Adolescent mental health

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Overview

- Background: Statistics, concerns about adolescent mental health, package
- Adolescent developmental framework
- Adolescent in psychiatric crises
- Comprehensive evaluation: physical- & mental exam
- Intellectual Disability & Autism Spectrum Disorder
- Depressive- & bipolar disorders
- Pharmacological treatment for aggression

Adolescents carry a substantial portion of global disease & injury load

- Adolescents form one sixth of the world's population
- 1.2 million adolescents aged 10 to 19 years died (2015)
- Over two thirds of adolescent deaths occurred in low- and middle-income countries (African (45%) & South-East Asia (26%))
- Causes: road injury, lower respiratory infections, drowning & depressive disorders
- UK: Increase in self-harm (females 13-16 y)- 'generation Z' born mid 1990s to early 2000s-growing up in age of social media(poor sleep), great recession, terrorism, student debt, academic pressures & family breakdown
- G(ene) X E(xperience/environmental) interaction= outcomes of depression (epigenetics)

Estimated top five causes of adolescent disability-adjusted life years (DALYs) lost by sex & age, 2015

Females (age 10-14)

- 1. Iron-deficiency anaemia
- 2. Lower respiratory infections
- 3. Diarrhoeal diseases
- 4. Anxiety disorders
- 5. Meningitis

Females (age 15-19)

- 1. Iron-deficiency anaemia
- 2. Depressive disorders
- 3. Maternal conditions
- 4. Self-harm

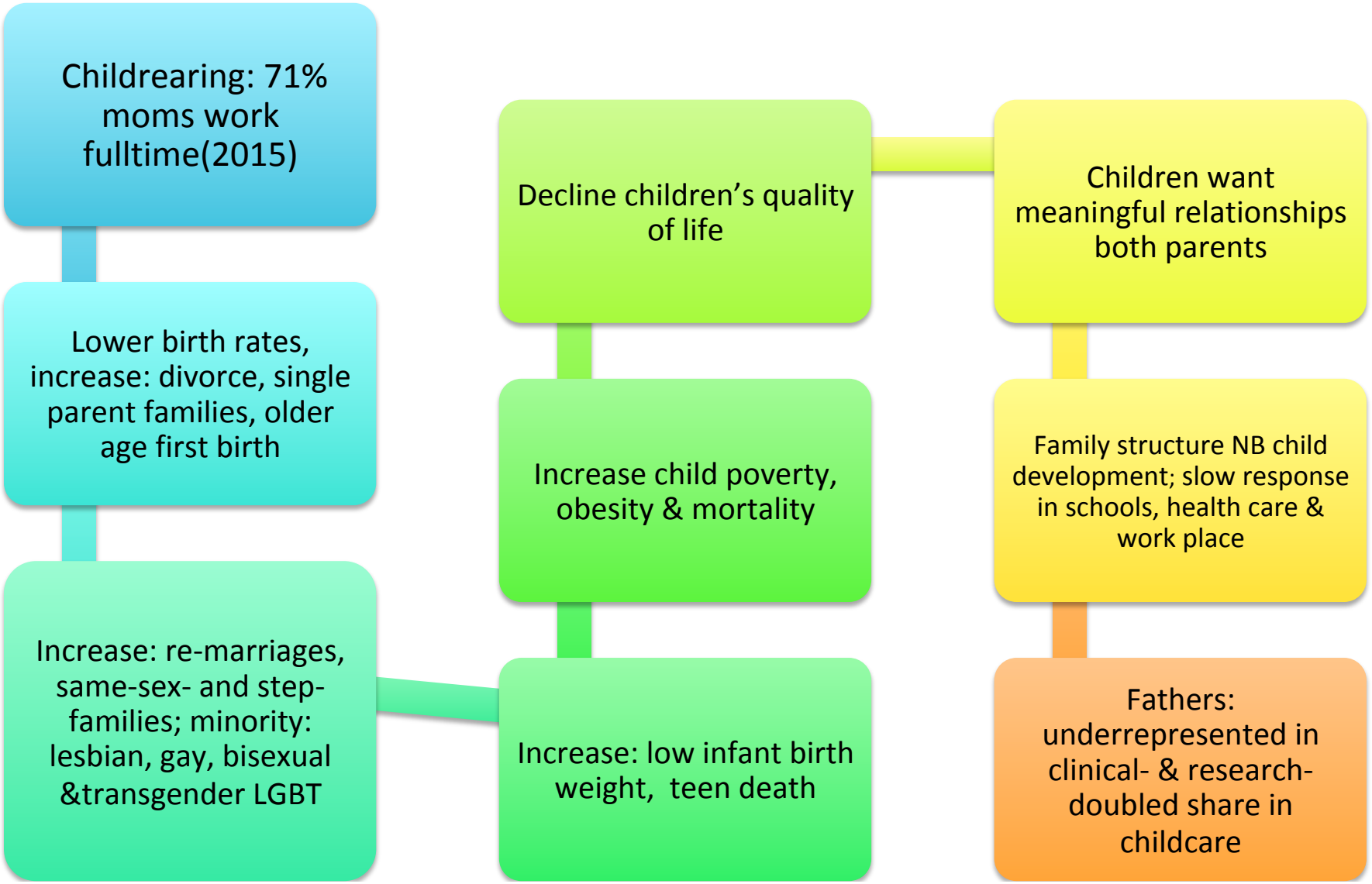
Males (age 10-14)

- 1. Iron-deficiency anaemia
- 2. Road injury
- 3. Childhood behavioural disorders
- 4. Drowning
- 5. Lower respiratory infections

Males (age 15-19)

- 1. Road injury
- 2. Interpersonal violence
- 3. Self-harm
- 4. Depressive disorders
- 5. Drowning

Transformation of families: co-parenting & paternal engagement



Global Mental Health concerns (GMH) adolescents

Contextual concerns: rapid changes in environment & information technology (mental dysfunction)

Displacement & Culture

-Children exposed to conflict

"Child soldiers"& exploitation

-Cultural Psychiatry: 'Incorrect universal system compares psychiatric manifestations in different cultures & countries' (East category vs West-) vs

Cultural relativist specific view: combined cultural &ethnic values & meanings & embedded in cultural context (environment in which people live & interact)

Specific mental disorders

HIV/AIDS

Suicide

ID & Epilepsy

Prevention

Substance abuse, violence & abuse

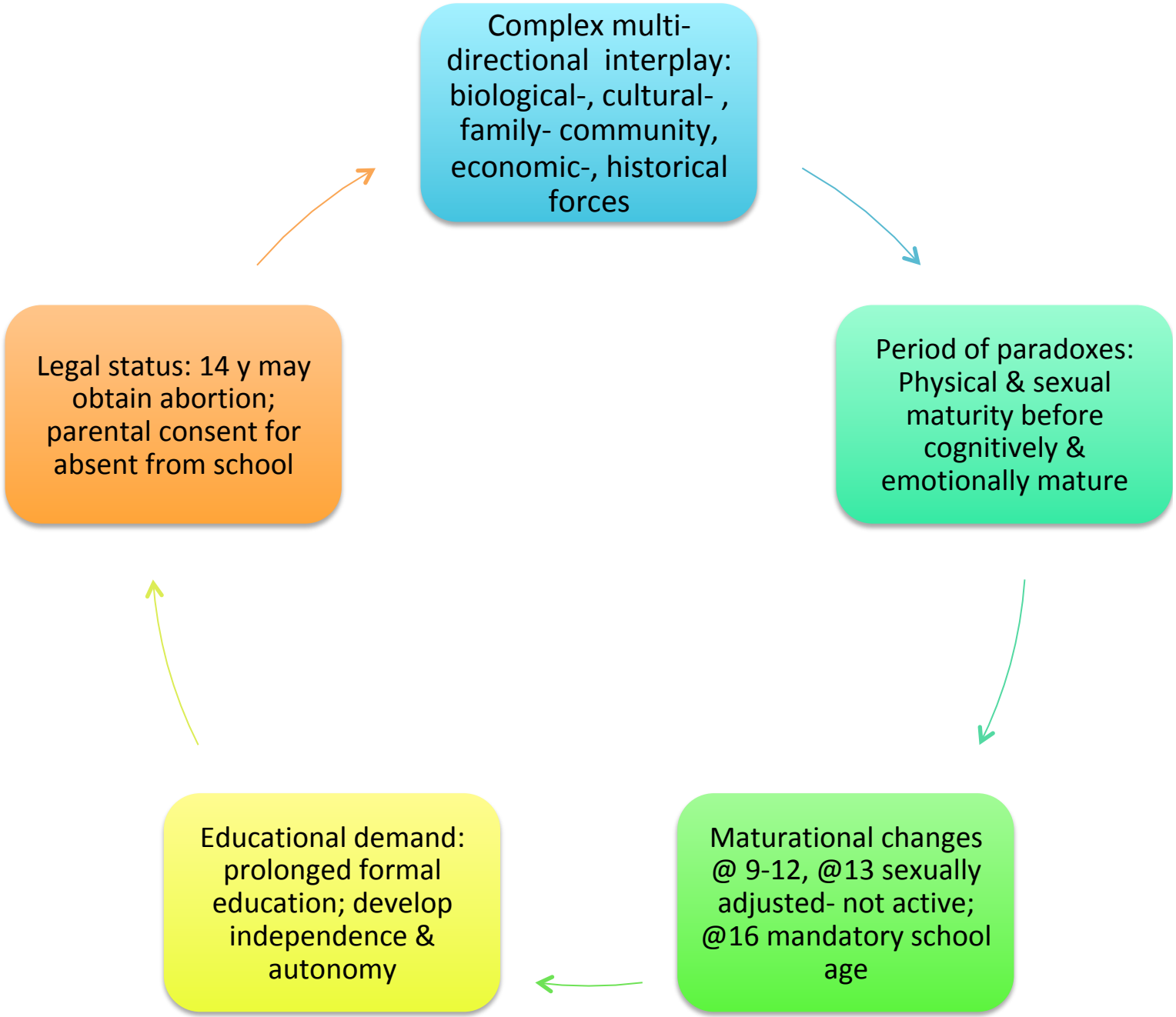
Research into mental health is underfunded

Emerging issues: reduction in stigma, child psychiatric disorders exist- depression

Adolescents: best resource for a society to succeed

UN agencies provide guidance to fast-track improvement	Package	Adolescent health central to:
• Improve health of adolescents • Respond more effectively to their needs	• Global Accelerated Action for the Health of Adolescents (AA-HA!)	• Achieve Sustainable Development Goals (SDGs) (The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030))

Dilemma of adolescent transitional phase: no longer child; not an adult



Bio-psycho-social changes at adolescence

Puberty

- Hormonal-mediated- & neuro-biological& other biological changes: secondary sex characteristics
- Cognitive changes

Coping with changing body image

- Identity
- Transition to self-care

Changing relations with parents-loosening ties with conflict

- Sexual & aggressive drives: conflict: dating, curfews, driving; parent tries to control route of child's sexual activity
- Developing satisfying relationships outside the family

Pubertal changes are the hallmark of adolescence

- **Precocious** puberty vs **delayed** puberty? Give support to adjust to physical changing bodies
- X **Storm and Stress debate**:

- Well adjusted- do not suffer from adolescent turmoil: satisfied with relationships; take pleasure in many aspects of their lives & hopeful about the future

-Only a minority develop full-blown mood disorder; mood difficulties & perceived stress

- **Rise of depression during puberty:** girls more moodier, sadder, lonelier, crying uncontrollably, easily hurt, less autonomous
- Overwhelmed: **negative life events**- parental unemployment & relationship problems, moves or deaths
- **Younger:** stress within peer group; **older:** with academics-impaired mood regulation due to hormones & increased stress reactivity
- **Risk-taking behaviours:** significant source of morbidity; three-fourths of all deaths due to MVA; drove without seat belts, carried weapons, e-mailed while driving, school problems, substance use (chronic alcohol, smoke cannabis/tobacco use- long lasting negative effects on cognitive functioning), sex, depression/suicide

Management principles in psychiatric crises: emergency room (ER) assessment

Safety of C&A first: to stay in safe & quiet area without restraint (remove cords sharp objects); minimum bright lights & monitors to decrease irritations/ overstimulation; lie or sit down with food & drink

Introduce yourself; provide clear expectations; be calm & professional & respectful (not hostile) as to procedure of evaluation; the wait time, rules; intervention if child becomes agitated; Trained ER staff to be familiar with procedures to provide containment & medication or restraint for dangerous behaviour

Protocols & response plans should be designed: calming & de-escalating' talking the child down"

Comprehensive screening assessment: DSM-5 Level 1 Cross-Cutting Symptom Measure Psychological and behaviour problems: to assess 12 mental health/ psychiatric domains in children

Identify intoxication/ overdose & do vital signs; structured screening tool: Colombia Suicide Severity Scale (C-SSRS)

Management principles in psychiatric emergency assessment -physical- & mental exam

Risk factors: agitation, suicidal, no collateral, unconcerned parents, recent high lethality suicide attempt, access to sharps, weapons, pills; refusal to attend or take treatment, poor social support, does not respond to therapeutic support

Protective factors: future hopeful; emotional appropriate talking about stressors; broad-congruent- reactive affect; no suicidal/homicidal intent plan; collateral support & know child well; no safety concerns, called for help or threat with other; low-lethality attempt; minor aggression or property destruction; high supervision; good alliance with OPD; connected to staff & peers; responds to therapy & medication; has coped successfully with stressors in past

Common medical & psycho-social causes of psychiatric disturbance: infections: (tropical disease & encephalitis); neoplasms(brain tumour); **seizures** (TLE temporal lobe & absence seizures); **autoimmune diseases** (autoimmune encephalitis, SLE); **head trauma;** present with hallucinations, behavioural changes. Undiagnosed genetic syndromes, metabolic disorders, porphyria (psychosis or behavioural changes); **undiagnosed sickle cell disease** (dismissed as drug seekers); **delirium** due to drug intoxication/withdrawal, self-poisoning; or substance misuse; steroid psychosis; **medication adverse effects**: akathisia from risperidone or irritability from

Possible medical aetiology: Atypical onset; abnormal vital signs; waxing & waning of MSE; clouding of consciousness, disorientation; memory impairment

Medical admission to stabilize prior to psychiatric hospitalization

Management of Autism Spectrum Disorders & Intellectual Disability in adolescent

- Risk assessment: ASD with ID: 9 X more likely to attend ER
- Often medical & psychiatric complications
- Behavioural Symptoms: aggression, self-injury, inappropriate sexual behaviours, sleep-cycle reversal, running away
- Worse in ER- hyper stimulation noise & light; unfamiliar-stress
- Ask for changes/triggers in environment, school vacation; rule-out: medical-constipation, dental pain; ear infection; side-effects: akathisia, fatigue due to polypharmacy; onset of puberty, subtle seizure activity
- Can not communicate verbally, consider age & developmental level- no understanding that touching of peer's breast is intrusive
- Management: any member from child multi-prof team to sooth child's behaviour (O/T) or preferred sensory tools or baby toys or baby sign language
- Use sedation cautiously may have paradoxical reactions (rather no benzodiazepine use). Give behavioural relief-effective pain control & resolution constipation

Depressive disorders

- Major depressive disorder (including major depressive episode)
- Persistent Depressive Disorder (dysthymia) (PDD)
- Disruptive Mood Dysregulation Disorder(DMDD)
- Premenstrual Dysphoric Disorder
- Substance/Medication-induced Depressive Disorder
- Depressive Disorder due to Another Medical Condition
- Other specified depressive disorder
- Unspecified depressive disorder

Depressive Disorders (DD)

- Core clinical: persistent & pervasive sadness, anhedonia, boredom/irritability; **being functionally impaired** & unresponsive to usual pleasurable experiences vs normal up and downs
- Continuum of DD:-classified on basis of severity; pervasiveness & presence or absence of mania
- Mildest end: Adjustment disorder with depressed mood- mild self-limited, occur in response to a stressor; PDD; chronic with fewer symptoms that major depressive disorder, lasts minimum 1 year
- Major depressive disorder: greater number of symptoms- either sad or irritable mood or anhedonia, at least 5 of: social withdrawal, worthlessness, guilt, suicidal thoughts, increased or decreased sleep, decreased motivation &/or appetite, disruptive mood dysregulation disorder (DMDD), severe persistent irritability & three temper outbursts weekly, onset in youth aged 6 years & not older than 10
- Comorbidity is the rule in depressed children; anxiety frequently precursor/forerunner of mood disorder
- Alcohol, tobacco & cannabis use are highly comorbid with depression

Descriptive epidemiology

- Population prevalence: point of prevalence of depressive disorders: 1-2% for pre-pubertal children; 12 month prevalence for adolescent depression 7.5 %.
- Gender: female pre-dominance in mood disorders in adolescence due to-

- higher rate of rumination in females
- higher rates of anxiety disorder
- greater sensitivity to interpersonal stressor
- early onset of puberty
- greater incidence of sleep deficit & experimentation with drugs.

- Age & development: Typically pre-pubertal depression has a set of risk factors similar to Conduct Disorder (CD) -family discord, parental criminality, parent substance abuse, increased risk for anti-social behaviour.
- Pre-pubertal depression is highly familial, multi-generation loading

Risk factors for depression onset & recurrence

Genetic: twin studies confirm-depressive Sx have heritability of 40-65%; higher in adolescents

Familial/Environmental/Protective factors: effect of shared environment as potent & as heritability- chronic parental depression has negative effect on child's mood via modelling of cognitive distortions; bereavement, bullying

Cognitive bias: negative view of self, future & world with stressful life events; rumination is predictor of onset depression (preoccupied negative thoughts)

Mood Repair or Emotion Regulation- ability to moderate extremes in emotional responses

Sleep: Subjective sleep complaints-very prominent component of earl-onset depression

Risk factors for depression onset & recurrence

- Internalizing disorders: behavioural inhibition & anxiety
- Externalizing disorders: ADHD, ODD & CD & irritability
- Medical illness of central nervous system (epilepsy, migraine) or systematic inflammation (asthma), or treatments for chronic illnesses (steroids)
- Cortisol: a blunted response to a social threat & low wakening cortisol-associated with depression in pre-pubertal children; increased morning cortisol predictive of onset of depression.
- Increased evidence of involvement of inflammatory processes in youth depression
- Functional magnetic resonance imaging studies in depressed youth: greater activation in amydala, dorsal anterior cingulate & insula in response to negative stimuli

Course & outcome

Episode length & recovery: duration for depressive episodes: 3 & 6 months for community samples, between 5 and 8 months for clinically referred samples

Risk for recurrence: risk of recurrence in children between 8 to 13 years was 40% in two years and 72% in 5 years

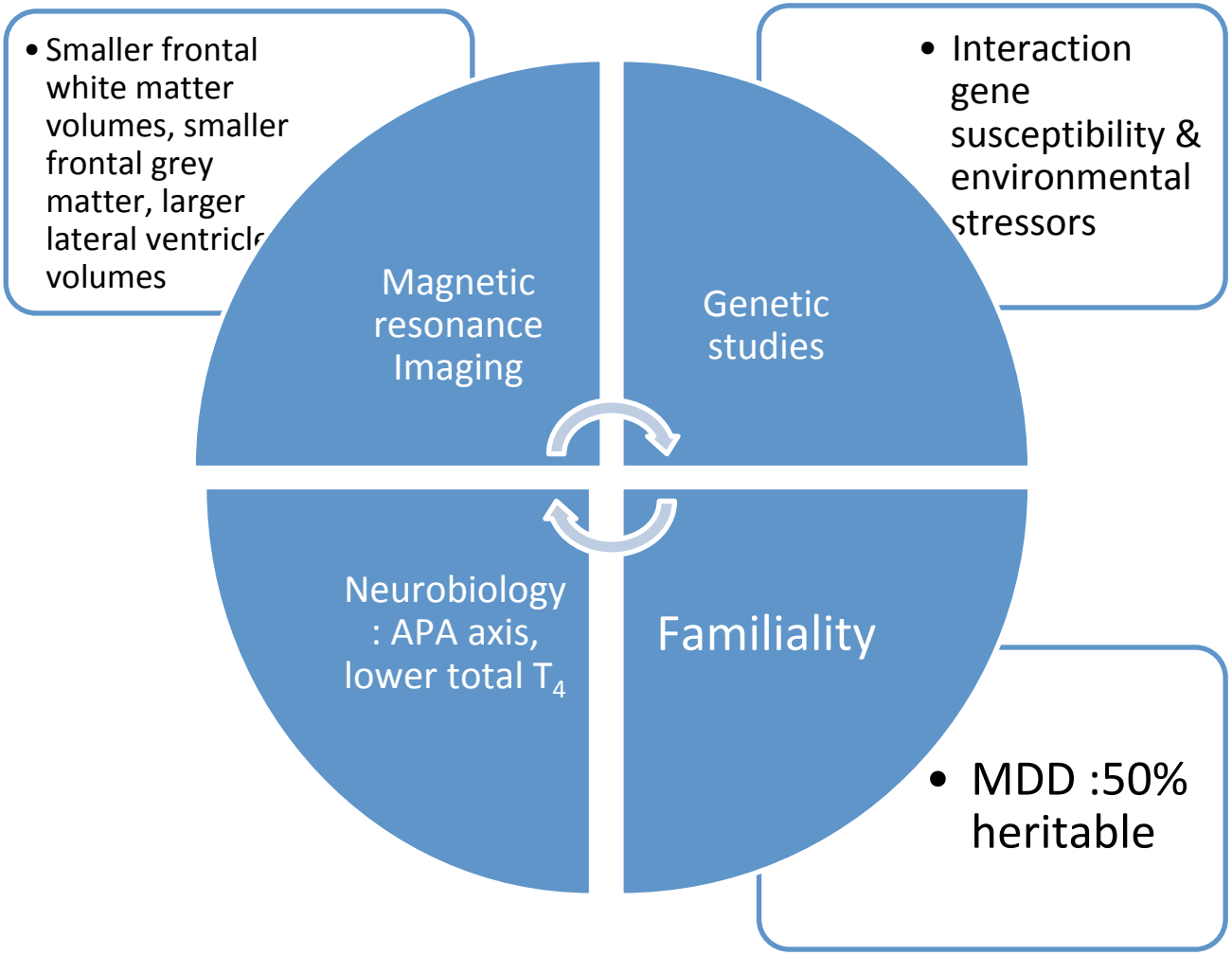
Risk for bipolar disorder in early-onset depression is around 10-20% and higher in patients who present with anti-depressant-induced or spontaneous hypomania, young children on antidepressants at high risk for manic switch.

Other sequelae: depressed youth at increased risk for suicidal behaviour; poor functioning as sequelae of incomplete recovery

Major depressive disorder (check DSM-5 specifiers):

- With anxious distress
- With mixed features
- With atypical features
- With melancholic features
- With mood-congruent (or mood incongruent) psychotic features
- With catatonia
- With peri-partum onset
- With seasonal pattern

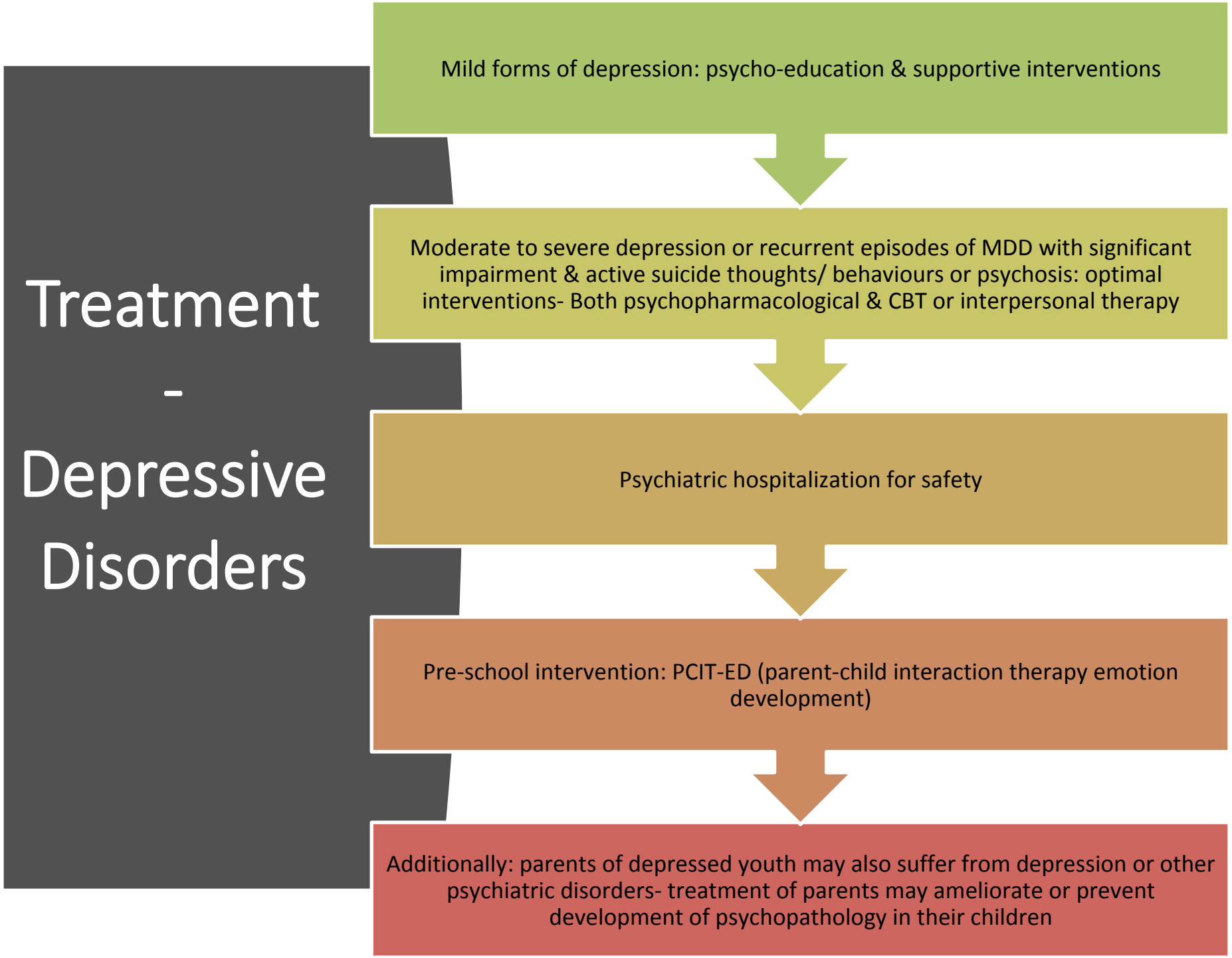
Aetiology: Depressive Disorder



Final diagnosis

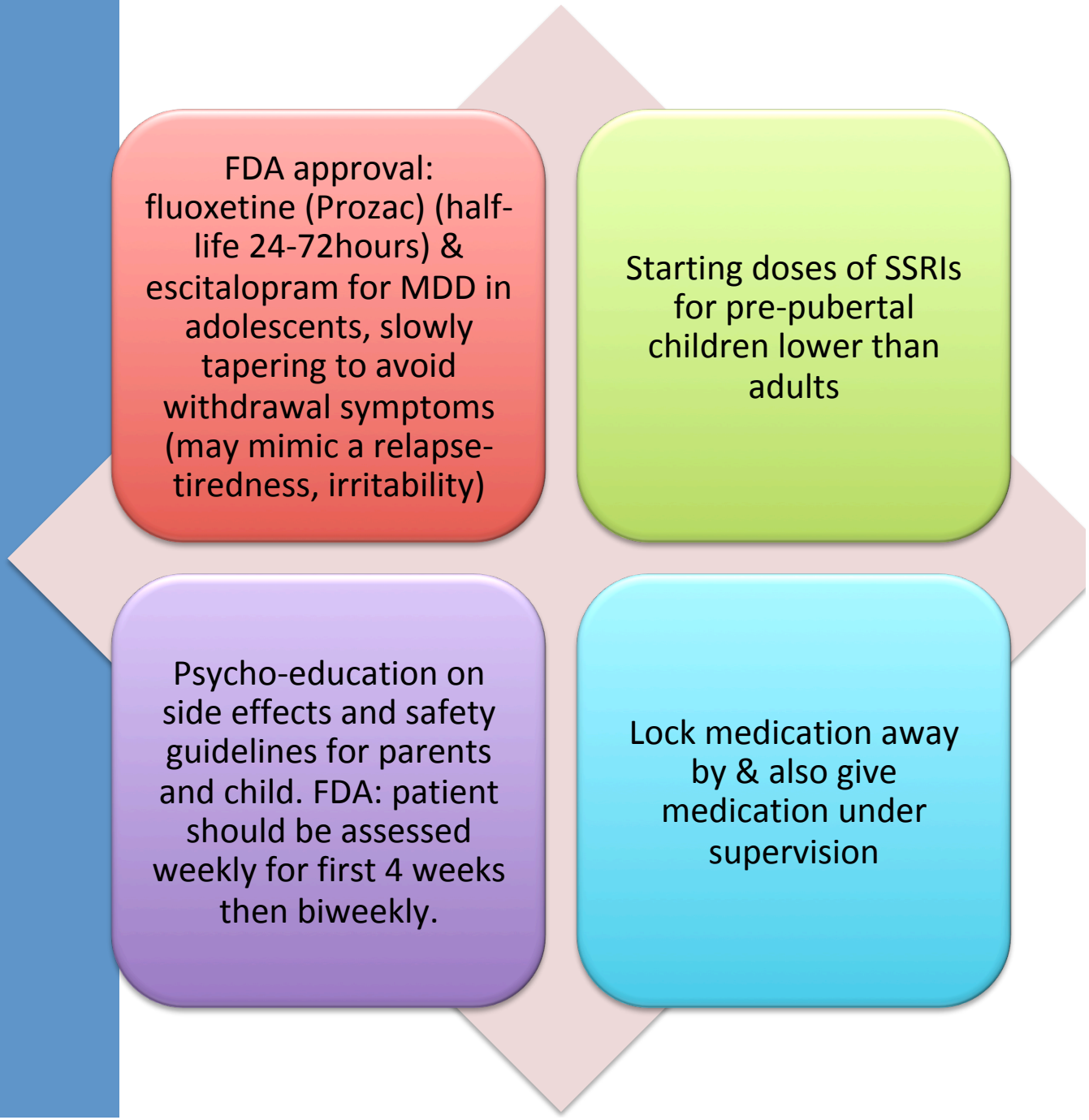
Exclude general medical/substance use conditions: hypothyroidism (TSH)

Exclude substance intoxication: U-cannabis and blood screening for substances)


Treatment - Depressive Disorders
Mild forms of depression: psycho-education & supportive interventions
Moderate to severe depression or recurrent episodes of MDD with significant impairment & active suicide thoughts/ behaviours or psychosis: optimal interventions- Both psychopharmacological & CBT or interpersonal therapy
Psychiatric hospitalization for safety
Pre-school intervention: PCIT-ED (parent-child interaction therapy emotion development)
Additionally: parents of depressed youth may also suffer from depression or other psychiatric disorders- treatment of parents may ameliorate or prevent development of psychopathology in their children

Pharmacotherapy

Depressive Disorders



Pharmacotherapy Depressive Disorders

- SSRI's (selective serotonin re-uptake inhibitors):
- S/E: gastro-intestinal symptoms, restlessness, headaches, , increased in spontaneous reporting self-harm, increased impulsivity, agitation, sleep changes, vivid dreams, impaired sexual functioning, silliness, behavioural activation or may induce hypomanic symptoms, suicidal behaviours, no onset of suicidality, no completions; decline in overall suicide ideation on rating scales
- TADs: lowers threshold for epilepsy, dry mouth, sedation- not effective
- Benzodiazepines: paradoxical aggression, disinhibition, dependence, rebound sleeplessness, dependence, memory problems, dysphoria,

Indications for hospitalization in depression

Ensure safety & provide milieu therapy: determine current suicidal thoughts, behaviours, past history of suicide behaviour/thoughts

Closely observe & monitor suicidal risk: wish to die

Initiate treatment

Provide maximum protection against own self-destructive impulses & suicide risk

Observe If psychotic features are present

Assess & treat coexisting substance abuse or dependence

Observe & initiate treatment in the absence of a primary support system

MDD: Continuation therapy

- Relapse rate is high
- Fluoxetine RCT (Randomized Controlled Trails): much lower relapse rate
- Continue for 6-12 months after complete symptom remission
- Monthly follow-up depending on: clinical status, functioning, support systems, environmental stressors, motivation for treatment, other psychiatric or medical disorders
- Psycho-educate/taught patient & parents to recognize early signs of relapse
- Keep anti-depressants at same dosage used to attain remission of acute symptoms, provided that medication causes no side-effects
- At the end of continuation phase: taper medication gradually (over a period of 6 weeks) to avoid withdrawal
- If relapse occur: determine if patient has been complaint

Maintenance therapy (MT): having two or more previous episodes

Asymptomatic for 6-12 months (continuation phase) decide whether patient should receive maintenance therapy- which therapy to use and how long

Main focus: to prevent recurrences

1 year or longer- depending on clinical status, functioning, support systems, environmental stressors, motivation for treatment, other psychiatric or medical disorders

MT depends on: severity of initial episode (suicidality, psychosis, functional impairment), number & severity of prior depressive episodes, chronicity, co-morbid disorders, family psychopathology, presence of support, willingness to adhere to treatment program, contraindications to treatment

Prevention of relapse

Depressed adolescents that have responded to Prozac who continued with Prozac (much superior to placebo)

Addition of the older selective serotonin reuptake inhibitors (SSRIs): fluoxetine (Prozac); CBT & continuation of pharmacotherapy decreased relapse rate even further

Treatment resistant Depression

Persistence of depression after having adequate quality and dose of evidence-based treatment

Adolescents (TORDIA) study designed to determine what clinicians should do next after patient does not respond to adequate trail with an SSRI

Switch from SSRI (Prozac), the older selective serotonin reuptake inhibitors (SSRIs), to another SNRI (Venlafaxine)-newer serotonin and norepinephrine reuptake inhibitors (SNRIs) and plus CBT

After 12 weeks the addition of CBT to either meds strategy resulted in superior outcome to medication monotherapy SSRI & venlafaxine interventions are similar- venlafaxine resulted in more side-effects

Best practice treatment

- High response to placebo or brief supportive treatment & education
- **Mild depression:** First approach should be family education, supportive counselling, case management & problem solving
- **More persistent & moderated depression**: initial treatment-one of the three empirically validated treatments: SSRIs, CBT or IPT (Interpersonal Therapy)-based on patient preference and availability of local expertise
- **More severely depressed:** problems with motivation & concentration, sleep, appetite- medications should be first line of treatment
- **Combination of SSRI & CBT**: more rapid improvement & more effective
- **Strongest evidence for efficacy:** Fluoxetine is first-line begin with 10 mg for I week- then increase to 20 mg for next three weeks- if not respond increase to 40 mg (rule out- rapid drug metabolism, nonadherence, cannabis use, undiagnosed medical or psychiatric co-morbidity, insomnia, psychosis, bipolar disorder, environmental stressors: family conflict, parental depression, peer victimization, same-sex attraction)

FDA warning on suicidality

1

Increased risk of suicidality (randomized clinical trails of 9 different anti-depressants in actively depressed youth)

2

FDA instituted: "black box warning": increased risk of suicidal thoughts & behaviour in children treated with anti-depressants & need for close monitoring for symptoms

3

Several reviews concluded since 2004: no data indicate a significant increase in risk of suicide or serious suicide attempts after starting treatment with anti-depressants

4

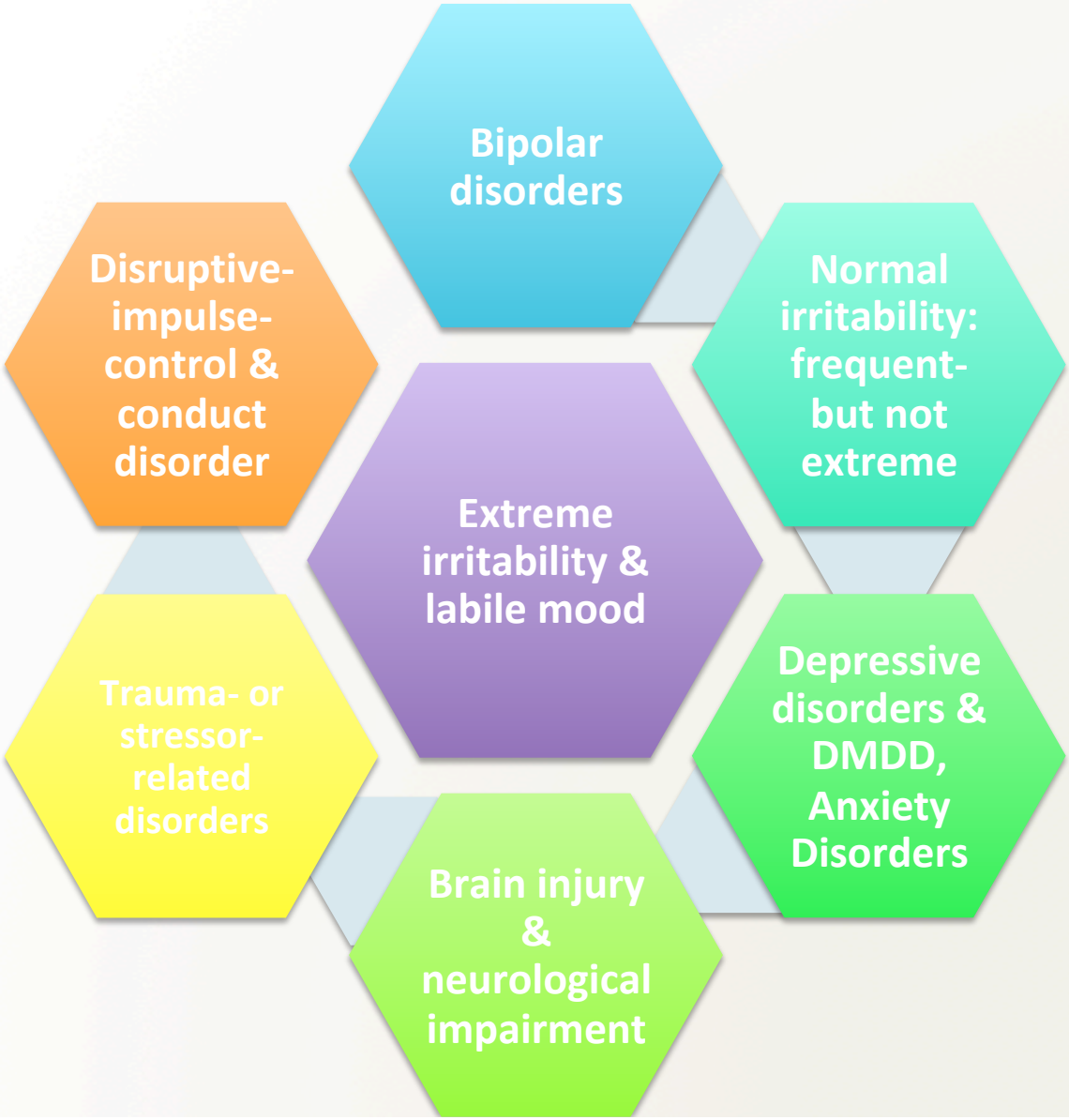
Duration of treatment: Anti-depressant treatment for 1 year (based on available longitudinal & natural history of depression); taper down at a time of low stress for medication-free period

Treatment -Depressive Disorders

- Mild forms of depression: psycho-education & supportive interventions
- Moderate to severe depression or recurrent episodes of MDD with significant impairment & active suicide thoughts/ behaviours or psychosis: optimal interventions- Both psychopharmacological & CBT or interpersonal therapy
- Psychiatric hospitalization for safety
- Pre-school intervention: PCIT-ED (parent-child interaction therapy emotion development)
- **Additionally: parents** of depressed youth may also suffer from depression or other psychiatric disorders- treatment of parents may ameliorate or prevent development of psychopathology in their children

Assessment of irritability and moodiness in children

DSM-5 **Disruptive behaviour- and/or mood disorders & irritability**



DISRUPTIVE MOOD DYSREGULATION DISORDER (DSM-5)

Severe recurrent temper outbursts in response to common stressors:
•Manifest verbally or behaviourally; verbal rages, or physical aggression towards people or property.• Grossly out of proportion in intensity or duration to the situation or provocation.• Inconsistent with the child's developmental level.

Criteria A-C have been present for at least 12 months and symptoms have been absent for less than 3 months at a time

Onset before 10 years of age

Temper outbursts occur, on average, three or more times per week.

Symptoms in at least two settings (at home, at school, or with peers) and must be severe at least in one setting.

Does not meet criteria for another mental disorder (e.g., bipolar, major depression, psychosis) but it can coexist with oppositional defiant disorder, ADHD, conduct disorder or substance use disorder.

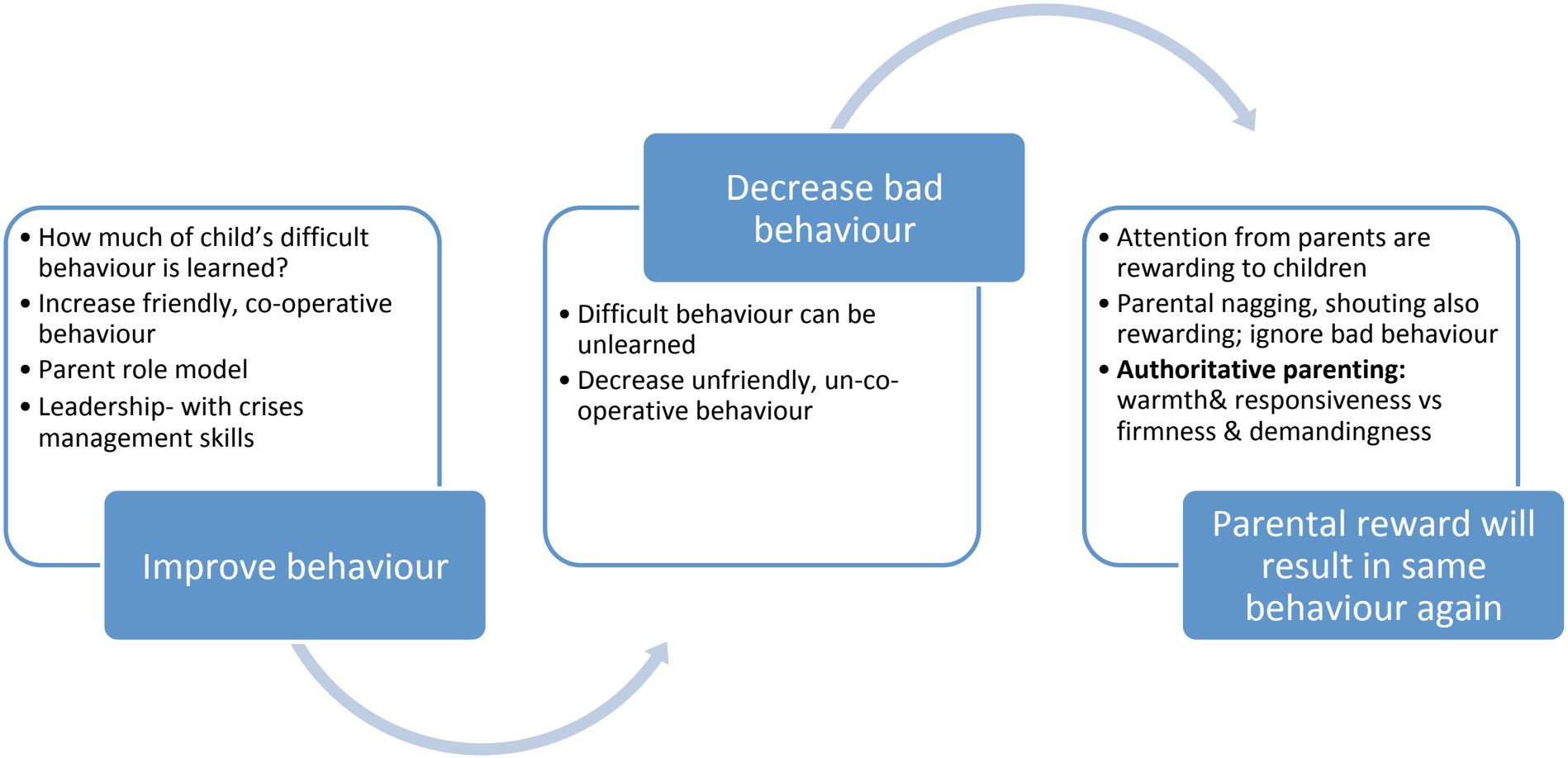
Mood between temper outbursts is persistently negative (irritable, angry, and/or sad) nearly every day

Aged 6 years or older

Bipolar spectrum disorders: mania in Bipolar I disorder

- **Mania:** older adolescents:
- Typically MDD episodes precede manic episode
- Same as adult- distinct from pre-existing state; grandiose & paranoid delusions, hallucinations
- Distinct period of abnormally elevated mood for 1 week; inflated self-esteem, decreased need for sleep, pressure to talk, flight of ideas, racing thoughts, increased goal-directed activity, involved in painful activities (hyper-sexuality, spending money, excessive phone calls)
- **Hypomania**: abnormally, elevated, expansive mood for 4 days; change in functioning observable to other, marked impairment not severe enough to necessitate hospitalization
- Screen: Child Mania Rating Scale (CMRS)

Basic principles of parent training: behaviour program (positive rewards- star chart)



Atypical-versus Typical antipsychotics: review of treatment studies on efficacy for aggression

Effectiveness of Atypical Antipsychotics:

- Risperidone: +++
- Olanzapine: ++
- Quetiapine: +
- Aripiprazole: +
- Clozapine: Additional research
- A/E: mild-to-moderate; EPS, increase weight (more than adults), somnolence, headache, increases in prolactin levels
- Less common: disruption of metabolic functioning: type 2 diabetes, cardiac rhythm abnormalities
- Long-term: tardive dyskinesia, parkinsonism, neuroleptic malignant syndrome
- More studies to examine safety-monitor vital signs, weight

Typical Antipsychotics: effective at low dosages

- Haloperidol
- A/E: increased occurrence of extrapyramidal side effects (EPSE) & tardive dyskinesia
- Benefits for youth with comorbid psychotic disorder
- Start treatment on a trail of atypical before typical when treating aggression or DBDs
- Specific cases: if treated with atypical and develop weight gain or diabetes: change then to typical (case-by-case use of typical antipsychotics)

Atypical anti-psychotics (FDA):

Mood-stabilizing properties of atypical antipsychotics: significant attention in adult bipolar literature for acute mania

Atypical ant-psychotics: risperidone (10–17 y); olanzapine (13–17 y); aripiprazole (10–17 y) & quetiapine (10–17 y)

Before prescribing: review potential for short-term & long-term side effects with both patient & guardians.

Baseline attention to medical-, family history, physical examination- weight/obesity, endocrine-, cardiovascular system issues, neurological status & movement disorders

Assess propensity to cause extrapyramidal side effects (EPSs) prior to and during course of treatment with atypical or typical. Dystonia, parkinsonism, tardive dyskinesia have been reported with all agents

Mood stabilizer Lithium: complicated to use

First U.S. Food and Drug Administration (FDA) approval for treating bipolar ages 12 years & older (based on adult research)

Prospective studies confirmed: Li is effective & well tolerated in treatment of PBD; effective in short term for mania; reduce substance abuse in youth; useful when Li is combined with valproate in treating severe manic symptoms; lithium with anti-psychotics

Lithium use in PBD supported by numerous studies: data from RCTs (randomized controlled trails) are only now emerging.

Current on-going trails to support its effectiveness: Collaborative Lithium Trails (CoLT) group (2006): data on evidence-based dosing strategies; establish acute efficacy in paediatric bipolar disorder (PBD) patients; investigate long-term effectiveness; short- & long-term safety

Baseline tests: TSH, creatinine (excreted by kidney), VBC, ECG, pregnancy test, monitor Li-level Avoid non-steroidal anti-inflammatory drugs, thiazide diuretics- may increase Li levels

Dangerous in overdose- should lobe locked away and be given under supervison

Mood stabilizers (Na-valproate) (Epilim):

Anticonvulsants: widely used in treating PBD- no anti-convulsant have received FDA approval for treating acute mania or as maintenance for bipolar disorder in children & adolescents

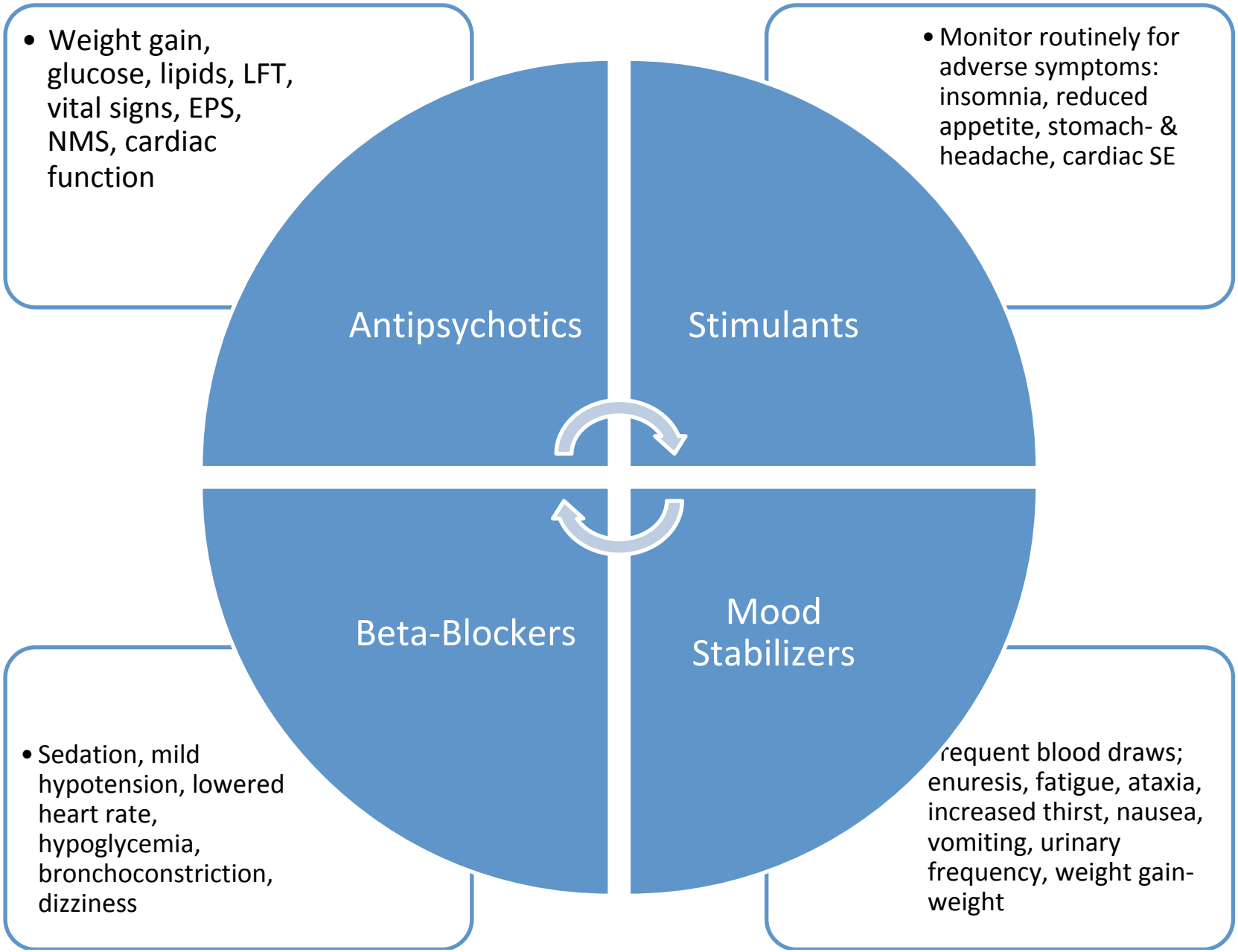
Valproate initiated in divided doses and gradually increased to a target dosage of 20 mg/kg/day (optimally adjusted based on blood levels), 200mg crushable, CR tablets of 200mg, 300mg, 500mg

S/E: gastro-intestinal upset, head-ache, tremor, sleepiness, weight gain, fatigue, ataxia, cognitive dulling, somnolence

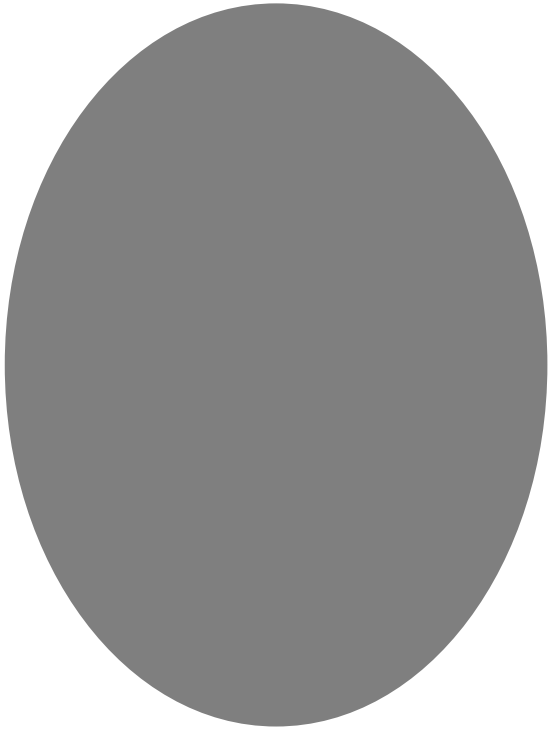
Uncommon: hepatic (LFT) & haematological (platelets) & metabolic functioning, jaundice, anorexia, diarrhoea, emesis, thrombocytopenia (bruising), potentially fatal pancreatitis, hepatic failure or bleeding, monitor PCOS (Polycystic ovary syndrome- absent menstruation)

Combination pharmacotherapy studies: valproate may be beneficial when co-administered with lithium, quetiapine, or risperidone, aripiprazole, lamotrigine

Safety issues: monitoring



- To strengthen development of a long-term vision & framework for adolescents' well-being (also parents & family)
- Positive mental health: +CBT, mindfulness training, exercise: walking/running, stable sleeping pattern, meals with family, health eating (happy greens) should be the foundation of all adolescent's experiences through all life stages & experiences
- Ongoing psycho-education on mental health to build a generation of youth with a deep understanding of own and other's mental health
- Psycho-education: Skills required to keep healthy; awareness of early signs of relapse- to seek help timeously



Ongoing research

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