial and Health System Barriers in Adolescent Pregnancy Management

Barrier	Impact on Pregnancy Care	Evidence Source	Reference
Stigma and Social Isolation	Delayed disclosure and antenatal care seeking	Qualitative studies from Ghana and Australia	**[7], [12]**
Mental Health Issues (Depression, Anxiety)	Poor adherence to antenatal care, poor self-care practices	US cohort studies	**[13]**
Lack of Family and Partner Support	Increased risk of repeat pregnancy and school dropout	Studies from Uganda and USA	**[8], [9]**
Inadequate Adolescent-Friendly Health Services	Reduced access to contraception, poor counseling experiences	Evaluation reports and program studies (SELPHI, Prime Time)	**[9], [14]**
Limited Knowledge on Reproductive Health	Poor contraception uptake, increased rapid repeat pregnancies	Tanzania and Uganda community surveys	**[2], [4]**

Health System and Service Delivery Challenges (Figure 2)

Health systems, particularly in low- and middle-income countries, often struggle to provide adolescent-centred maternity care[9][14]. Facilities frequently lack adolescent-friendly adaptations and teenage mothers report

judgmental attitudes, confidentiality breaches, and unwelcoming environments[9].

Communication barriers persist, with adolescents hesitant to articulate health concerns and providers inadequately trained in youth communication[8][9]. The absence of standardized protocols further fragments care, especially where mental health, social support, and educational needs intersect[10][13].

Programs like ARSH and RKSK have attempted reforms but face obstacles like resource constraints and limited adolescent participation[14]. Rural adolescents encounter additional barriers, including geographic inaccessibility and low-quality services[2][4].

Innovations like SELPHI demonstrate that mobile technologies can enhance engagement[14]. Strengthening adolescent health services demands investment in youth-centred training, integrated service models, and community outreach to create accessible, respectful care systems. (See fig 2)

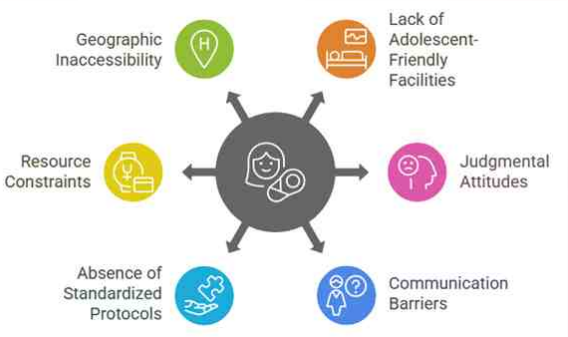


Figure 2: Challenges in Adolescent maternity care

Barriers to Effective Prevention and Intervention

Efforts to prevent teenage pregnancy are hampered by misinformation, cultural taboos and limited contraceptive access[2][8]. Inadequate or abstinence-only sex education leaves adolescents vulnerable to unintended pregnancies[8].

Programs like RKSK face implementation gaps with insufficient funding and adolescent involvement[14]. Even where services exist logistical barriers, stigma, and provider biases deter adolescent engagement[9][14].

Family dynamics, early marriage norms, and confidentiality concerns further complicate prevention efforts[4][8]. Although mHealth solutions show promise, digital divides threaten to exclude vulnerable adolescents[14].

A comprehensive approach integrating education, accessible contraception, community mobilization, and provider training is essential to overcome these barriers.

POCSO act and mandatory reporting:

The Indian Parliament enacted The Protection of Children from Sexual Offences (POCSO) Act in 2012, to deal exclusively with the issues of sexual exploitation and sexual abuse of children.

[15]Under S.19 of POCSO, any person who has "knowledge" of the commission or likely commission of a sexual offence against a child must report that offence to the police or appropriate authority. The act requires mandatory reporting of any sexual activity or its consequences in individuals 18 years or less by medical professionals, non-compliance being punishable with imprisonment for up to six months, a fine, or both, according to Section 21.

Mandatory reporting of sexual offences by healthcare professionals may conflict with medical ethics as it entails a breach of the principles of confidentiality and informed consent Under the IMC Regulations, 2002, it is the duty of the physician to protect the confidentiality of a patient's information. S. 23 of the Mental Healthcare Act, 2017 also protects a patient's privacy and confidentiality, not only in respect of "mental health or mental healthcare, but also other treatment and physical healthcare". Patient privacy is also a fundamental right. Mandatory reporting of offences can have an adverse impact on therapeutic outcomes. Administratively also, reporting can be a laborious and time-consuming task for doctors and healthcare professionals as there is no prescribed format for a report under S.19, nor does POCSO specify the circumstances in which healthcare professionals are required to report sexual offences. This can act as a deterrent to adolescents to approach health care givers for fear of reporting and compel them to seek unsafe means of abortion or delivery. Health care professionals may also be reluctant to offer their services due to cumbersome reporting task and legalities involved.

Conscious of the unintended outcome of the mandatory reporting norms under POCSO and championing woman's right to bodily integrity and reproductive choices, a three-judge bench of the Supreme Court speaking through Chief Justice (Dr) DY Chandrachud in X v Health & Family Welfare Department has sought to dilute, if not erase, mandatory reporting norms for consensual relationships by adolescents. It held: "… If there is an insistence on the disclosure of the name of the minor in the report under Section 19(1) of POCSO, minors may be less likely to seek out RMPs for safe termination of their pregnancies under the MTP Act. For the limited purposes of providing medical termination of pregnancy in terms of the MTP Act, we clarify that the RMP, only on request of the minor and the guardian of the minor, need not disclose the identity and other personal details of the minor in the information provided under Section 19(1) of the POCSO Act." (emphasis added)[16]

It must be noted that the decision of the Supreme Court in this case only created a modified pathway for due diligence for reporting sexual offences against children. It diluted the requirement to disclose the personal information and identity of the minor in the report made to the police. But, as a matter of fact, the report still needs to be made.

Strategies and Recommendations (Figure 3)

Holistic, adolescent-centred strategies are critical. Strengthening adolescent-friendly services with confidential, empathetic care must be prioritized[9][14]. Comprehensive sexuality education integrated with life skills and gender equality training can empower informed decision-making[8][9].

Community-based outreach, mobile clinics, and peer education models are vital for reaching marginalized adolescents[2][4]. Policy reforms should remove parental consent barriers and strengthen protections against early marriage[4][9].

Provider capacity-building in clinical ante-natal care, addressing factors complicating teenage pregnancies, adolescent communication, and mental health support is essential[9][13]. Integrated mental health screening during antenatal care can address hidden psychological needs[13].

Finally, participatory research frameworks must capture adolescent voices, ensuring that programs evolve responsively[4][6].

We also need to seriously reconsider the criminalisation of non-reporting of sexual offences by doctors and imprisoning them for it as per POCSO act. As with medical negligence, FIRs should not be filed automatically

against doctors for non-reporting, but only after a preliminary enquiry suggests that there was knowledge of a sexual offence. Further, if action has to be taken against doctors for non-reporting, it may be done by their professional regulatory bodies, not by courts.[17]

Figure 3: Strategies for adolescent well being

Conclusion

Teenage pregnancy remains a pressing challenge with profound health and social consequences[2][5][13]. Addressing it requires more than medical care; it demands integrated, empathetic strategies that empower adolescents.

Strengthening adolescent-friendly services, comprehensive education, community engagement, and mental health integration are critical[8][9][14]. Persistent research gaps must be bridged through participatory, context-sensitive studies[4][14].

A coordinated multi-sectoral response rooted in dignity, equity, and evidence is essential to break the intergenerational cycle of adolescent disadvantage and create healthier futures.

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MENSTRUAL HYGIENE IN ADOLESCENTS: A CRITICAL COMPONENT OF REPRODUCTIVE HEALTH

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Menstrual hygiene management (MHM) plays a pivotal role in adolescent health, affecting their physical, psychological, and social well-being. The transition from childhood to adolescence marks the onset of menstruation, a crucial developmental milestone accompanied by significant biological, emotional, and psychological changes. Adolescents' ability to effectively manage menstrual hygiene is essential to ensuring dignity, comfort, and continued participation in daily activities, education, and social engagements.

WHO calls for menstrual Health to be recognized, framed and addressed as a health and human right issue ,not a hygiene issue.

Comprehensive menstrual care encompasses, Access to information, Education, Menstrual products, Sanitation facilities, Supportiveservices, Ensuring safe and dignified management of menstruation, and addressing associated stigma and health concerns.

Significance of Menstrual Hygiene in Adolescents

Menstruation, while a natural biological phenomenon, is often surrounded by cultural stigmas, misinformation, and inadequate support, particularly among adolescents. Proper menstrual hygiene management includes using hygienic menstrual products, regular changing of these products, appropriate disposal, and having adequate washing facilities. Ensuring appropriate MHM directly influences adolescents' reproductive health, prevents infections such as urinary tract infections (UTIs), reproductive tract infections (RTIs), and supports psychosocial well-being.

Poor menstrual hygiene contributes to preventable gynecologic complications:

Infections:

Bacterial Vaginosis: Prolonged pad use or inadequate cleansing alters vaginal flora, presenting as malodorous discharge.

Urinary Tract Infections (UTIs): Soiled products near the urethra increase Escherichia coli transmission. Counsel on post-change urination and hydration.

Yeast Infections: Moisture from infrequent changes fosters Candida growth. Antifungals (e.g., fluconazole 150 mg single dose) resolve symptoms, but hygiene education prevents recurrence.

Pelvic Inflammatory Disease (PID): Rare in adolescents but possible if pathogens ascend due to poor hygiene. Monitor for fever or pelvic pain and treat per CDC guidelines.

Dermatologic Issues: Wet or soiled pads cause vulvar dermatitis or maceration. Recommend barrier creams (e.g., zinc oxide) and frequent changes.

Anemia:

- Heavy menstrual bleeding (HMB), often linked to anovulatory cycles in early adolescence, risks iron deficiency anemia (prevalence ~10-20% in HMB cases). Screen hemoglobin in fatigued patients or those soaking pads in <2 hours.

Menstrual Disorders: A Hygiene Intersection

Adolescent menstruation is often irregular due to hypothalamic-pituitary-ovarian axis immaturity. However, hygiene practices can unmask underlying disorders:

- Heavy Menstrual Bleeding: Defined as >80 mL blood loss per cycle or soaking a pad in <2 hours. Evaluate for von Willebrand disease (prevalence ~1-2% in HMB) or platelet dysfunction. Manage with tranexamic acid (1-1.3 g TID) or hormonal therapy (e.g., combined oral contraceptives) after workup.

- **Dysmenorrhea:** Primary dysmenorrhea responds to NSAIDs (ibuprofen 400-600 mg TID). Severe pain suggests secondary causes like endometriosis (prevalence ~10% in adolescents with chronic pelvic pain). Consider pelvic ultrasound or laparoscopy if refractory.
- **Irregular Cycles:** Common in the first 2 years post-menarche but investigate persistent oligomenorrhea for polycystic ovary syndrome (PCOS). Look for hyperandrogenism or obesity; order LH/FSH and pelvic ultrasound.

Evidence-Based Hygiene Practices

1. **Sanitary Product Selection and Use:**
   - Recommend sterile, absorbent products: disposable pads, tampons, menstrual cups, or period underwear. Change pads/tampons every 4-6 hours (sooner for heavy flow) to prevent bacterial proliferation.
   - Menstrual cups require rinsing with clean water during use and boiling between cycles. Ensure adolescents understand sterilization to avoid contamination.
   - Caution against scented products, which may trigger contact dermatitis or disrupt vaginal pH, increasing risks of bacterial vaginosis (BV) or candidiasis.
   - Educate on toxic shock syndrome (TSS), a rare but serious risk with tampons (incidence ~1/100,000). Advise alternating tampons with pads and avoiding overnight use beyond 8 hours.
2. **Genital Hygiene:**
   - Advise daily vulvar cleansing with lukewarm water and fragrance-free, hypoallergenic soap. Overwashing or douching disrupts Lactobacillus-dominated flora, elevating risks of BV (odds ratio ~2.2 in studies) or yeast infections.
   - Emphasize patting the area dry to prevent moisture-related irritation.
3. **Hand Hygiene and Disposal:**
   - Stress handwashing before and after product changes to reduce pathogen transmission to the genital tract.
4. **Clothing Considerations:**
   - Recommend breathable cotton underwear, changed daily or after leaks, to reduce moisture buildup—a risk factor for vulvovaginal infections.

Challenges in Adolescent Populations

1. **Access Barriers:**
   - Globally, 500 million girls lack adequate menstrual products or facilities (WHO/UNICEF). In low-resource settings, adolescents use rags or leaves, increasing infection risks. Advocate for subsidized products and school-based distribution, as piloted in India and Kenya.
2. **Knowledge Gaps:**
   - Cultural stigma or parental discomfort limits education. Many adolescents believe myths (e.g., menstruation as "unclean"), delaying care for abnormal symptoms. Provide age-appropriate counseling, ideally pre-menarche.
3. **Psychosocial Barriers:**
   - Fear of leaks or peer bullying causes anxiety, with 60% of girls reporting period-related embarrassment (Plan International). Early menarche correlates with body image concerns; late menarche may signal nutritional or endocrine issues.

Sustainable Menstrual Products: An Essential Alternative

- Reusable cloth pads like Cotton , bamboo , banana

- Have excellent hydrophilic properties and consequently can accelerate the absorption
- Linen fibre –Known for freshness in hot weather
- Durable and dries quickly Allergy free and can hold upto20% water

The rising awareness of environmental concerns and menstrual equity highlights the significance of sustainable menstrual products, such as menstrual cups, reusable cloth pads, and period underwear.

Benefits of Sustainable Menstrual Products

1. Health and Safety

Sustainable menstrual products are typically made from medical-grade silicone, organic cotton, or bamboo fabric, reducing the risks associated with synthetic chemicals found in disposable sanitary pads and tampons. Menstrual cups, for example, pose a significantly lower risk of Toxic Shock Syndrome (TSS) compared to traditional tampons. Reusable cloth pads and period underwear, being breathable and chemical-free, reduce irritation and infections.

2. Economic Accessibility

Though initially costly, sustainable menstrual products are economical in the long run. A single menstrual cup can last up to 10 years, significantly reducing the lifetime expenditure on menstrual management products. Cloth pads and period underwear can be reused for 2-5 years.

Menstrual products	Quantity	Monthly (1 cycle)	5 years (60 cycles)	Lifetime (420 cycles)
Disposable pads	10 pads		Rs 4800	34000 rs
Cloth pads	2 pads		Rs 1200	8400 Rs
Menstrual cups	1 cup		Rs 1000	7000 Rs

3. Environmental Sustainability

Disposable sanitary products contribute extensively to global waste. A typical sanitary pad contains plastic equivalent to four plastic bags, taking hundreds of years to decompose. Transitioning adolescents to sustainable menstrual products significantly decreases landfill waste, reducing environmental pollution and resource depletion.

4. Empowerment and Autonomy

Adopting sustainable menstrual products fosters autonomy and reduces dependency on continuous purchase of disposable products. Adolescents gain greater control over menstrual management, enhancing self-esteem and comfort.

Overcoming Barriers to Sustainable Products Adoption

Despite their numerous benefits, sustainable menstrual products face adoption barriers, particularly among adolescents:

- *Cultural Resistance:* Societal taboos and misconceptions discourage open discussions and acceptance of reusable menstrual products.

- *Lack of Awareness and Education:* Many adolescents and caregivers remain unaware of the existence, usage, and advantages of sustainable menstrual products.

- *Accessibility and Initial Costs:* High initial costs and limited distribution channels inhibit immediate adoption despite long-term economic advantages.

Addressing these barriers requires integrated efforts from gynecologists, educators, healthcare providers, policymakers, and community leaders to disseminate knowledge, enhance accessibility, and support behavioral change.

Gynecologist's Role in Intervention

1. Education and Counseling:
    - Use well-child or gynecologic visits to discuss hygiene, product options, and normal vs. abnormal symptoms. Tools like menstrual diaries aid cycle tracking.
2. Clinical Management:
    - Screen for menstrual disorders in routine visits. Ask about cycle length, flow volume, and pain severity.
    - Treat infections promptly and address hygiene as a preventive measure.
    - For HMB or dysmenorrhea, offer hormonal options (e.g., levonorgestrel IUD for long-term control) after excluding contraindications.
3. Advocacy and Systems Change:
    - Support policies for menstrual equity, such as tax exemptions on sanitary products or mandatory school facilities (e.g., Scotland's 2021 model).
    - Collaborate with paediatricians and school nurses to integrate menstrual health into curricula, reducing stigma.

Practical Tools for Practice

- **Patient Handouts:** Create multilingual guides on hygiene and product use.
- **Period Kits:** Encourage carrying pads, wipes, and spare underwear for emergencies.
- **Apps:** Recommend cycle-tracking apps (e.g., Clue) to monitor patterns and prompt medical consultation for irregularities.
- **Screening Questions:**
- "How often do you change your pad or tampon?"
    - "Do you have pain or bleeding that keeps you from school or activities?"
    - "Do you have access to clean water and private bathrooms during your period?

Policy Recommendations for Sustainable Menstrual Management

- *Integrating Menstrual Health Education:* Mandate comprehensive menstrual hygiene education programs in school curricula.

Equally important is the inclusion of boys and male teachers in educational efforts.

Destigmatizing menstruation among males helps create safer, more supportive environments for adolescent girls and prevents harassment or shaming.

- *Subsidizing Sustainable Products:* Introduce subsidies and incentives to lower initial costs and enhance affordability for low-income populations.

- *Improving Infrastructure:* Ensure adequate sanitation facilities with privacy, running water, and disposal options in educational institutions.

- *Public Awareness Campaigns:* Conduct mass media and community campaigns to destigmatize menstruation and promote sustainable menstrual practices.

Conclusion - When adolescent girls are equipped with knowledge, support, and resources, they are not just managing their periods-they are stepping into their potential. A world that supports menstrual hygiene is a world that uplifts women, builds equality, and nurtures future generations with dignity and respect.

Let's break the silence and champion Triple "P" (Period Positivity with Purpose)

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ADOLESCENT DEPRESSION AND ANXIETY DISORDER

Dr. Roma Nag, Quiz Committee JOGS

"You are the artist of your own life. Don't hand the paintbrush to anyone else"

Adolescent depression and anxiety disorder are serious mental health conditions that can have a significant impact on a young person's well-being and daily functioning. These disorders can manifest in various ways, including persistent feelings of sadness or hopelessness, overwhelming worry or fear, changes in sleep or eating patterns, difficulty concentrating, and withdrawal from social activities.

It Is important for parents, teachers, and other caregivers to be aware of the signs and symptoms of depression and anxiety in adolescents so that they can provide the necessary support and help. Early intervention and treatment are crucial in managing these conditions and preventing them from worsening.

If you suspect that a teenager in your life is struggling with depression or anxiety, it is important to encourage them to seek help from a mental health professional. With the right support and treatment, adolescents can learn to manage their symptoms and improve their overall well-being.

"Sometimes when you're in a dark place, you think you've been buried, but actually, you've been planted." – Christine Caine "

Depression in adolescents is a serious mental health condition that can have a significant impact on their overall well-being and functioning. It is characterized by persistent feelings of sadness, hopelessness, and worthlessness, as well as a loss of interest in activities they once enjoyed. Adolescents with depression may also experience changes in appetite or sleep patterns, difficulty concentrating, and thoughts of self-harm or suicide.

There are several factors that can contribute to the development of depression in adolescents, including genetic predisposition, brain chemistry, environmental stressors, and traumatic experiences. Adolescents who have a family history of depression, a chronic medical condition, or a history of abuse or neglect may be at a higher risk for developing depression.It Is important for adolescents with depression to have a strong support system in place, including family, friends, and mental health professionals. Encouraging open communication, providing a safe and nurturing environment, and helping adolescents engage in healthy coping strategies can all be beneficial in managing their depression.

Treatment for depression in adolescents typically involves a combination of therapy, medication, and lifestyle changes. Cognitive-behavioral therapy (CBT) is often used to help adolescents identify and change negative thought patterns and behaviors that contribute to their depression. Antidepressant medications may also be prescribed in some cases, under the supervision of a healthcare. Some antidepressants are FDA-approved and used in adolescents, there are safety concerns, particularly the risk of increased suicidal thoughts and behaviors. The FDA requires a "black box" warning on all antidepressant labels for children and teens, highlighting this risk. Prozac (fluoxetine) and Lexapro (escitalopram) are the only FDA-approved medicines for teens Adolescent depression and anxiety disorder may include therapy, medication, lifestyle changes, and support from loved ones. It is essential for young people to feel heard, understood, and supported as they navigate their mental health challenges.

These are the important tips in dealing with adolescent disorder -

- **Encourage open communication:** Create a safe and supportive environment for adolescents to express their thoughts and feelings without judgment. Encourage them to talk about their worries and fears.
- **Promote healthy lifestyle habits:** Encourage regular exercise, a balanced diet, and sufficient sleep to help maintain physical and mental well-being.
- **Teach stress management techniques:** Teach adolescents coping strategies such as deep breathing exercises, mindfulness, and relaxation techniques to help manage stress and anxiety.
- **Foster positive relationships:** Encourage adolescents to build and maintain positive relationships with friends, family, and supportive adults who can provide emotional support.
- **Set realistic goals:** Help adolescents set achievable goals and break them down into smaller steps to avoid feeling overwhelmed or discouraged.
- **Encourage a healthy balance:** Encourage adolescents to balance schoolwork, extracurricular activities, and leisure time to prevent burnout and overwhelm.
- **Monitor social media use:** Be aware of the impact of social media on adolescents' mental health and encourage healthy boundaries and limits on screen time.
- **Seek professional help if needed:** If an adolescent is showing signs of anxiety or depression, encourage them to seek help from a mental health professional. Early intervention can help prevent these issues from escalating.

"Keep your face always toward the sunshine-and shadows will fall behind you." Walt Whitman. ..."

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बचपन को पीछे छोड़ किशोरावस्था में कदम आगे बढ़ रहे है। गर्भावस्था एवं बचपन के संस्कार साथ हैं। अब स्वयं एवं परिवार के आगे के जीवन की रूपरेखा बन रही है।

आज समाज में संयुक्त परिवार प्राय समाप्त हो चुके है। एकत्र परिवार में माँ पिता दोनों काम पर जाते है ऐसे में जो कुछ बच्चे सीख रहे है वह या तो साथियों से, स्कूल से या घर पर उनकी देख–रेख के लिए रखे नौकरों से। हम उनकी सेहत (Body) के लिए खाना, सोना, व्यायाम खेल पर थोड़ा ध्यान दे लेते है। शाला में उनके Skills Intelligence Quotient IQ को ध्यान दिया जाता है। जिससे आगे का..... भविष्य बनता है जैसे डॉक्टर, इंजीनियर, शिक्षक इत्यादि। इससे आगे चलकर वह बहुत धन कमा रहे है। ऊंची ऊंची नौकरियाँ पाकर नाम भी कमा रहे है।

आज के किशोर एवं युवाओं के भावनात्मक एवं आध्यात्म पर किसी का ध्यान नहीं है। अत: हमारे पास आधुनिक तकनीक– बम, बन्दुक, मोबाईल, टीवी, ए आई इत्यादि है पर उन्हें किस लिए कहाँ उपयोग करना है हमारे किशोर एवं युवा नहीं समझ पा रहे है स्कूल में उन्हें Competition, Comparison सिखा रहे है। स्वार्थी हो गये हैं। उन्हें बहुत Anxiety एवं Stress depression है। रोज हम Suicide, Murder, Rape के Case देख रहे है। भाई–भाई का झगड़ा रोज का हो गया है। खुशी गायब हो गई है।

अगर हम आज की पीड़ी को Healthy Wealthy and Happy देखना चाहते है तो हमें उनका भावनात्मक एवं आध्यात्मिक स्तर को ठीक करना होगा। हमें पश्चिम की सभ्यता की ओर न जाकर भारतीय संस्कृति की वैज्ञानिक आध्यत्मिकता को अपनाना होगा। हमारे ऋषिमुनियों के द्वारा लिखा साहित्य उनकी जीवन शैली को वैज्ञानिक तरीके से आत्म सात कराना होगा ऐसा करने से ही सामाजिक उत्थान एवं वैश्विक सौद्धार बढ़ेगा।

आज हमारे देश के किशोर एवं युवा धन कमाने की अंधी दौड़ में नैतिक मूल्य, सत्य निष्ठा मानवता एवं सहानुभूति जैसी मूल्यों का मूल्य कर आगे बढ़ रहे है किन्तु इस अन्धी दौड़ का कोई अन्त नहीं है। आखिर में अकेले खड़े रहते है पश्चाताप करते हुए।

हमें हमारे देश के किशोरो को समझाना होगा, उनकी सोच आध्यातम की ओर बदलनी होगी उनका भावनात्मिक स्तर नैतिक मूल्यों की ओर मोड़ना होगा। हमें उन्हें परम सत्ता (जिस भी रूप में माने) से जोड़ना होगा। उसके अस्तित्व को समझाना होगा।

ईश्वर से जुड़ने से हम नैतिक मूल्यों की ओर स्वंय ही जुड़ जाते है वह बहुत अच्छी Counseling करता है, बाहर की दुनिया से मोड़कर अन्तर आत्मा की यात्रा कराता है अस्थिरता को मिटाता है आत्म ज्ञान आत्म बल को बढ़ाता है।

हमारा शरीर एक राज्य, आत्मा राजा, बुद्धि मंत्री एवं इन्द्रियाँ कर्मचारी है। अगर Science की भाषा में बात करें तो हमारा शरीर एक Computer की तरह है। Hardware शरीर है और आत्मा Software है। आत्मा की उन्नति एवं उसके बारे में जानने की क्रिया को ही आध्यात्म कहते है।

आध्यात्म को बढ़ाने के तरीके खोजना होगें।

– स्वाध्याय – हमारा इतिहास उदाहरणों से भरा पड़ा है रामायण में श्रीराम जी का त्याग, पिता की आज्ञा का पालन, भाई–भाई का प्यार, लक्ष्मण का समर्पण श्रीकृष्ण का पुरूषार्थ, शौर्य, कार्य कुशलता, अधर्म का नाश, प्रतिकूल परिस्थितियों में सूझबूझ से कार्य करना, महाराणा प्रताप का देश प्रेम इत्यादि। हमें उन्हें इसे पढ़ाना और सुनाना चाहिए।

सतंसग – उनमें अच्छे संस्कार आयेंगे सुबह जल्दी उठना, बड़ों के पैर छूना, प्रणाम करना, घर के बड़ों का एंव आये हुए मेहमानो का आदर करना, महिलाओं का आदर करना, अपने साथियों से अच्छा व्यवहार करना एवं उनकी सहायता करना, घर को साफा सुन्दर रखना, वातावरण को अच्छा रखना, पेड़, पौधे, प्रकृति, पशु, पक्षी से अच्छा व्यवहार करना।

इसके लिए हम बड़ो को भी बदलना होगा एक अच्छा Roll model बनकर उन्हें दिखाना होगा। हमें बच्चों को मारना, डाटना नहीं चाहिए। इससे उनके बन में डर बढ़ जाता है। फिर वह बड़े को बताते नहीं है और अपने दोस्तो के बताए तरीके से गलत करते है। Punishment नही देना है गलती का कारण बाते करके पता लगाकर उन्हें Transform करना है, उन्हे समझे – Empathy करे

एवं Empower करें । Non-Judgemental बनना होगा Respect dignity के Tag न लगायें । compassion, trust, Peace, love, forgiveness का व्यवहार करें।

Revenge-relationship से withdrawal करना है। उन्हें values सिखायें Right thinking, Right way, Right time, Right place से success प्राप्त करना सिखायें । Failure में Stable रहना है यह भी हमें सिखाना होगा।

मंत्र पाठ करना – मंत्र Powerful ऊर्जा का स्त्रोत है। बच्चों एवं किशोरो को उनके ईष्ठ ईश्वर से जोड़ें। घर में पूजा आरती में उन्हें सम्मलित करें। मंदिर लेकर जायें प्रार्थना, उपासना एंव मंत्र सिरवाए।

सेवा – बच्चों एवं किशोरो का छोटे छोटे कार्य घर से शुरू कराना चाहिए । माँ का घर में, काम में हाथ बटाना, पिता के साथ बाहर के कार्य कराना इत्यादि ।

Meditation – मेडीटेशन जीवन जीने की कला सिरवाता है। विपरीत परिस्थितियों में कैसे स्थिर रह कर उन्हें पार करे यह सिखाता है । meditation हमें ज्ञान देता है कि हम सिर्फ शरीर नहीं आत्मा भी है। हम Mode में अपनी–अपनी चेतना को ले जाते हैं। अचेतन (subconscious mind) की स्थिति आ जाती है, Positive hormone निकलते है और आत्मा की एवं आत्मा के गुण, शांति, पवित्रता, प्रेम, शक्ति हमारे अन्दर आ जाती है ।

अगर हम चाहते है कि हमारा समाज बदले, सब खुश रहे तो हमें Physical एवं Intelligence Quotient के साथ–साथ Emotional एवं Spiritual Querent की और भी ध्यान देना होगा । उन्नत EQ एवं 3Q से किशोरो का भावनात्मक एवं आध्यात्मिक को सही Direction में होने से सोचने एवं कार्य करने का तरीका बदल जायेगा। माननीय श्री अबदुल कलाम जी ने कहा है–

''मन के पास है- विचार, शब्द
हृदय के पास हैं - संवेदनायें एव भावनायें हैं दोनों के बीच में एक Bridge बनाना चाहिए,
तभी हम आध्यात्मिकता के निकट आते हैं । और धीरे - धीरे सब स्वस्थ्य रहेंगे खुश रहेंगे ।''

समा को बदल दो सितारे बदल जायेंगे
नजर को बदल दो नजारे बदल जायेगे
जरूरत नहीं कश्ती को बदलने की
दिशायें बदल दो किनारे बदल जायेंगे।

किशोरों को आध्यात्म की ओर अग्रसर करें भारत एक खुशहाल राष्ट्र बन जायेगा।

आध्यात्म का साथ होगा
साइंस का कमाल होगा
पर्यावरण शु(स्वच्छ होगा
सब कुछ खुशहाल होगा

EMERGING PHARMACOLOGICAL THERAPIES FOR MANAGEMENT OF ADOLESCENT PCOS AND PUBERTY MENORRHAGEA: A REVIEW OF RECENT ADVANCES

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Adolescent polycystic ovary syndrome (PCOS) is characterized by androgen excess and oligomenorrhea, and commonly driven by hepato-visceral fat excess ("central obesity") ensuing from a mismatch between prenatal and postnatal nutrition, on a background of genetic susceptibility. There is no approved treatment for adolescent PCOS. There is role of various newer regimens which are potentially less established.

1. Semaglutide:

Semaglutide for obesity and mental health: a glucagon-like peptide-1 receptor agonists (GLP-1Ras) can be used for weight loss, offers mental health benefits for obese teenagers. Dose of semaglutide given in the form of subcutaneous injections weekly in various doses depending upon BMI and are 0.25 mg or 0.5 mg dose pen, 1 mg dose pen, 2mg dose pen. A study published in JAMA pediatrics found 33% reduction in the risk of suicidal ideation &attempts over 2 months, suggesting potential for broader role in adolescent health.[1,2]

Semaglutide's mechanism of action involves mimicking a natural hormone in the body called GLP-1 which:[2]

1. Stimulates insulin production from the pancreas
2. Reduces liver sugar production
3. Slows down digestion
4. Helps control appetite and food intake

2. SPIOMET:

low-dose combination of spironolactone (an anti-androgen), pioglitazone (an insulin sensitizer), and metformin (another insulin sensitizer) (SPIOMET, targeting the excess of ectopic fat). SPIOMET as a combination treatment that is accompanied by more normalization of the endocrine-metabolic status, and is followed by markedly more ovulations than OC in nonobese adolescent girls with PCOS.[3]

Spironolactone (50 mg/d) is a mixed anti-androgen and anti-mineralocorticoid that was recently found to activate brown adipose tissue (BAT) thereby raising the energy expenditure of PCOS patients toward normal. Pioglitazone (7.5 mg/d) has the capacity to drive adipogenesis in white adipose tissue (via PPAR-gamma agonism) and to raise high-molecular-weight (HMW) adiponectinemia (via cdk5 antagonism) without causing weight gain. HMW adiponectin is a key adipokine that can reverse liver & muscle insulin resistance by reducing ectopic lipid storage in these organs. Metformin (850 mg/d) improves insulin sensitivity via complex mechanisms, and may decrease appetite via growth-and-differentiation factor 15 (GDF15) which is a peptide hormone that acts via a specific receptor in the brainstem, and that may also reduce liver fat in the absence of weight loss.[7,9]

3. PioFluMet:

The combination of pioglitazone(an insulin sensitizer), flutamide (another anti-androgen), and metformin is studied, with research indicating that it, along with SPIOMET, can effectively manage androgen excess in adolescents with PCOS. doses of these drugs and schedules given in various studies are pioglitazone (7.5 mg/d) at breakfast, and metformin (850 mg/d), flutamide (62.5 mg/d)for 24/28 days, given for 6 months to 30 months of variable duration depending upon study periods.[4,5]

In a study Low-dose PioFluMet (pioglitazone-flutamide-metformin) are compared favorably to EE-CA in adolescents with androgen excess and without pregnancy risk. The efficacy and safety of low-dose Pio Flu Met remain to be studied over a longer term and in larger cohorts.

Normalizing Effects:

Studies suggest that both SPIOMET and PioFluMet can help normalize ovulation and hormone imbalances, potentially reversing some of the alterations associated with PCOS.[8]

PUBERTY MENORRAGIA:

Puberty menorrhagia, characterized by excessive menstrual bleeding during adolescence, often results from an immature hypothalamic-pituitary ovarian axis. Effective management is crucial, yet compliance with traditional combined oral contraceptives (COCs) is often low due to side effects like nausea and breakthrough bleeding. Here comes the role of newer combination drug.

Medical Management Innovations:

1. ULDCOCs

Use of ultra-low dose COCs (ULDCOCs) containing15μ get hinyloestradiol and 60μ ggestodene in patients presented with prolonged bleeding, irregularcycles, and underlying conditions like poly cystic ovarian syndrome (PCOS) and hypothyroidism has been studied. Treatment with ULDCOCs resulted in significant improvements. ULDCOCs provide effectivecy cleregulation and symptom relief with a favourable safety profile in adolescents with puberty menorrhagia. The reduced estrogen content offers fewer side effects while maintaining efficacy. [6]

2. Tranexamic Acid (TXA):

TXA, an anti fibrinolytic agent, is increasingly utilized for its efficacy in reducing menstrual blood loss. Administered orally during menstruation, it offers a non-hormonal treatment option for adolescents.

3. Levonorgestrel-Releasing Intrauterine System (LNG-IUS):

The LNG-IUS has been recognized for its effectiveness in managing heavy menstrual bleeding. It provides long-term relief and is particularly beneficial for adolescents with contraindications to estrogen therapy.

Multi disciplinary and Personalized Care

Specialized Clinics:

The establishment of adolescent-focused clinics, like the EAGER (empowering adolescents with gynecology hematology resources and care) Clinic, emphasizes a multi disciplinary approach involving gynecologists, hematologists, and mental health professionals to provide comprehensive care.

Tailored Treatment Plans:

Personalized management strategies that consider these verity of bleeding, underlying causes, and patient preferences areessential. This includes the judicious use of hormonal therapies, iron supplementation, and, when

necessary, blood transfusions.

Recent studies advocate for the development and implementation of standardized protocols to guide the initiation and escalation of therapy based on objective parameters like hemoglobin levels and hemodynamicst ability.

These advancements under score the importance of early recognition, comprehensive evaluation, and individualized treatment in managing puberty menorrhagia. [9,10]

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