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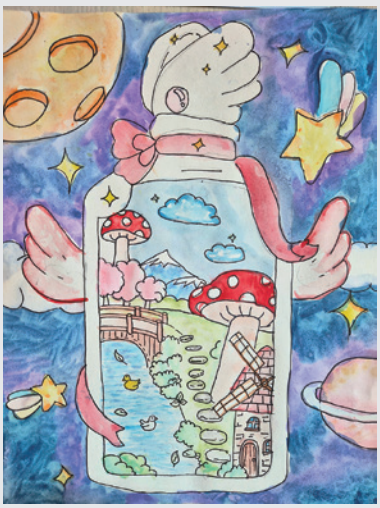

It is a painting done by my daughter. It portrays a magical potion in the galaxy filled with all the amazing things that she likes. "Pour in a little stardust and let it grow!" Inside the bottle, a whole enchanted world awakens. It's a quiet reminder that wonder can fit in small places, and that every ordinary moment can become an adventure when you believe.

Every child should have the freedom to unleash their imagination and explore the limitless possibilities of the universe without stress.

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Editorial

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Issue Editor

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Research consistently paints a concerning picture of the growing need for Child and Adolescent Mental Health services in Hong Kong. A large-scale epidemiological study found the prevalence of diagnosable psychiatric disorders among children and adolescents to be 16.4 %, with anxiety and depressive disorders being the most common mental illnesses (Lam et al., 2015) in Hong Kong. Children of this generation are undoubtedly under a lot of stress. The triad of academic pressure, digital saturation and societal uncertainty created a lot of unsettlements and may lead to mental issues in children. Yet, a glaring treatment gap persists. The long waiting time for public child psychiatric services still stretches to around 18 to 24 months, together with undiagnosed children with parents who are afraid of being stigmatised or lack knowledge to help their children, the future must shift from a reactive, hospital-based model to a proactive, community integrated ecosystem[1].

How should we address the service gap and unmet service needs in Child and Adolescent mental health services in Hong Kong? In the era of AI and technological augmentation, can we use these tools to help facilitate the delivery of our services? Is the use of tele-medicine applicable? Research is emerging, a pilot study from Singapore on a therapist-guided digital cognitive behavioural therapy (CBT) programme for youths showed significant reduction in anxiety and depressive symptoms[2]. These tools may not be a replacement but can act as a force multiplier, extending the reach of limited workforce. A 2021 review in the Asian Journal of Psychiatry on digital mental health in Asia concluded that while challenges like digital equity exist, these tools are regarded as transformative for service delivery in low-resource settings[3], which may be applicable to our overstretched system in Hong Kong. In this issue of *the Hong Kong Medical Diary*, our two clinical psychologists Ms Bianca Chan and Ms Mary Lee will further explore the use of artificial intelligence for emotional support, the future directions for its use in mental health services and the pitfalls.

The evidence from Asia supports moving care into schools. A cluster-randomised controlled trial in Beijing demonstrated that a school -based, teacher-delivered mental health literacy programme significantly improved students' knowledge and reduced stigma, which proved the efficacy of an integrated approach[4]. In Hong Kong, the government is promoting mental health at the universal level by running the 4R Mental Health Charter starting from 2024/2025, to promote mental wellness through the concepts of Rest, Relaxation, Relationship and Resilience. Most schools also have staff including teachers, social workers, and on-site counsellors/psychologists to support students with Special Educational Needs (SENs). Locally, the "Shall We Talk" initiative led by the Advisory Committee on Mental Health has made strides in public education, but stigma still persists deep within families and schools. Many parents are afraid of their children being stigmatised by school and do not seek appropriate treatment and services for their children. The future care must adopt a collaborative approach, actively involving families and teachers as supporting partners, as recommended by the Hong Kong College of Psychiatrists' position paper on youth mental health. The cost

of under-treatment is quantified not just in human suffering but in long-term societal burden. The Lancet Psychiatry Commission's focus on global child mental health has unequivocally stated that investment in early intervention yields the highest return in well-being and economic productivity. In this issue, Dr Heidi Lo conducted a peer-led local mental health literacy workshop programme with HKU MBBS students, aiming at enhancing mental health literacy, reducing stigma and strengthening stress coping skills among adolescents, which helps to provide more insight into the current Hong Kong situation on a school basis.

With the increasing need for child and adolescent psychiatric services, different treatment modalities are also emerging and available in Hong Kong. Many parents are willing to pay for treatments that merely have evidence-based support, as they are under great carer stress, and are desperate for help, and yet the years of waiting time for training in the public sector or in NGO is exhausting the parents' limits. With parents receiving complaints from school every day concerning their child's misbehaviour due to suboptimal treatment of Attention Deficit/Hyperactivity Disorder (ADHD), the child receiving years of social skills and behavioural training but did not find any improvement in the symptoms of their child with Autism Spectrum Disorder (ASD). However, some of these non-evidence-based treatments are not censored in the private sector. In this issue, Dr Calvin Pak-wing Cheng will discuss the potentials and problems of non-invasive brain modulation application in local mental health in the hope of bringing more insights into this aspect of treatment.

In addition, Dr Chan Hung will talk about the common misdiagnoses and misconceptions between normal adolescent mood fluctuation, borderline personality disorder and bipolar affective disorder. Whereas, Dr Christina Lam, Dr Tin Ngai-wa and I will discuss the current management of Tourette syndrome and Tics disorder. Finally, Ms Kelly Kwong will enlighten us on the topic of digital pacifiers, which are of concern to most parents, and how we can reclaim connection and language in an age of distraction.

It is our hope that by offering this collection of multidisciplinary perspectives on a vast variety of topics, it can help to address the different landscape, current situation and future trends and evolvement of Child and Adolescent Psychiatry.

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First-line Treatment for ADHD Recommended by International Guidelines and Consensus[1-4]

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Onset of Action at 1 to 1.5 hours[5]

1-1.5 hrs

Bimodal release for reduced pharmacokinetic fluctuation[6]

Flexibility on administration[7]

- Swallow as whole capsule or sprinkle the contents on soft food

2-year prospective, longitudinal, controlled study on ADHD eased safety concern over long-term MPH use[8]

No growth reduction at 2 years[8]

No statistical differences between MPH treatment group and non-treatment group on

Height velocity
Difference in log score

-0.07

(95%CI -0.18 to 0.04; p=0.20)

Log height velocity SD score
MPH treatment –0.04
MPH non-treatment 0.03

Weight velocity
Difference in log score

-0.02

(95%CI -0.09 to 0.05; p=0.64)

Log weight velocity SD score
MPH treatment 0.02
MPH non-treatment 0.04

BMI
Difference in log score

0.00

(95%CI -0.03 to 0.04; p=0.99)

Log BMI
MPH treatment 2.91
MPH non-treatment 2.91

The most common adverse events (≥5%) in children are headache, insomnia, upper abdominal pain, anorexia, decreased appetite, nasopharyngitis, irritability and lethargy[7]

Study design: The study of naturalistic, longitudinal and controlled nature was a part of the ADDUCE research programme in 27 European child and adolescent mental health centres in the United Kingom, Germany, Switzerland, Italy and Hungary. Children and adolescents aged 6-17 years were recruited into three cohorts: medication-naive ADHD patients who intended to start MPH treatment, medication-naive ADHD patients who did not intend to start any ADHD medication, and a control group without ADHD. It aimed to evaluate the long-term effects of MPH on growth and development, neurological health, psychiatric health, sexual development and fertility, and cardiovascular responses in ADHD children and adolescents. The primary outcome was height velocity.

ADHD= attention deficit hyperactivity disorder; CI= confidence interval; MPH= methylphenidate; SD= standard deviation.

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Patients may begin treatment with Ritalin® LA 10 mg if necessary. ♦ for patients who are currently taking methylphenidate: the recommended dose of Ritalin® LA should be equal to the total daily dose of the immediate-release formulation ♦ Daily dosage should not exceed 60 mg. ♦ Ritalin® LA dosage may be adjusted at weekly intervals in 10 mg increments for children ♦ Ritalin® LA is for once daily administration. *Adult* ♦ Only the Ritalin® LA formulation should be used for the treatment of ADHD in adults. ♦ for patients who are currently not taking methylphenidate: starting dose is 20 mg. ♦ for patients who are currently taking methylphenidate: the recommended dose of Ritalin® LA should be equal to the total daily dose of the immediate-release formulation ♦ Daily dosage should not exceed 80 mg. ♦ Use of Ritalin® LA in patients over 60 years of age has not been studied in controlled trials. ♦ Ritalin® LA dosage may be adjusted at weekly intervals in 20 mg increments for adults. ♦ Ritalin® LA is for once daily administration. **Narcolepsy** ♦ Daily dosage should not exceed 60 mg. ♦ For adults treated for narcolepsy, the usual daily dose is 20 to 30 mg. **Contraindications:** ♦ anxiety and tension states, agitation, a family history or diagnosis of Tourette's syndrome, glaucoma, hyperthyroidism, pre-existing cardiovascular disorders including uncontrolled hypertension, angina pectoris, arterial occlusive disease especially coronary arteries; heart failure, haemodynamically significant congenital heart disease, cardiomyopathies, myocardial infarction, cardiac arrhythmia and channelopathies (disorders caused by the dysfunction of ion channels), treatment with monoamine oxidase inhibitors, and also within a minimum of 14 days following discontinuation of a monoamine oxidase inhibitor (hypertensive crises may result), phaeochromocytoma, known drug dependence or alcohol abuse; severe depression, anorexia nervosa, psychotic symptoms or suicidal tendency, since Ritalin® might worsen these conditions; known hypersensitivity to methylphenidate or to any component of the formulation. **Warnings and precautions:** ♦ Treatment with methylphenidate is not indicated in all cases of ADHD and should be considered only after detailed history taking and evaluation of the patient. The decision to prescribe methylphenidate should depend on the physician's assessment of the chronicity and severity of the symptoms and in paediatric patients, the appropriateness to the child's age. Prescription should not depend solely on the presence of isolated behavioural characteristics. When the symptoms are associated with acute stress reactions, treatment with methylphenidate is usually not indicated. ♦ Generally should not be used in patients with structural cardiac abnormalities or other serious cardiac disorders that may increase the risk of sudden death. ♦ Pre-existing cardiovascular disorders, a family history of sudden death and ventricular arrhythmia should be assessed before initiating treatment. ♦ Caution in patients with pre-existing hypertension. Blood pressure should be monitored during treatment. ♦ Patients who develop symptoms suggestive of cardiac disease should undergo prompt cardiac evaluation. Misuse of stimulants of the central nervous system may be associated with sudden death and other serious cardiovascular adverse events. ♦ Patients with pre-existing cerebrovascular abnormalities should not be treated with Ritalin®. ♦ Patients with additional risk factors (history of cardiovascular disease, concomitant medications that elevate blood pressure) should be assessed regularly for neurological/psychiatric signs and symptoms. ♦ Pre-existing psychiatric disorders and a family history of psychiatric disorders should be assessed before initiating treatment. ♦ Should not be initiated in patients with acute psychosis, acute mania or acute suicidality. ♦ In case of emergent psychiatric symptoms (e.g. hallucinations or mania, aggressive behaviour and suicidal tendency) or exacerbation of pre-existing psychiatric symptoms, Ritalin® should not be given to patients unless the benefit outweighs the potential risk. ♦ Patients and caregivers should be alerted about the need to monitor for suicidal thoughts and unusual changes in behavior and to seek immediate medical attention. ♦ Family history should be assessed and clinical evaluation for tics or Tourette's syndrome in children should precede ADHD treatment. ♦ Patients should be regularly monitored for the emergence or worsening of tics during initiating treatment. ♦ Growth should be monitored during treatment as clinically necessary, treatment interruption may be considered. ♦ Caution in patients with epilepsy. ♦ Patients who develop priapism should seek immediate medical attention. ♦ Not recommended together with serotonergic drugs due to risk of serotonin syndrome. ♦ Chronic abuse can lead to marked tolerance and psychological dependence. ♦ Caution in emotionally unstable patients. ♦ Careful supervision during withdrawal. ♦ Patients requiring long-term therapy should be carefully monitored. Consider appropriate medical intervention in the event of hematological disorders. ♦ Ritalin®-treated patients considered at risk for acute angle closure glaucoma (e.g., patients with significant hyperopia) should be evaluated by an ophthalmologist. ♦ Close monitoring of Ritalin®-treated patients with a history of abnormally increased IOP or glaucoma is recommended. ♦ Should not be used for children under 6 years of age. ♦ Patients should refrain from driving and using machinery if dizziness, drowsiness, blurred vision, hallucinations or other CNS side effects occur. ♦ Prolonged and painful erections, sometimes requiring surgical intervention, have been reported with methylphenidate products in both pediatric and adult patients. Priapism was not reported with drug initiation but developed after some time on the drug, often subsequent to an increase in dose. Priapism has also appeared during a period of drug withdrawal (drug holidays or discontinuation). Patients who develop abnormally sustained or frequent and painful erections should seek immediate medical attention. **Pregnancy, lactation, females and males of reproductive potential Pregnancy:** ♦ Ritalin® should not be given to pregnant women unless the potential benefit outweighs the risk to the fetus. **Lactation:** ♦ Case reports showed that methylphenidate was distributed into breast milk. A decision should be made whether to abstain from breast-feeding or to abstain from Ritalin® therapy, taking into account the benefit of breast-feeding to the child and the benefit of therapy to the woman. **Adverse drug reactions: Very common (≥10%):** nasopharyngitis, decreased appetite, nervousness, insomnia, nausea, dry mouth, irritability; **Common (≥1 to <10%):** anxiety, restlessness, sleep disorder, agitation, depression, aggression, bruxism, tremor, dyskinesia, headache, drowsiness, dizziness, tachycardia, palpitation, arrhythmias, changes in blood pressure and heart rate (usually an increase), cough, abdominal pain, vomiting (which may be alleviated by concomitant food intake), dyspepsia, toothache, rash, pruritus, urticaria, fever, scalp hair loss, hyperhidrosis, arthralgia, feeling jittery, decreased weight, Raynaud's phenomenon, peripheral coldness. **Uncommon (≥0.1 to <1%):** trismus. **Rare (≥0.01 to <0.1%):** difficulties in visual accommodation, blurred vision, angina pectoris, moderately reduced weight gain and slight growth retardation during prolonged use in children. **Very rare (<0.01%):** leucopenia, thrombocytopenia, anaemia, hypersensitivity reactions, including angioedema and anaphylaxis, hyperactivity, psychosis (sometimes with visual and tactile hallucinations), transient depressed mood, convulsions, choreoathetoid movements, tics or exacerbation of existing tics and Tourette's syndrome, cerebrovascular disorders including vasculitis, cerebral haemorrhages and cerebrovascular accidents, reports of poorly documented neuroleptic malignant syndrome, abnormal liver function, ranging from transaminase elevation to hepatic coma, thrombocytopenic purpura, exfoliative dermatitis, erythema multiforme, muscle cramps. **Unknown**: pancytopenia, dysphemia, suicidal ideation or attempt (including completed suicide), irritability, affect lability, abnormal thinking or behaviour, anger, altered mood, mood swings, hypervigilance, mania, disorientation, libido disorder, apathy, stereotypy, change in sustained attention, confusional state, drug abuse and drug dependence, reversible ischemic neurological deficit, migraine, diplopia, mydriasis, visual impairment, auricular swelling, cardiac arrest, myocardial infarction, laryngeal pain, dyspnoea, epistaxis, diarrhoea, constipation, erythema, fixed eruption, myalgia, muscle twitching, priapism, erectile dysfunction, gynaecomastia, chest pain, fatigue, enuresis, increased intraocular pressure. Very rare reports of poorly documented neuroleptic malignant syndrome (NMS) have been received. In most of these reports, patients were also receiving other medications. It is uncertain what role Ritalin® played in these cases. ***Reported with other methylphenidate-containing products:*** hypersensitivity reactions such as auricular swelling, haematuria, incontinence, sudden cardiac death, cardiac murmur. **Interactions:** ♦ **Concomitant use contraindicated:** MAO inhibitors (currently or within the preceding 2 weeks). ♦ Caution when used concomitantly with drugs that elevate blood pressure, coumarin anticoagulants, anticonvulsants, centrally acting alpha-2 agonists (e.g. clonidine), direct and indirect dopaminergic drugs (e.g. tricyclic antidepressants, DOPA, antipsychotics), phenylbutazone. Monitoring of extrapyramidal symptoms is recommended when antipsychotics are used concomitantly. ♦ **Alcohol:** Patients should abstain from alcohol during treatment. ♦ Ritalin® should not be taken on the day of a planned surgery due to risk of sudden blood pressure increase during surgery. ♦ May induce false positive laboratory tests for amphetamines. ♦ Risk of serotonin syndrome with concomitant use of methylphenidate and serotonergic drugs. **Packs and prices:** ♦ Ritalin® Tablets: 10 mg (200's) ♦ Ritalin® LA Capsules: 10 mg (30's), 20 mg (30's and 100's) and 30 mg (30's) **Legal classification:** P1S153 Revision Date: 01 Apr 2025 Ref: Australia Jan 2024 (including 1239s + 1371s) + Apr 2024 DoH request

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Exploring the Potential and Challenges of Non-Invasive Brain Stimulation for Local Mental Health

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This article has been selected by the Editorial Board of the Hong Kong Medical Diary for participants in the CME programme of the Medical Council of Hong Kong (MCHK) to complete the following self-assessment questions in order to be awarded 1 CME credit under the programme upon returning the completed answer sheet to the Federation Secretariat on or before 31 July 2026.

ABSTRACT

Non-invasive brain stimulation (NIBS) has emerging potential to complement pharmacotherapy and psychotherapy for mental disorders in Hong Kong. However, its development is constrained by evidence gaps, limited regulation, and a lack of structured training and ethical guidance. This article focuses on the clinical potential of repetitive transcranial magnetic stimulation (rTMS), transcranial pulse stimulation (TPS), and transcranial direct current stimulation (tDCS), and proposes directions for safe and ethical implementation in Hong Kong.

INTRODUCTION: MENTAL HEALTH AND NIBS

The mental health burden in Hong Kong has been rising, with persistently high service demand remaining a major public health concern. Existing treatment modalities each have important limitations, including adverse effects of psychotropic medications, the labour intensity and cost of psychotherapy, and incomplete or non-response to both pharmacological and psychological interventions. Consequently, identifying new treatment options has become a pressing priority in psychiatry.

Non-invasive brain stimulation (NIBS)/non-invasive brain modulation has attracted growing attention in mental health research as a potential adjunctive or alternative treatment. "Non-invasive" in this context refers to techniques that do not require general anaesthesia or invasive neurosurgical procedures. NIBS can modulate brain function through externally applied physical stimuli, and, in most cases, can be delivered in outpatient clinic settings or, in specific formats, at home. The most widely used NIBS modalities are transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (tDCS), with transcranial pulse stimulation (TPS) representing a more recent development.

REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION (rTMS)

Repetitive transcranial magnetic stimulation (rTMS) is a non-invasive neuromodulation technique that has become an important complementary or alternative treatment for depression due to its favourable safety profile and distinct mechanism of action[1]. rTMS uses rapidly changing magnetic fields to induce an electric field in cortical tissue, thereby modulating neuronal excitability and network activity. High-frequency stimulation generally increases local cortical excitability and alters inhibitory circuit activity, whereas low-frequency stimulation reduces local cortical activity. Theta burst stimulation (TBS), a patterned form of rTMS, allows for substantially shorter treatment sessions while retaining therapeutic efficacy, thereby improving convenience and potentially facilitating wider clinical implementation[1]. These effects are thought to induce neuroplastic changes, mediated through mechanisms analogous to long-term potentiation (LTP) and long-term depression (LTD), leading to sustained clinical benefits. rTMS has been approved by the U.S. Food and Drug Administration (FDA) for the treatment of major depressive disorder in adults, with substantial evidence demonstrating its efficacy and safety. Compared with pharmacotherapy, rTMS may have a relatively faster onset of effect, with symptom improvement often observed within 1-2 weeks, and is associated with a different and generally milder adverse effect profile, most commonly transient headache and scalp discomfort at the stimulation site[2].

The most clinically significant safety concern with rTMS is the risk of treatment-emergent seizures. However, when evidence-based safety guidelines and stimulation parameters are followed, the risk is very low - estimated at approximately 0.08 seizures per 1,000 sessions[1]. With appropriate screening and monitoring, rTMS is considered a safe treatment modality. Beyond major depressive disorder, rTMS has received FDA approval for obsessive-compulsive disorder and smoking cessation using specific stimulation protocols and coil configurations. Emerging evidence also supports potential clinical applications in cognitive impairment, substance use disorders, insomnia, and schizophrenia, although these indications currently remain off-label and require further high-quality research to clarify optimal parameters, durability of response, and patient selection[2,3].

TRANSCRANIAL PULSE STIMULATION (TPS)

Transcranial pulse stimulation (TPS) is an emerging neuromodulation technique that delivers repetitive, high pressure, ultrashort shockwave pulses (approximately 3 μs in duration, repeated every 200-300 ms) to influence neuronal activity. Unlike other non invasive brain stimulation modalities such as TMS, tDCS, and tACS, TPS uses low intensity, focused shock waves with high spatial precision and resolution, thereby overcoming limitations related to tissue conductivity and restricted access to deep brain regions[4]. The mechanism of TPS is based on mechanotransduction, in which mechanical stimuli are converted into biochemical signals, thereby activating key cellular functions. TPS has been shown to promote angiogenesis and nerve regeneration, enhance the production of vascular growth factors and brain derived neurotrophic factor (BDNF), improve cerebral blood flow, and modulate neuroplasticity[4]. TPS is generally safe and well tolerated. Reported adverse event rates range from 4 % to 33.3 %, with the most common side effect being transient headache[4]. TPS received CE marking in 2018 for the treatment of central nervous system (CNS) disorders in patients with mild to moderate Alzheimer's disease. Beyond Alzheimer's disease and other cognitive impairment conditions[5], local studies have demonstrated initial therapeutic potential in depression[6], attention deficit/hyperactivity disorder (ADHD)[7], and autism spectrum disorder (ASD)[8]. Although these findings are preliminary, they support further investigation of TPS as a novel NIBS modality for a range of psychiatric and neurodevelopmental conditions.

TRANSCRANIAL DIRECT CURRENT STIMULATION (tDCS)

Transcranial direct current stimulation (tDCS) delivers a low-intensity direct current (typically 1-2 mA) through the cerebral cortex via electrodes placed on the scalp, thereby modulating cortical excitability in a polarity dependent manner[9]. Compared with TMS and TPS, tDCS devices are generally simpler, more portable, and less costly, which facilitates broader clinical use. Its favourable safety profile has also enabled supervised home based administration. In 2025, the U.S. Food and Drug Administration (FDA) granted the first premarket approval (PMA) for a home use non invasive brain stimulation device specifically indicated for the treatment of depression[10]. The antidepressant effects of tDCS are thought to be mediated by modulation of cortical excitability and network dynamics[9,11], enhancement of long term synaptic plasticity, and changes in neurotransmitter release[12]. While FDA approval currently focuses on depression, evidence for tDCS in other mental health conditions remains more preliminary. Clinical studies have explored the use of tDCS in patients with neurocognitive disorders, including preclinical Alzheimer's disease[13], schizophrenia[14], substance use disorders, and obsessive-compulsive disorder (OCD), with generally promising but mixed results[15]. Overall, the existing literature suggests potential benefits across several psychiatric and neurocognitive conditions, but larger, rigorously designed randomised controlled trials and updated meta analyses are needed to define efficacy, optimal stimulation parameters, and patient selection in real world clinical settings[14,15].

CURRENT CLINICAL SITUATIONS IN HONG KONG

The Hospital Authority (HA), the largest public health service provider in Hong Kong, has introduced TMS treatment into psychiatric services across all clusters since 2016-2017[16]. Within HA, psychiatrists refer selected patients with depression for rTMS based on clinical need, and some centres also employ rTMS in patients with addiction problems. Beyond psychiatry, rTMS has been adopted by other specialties in HA for stroke rehabilitation.

In the private sector, rTMS services are widely available, with more frequent off label use for conditions such as neurocognitive disorders, anxiety disorders, and insomnia. In contrast, TPS and tDCS are not formally available within HA and are predominantly offered by universities and private centres. Their overall prevalence of use remains lower than that of rTMS, with most applications focusing on neurocognitive disorders, mood disorders, and neurological rehabilitation. Across settings, NIBS is most commonly used as an adjunctive treatment - either to augment pharmacotherapy and psychotherapy or to enhance functional recovery - rather than as monotherapy. Combination treatment appears beneficial: a recent systematic review and meta analysis reported that rTMS retains antidepressant efficacy across different concurrent antidepressant classes, supporting its role as part of a multimodal treatment strategy in major depressive disorder[17].

PRACTICE GUIDELINES AND ETHICAL CONCERNS

NIBS in Hong Kong currently falls under general medical device regulation, hospital governance frameworks, professional ethical codes, and research ethics oversight, but there is no NIBS-specific statute or territory-wide clinical guideline. Internationally, consensus is also limited regarding many aspects of NIBS practice, including optimal stimulation parameters, duration and frequency of maintenance treatment, and criteria for continuation or discontinuation.

In practice, there is substantial heterogeneity in local protocols, even within HA, regarding issues such as the required presence of a medical practitioner during sessions, staff qualifications to administer NIBS, and monitoring procedures. No widely accepted local guideline or accreditation framework exists for NIBS services.

Several structural problems constrain the safe and effective implementation of NIBS:

- No dedicated regulatory or credentialling body oversees clinical NIBS practice.
- Lack of formal, regular, competency-based training programmes for NIBS practitioners. Training is often limited to vendor courses, short workshops, or

on-the-job supervision in HA or academic units, typically without a structured curriculum or ongoing support.
- Potential implications for treatment quality and safety, including inconsistent patient selection, dosing, monitoring, and management of adverse events.
- Limited insurance coverage for NIBS, which restricts equitable access and may confine its use to patients who can self-fund treatment.

These gaps raise ethical concerns regarding patient welfare, informed decision making, and fair access to emerging neuromodulation therapies, particularly when used off label or outside rigorous research contexts[18].

SUGGESTIONS AND FUTURE DIRECTIONS

For mental health indications, NIBS should be prescribed or overseen by psychiatrists or other appropriately trained mental health professionals who can assess diagnoses, prior treatment history, treatment resistance, and individual risk factors, and who can integrate NIBS within a comprehensive care plan.

Clinical governance for NIBS should include:

- Clear documentation of indications, treatment protocols, and concurrent therapies.
- Robust informed consent processes, explicitly discussing potential benefits, uncertainties, and risks - especially for off label indications or newer modalities such as TPS[18].
- Systematic monitoring and recording of clinical outcomes and adverse events.
- For off-label use (i.e., indications not formally approved by local regulators or major agencies such as the FDA), clinicians should provide enhanced counselling on the strength of evidence, alternative options, and the experimental nature of treatment, with careful documentation of shared decision-making.

To strengthen practice and safeguard patients, the following measures are recommended:

- Development of local consensus guidelines and standards for NIBS (covering indications, minimum training requirements, staffing, safety procedures, and follow-up), ideally led by relevant professional bodies (e.g., psychiatric, neurology, rehabilitation, and neurophysiology societies).
- Establishment of regular training, supervision, and support for NIBS practitioners, including competency-based workshops, hands-on courses, mentorship, and case conferences, in collaboration with international experts.
- Incorporation of NIBS into continuing medical education (CME/CPD) frameworks for clinicians who prescribe, supervise, or deliver these interventions.

Further research in Hong Kong should focus on these areas:

- Evaluate the effectiveness, safety, and cost-effectiveness of NIBS across key psychiatric and neurocognitive disorders in local populations.
- Examine optimal ways to combine NIBS with pharmacotherapy and psychotherapy.
- Explore patient-reported outcomes, long-term trajectories, and predictors of response and non-response.
- The use of objective biomarkers and quantitative tools - such as EEG, functional near-infrared spectroscopy (fNIRS), neuroimaging, and validated symptom and functioning scales - may help to monitor treatment response, refine stimulation parameters, and move toward more personalised NIBS protocols. As high-quality evidence accumulates, broader insurance coverage for evidence-based NIBS protocols could improve equity of access and support integration of these treatments into routine mental health care.

CONCLUSION

NIBS represents a promising addition to Hong Kong's mental health treatment options, particularly for treatment-resistant depression and cognitive disorders. rTMS is already established within HA psychiatric services, while TPS and tDCS remain largely confined to research settings or early clinical adoption. To realise the full potential of NIBS and minimise associated risks, clearer regulatory pathways, robust ethical frameworks, and structured training and accreditation for clinicians are essential. Coordinated efforts among the government, the HA, universities, and professional bodies will be crucial to support the safe, evidence-based expansion of NIBS and to enhance mental health outcomes in Hong Kong.

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MCHK CME Programme Self-assessment Questions

Please read the article entitled "Exploring the Potential and Challenges of Non-Invasive Brain Stimulation for Local Mental Health" by Dr Calvin Pak-wing CHENG and complete the following self-assessment questions. Participants in the MCHK CME Programme will be awarded CME credit under the Programme for returning completed answer sheets via fax (2865 0345) or answer link: https://forms.gle/tUL6dJffqK27gyCMA or by mail to the Federation Secretariat on or before 31 July 2026. Answers to questions will be provided in the next issue of The Hong Kong Medical Diary. (Address: Duke of Windsor Social Service Bldg., 4/Fl., 15 Hennessy Rd., Wan Chai. Enquiry: 2527 8898)

Questions 1 - 10: Please answer T (true) or F (false)

1. rTMS has FDA approval for major depressive disorder in adults.
2. TPS received CE marking in 2018 for the treatment of CNS disorders in mild to moderate Alzheimer's disease.
3. In 2025 the FDA granted the first premarket approval (PMA) for a home use non invasive brain stimulation device for depression (tDCS).
4. The Hospital Authority has already introduced rTMS treatment across all clusters in Hong Kong.
5. The estimated risk of seizure with rTMS when guidelines are followed is about 0.08 seizures per 1,000 sessions.
6. TPS adverse event rates reported range from 4 % to 33.3 %, with transient headache the most common side effect.
7. Hong Kong currently has a dedicated NIBS specific statute and territory wide clinical guideline.
8. tDCS devices are generally more complex and more expensive than TMS devices.
9. Across settings in Hong Kong, NIBS is most commonly used as monotherapy rather than as an adjunct to other treatments.
10. rTMS has FDA approval for obsessive–compulsive disorder and for smoking cessation using specific protocols.

ANSWER SHEET FOR JULY 2026

Please return the completed answer sheet to the Federation Secretariat on or before 31 July 2026 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

Exploring the Potential and Challenges of Non-Invasive Brain Stimulation for Local Mental Health

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Answer Link

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

Name (block letters):_____ HKMA No.: _____ CDSHK No.: _____

HKID No.: __ __ - __ __ __ __ X X (X) HKDU No.: _____ HKAM No.: _____

Contact Tel No.:_____ MCHK No. / DCHK No.: _____(must fill in)

Answers to June 2026 Issue

Artificial Intelligence in Liver Diseases

1. F **2.** T **3.** T **4.** F **5.** T **6.** F **7.** F **8.** T **9.** F **10.** T

唯穩思®
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3 AVAILABLE CAPSULE STRENGTHS:

Recommended dose: 30 mg - 70 mg[3]

^ Based on IQVIA Worldwide Sales Data MAT 09/2025.[1]

* Study design: Study 311 was a randomised, double-blinded, multicentre, placebo-controlled, crossover, analogue-classroom study of children (6-12 years) with a primary diagnosis of ADHD. Following screening (-3 weeks) and washout (up to 1 week), eligible subjects received open-label VYVANSE, titrated from 30 mg QD to reach an optimal dose in 4 weeks. Afterwards, 117 patients were randomised (1:1) to receive VYVANSE at the optimised QD dose x 1 week followed by placebo QD x 1 week or vice versa, in a double-blind manner. The primary end point was the SKAMP-D subscale score at 1.5 hours post-dose on the last day of each week (dosed at 7 a.m.).[4]

\# Study design: Study 316 was a randomised, double-blind, placebo-controlled, 2-way crossover study of adults (18-55 years) with a primary diagnosis of ADHD, conducted in a simulated adult workplace environment (AWE). Following a 4-week, open-label dose-optimisation phase, 127 patients were then randomised to receive their optimised dose of VYVANSE x 7 days followed by placebo x 7 days or vice versa. The primary efficacy end point was the total PERMP scale scores averaged over all post-dose time points during the visits at week 5 and 6.[5]

Abbreviations: ADHD = attention deficit/hyperactivity disorder; AWE = adult workplace environment; PERMP = Permanent Product Measure of Performance; QD = once a day; SKAMP-D = Swanson, Kotkin, Agler, M-Flynn, and Pelham deportment

Abbreviated Prescribing Information (US-OCT2023-HK-FEB2025)
Vyvanse Capsules 20mg, 30mg, 50mg (lisdexamfetamine dimesylate)
Indication: Attention Deficit Hyperactivity Disorder (ADHD) in adults and pediatric patients 6 years and older. Limitations of Use: Pediatric patients with ADHD younger than 6 years of age experienced more long-term weight loss than patients 6 years and older. VYVANSE is not indicated or recommended for weight loss. Use of other sympathomimetic drugs for weight loss has been associated with serious cardiovascular adverse events. The safety and effectiveness of VYVANSE for the treatment of obesity have not been established. **Dosage and Administration:** initiated at 30 mg once daily in the morning (avoid afternoon doses due to potential for insomnia) and adjusted in increments of 10 mg or 20 mg at approximately weekly intervals up to maximum recommended dosage of 70 mg once daily. Capsules may be taken whole or opened and the contents emptied and mixed with yogurt or in a glass of water or orange juice. The contents should be mixed until completely dispersed. Consume the entire mixture immediately. It should not be stored. **Contraindications:** Known hypersensitivity to amphetamine products or other ingredients of VYVANSE. Anaphylactic reactions, Stevens-Johnson Syndrome, angioedema, and urticaria have been observed in post-marketing reports. Patients taking monoamine oxidase inhibitors (MAOIs), or within 14 days of stopping MAOIs (including MAOIs such as linezolid or intravenous methylene blue), because of an increased risk of hypertensive crisis. **Precautions:** Abuse, misuse and addiction: before prescribing and throughout the treatment, assess each patient's risk for abuse, misuse, and addiction. Educate patients and their families about these risks and proper disposal of any unused drug; Serious cardiovascular reactions: Avoid use in patients with known structural cardiac abnormalities, cardiomyopathy, serious cardiac arrhythmia, coronary artery disease, or other serious cardiac disease; Increased blood pressure and heart rate: monitor all patients for potential tachycardia and hypertension; Psychiatric adverse reactions: exacerbation of pre-existing psychosis, induction of a manic episode in patients with bipolar disorder, new psychotic or manic symptoms; Long Term suppression of growth in pediatric patients: closely monitor growth (weight and height) in pediatric patients. patients who are not growing or gaining height or weight as expected may need to have their treatment interrupted. VYVANSE is not approved for use in pediatric patients below 6 years of age; Peripheral vasculopathy, including raynaud's phenomenon: careful observation for digital changes is necessary during treatment. Further clinical evaluation (e.g., rheumatology referral) may be appropriate for patients who develop signs or symptoms of peripheral vasculopathy; Serotonin syndrome: If you have symptoms of serotonin syndrome while taking VYVANSE or other serotonergic drugs, stop taking them immediately and seek medical attention. If you need to take VYVANSE with other drugs, start with lower doses and monitor for serotonin syndrome; Motor and Verbal Tics, and Worsening of Tourette's Syndrome: Before initiating VYVANSE, assess the family history and clinically evaluate patients for tics or Tourette's syndrome. Regularly monitor patients for the emergence or worsening of tics or Tourette's syndrome, and discontinue treatment if clinically appropriate; Suicidal Behavior and Ideation: it is recommended for patients treated with ADHD drugs that caregivers and physicians monitor for signs of suicide-related behavior, including at dose initiation/optimization and drug discontinuation. **Adverse Effects:** most common side effects: anorexia, anxiety, decreased appetite, weight loss, diarrhea, dizziness, dry mouth, irritability, trouble sleeping, nausea, stomach pain, vomiting.

Full prescribing information is available upon request.

To Report Suspected Side Effects for Takeda Products at **AE.HongKong@takeda.com**

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References: 1. DOF: IQVIA worldwide sales data MAT 09/2025 **2.** Gudin JA et al. Postgrad Med 2016;128:97-105 **3.** Vyvanse (lisdexamfetamine dimesylate) capsules Hong Kong prescribing information. Feb 2025. **4.** Wigal SB et al. Child Adolesc Psychiatry Ment Health 2009;3:17 **5.** Wigal T et al. Behav Brain Funct 2010;6:34

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C-APROM/HK/Vyv/0100 (02/2026)

Differentiating Adolescent Emotional Fluctuations from Bipolar and Borderline Personality Disorders

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ABSTRACT

Adolescence often brings intense swings in emotion, which makes it tough to tell apart the usual ups and downs from more serious conditions such as bipolar disorder (BD) or borderline personality disorder (BPD). Mood instability, impulsivity, and other shared features frequently lead to diagnostic confusion in child and adolescent mental health settings. This review sets out to clarify the key clinical characteristics of typical adolescent emotional variability, BD, and BPD; to point out where diagnostic mistakes commonly happen and why they matter; to summarise practical treatment approaches; and to trace how BPD tends to evolve from the teenage years into adulthood. Correct diagnosis helps avoid stigma and leads to better outcomes - whether that means simple psychoeducation for normal mood changes, dialectical behaviour therapy (DBT) for BPD, or mood stabilisers plus psychotherapy for BD. Intervening early in BPD appears to improve the long-term picture meaningfully.

INTRODUCTION

The teenage years involve major changes in emotions, thinking, and relationships, and wide mood swings are very common during this stage[1]. Clinicians often struggle to decide whether the intense emotional ups and downs they see are just part of normal development or whether they point toward something more concerning, such as bipolar disorder (BD) or borderline personality disorder (BPD). Symptom overlapping - rapid mood shifts, impulsive behaviour, and trouble with relationships appear in all three[2,3]. The goal of this review is to describe how these three presentations typically look in practice, to emphasise why getting the diagnosis correct matters, to highlight the most frequent misdiagnosis pitfalls, and to outline sensible management options for each. It also looks at what usually happens with BPD over time as young people move into adulthood, since that longer view can help guide both treatment decisions and expectations. Some of the discussion around BPD and DBT draws on specialist experience in the field.

CLINICAL FEATURES OF NORMAL EMOTIONAL FLUCTUATIONS IN ADOLESCENTS

Normative adolescent emotional fluctuations arise from neurobiological changes, including prefrontal cortex maturation and hormonal shifts, leading to increased sensitivity and reactivity[4]. These are typically transient, context-dependent responses to stressors, such as peer conflicts or academic pressures, lasting minutes to hours. Key features include:

- **Mood variability**: Rapid shifts between happiness, irritability, or sadness, resolving without intervention.
- **Impulsivity**: Occasional risk-taking, such as impulsive decisions in social settings, but without chronic patterns.
- **Interpersonal sensitivity**: Heightened reactions to rejection, but with preserved relationships and self-image.
- **Duration and triggers**: Episodic, triggered by external events, and not impairing long-term functioning.

Unlike disorders, these fluctuations align with identity exploration and autonomy-seeking, as described in Rutter's[1]. They lack the intensity or persistence seen in psychopathology and remit with maturation.

CLINICAL FEATURES OF BIPOLAR DISORDER IN ADOLESCENTS

BD in adolescents involves episodic mood disturbances with manic/hypomanic and depressive phases. ICD-11 emphasises cyclic patterns[3]. Presentation differs from adults, with more irritability than euphoria.

- **Manic/hypomanic episodes**: Elevated or irritable mood, increased energy, reduced sleep need, grandiosity, racing thoughts, and risky behaviours lasting days to weeks.
- **Depressive episodes**: Persistent sadness, anhedonia, fatigue, worthlessness, and suicidality, and psychomotor changes.
- **Duration and patterns**: Episodes are distinct, lasting at least 4-7 days for hypomania/mania, with inter-episode euthymia or residual symptoms.
- **Triggers and course**: Often endogenous or stress-related, with a family history of mood disorders; rapid cycling is common in youth.

The global prevalence of BD in adolescents is approximately 1-2 %, with lifetime rates up to 2.5 % in youth[5]. In Hong Kong, the 12-month prevalence is 1.4 % for BP-I and 0.5 % for BP-II[6]. Comparatively, the U.S. studies report similar rates of 1-2 % in community adolescent samples[7].

CLINICAL FEATURES OF BORDERLINE PERSONALITY DISORDER IN ADOLESCENTS

BPD is a pervasive pattern of instability in relationships, self-image, affects, and impulsivity[3], beginning by early adulthood but often evident in adolescence. ICD-11 classifies it under personality disorders with emotional dysregulation.

- **Affective instability**: Rapid shifts (hours to days) from baseline to intense anger, anxiety, or emptiness, likely reactive.
- **Interpersonal issues**: Fear of abandonment, unstable relationships with idealisation/devaluation.
- **Impulsivity and self-harm**: Recurrent self-injury, suicidality, or risky behaviours as emotion regulation attempts.
- **Identity disturbance**: Unstable self-image, chronic emptiness.
- **Triggers and course**: Strongly interpersonal, linked to trauma; chronic rather than episodic.

Borderline personality disorder (BPD) in adolescents exhibits significant comorbidity with mood disorders and is strongly associated with a history of trauma[1,8]. Globally, community prevalence estimates for adolescents range from 1 % to 3 %, with longitudinal data indicating a substantial proportion of cases achieve remission by adulthood[9]. Within the Hong Kong context, epidemiological studies report a comparable prevalence of approximately 2 % in adolescent community samples[10]. However, recent screening research utilising university and young adult cohorts has identified a higher rate - approximately 10 % - of individuals meeting subthreshold criteria for BPD features[11]. This discrepancy is likely attributable to methodological variations, including differences in sample characteristics (e.g. age, help-seeking status) and assessment instruments. For estimating the prevalence of clinically significant BPD in the Hong Kong adolescent population, the consensus figure of 2 % is considered the most representative.

CLINICAL COURSE OF BORDERLINE PERSONALITY DISORDER FROM ADOLESCENCE TO ADULTHOOD

The clinical course of BPD typically begins in adolescence, with symptoms emerging around puberty and peaking in prevalence and severity during late adolescence and early adulthood[12]. Early identification is feasible, as BPD can be reliably diagnosed in youth, contrary to earlier assumptions that personality disorders stabilise only in adulthood[13]. The trajectory is characterised by chronic instability, including frequent crises involving affective dysregulation, impulsivity, and interpersonal turmoil, leading to high utilisation of emergency services prior to formal diagnosis.

Longitudinal studies indicate modest diagnostic stability; in a 5-year follow-up of adolescents with BPD, categorical diagnosis persistence is low, but the condition serves as a marker of broader maladjustment, predicting functional impairments in young adulthood, such as occupational impermanence, relational difficulties, and comorbid psychopathology[12]. Symptoms generally attenuate over time, with remission rates increasing: approximately 25 % achieve remission (fewer than two symptoms for at least two months) after two years, rising to 85 % after ten years[14]. Impulsive and behavioural symptoms (e.g., self-harm, recklessness) remit earlier than affective ones (e.g., emptiness, emotional turbulence), which may persist or resurface in later life due to stressors like attachment disruptions.

Although BPD is considered a lifelong condition, the overall prognosis is positive with early intervention, particularly psychotherapy, reducing symptom severity and improving functioning. Factors influencing the course include trauma history, comorbidity (e.g., mood disorders), and access to treatment; untreated cases risk persistent disability, while treated ones show dynamic improvement across the lifespan[13].

Differentiating the Conditions

Differentiation requires a comprehensive, longitudinal assessment incorporating family history, symptom phenomenology, and collateral information from parents, teachers, and peers. Overlapping symptoms such as affective volatility, impulsivity, and suicidality can complicate diagnosis, but careful examination of duration, triggers, intensity, and functional impact provides clarity[15.] Misinterpretation of "mood swings" leads to confusion; thus, specifying the nature, context, and persistence is essential.

- **Normal Fluctuations vs. Pathological States (BD and BPD)**: Normative moods are adaptive, self-resolving, and tied to developmental stressors, lacking the chronic impairment or intensity of disorders[4]. In contrast, BD and BPD involve persistent functional decline, such as school dropout, relational ruptures, or recurrent crises[1]. For instance, a teen's brief irritability after a peer argument is normal, but if it escalates to repeated self-harm or chronic emptiness, BPD may be indicated; prolonged, untriggered euphoria or depression suggests BD. Pathological states sometimes feature comorbidity (e.g., ADHD in BD, trauma in BPD)[8]. In Hong Kong's context, where intense academic competition and high parental expectations frequently heighten interpersonal and achievement-related pressures, these dynamics may particularly amplify BPD-like features such as abandonment fears or emotional reactivity. A thorough history, exploring family dynamics, perceived parental criticism, and school-related stressors, is therefore essential to distinguish normative responses from emerging psychopathology.

- **BD vs. BPD**: BD episodes are longer (days to weeks), probably autonomous or endogenous, featuring distinct manic symptoms like grandiosity, reduced sleep, and racing thoughts, with inter-episode stability or euthymia. BPD shifts are briefer (minutes to hours or days), highly reactive to interpersonal

triggers, dominated by abandonment fears, identity unsteadiness, and chronic emptiness. Family history favours BD (mood disorders) over BPD (trauma, impulsivity disorders) . Trauma, particularly childhood sexual abuse or depersonalisation, strongly predicts BPD. BPD involves more negative interpersonal attitudes, conflictive relationships, and maladaptive regulation, while impulsivity is a trait in BPD but state-dependent in BD[16]. Comorbidity occurs in up to 20 %, requiring assessment for both. Bipolar I is easier to distinguish due to frank mania; Bipolar II overlaps more with BPD due to hypomania and depression. Patterns: BD is episodic with stable periods; BPD is chronic with easy trigger reactivity. Examples: A teen with weeks of sleepless grandiosity followed by depression likely has BD; rapid splitting (idealisation/devaluation) in relationships points to BPD. Depressive onset is earlier in BPD, with more mixed symptoms in BD[16].

- **Tools and Strategies**: Structured interviews such as the Kiddie Schedule for Affective Disorders and Schizophrenia (KSADS) for BD and the Structured Clinical Interview for DSM-5 Personality Disorders (SCID-PD) for BPD aid precision.

Table 1: Comparative overview of normal mood fluctuations, bipolar disorder (BD), and borderline personality (Developed by the author)

Feature	Normal Fluctuations	BD	BPD
Duration	Minutes-hours	Days-weeks	Minutes-hours/ days
Triggers	Contextual (e.g., peer stress)	Often endogenous/ random	Interpersonal (e.g., rejection)
Key Symptoms	Transient irritability, adaptive	Mania/ depression cycles, grandiosity	Abandonment fear, self-harm, splitting
Course	Self-resolving, developmental	Episodic with euthymia	Chronic, pervasive instability
Impairment	Minimal, transient	Cyclic, significant during episodes	Persistent, relational/ functional
Family History	None specific	Mood disorders	Trauma, personality issues

CONSEQUENCES OF MISDIAGNOSIS

Misdiagnosing BPD as BD is common, with studies indicating rates as high as 40 % among individuals meeting BPD criteria but not BD[17]. This error stems from overlapping symptoms like mood instability and impulsivity, leading to inappropriate prescribing of mood stabilisers or antipsychotics. Consequences include exposure to unnecessary pharmacotherapy, resulting in side effects such as weight gain, metabolic syndrome, sedation, and cognitive dulling, which can exacerbate self-image issues in adolescents already struggling with identity disturbance. For instance, youth misdiagnosed with BD may receive lithium or valproate, increasing risks of thyroid dysfunction or polycystic ovary syndrome, without addressing core BPD relational dynamics[15].

This misdiagnosis delays access to evidence-based psychotherapies like DBT, prolonging cycles of self-harm, suicidality, and interpersonal chaos, with potential increases in emergency service utilisation and hospitalisation. It fosters unrealistic expectations about medication efficacy, leading to despair and non-adherence when symptoms persist. Conversely, misdiagnosing BD as BPD overlooks biological underpinnings, delaying mood-stabilising treatments and risking untreated manic episodes, psychosis, or suicide[15]. Both scenarios heighten stigma, impair identity formation in adolescence, and escalate healthcare costs through repeated interventions[17].

Management of Normal Emotional Fluctuations

For normative fluctuations, intervention focuses on education and resilience-building.

- **Psychoeducation**: Inform teens/parents about developmental norms to normalise experiences[4].
- **Coping strategies**: Mindfulness, exercise, journaling; parental modelling of emotion regulation.
- **Supportive monitoring**: Regular check-ins; escalate if impairment emerges.
- **Prevention**: Foster secure attachments and stress management in schools.

No pharmacotherapy is indicated; emphasis on family communication.

TREATMENT OF BORDERLINE PERSONALITY DISORDER IN ADOLESCENTS

DBT is the gold standard for adolescent BPD, adapted as DBT for Adolescents (DBT-A), which integrates family involvement to address relational dynamics unique to youth[18]. It focuses on four core modules: mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness, with an additional "Walking the Middle Path" module for adolescents to balance acceptance and change in family contexts. Evidence from randomised trials shows DBT-A reduces self-harm, suicidal ideation, and core BPD symptoms like identity disturbance and impulsivity, with impacts on emotion dysregulation after intensive programmes[19]. A 1-year follow-up study demonstrated sustained improvements in psychosocial functioning.

Other evidence-based options include Mentalisation-Based Treatment for Adolescents (MBT-A), which enhances understanding of mental states to improve attachment and emotion regulation, showing reductions in BPD symptoms and self-harm in outpatient settings. Schema Therapy for Adolescents adapts adult protocols to target maladaptive schemas from early trauma, with preliminary evidence of symptom remission. Adolescent Identity Treatment (AIT) focuses on identity diffusion, reducing depressive symptoms and improving personality functioning. Medications, such as SSRIs for comorbid depression or low-dose antipsychotics for agitation, are adjunctive and not

primary, due to limited efficacy in core BPD. Family involvement is crucial, as in DBT-A multifamily groups, to mitigate conflict and enhance outcomes. Early intervention in adolescence potentially alters the chronic course.

TREATMENT OF BIPOLAR DISORDER IN ADOLESCENTS

The mainstay of BD treatment in adolescents is pharmacotherapy, preferably combined with adjunctive psychotherapy to improve adherence and functioning. For acute mania or mixed episodes, second-generation antipsychotics (SGAs) such as risperidone, aripiprazole, quetiapine, or olanzapine are first-line, with response rates up to 80 % in randomised trials, augmentation by mood stabilisers like lithium or valproate for rapid cycling may be necessary. Lithium remains a cornerstone for maintenance, reducing relapse by 50 %, but requires monitoring for thyroid and renal effects. For bipolar depression, lurasidone or olanzapine-fluoxetine combination is recommended, with caution against antidepressants alone due to swing risk.

Psychosocial interventions include Family-Focused Therapy (FFT), which reduces recurrence by 30-40 % through psychoeducation, communication training, and problem-solving[20]. Cognitive Behavioural Therapy (CBT) targets mood monitoring and coping, improving depressive symptoms. Guidelines from the American Academy of Child and Adolescent Psychiatry emphasise multimodal approaches, starting with monotherapy and escalating to combinations for non-response, with regular monitoring for side effects like metabolic syndrome.

CONCLUSION

For the Hong Kong clinician facing an emotionally dysregulated adolescent, distinguishing between normative stress reactivity, BD, and BPD requires meticulous attention to symptom duration, triggers, and family history. Involving family in assessment is a must. Crucially, in a resource-limited setting, initial misdiagnosis carries high opportunity costs. Accurate diagnosis shapes what kind of help we offer: straightforward psychoeducation and support for the ups and downs that many teens go through, structured approaches like DBT for BPD, or mood stabilisers combined with therapy for BD.

When a teenager self-harms or makes a suicide attempt, depression, BD or BPD may be considered in the differential diagnosis, but often these acts are really a desperate way of seeking help, trying to manage their intense feelings, or communicating distress. Treating their behaviours as "just attention-seeking" usually discourages the teenagers from seeking help and delays the support they actually need.

A validating, non-stigmatising approach is recommended. The focus should remain on acknowledging that their emotions make sense in context, while gently steering them away from destructive patterns. Practical steps like learning to handle intense feelings, building safer attachments, and finding ways to grow more independent fit right into where adolescents are developmentally.

It is important to make teenagers feel heard and involved in the therapeutic process. A solid therapeutic relationship - one built on listening carefully, making decisions together, and setting goals they actually care about - sets the stage for lasting shifts. Evidence-based interventions such as adapted DBT for adolescents remain the gold standard for BPD. There is a pressing need for local implementation research and cost-effectiveness studies given the resource constraints in Hong Kong's public healthcare system . Currently, access to comprehensive DBT programmes in Hong Kong is limited. Specialist psychotherapy waiting times can sometimes exceed 12 months. Thus, stepped-care model or adapted approaches remain valuable. Whether through adapted DBT, family-focused work, or careful ongoing monitoring, getting in early and staying engaged can reduce symptoms and improve long-term psychosocial outcomes and functioning in adulthood.

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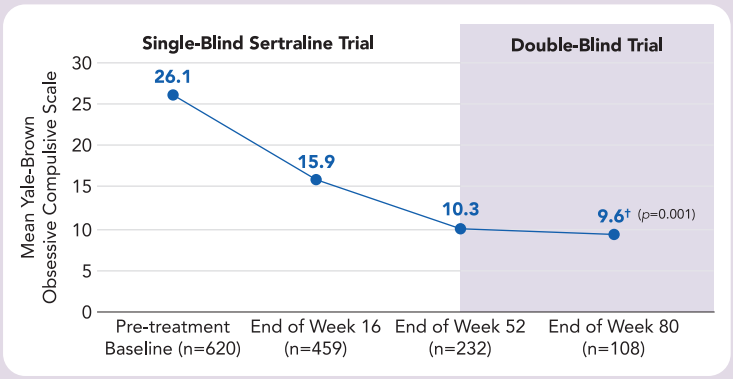

Continued improvement in Y-BOCS Scores and shown significance at week 80[2]

77.3% patient rated significant and **sustained improvement in QoL** at week 80[2]

Continuous improvement with Zoloft® was observed at a **mean dose of 183 mg/day[2]**

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*Includes ability to work and perform household duties, subjective sense of wellbeing, social relationships, and ability to enjoy leisure activities compared with community norms.[1]
†Significant difference between sertraline and placebo from baseline of double-blind trial to last-observation-carried-forward endpoint.[2]

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Abbreviations: CGI: Clinical Global Impressions; DSM-III-R: Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised; NIMH: National Institute of Mental Health; OCD: Obsessive-compulsive disorder; QoL: Quality of life; Y-BOCS: Yale-Brown Obsessive-Compulsive Scale.

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ZOLOFT SUMMARY OF PRODUCT INFORMATION
1. TRADE NAME: ZOLOFT® 2. PRESENTATION: 100mg sertraline film-coated tablets. **3. INDICATIONS:** Major depressive episodes. Prevention of recurrence of major depressive episodes. Panic disorder, with or without agoraphobia. Obsessive compulsive disorder (OCD) in adults and paediatric patients aged 6–17 years. Social anxiety disorder. Post-traumatic stress disorder (PTSD). **4. DOSAGE:** Depression and OCD: Start at a dose of 50mg/day. Patients not responding to a 50mg dose may benefit from dose increases. Dose changes should be made in steps of 50mg at intervals of at least one week. Maximum dose: 200mg/day. Changes in dose should not be made more frequently than once per week. Panic Disorder, PTSD and Social Anxiety Disorder: Initially 25mg/day and dose should be increased to 50mg once daily after one week. Patients not responding to a 50mg dose may benefit from dose increases. Dose changes should be made in steps of 50mg at intervals of at least one week. Maximum dose: 200mg/day. Changes in dose should not be made more frequently than once per week. Maintenance: lowest effective level. Use in children with OCD: (aged 13–17) initially 50mg/day, (aged 6–12) initially 25mg/day, may be increased to 50mg/day after one week. Subsequent dose titration may be made in 50mg increments over a period of some weeks as needed. Maximum dose: 200mg/day. Dose changes should not occur at intervals of less than one week. **5. CONTRAINDICATIONS:** Hypersensitivity to the active substance or any of the excipients. Concomitant treatment with irreversible monoamine oxidase inhibitors (MAOIs), and pimozide. Linezolid. **6. WARNINGS & PRECAUTIONS:** Development of serotonin syndrome or Neuroleptic Malignant Syndrome. Switching from Selective Serotonin Reuptake Inhibitors (SSRIs), antidepressants or anti-obsessional drugs, particularly from long-acting agents such as fluoxetine. Co-administration of sertraline with other drugs that enhance the effects of serotonergic neurotransmission such as amphetamines, tryptophan or fenfluramine or 5-HT agonists or the herbal medicine, St. John's Wort should be undertaken with caution and avoided whenever possible. QTc Prolongation/Torsade de Pointes (TdP). Activation of Mania/Hypomania. Schizophrenia. Seizures, avoid in unstable epilepsy and carefully monitor in controlled epilepsy, discontinue if seizures develops. Suicide/suicidal thoughts/suicide attempts or clinical worsening. Sexual dysfunction. Paediatric population: should not be used in the treatment of children and adolescents under the age of 18 years except for patients with OCD aged 6–17 years old. Caution with concomitant use with drugs known to affect platelet function, as well as in patient with history of bleeding disorders. Increased risk of postpartum haemorrhage. Hyponatraemia. Withdrawal symptoms with discontinuation of sertraline treatment. Akathisia/psychomotor restlessness. Patients with hepatic impairment need lower or less frequent dose, should not be used in patients with severe hepatic impairment. Patients with diabetes may need insulin and/or oral hypoglycaemic dosage adjustment. Grapefruit juice is not recommended. Patients with angle-closure glaucoma or history of glaucoma should use with caution. **7. INTERACTIONS:** MAOIs, pimozide, CNS depressants, alcohol, other serotonergic drugs, drugs that prolong the QT interval, lithium, phenytoin, metamizole, triptans, warfarin, cimetidine, drugs that affect platelet function (e.g. NSAIDs, acetylsalicylic acid and ticlopidine), neuromuscular blockers, drugs metabolized by cytochrome P450. **8. PREGNANCY AND LACTATION:** Use in pregnancy and nursing mother is not recommended. **9. SIDE EFFECTS:** Insomnia, dizziness, headache, somnolence, nausea, diarrhea, dry mouth, ejaculation failure, fatigue, upper respiratory tract infection, pharyngitis, rhinitis, decreased appetite, increased appetite, anxiety, depression, agitation, libido decreased, nervousness, depersonalisation, nightmare, bruxism, tremor, movement disorders, paraesthesia, hypertonia, disturbance in attention, dysgeusia, visual disturbance, tinnitus, palpitations, hot flush, yawning, dyspepsia, constipation, abdominal pain, vomiting, flatulence, hyperhidrosis, rash, back pain, arthralgia, myalgia, menstruation irregular, erectile dysfunction, malaise, chest pain, asthenia, pyrexia, weight increased, injury. Reference: HK LPD (NOV 2025) Date of preparation: DEC 2025 Identifier number: ZOLO1225 (100mg). **FULL PRESCRIBING INFORMATION IS AVAILABLE UPON REQUEST.**

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An Ad-hoc Article: Interim Report from Students Project - Exploration of the Youth-Adult Partnership Mental Health Literacy Workshop for Hong Kong Secondary School Students

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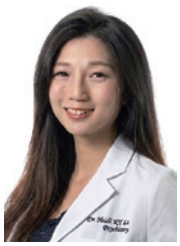
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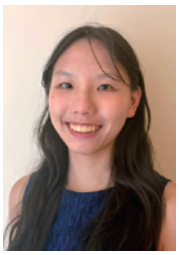
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INTRODUCTION

Mental health problems remain a growing concern among adolescents in Hong Kong. The number of children and adolescents known to mental health services has more than doubled from 18,974 cases in 2011-12 to 43,589 cases in 2020-21, according to the Clinical Data Analysis and Reporting System (CDARS)[1]. Recent population-based estimates indicate that approximately 13.5 % of adolescents meet criteria for at least one DSM-5 mental disorder within a 12-month period, with a further 11.0 % meeting criteria for two or more disorders[2]. Adolescence and the transition to early adulthood represent a critical window for prevention and early intervention[3], as most mental disorders first emerge during this developmental stage, yet frequently remain unrecognised and untreated until later adulthood. Globally, mental disorders constitute a major contributor to disease burden among young people[4], with this period characterised by significant emotional, cognitive, and social changes that increase vulnerability to depression and suicidality[5]. Importantly, many of the proximal and protective factors in this developmental stage are accessible and potentially modifiable for prevention and early intervention[6]. Despite the high prevalence of mental health needs and increasing service demand, Hong Kong currently lacks evaluated, universal, youth-led mental health literacy and peer-support programmes.

Schools and universities, as structurally central nodes within youth mental ecosystems where young people can be reached early[7], before difficulties become entrenched, provide a strategic platform for early detection and intervention[8]. Mental health literacy has been identified as a key modifiable determinant of stigma, symptom recognition, and help-seeking behaviour, underscoring the need for evidence-based, contextually tailored mental health literacy interventions during these formative years[9].

To enhance mental health literacy, reduce stigma, and strengthen stress coping skills among adolescents, a peer-led local mental health literacy programme (*We Children Care*) was conducted in Hong Kong, with students' initiative under the HKU Med MBBS-DMS Programme, collaboration with the HKUMed Wellness Team, and ten local secondary schools. Secondary school students participated in workshops delivered by medical student facilitators who were trained and supervised by a psychiatrist and a qualified university counsellor. All facilitators had completed a face-to-face 12-hour Mental Health First Aid (MHFA) Standard Course.

The objectives of the programme were to: (1) improve mental health literacy related to common conditions such as anxiety and depression; (2) reduce stigma and promote help-seeking attitudes; and (3) enhance stress coping skills to support resilience and well-being. The programme comprised three weekly bilingual sessions of three hours each (total 9 hours; Cantonese and English). Teaching methods included brief didactic input, group discussion, experiential exercises, and role-play. University students, including medical students and trained "*wellness buddies*", acted as near-peer facilitators under professional supervision. As data collection and analysis are ongoing, the present study reports interim findings from pre- and post-intervention assessments to evaluate the early effectiveness and feasibility of the programme.

Table 1: Overview of the core components, educational content, delivery methods, and theoretical frameworks underpinning the We Children Care Programme (Summarised by the authors)

Component	Topics	Activities	Conceptual underpinning
Fundamental mental health knowledge	Common emotional difficulties in adolescents	Short sharing delivered by facilitators; Sharing by a psychiatrist	Mental health literacy framework; normalisation of adolescent emotional experiences
Multidimensional understanding of mental health	Biopsychosocial model of mental health	Case-based explanation using real-life adolescent scenarios	The biopsychosocial model highlights interacting biological, psychological, and social determinants
Help-seeking and care pathways	Introduction to treatment of common mental health disorders (psychological, pharmacological, school-based support)	Sharing with local service pathways introduced	Stepped-care framework; early identification and timely intervention
Stigma awareness and help-seeking attitudes	Stigma, self-stigma, and help-seeking attitudes	Students reflect anonymously on barriers to help-seeking via Mentimeter	Stigma reduction frameworks; help-seeking and disclosure models
Peer communication and supportive responding	Talking to peers in distress: when and how to seek adult help	Case scenario role-play: responding to a friend with panic symptoms	Social learning theory, peer support, and behavioural modelling
Stress regulation and coping skills	Stress response, coping mechanisms	Zentangle drawing/ brief mindfulness practice	Emotion regulation theory; mindfulness-based stress reduction
Understanding anxiety & panic	Anxiety curve, panic attack physiology	Visual walkthrough of anxiety curve	Cognitive-behavioural model of anxiety
Risk awareness & safety	Risk assessment, emergencies, red flags	Sharing by university counsellor; Case scenario role-play on "what to do next?"	Safety-oriented communication strategies, CARES mnemonics for facilitating good communication
Strengths-based resilience developments	Resilience, coping flexibility, self-care	Small-group discussion: Students identify personal coping strategies they would try	Strengths-based approaches; resilience and adaptive coping frameworks

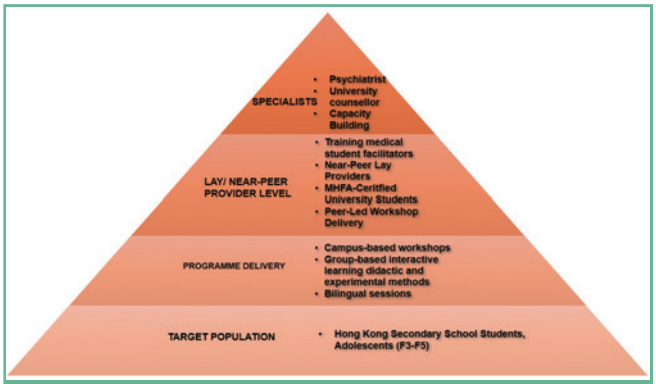

Fig 1. Specialist-supervised, peer-led implementation pyramid of the We Children Care Programme (Adapted from We Children Care Programme)

METHODS

Study Design and Participants

Form 3 to Form 6 (aged 13-18) students across ten dedicated local secondary schools were recruited for the evaluation study. To ensure representativeness, the local secondary schools across Hong Kong Island, Kowloon, and the New Territories, included both boys' school, girls' school, international and included boys' schools, girls' schools, as well as local and international schools offering the DSE and IB curricula. Approximately 5,000 students across Forms 3 to 6 were invited to participate voluntarily. Invited schools were provided with standardised programme information, and students were encouraged to register independently via email. To support balanced participation across schools and seniority levels, enrolment was guided by pre-specified participation targets at the school level, with priority given to students in higher grade levels, reflecting greater developmental relevance to the intervention content. Final enrolment numbers were adjusted pragmatically based on student interest and logistical capacity. Participation was optional and required parental consent. All students who attended the *We Children Care* programme were invited to complete pre-intervention, post-intervention, and one-month follow-up questionnaires administered via an online survey platform (Qualtrics). Workshops were conducted between July 2024 and October 2025. The programme was co-produced with educators and youth partners, and ethical approval was obtained from the Human Research Ethics Committee (EA240528).

This study adopted a mixed-methods design to examine the early effectiveness and implementation outcomes of the *We Children Care* programme. Quantitative outcomes included participation and retention rates, as well as changes in self-reported mental health literacy, stigma-related attitudes, and help-seeking. Qualitative data were collected to explore key implementation outcomes, including acceptability, perceived usefulness, appropriateness, and early adoption of learned knowledge and skills. Participant reflections focused on changes in perceptions of mental health, confidence in recognising and managing mental health concerns, willingness to support peers, application of coping strategies in daily life, and attitudes towards help-seeking. Data were collected at three timepoints: baseline prior to the workshop (T0), immediately post-intervention (T1), and at one-month follow-up (T2).

Outcome Measures

Demographics

The students' basic demographics, including age, gender, year of study, general well-being (with one-item scales: 1-item General Wellbeing Scale[10]; 1-item Life Satisfaction Scale[11,12]; 1-item self-rated mental health

SRMH[13]; and 1-item loneliness scale[14]; all adapted in previous studies with good psychometric properties[15]) and 4-item Family Affluence Scale (which is designed to be simple, non-invasive, and easy for young people to answer for estimating their socioeconomic status)[16], are reported on baseline.

Mental Health Literacy

Mental Health Literacy Questionnaire – short version for young adults (MHLq-SVa;[17]) is a 16-item short version adapted from the 29-item MHLq-YA[18]. It is developed to measure mental health literacy on four dimensions: (1) knowledge of mental health problems (e.g., "A person with depression feels very miserable."; "People with schizophrenia usually have delusions."), (2) erroneous beliefs/ stereotypes (e.g., "Mental disorders don't affect people's behaviours."; "People with mental disorders belong to low-income countries." (3) help-seeking and first aid skills (e.g., "If I had a mental disorder, I would seek my relatives' help."; "If someone close to me had a mental disorder, I would encourage her/him to look for a psychologist,", and (4) self-help strategies (e.g., "Physical exercise contributes to good mental health."; "Sleeping well contributes to good mental health."). Participants were asked to rate each item, ticking the option that indicated how much they agreed or disagreed, using a five-point scale (ranging from 1=Strongly Disagree to 5=Strongly Agree) to respond to the items. Cronbach's Alpha for the total scale in the adaptation study was 0.84[17]. MHLq-SAs validated in six different countries and languages, including China, and suggest that it is a valid and reliable measure for assessing MHL.

THE KNOWLEDGE AND ATTITUDES TO MENTAL HEALTH

The Knowledge and Attitudes to Mental Health Scales (KAMHS;[19]) is a reliable multifaceted self-report questionnaire measuring mental health literacy in adolescents. The instrument consists of 50 items aiming to measure knowledge and attitudes to mental health across seven domains: (1) knowledge about mental health (12 items), (2) knowledge about mental health-promoting behaviours (6 items; previously known as "good mental health behaviours"), (3) stigma (6 items), (4) (lack of) self-stigma (6 items), (5) (lack of) avoidant coping (5 items), (6) help-seeking behaviours (7 items) and (7) social desirability (8 items). Participants are asked to rate their agreement with statements on a five-point Likert scale (Strongly Agree, Agree, Don't Know, Disagree, Strongly Disagree). The items were scored in a manner that higher scores represented positive attitudes or behaviours. Several items were reverse-scored, and average scores were calculated for each subscale and adjusted for missing items. A total MHL score is calculated by summing each of the average subscales (excluding the subscale social desirability).

MENTAL HEALTH-RELATED REPORTED AND INTENDED BEHAVIOUR

Mental health-related reported and intended behaviour was measured by the Reported and Intended Behaviour Scale[20]. The overall internal consistency of the scale was 0.85 (Cronbach's alpha). This scale assesses four actual and four intended behaviour outcomes (domains comprised: living with, working with, living nearby, and having or continuing a relationship with someone with a mental health problem), including items such as "Are you currently working with or have ever worked with someone with a mental health problem?" Answer choices ranged from yes, no or don't know for the Reported Behaviour Scale. A sample item of intended behaviours is: "In the future, I would be willing to work with someone with a mental health problem. " Respondents chose from agree, agree slightly, neutral, disagree slightly, disagree, and don't know in the Intended Behaviour Scale.

Data Analysis

The present analysis focuses on early quantitative outcomes; qualitative data collection and longer-term follow-up are ongoing. All quantitative analyses were performed using IBM SPSS Statistics software. Descriptive statistics were used to summarise participants' sociodemographic characteristics and baseline measures. As this interim analysis focused on within-participant changes over time, linear mixed-effects models were used to compare outcome scores at baseline (T0) with post-intervention (T1). This approach accounts for repeated measures within individuals and allows inclusion of participants with incomplete data across timepoints. Statistical significance was set at a two-sided p-value of < 0.05.

Results

Participant Characteristics

A total of 187 students participated in the *We Children Care* programme, of whom 156 provided at least one valid questionnaire response, yielding an overall study participation rate of 83.4 %. After data cleaning, including the removal of incomplete responses, these 156 participants were included in the interim analyses. The sociodemographic characteristics of the participants are summarised in Table 2. Participants were aged between 14 and 18 years, with over 85 % enrolled in senior secondary grades (Forms 3-6). The sample was predominantly female (n = 117, 75.0 %). The mean Family Affluence Scale score was 5.20, indicating a medium-to-high level of family affluence. Participants reported moderate to high levels of self-rated general happiness and life satisfaction; however, fewer than half rated their mental health as "good" or above.

Interim analyses demonstrated statistically significant improvements across all primary outcomes immediately following the workshop (Table 3). Mean mental health literacy scores (MHL total) increased from 66.7 (SD 5.2) at baseline to 68.9 (SD 6.0) post-intervention, corresponding to an estimated mean increase of 2.34 points (95 % CI 1.19-3.48; $p< 0.001$). Improvements were also observed in help-seeking attitudes, with KAMHS total scores increasing from 15.0 (SD 2.0) to 15.4 (SD 2.3; mean change 0.57, 95 % CI 0.19-0.95; $p=0.001$). In addition, stigma-related attitudes, as measured by the

RIBS, showed a significant improvement, increasing from 14.0 (SD 3.1) to 15.6 (SD 2.9) (mean change 1.56, 95 % CI 0.89-2.23; p<0.001).

Table 2: Sociodemographic characteristics of the We Children Care Programme (Summarised by the authors)

Age, years		16 ± 1
Female, n (%)		117 (75.0 %)
School grade n (%)	F3	20 (12.8 %)
	F4	42 (26.9 %)
	F5	84 (53.8 %)
	F6	10 (6.4 %)
General happiness (1-7)		5 ± 1
Life satisfaction (1-7)		5 ± 1
Self-rated mental health (1-5)		4 ± 1
Loneliness (1-5)		3 ± 1
Family Affluence Scale		5.20 ± 1.92

Table 3: Changes in mental health literacy, stigma, and help-seeking attitudes from baseline to post-intervention for We Children Care programme (Summarised by the authors)

Outcome	Timepoint	Mean (SD	Estimated Mean Change vs Baseline (95% CI)	p-value
MHL total	Pre-intervention Post-intervention	66.7 (5.2) 68.9 (6.0)	— +2.34 (1.19–3.48)	— <.001
KAMHS total	Pre-intervention Post-intervention	15.0 (2.0) 15.4 (2.3)	— +0.57 (0.19–0.95)	— .001
RIBS total	Pre-intervention Post-intervention	14.0 (3.1) 15.6 (2.9)	— +1.56 (0.89–2.23)	— <.001

Abbreviations: MHL, the Mental Health Literacy Questionnaire ; KAMHS, the Knowledge and Attitudes to Mental Health Scales ; RIBS, the Reported and Intended Behaviour Scale.

DISCUSSION

This interim study examined the feasibility and preliminary outcomes of a Youth-Adult Partnership mental health literacy workshop (*We Children Care* programme) for Hong Kong secondary school students. The present study demonstrated small but significant short-term improvements in mental health knowledge, openness to discussing mental health, and reductions in stigma-related attitudes, with attitudinal gains largely sustained at follow-up at one-month. These findings suggest that brief, school-based mental health literacy interventions may play a valuable preventive role within the Hong Kong educational context.

To the best of our knowledge, this is among the first evaluations of an adolescent mental health literacy programme in Hong Kong, whereas previous local studies have primarily focused on college settings[21]. As participation was voluntary, the sample may be subject to self-selection bias, whereby students with a greater interest in mental health or higher baseline mental health literacy were more likely to enrol. Nevertheless, despite relatively favourable baseline levels of mental health literacy and stigma-related attitudes, interim analyses demonstrated small but statistically significant improvements in mental health literacy, help-seeking attitudes, and stigma-related outcomes immediately following the workshop, supporting the potential value of the intervention in this population. The YAP model, delivered through near-peer facilitation by trained medical students,[22] may represent a key mechanism underpinning engagement and stigma reduction. As relatable yet credible role models, near-peer facilitators likely reduced power distance, enhanced psychological safety, and facilitated discussion of sensitive topics. This approach aligns with World Health Organization youth engagement principles emphasising flexible engagement, reciprocal learning, and shared ownership, and operationalises youth-adult partnership as a feasible delivery model rather than a theoretical construct. Consistent with the HKSAR Policy Address and its "4R's" school-based education framework, such youth-led, universal mental health literacy programmes may support resilience-building[23].

The high overall participation rate supports the feasibility and acceptability of the programme within the Hong Kong secondary school context. Findings suggest that a specialist-supervised, near-peer delivery model - whereby mental health professionals provide oversight and capacity building for trained lay providers, who in turn deliver school-based workshops to adolescents - could be practicable and well-received. This pyramid-structured implementation approach provides a potential coherent pathway linking specialist input to adolescent engagement and measurable outcomes, including improvements in mental health literacy, stigma-related attitudes, and help-seeking, supporting its potential scalability within school settings.

As an interim analysis, causal conclusions regarding effectiveness cannot yet be drawn. Qualitative data exploring participants' experiences and mechanisms of change, and the longer-term followup effect are being analysed separately and are not included in the present interim report. Subsequent analyses will incorporate qualitative data and follow-up data analysis to further examine mechanisms of change and evaluate their sustained effects.

In conclusion, we suggest the Youth-Adult Partnership Mental Health Literacy Workshop (*We Children Care*) demonstrates early promise as a feasible, youth-centred, and policy-aligned universal prevention strategy for Hong Kong secondary school students. Continued evaluation will clarify its role within a broader youth mental health ecosystem.

***Acknowledgement Section**: The authors would like to express their sincere gratitude to every Wellness Buddies for their essential role in their student-led initiative. In particular, we acknowledge the dedicated contributions of We Children Care team MBBS students **Ching Kwok, Ngai Sui Xu**, and **Xi Lam Tsoi**, as the junior cohort, took an active role in supporting the programme's continuity. We also thank the HKU Med Wellness Team, especially **Ms Vincci Wan-chi Lau**, for their valuable coordination and support. We are also thankful to the schools that joined and our every participant.*

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Dermatology Quiz

Dermatology Quiz

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Dr Lai-yin CHONG

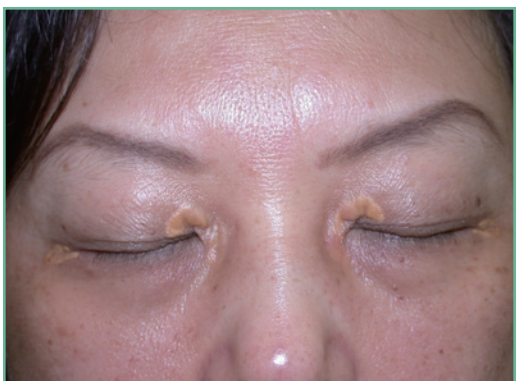


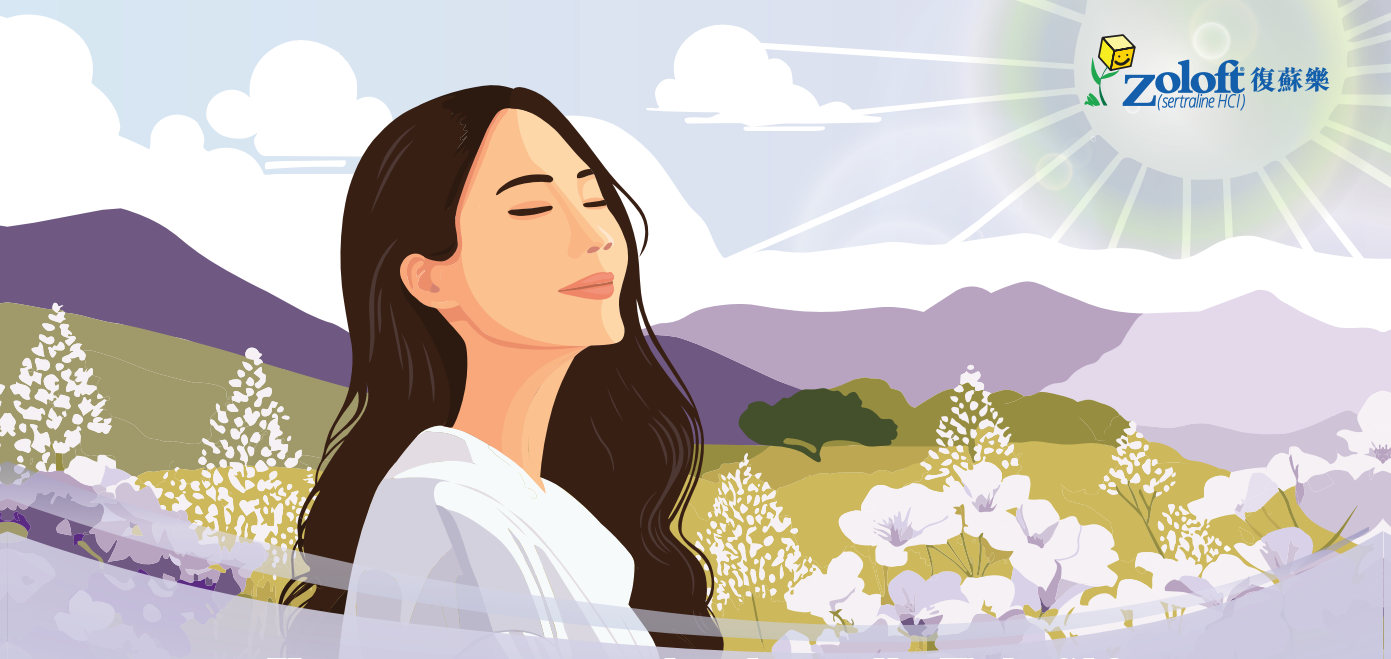
Fig. 1: Yellowish plaques at both canthus of the eyes

This middle-aged woman presented with asymptomatic lesions at the medial and lateral canthus of both eyes in the past one year (Fig. 1). She noticed the lesions gradually became larger and thicker. Her past health was good, and she did not need any regular medications. There was no relevant family history.

Questions

1. What is your spot diagnosis?
2. What are the differential diagnoses in an atypical case?
3. What investigations will you order?
4. How do you manage this condition?

(See P.33 for answers)



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	Zoloft® dosing in PTSD[1]
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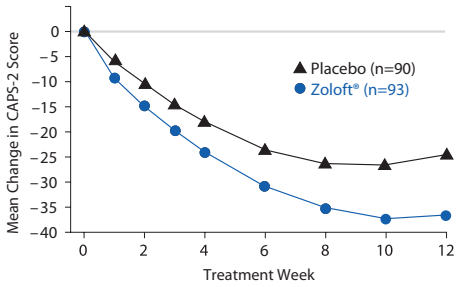
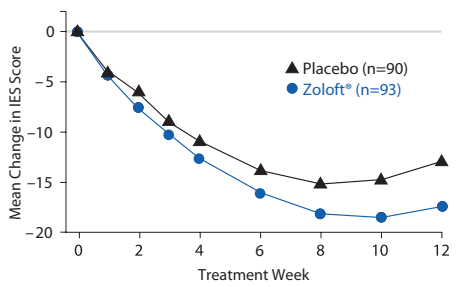
Titration	If inadequate response, increase by 50mg at ≥1-week intervals
Maximum	200mg/day

ZOLOFT® Provides Significantly Greater Improvement Than Placebo From Week 2[2]*

Mean Change in CAPS-2 Score over 12 weeks



Mean Change in IES Score over 12 weeks



Adapted from: Brady K, et al. *JAMA*. 2000.

Zoloft® demonstrated significant improvement in PTSD, with a 53% responder rate at treatment end point[2†]

Study design: This 12-week, double-blind, placebo-controlled, multicenter trial aimed to evaluate the efficacy of sertraline in reducing symptoms of moderate-to-marked PTSD. A total of 187 outpatients with a baseline Clinician Administered PTSD Scale Part 2 (CAPS-2) total score ≥50 were randomized to receive sertraline 50-200mg/day (after 1 week at 25mg/day; n=94) or placebo (n=93). Efficacy was assessed by changes from baseline to end point in CAPS-2, Impact of Event Scale (IES), Clinical Global Impression–Severity (CGI-S), and Clinical Global Impression–Improvement (CGI-I) scores[2].

*Mean change in CAPS-2 scores from baseline (top) (t_{186}= -3.68; p<0.001) and the IES score from baseline (bottom) (t_{175}= -3.00; p=0.003), estimated from random regression analyses plotted over the 12-week course of study treatment. Gray line indicates baseline. Negative change in scores reflects clinical improvement.[2]
†Compared with a placebo responder rate of 32%.[2]

Abbreviations: CAPS-2: Clinician Administered PTSD Scale Part 2; CGI-I: Clinical Global Impression–Improvement; CGI-S: Clinical Global Impression–Severity; IES: Impact of Event Scale; PTSD: Post-traumatic stress disorder.

References: 1. Zoloft® (sertraline) Prescribing Information: Version May 2024. **2.** Brady K, et al. Efficacy and safety of sertraline treatment of posttraumatic stress disorder: a randomized controlled trial. *JAMA*. 2000;283(14):1837-44.

ZOLOFT SUMMARY OF PRODUCT INFORMATION
TRADE NAME: ZOLOFT® 1. PRESENTATION: 50mg sertraline film-coated tablets. **2. INDICATIONS:** Major depressive episodes. Prevention of recurrence of major depressive episodes. Panic disorder, with or without agoraphobia. Obsessive compulsive disorder (OCD) in adults and pediatric patients aged 6-17 years. Social anxiety disorder. Post-traumatic stress disorder (PTSD). **3. DOSAGE:** Depression and OCD: Start at a dose of 50mg/day. Patients not responding to a 50mg dose may benefit from dose increases. Dose changes should be made in steps of 50mg at intervals of at least one week. Maximum dose: 200mg/day. Changes in dose should not be made more frequently than once per week. Panic Disorder, PTSD and Social Anxiety Disorder: Initially 25mg/day and dose should be increased to 50mg once daily after one week. Patients not responding to a 50mg dose may benefit from dose increases. Dose changes should be made in steps of 50mg at intervals of at least one week. Maximum dose: 200mg/day. Changes in dose should not be made more frequently than once per week. Maintenance: lowest effective level. Use in children with OCD: (aged 13-17) initially 50mg/day, (aged 6-12) initially 25mg/day, may be increased to 50mg/day after one week. Subsequent dose titration may be made in 50mg increments over a period of some weeks as needed. Maximum dose: 200mg/day. Dose changes should not occur at intervals of less than one week. **4. CONTRAINDICATIONS:** Hypersensitivity to the active substance or any of the excipients. Concomitant treatment with irreversible monoamine oxidase inhibitors (MAOIs) and pimozide. Linezolid. **5. WARNINGS & PRECAUTIONS:** Development of serotonin syndrome or Neuroleptic Malignant Syndrome. Switching from Selective Serotonin Reuptake Inhibitors (SSRIs), antidepressants or anti-obsessional drugs, particularly fluoxetine. Co-administration of sertraline with other drugs that enhance the effects of serotonergic neurotransmission such as amphetamines, tryptophan or fenfluramine or 5-HT agonists or the herbal medicine, St. John's Wort should be undertaken with caution and avoided whenever possible. QTc Prolongation/Torsade de Pointes (TdP). Activation of Mania/Hypomania. Schizophrenia. Seizures, avoid in unstable epilepsy and carefully monitor in controlled epilepsy. Suicide/suicidal thoughts/suicide attempts or clinical worsening. Sexual dysfunction. Pediatric population: should not be used in the treatment of children and adolescents under the age of 18 years except for patients with OCD aged 6-17 years old. Caution with concomitant use with drugs known to affect platelet function, as well as in patient with history of bleeding disorders. Increased risk of postpartum hemorrhage. Hyponatremia. Withdrawal symptoms with discontinuation of sertraline treatment. Akathisia/psychomotor restlessness. Patients with hepatic impairment need lower or less frequent dose, should not be used in patients with severe hepatic impairment. Patients with diabetes may need insulin and/or oral hypoglycemic dosage adjustment. Grapefruit juice is not recommended. Patient with angle-closure glaucoma or history of glaucoma should use with caution. **6. INTERACTIONS:** MAOIs, pimozide, CNS depressants, alcohol, other serotonergic drugs, drugs that prolong the QT interval, lithium, phenytoin, metamizole, triptans, warfarin, cimetidine, drugs that affect platelet function (e.g. NSAIDs, acetylsalicylic acid and ticlopidine), neuromuscular blockers, drugs metabolized by cytochrome P450. **7. PREGNANCY AND LACTATION:** Use in pregnancy and nursing mother is not recommended. **8. SIDE EFFECTS:** Upper respiratory tract infection, pharyngitis, rhinitis, decreased appetite, increased appetite, insomnia, anxiety, depression, agitation, libido decreased, nervousness, depersonalization, nightmare, bruxism, dizziness, headache, somnolence, tremor, movement disorders, paresthesia, hypertonia, disturbance in attention, dysgeusia, visual disturbance, tinnitus, palpitations, hot flush, yawning, nausea, diarrhea, dry mouth, dyspepsia, constipation, abdominal pain, vomiting, flatulence, hyperhidrosis, rash, back pain, arthralgia, myalgia, ejaculation failure, menstruation irregular, erectile dysfunction, fatigue, malaise, chest pain, asthenia, pyrexia, weight increased, injury. Reference: HK LPD (MAY 2024) Date of preparation: OCT 2024 Identifier number: ZOLO1024 **FULL PRESCRIBING INFORMATION IS AVAILABLE UPON REQUEST.**

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48%↓ in HAM-A in monotherapy with 20 - 60 mg/day*

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Better Quality of Life (QoL)[2-3]

50%↑ QoL enjoyment and satisfaction in monotherapy*

39%↑ QoL enjoyment and satisfaction in adjunctive therapy*^

*compared to placebo at week 6 ^with lithium/valproate

Well-established Safety Profile[2-4]

No or Minimal Noticeable Effect on Weight and Metabolic Parameters - BMI, Prolactin, ECG parameters[2,4]

Low Occurrence of Serious AEs[2,3]

Indications[1]

No initial dose titration is required[1]

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BIPOLAR I DEPRESSION

- Adults 20-120 mg/day
- Adolescents (13-17 years) 20-80 mg/day

Abbreviations: BMI= Body Mass Index, ECG= Electrocardiography, HAM-A= Hamilton Anxiety Rating Scale, MADRS= Montagometry-Asberg Depression Rating Scale, QoL= Quality of Life, SDS= Sheehan Disability Scale

References: 1. LATUDA® Hong Kong Prescribing Information. Feb 2023. 2. Loebel A, et al. Am J Psychiatry. 2014; 171(2):160-168.3. Loebel A, et al. Am J Psychiatry. 2014; 171(2): 169-177. 4. Tocco M et al. CNS Spectr.2023;28(6):680-687.

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Current Management of Tic Disorders and Tourette Syndrome

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INTRODUCTION

Tic disorders are common neurodevelopmental conditions affecting 1-3 % of school-aged children[1], with Tourette's prevalence around 0.5 %-1 %. They are 3-4 times more common in boys. The condition often started between ages 4-6, peaking in severity at ages 10-12, and often improving by adulthood[2]. Tic Disorders are not uncommon in China. According to a meta-analysis study, the prevalence of transient tic disorder (TTD), chronic tic disorder (CTD), and Tourette Syndrome (TS) were 1.7 %, 1.2 %, and 0.3 %, respectively[3]. Treating tic disorders is crucial for improving daily functioning, as tics often cause significant social or educational impairment to the patients. Male gender, positive family history of tic disorders and parental mental illness are important risk factors for developing tic disorders[8].

WHAT IS TIC

Tic is a sudden, rapid, recurrent, non-rhythmic motor movement or vocalisation. All tics are involuntary movements, but can be voluntarily suppressed for seconds to hours; this suppression causes mounting tension that eventually requires release.

Tics waxing and waning in frequency and severity, they are often preceded by uncomfortable sensory sensations known as premonitory urges (pressure, tension, or itch) which are temporarily relieved by the movement. Tics can be exacerbated by stress, fatigue, or excitement and subside once a person is fully asleep. The differential diagnosis of tics may include dystonia, chorea, stereotypes, athetosis and myoclonus.

Two parameters are frequently used to describe tics, namely motor tic vs vocal tic, simple tic vs complex tic.

Simple motor tics involve a few muscle groups, often appear in the face, neck, or shoulders. Common examples include facial grimacing, rapid eye blinking, nose twitching, shoulder shrugging, head jerking, or mouth movements.

Complex motor tics are distinct, coordinated, and repetitive movements involving multiple muscle groups, often appearing purposeful or habitual, such as touching objects, hopping, mimicking gestures or complex facial contortions.

Vocal tics are rapid, and repetitive sounds produced by moving air through the nose/mouth or throat. Common examples of simple vocal tics include throat clearing, grunting, sniffing, barking, and coughing. Some simple vocal tics are often mistaken for respiratory illnesses.

Complex vocal tics often involve context-inappropriate sounds or phrases that last longer and are more structured than simple vocal tics. Examples include shouting words, repeating phrases and uttering socially inappropriate words.

Coprolalia and Copropraxia

Coprolalia is the uncontrollable utterance of obscenities and profanities[12] while Copropraxia is a tic consisting of involuntarily performing obscene or forbidden gestures. They are complex tics which are considered among the most socially disabling symptoms of Tourette Syndrome (TS) because they involve involuntary behaviours that are often misinterpreted as intentional or offensive. The emergence of coprophenomena should prompt clinicians to consider starting pharmacological treatment earlier.

Classification:

DSM-5-TR[8] Classified Tic Disorders into three sub categories:

- **Tourette's Disorder (307.23)**: Multiple motor tics AND at least one vocal tic must be present, though not necessarily concurrently, for more than one year.
- **Persistent (Chronic) Motor or Vocal Tic Disorder (307.22)**: Single or multiple motor OR vocal tics (but not both) present for more than one year.
- **Provisional Tic Disorder (307.21)**: Single or multiple motor and/or vocal tics present for less than 12 months.
- **Other Specified/Unspecified Tic Disorder (307.20)**: Symptoms that cause distress/impairment but do not meet full criteria for the above, or insufficient information is available.

Current Management Paradigms

First-Line: Psychoeducation and Behavioural Therapy

Psychoeducation: Education and Reassurance are the most important steps, explaining to patients and their

parents that tics are involuntary, neurobiological, wax-and-wane movements that are often worsened by stress, fatigability, or excitement. This can help the patient and his family to reduce anxiety towards the tics. Education to teachers and peers is also essential to reduce stigma and the subsequent psychosocial stress that occurs in school.

Comprehensive Behavioural Intervention for Tics (CBIT):

CBIT is a first-line, non-pharmacological intervention for tic disorders; it helps reduce tic severity by training individuals to manage urges to perform tic movements. CBIT is highly effective for both children and adults. The treatment programme consists of three main components, which are often delivered over 8-10 sessions[11]:

- **Awareness Training**: Guide patients to recognise their premonitory urge that precedes a tic.
- **Habit Reversal Training (HRT)**: Assist patients to develop a "competing response" (a physical act that is incompatible with the tic) to perform when they feel the urge.
- **Functional Intervention**: Help patients identify and modify environmental, emotional, or situational factors that worsen tics.

Second-Line: Pharmacotherapy

When behavioural approaches are ineffective or not feasible, and the tics cause significant physical discomfort/social distress or interfere with learning, pharmacological treatment is indicated, alone or in combination with behavioural therapy.

- **Alpha-2 Agonists**: The Maudsley Prescribing guidelines in the U.K. - (14th ed) suggest Clonidine and Guanfacine as first-line medication to be used due to its safety profile, but the efficacy was being questioned because there are relatively few placebo-controlled trials and the studies are often of poor quality and short duration[4]. α2 adrenergic agonists may help to treat both disorders for patients with co-morbid Attention Deficit Hyperactivity Disorder (ADHD). Guanfacine is not yet available in Hong Kong. Prescription of Clonidine can be started with 0.05 mg at bedtime. Increase as needed and as tolerated by 0.05 mg every 4 to 7 days to a maximum dosage of 0.3 to 0.4 mg/day divided into three or four times a day[10].
- **Dopamine antagonist**: The largest amount of evidence supports the use of dopamine antagonist[7]. Aripiprazole and Risperidone are often preferred over first-generation antipsychotics such as haloperidol, due to their more favourable profile of adverse events. The initial dose of Aripiprazole was 1.25 mg/day to be gradually increased up to 10 or 15 mg/day, depending on the child's weight[9]. Risperidone can be started with 0.01 mg/kg/dose once a day[10].
- **Other agents**: 1st generation antipsychotics, Topiramate, vesicular monoamine transporter 2 (VMAT2) Inhibitors such as Tetrabenazine are occasionally used in specialist settings for treatment-resistant individuals. Botulinum toxin injections may be effective in treating focal motor tics[5].

Managing Comorbidities

It is crucial to recognise that Tic Disorders patients often have other co-morbidities like Attention Deficit Hyperactivity Disorder ADHD (30-50 %) and Obsessive-compulsive disorder OCD (10-50 %)[1] which often exacerbate patient's functional impairment. Indeed, the co-morbid condition often caused more impairment than the tics. Concerning ADHD, stimulants are effective but require careful monitoring as they may sometimes worsen the tics. Non-stimulants like Atomoxetine or alpha-2 agonists (Clonidine, Guanfacine) are alternatives. In patients with co-morbid OCD or Anxiety Disorders, selective serotonin reuptake inhibitors should be considered as the primary treatment. Psychological treatment, such as Exposure and Response Prevention (ERP) should be arranged for patients with OCD.

SUMMARY

Tic disorders are classified as neurodevelopmental disorders, characterised by sudden, rapid, recurrent, non-rhythmic motor movements or vocalisations. Tic disorders include Tourette Syndrome, Persistent (Chronic) Motor/Vocal Tic Disorder, and Provisional Tic Disorder. The tics may wax and wane in frequency, but symptoms must start before age 18. Tic Disorders are often accompanied by a variety of behavioural co-morbidities such as Attention Deficit Hyperactivity Disorder and Obsessive-Compulsive Disorder. The management of Tic Disorders includes behavioural interventions such as Comprehensive Behavioural Intervention for Tics (CBIT) and pharmacological options such as risperidone or α-agonists. Screening and managing the co-morbid psychiatric condition is as crucial as controlling the tics themselves.

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CSI 資本策略 PROPERTIES

Echo Chambers For The Young: The Artificial Intelligence Therapist Fallacy

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Over the past decade, the number of adolescents who face mental health problems has risen. Amid obstacles such as limited access to professional services, long waiting times, negative labelling and stigma, an increasing number of adolescents are turning towards artificial intelligence (AI) for emotional support. This article reviews the prevalence of mental health disorders among children and adolescents in Hong Kong, as well as existing barriers hindering access to professional care; the advantages of using AI in the provision of emotional support, along with the limitations and potential risks of using AI in psychotherapy; and possible future directions for integrating AI with mental health service provision.

CURRENT TRENDS IN ADOLESCENT MENTAL HEALTH

Despite advances in public access to mental health care services, the mental health conditions of children and adolescents in Hong Kong remain a significant public health concern. Recent data indicate a persistently high prevalence of 24-25 % for psychiatric disorder among this population, with the most common conditions including attention-deficit/hyperactivity disorder; disruptive, impulse-control, and conduct disorders; and mood disorders[1]. Despite these alarming figures, the proportion of affected youths who receive professional help remains low. For example, in a study examining help-seeking behaviours among adolescents with insomnia, only 10 % reported having sought treatment[2]. Similarly, among university undergraduates in Hong Kong who are experiencing moderate to severe depressive symptoms, only 25 % have sought professional assistance[3]. This reluctance to seek help is a globally observed pattern among young people. Common barriers include the need for adult referral, concerns regarding confidentiality and trust, fear of negative labelling, stigma associated with seeking help, and limited service accessibility[4].

In the contemporary digital era, artificial intelligence (AI) driven conversational agents (CAs), commonly referred to as chatbots, have rapidly proliferated. These tools are increasingly viewed as potential alternatives or supplements to traditional psychotherapy, as they can simulate human-like interactions and engage with users in therapeutic dialogue. Available programmes range from general-purpose systems with open-ended conversational capabilities, such as ChatGPT, to domain-specific applications such as Woebot, a clinically designed chatbot delivering cognitive behavioural therapy (CBT) based exercises[5]. Regarding communication modalities, text-based interaction remains the most common format, while combined voice-and-text interfaces represent the second most prevalent modality and may enhance user engagement and emotional connection[6].

THE BENEFITS OF ARTIFICIAL INTELLIGENCE IN PSYCHOTHERAPY

Compared with conventional in-person psychotherapy delivered in clinical settings, mental health chatbots offer compelling advantages that directly address long-standing gaps in mental health care access. They provide immediate on-demand support with complete temporal and geographical flexibility, allowing users to engage at any time and from any location via smartphones or computers. Unlike traditional services which often involve high costs, long waiting lists, and complex referral pathways, chatbot-based interventions are typically free or low-cost and require no waiting time. Crucially, young people can access these tools independently, without adult mediation, thereby overcoming structural and developmental barriers that frequently delay or prevent help-seeking. In addition, digital interaction may reduce stigma, fear of judgement, and concerns about prejudice from professionals - factors that are well documented to deter youths from seeking formal care. The rapid uptake of these technologies further underscores their perceived value. In fact, the use of mental health chatbots and virtual therapists increased by approximately 320 % between 2020 and 2022[7]. In the United States alone, 13.1 % of youths (approximately 5.4 million individuals) reported using generative AI for mental health advice; among these users, 65.5 % engaged with such tools at least on a monthly basis, and 92.7 % found the advice helpful[8]. Taken together, these findings suggest that AI-based support is not merely a technological novelty but an acceptable pathway to care for a population that is otherwise underserved.

Beyond accessibility, growing empirical evidence indicates that AI chatbots can deliver meaningful therapeutic benefits, particularly for early intervention and ongoing self-management. Studies have

demonstrated their effectiveness in providing psychoeducation, enhancing treatment adherence, and supporting health-promoting behaviours such as medication compliance, physical activity, and sleep hygiene[9]. Perhaps more importantly, chatbot-based interventions have shown the capacity to reduce symptoms of subclinical distress and mild-to-moderate mood disorders, particularly for depression and anxiety, both of which are conditions that account for a substantial proportion of youth mental health burdens. This is supported by evidence from both adult and youth samples, which indicate reductions in stress, anxiety, and depressive symptoms following chatbot use[9,10]. Meta-analytic findings focusing on children and adolescents further support the use of AI chatbot in reducing psychological distress. However, current evidence does not demonstrate significant improvements in overall psychological well-being[9,10,11]. This may reflect that psychological well-being is relatively resistant to improvement, and it typically requires sustained, long-term intervention to produce meaningful change[10].

LIMITATIONS AND POTENTIAL RISKS OF USING ARTIFICIAL INTELLIGENCE IN PSYCHOTHERAPY

While the emerging evidence supports the promise of AI chatbots as accessible tools for early intervention and symptom management, we must also give careful consideration to their limitations and potential risks. The very characteristics that make these technologies appealing, such as immediacy, anonymity, and round-the-clock availability, may also introduce clinical, ethical, and safety challenges. This is especially evident when these tools are used without professional guidance. As AI tools become increasingly embedded in the help-seeking patterns of young people, it becomes essential that we designate appropriate roles to these tools. Without clear boundaries, safeguards, and empirical validation, the rapid adoption of AI in mental health contexts may outpace the evidence base needed to ensure safe and effective use. Accordingly, concerns have been raised by professional bodies such as the American Psychological Association, which noted in its 2025 health advisory that even well-designed GenAI tools currently lack sufficient scientific evidence for delivering psychotherapy and should not be relied upon as stand-alone treatment[12].

A primary limitation is that AI is incapable of replicating the genuine empathy and human nuance inherent in human decision-making, which are intrinsic components of effective psychotherapy. While AI is able to respond in a caring tone and mimic different therapeutic techniques, it struggles to interpret subtle emotional cues, unspoken emotions, or nonverbal cues[13]. This often leads to superficial interactions between AI and the user, which impedes the formation of epistemic trust and authentic therapeutic relationships, an irreplaceable element for effecting meaningful change in psychotherapy, as psychotherapy requires therapists to hold a safe space for clients to experience discomfort, confrontation and growth[14].

Another critical risk of adolescents using AI involves safety issues associated with the tool's tendency to mishandle crisis situations. Studies suggest that AI often mishandle suicidal risk and intention to self-harm, as well as validate delusions and reinforce negative self-images[15,16]. Given that adolescence is a developmental stage characterised by impulsivity and still-developing critical thinking abilities, adolescents are more prone to suggestion and less able to critically evaluate the responses provided by AI. AI chatbots are always available and always offer non-judgement responses and validation, which can seem appealing to adolescents who are facing interpersonal relationship issues or family conflicts. However, without the nuanced confrontation or thought-challenging actions that only human therapists can provide, maladaptive thinking patterns or behaviours could end up being reinforced instead of alleviated. For adolescents suffering from more severe mental health conditions, including mood disorders or emerging personality difficulties, reliance on AI chatbots may delay their access to professional help[17]. Unfortunately, there have been several documented adolescent cases, which reveal that prolonged interaction with AI chatbots can worsen mental states. For instance, we look towards the case of a 14-year-old boy from the United States who committed suicide after he became attached to an AI chatbot. From examining conversation records between the boy and the AI chatbot, it has been found that the boy had confided to the AI chatbot about his suicidal thoughts. The AI chatbot reportedly however, did not discourage these suicidal thoughts in response[18].

LOOKING TOWARDS THE FUTURE - THE BEST PRACTICE

Despite the aforementioned potential risks, there is in fact, a place for AI in mental health treatment, and the best practice emphasises integrating AI with professional psychotherapy , using it as a supplementary tool rather than a sole solution. There are AI-tools that provide between-session support such as skill reminders and mood tracking. This creates a hybrid psychological intervention model, which allows clients to track their progress via AI-tools, while reserving difficult emotional work for in-person sessions. Studies in general adult populations suggest a reduction in mood symptoms when hybrid models are adopted[19]. There is also an emerging trend to involve AI agents (i.e., an AI model, which unlike passive models such as chatbots, that acts automatically to achieve specific goals through its perception of the environment, reasoning and planning) in identifying high-risk clients. Therapists are encouraged to evaluate the AI tools before using them with clients, to stay updated on the development of AI tools, and be aware of their potential risks.

The increasing prevalence of adolescents turning to AI chatbots for emotional support underscores their compelling appeal and limitations. While AI chatbots provide benefits such as continuous availability, early intervention and symptom relief for subclinical distress and mild-to-moderate mood disorders, they cannot adequately manage the complexities of more severe conditions. Moreover, the limitations and potential risks of using AI should not be overlooked. Its inability

to replicate genuine empathy, mishandling of crises, and its potential for perpetuating users' maladaptive thinking and behavioural patterns. Prospectively, the strategy forward lies in a stratified hybrid approach: AI can serve as a first-line resource for individuals with low-to-moderate-severity conditions, while individuals with high-severity conditions mandate the integration of in-person psychotherapy and adjunct support from AI. By tackling existing clinical, ethical and safety challenges, the hybrid approach can fill the gaps in adolescent mental health services, thereby fostering equitable access for all adolescents in need.

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The Digital Pacifier: A Speech Therapist Mom's Note on Reclaiming Connection

Ms Kelly KY KWONG

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INTRODUCTION

It is 7:00 PM on a Tuesday. I have just finished a full day of clinic, seeing children with language delays, autism, and articulation disorders. My brain is fried. I come home to my own "client", my wonderful, energetic, and demanding 9-month-old boy. He is at that beautiful age when everything is a discovery, and everything must go into his mouth. He is also teething and clinging to my leg.

In that moment of sheer exhaustion, I feel the itch. My phone is right there on the counter. It would be so easy to prop him up with a sensory fruit video on YouTube, just to buy myself 15 minutes of silence to wash my face and decompress. I am a Speech Therapist; I know the science inside out. And yet, I am also a mother. I know exactly how seductive the "digital babysitter" is.

We often talk about screen time in clinical terms, but we rarely talk about the guilt and the reality of modern parenting. Walking through a restaurant in Hong Kong, seeing tables of silent children glued to iPads, I don't judge. I understand the urge. But as I look at my son, I constantly remind myself of what my professional training has taught me: those 15 minutes of silence come at a cost. In the critical window of early childhood, the absence of bidirectional interaction is not just a quiet moment; it is a missed opportunity for building the brain architecture my son needs to thrive.

THE "SERVE AND RETURN" OF A 9-MONTH-OLD

To understand why I resist the screen (most of the time), we have to look at what is happening inside a baby's head. The Harvard Center on the Developing Child calls it "Serve and Return".

My son is currently mastering the art of the "serve". He babbles "ba-ba-ba", he points at the ceiling fan with his chubby finger, or he deliberately drops his toy on the floor for the tenth time, holding my gaze. He is serving the ball. He is waiting for me to return it.

When I smile back, say "Yes, that's the fan!", or pick up the toy, I am not just playing. I am building neural connections. This back-and-forth is the biological foundation of his stress regulation and attachment. When I respond, his brain floods with safety signals. He learns, "I speak, and the world answers. I matter".

If I were to replace my face with a screen during these moments, the "Still Face" effect takes over, and the game stops. He serves, but the iPad doesn't smile back. It doesn't widen its eyes in mock surprise. The "return" never comes. If this happens chronically, the child eventually stops serving. They retreat. As a therapist, I have seen this "silencing" in the clinic, and it gives me pause. As a mom, it motivates me to put the phone down, even when I am tired.

THE SPEECH THERAPIST'S LENS: JOINT ATTENTION

Parents often ask me, "But isn't this educational app teaching him colours?" It is a fair question. But here is the "insider secret" from speech therapy: Language is not just labelling; it is sharing.

My 9-month-old doesn't learn the word "dog" because a screen flashes a picture of a poodle. He learns "dog" because we are walking outside, a dog barks, he gets startled, looks at me for reassurance, and I say, "Wow, dog, woof woof".

This is Joint Attention, two people sharing a focus on the same object. It is the secret sauce of language learning. Screens sever this triangle. A child locked into a device is isolated. They might learn to recite "A-B-C", but they miss expressive language skills and the ability to look at another human to share a thought, a need, an emotion. I want my son to do more than recite; I want him to communicate.

THE MENTAL HEALTH RIPPLE EFFECT

The stakes feel even higher when we talk about mental health. We often overlook the fact that a child's behaviour is their primary way of communicating before they have a full vocabulary. When a toddler throws a tantrum, they are often saying "I am overwhelmed, and I don't have the words to tell you!" Screens complicate this because they hijack the dopamine reward system. They offer high stimulation with zero effort. Real life, with its delays and boredom, feels intolerably slow by comparison. I see this when I take the iPad away from young clients. The meltdown is not just anger; it is a dopamine crash.

I want my son to learn how to be bored. I want him to stare at the ceiling fan and wonder how it works,

rather than needing constant digital entertainment. Boredom is the birthplace of creativity. By plugging every gap with a screen, we risk raising a generation that cannot self- soothe.

A DOWN-TO-EARTH PRESCRIPTION

So, am I a perfect, screen-free mother? Absolutely not. We video call his grandparents (which is interactive and healthy!). I check emails, but I try to stick to a few "guilt-free" rules that work for our chaotic life:

1. **The Transition Rule**: I protect the transition times. Meals, bath time, and the moments right after I come home from work are "phone-free zones". These are our prime connection times. I put my phone in my handbag, zipped it, so I am not tempted to check a notification while feeding him his finger food.

2. **Narrating the Mess**: I don't set aside "teaching time". I just narrate my life. As I am cleaning up his scattered toys, I say, "Up goes the block. In goes the bear". It feels silly, but this "sportscasting" bathes him in language without requiring extra energy.

3. **Co-Viewing**: If I do need five minutes and I put on a video, I try to sit with him. I become the narrator. "Oh, look at the monkey! He is jumping!" I try to bridge the gap between his digital world and our real one.

CONCLUSION

Tonight, after I finish this article, I will leave my room and find my son in the living room, demanding to be held, demanding to play. I will get on the floor, choose his favourite toy and play with him. Because I know that the most sophisticated, interactive, and educational app ever created is already in his nursery, it's me. And for your children, it's you.

Fig. 1: This is Joint Attention, two people sharing a focus on the same object. It is the secret sauce of language learning (Personal collection)

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Medical Diary of July

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	★ HKMA CME Portal (Online) HKMA-KWC CME Online Lecture Series on Common Medical Conditions for GP in 2026 Topic: Common Hematological Problems: Paraproteinemia, Thrombocytopenia, Thrombocytosis, Neutropenia and Macrocytosis 6	★ In-person / HKMA CME Portal (Online) HKMA-HKSH CME Programme 2026 Topic: The Crying Child - Decoding the Paediatric Acute Abdomen ★ Certificate Course on Practical Ultrasound Approach to Common Clinical Problems 2026 - from Basic to Advance (Video Lectures) 7	★ The Hong Kong Neurosurgical Society Monthly Academic Meeting - To be confirmed 8	★ Certificate Course on Latest Advancement of Nuclear Medicine 2026 (Video Lectures) 9	10	11
12	13	★ In-person The HKMA CME Lecture in Physical Attendance Mode Topic: Bridging the Gap: Evidence-Based Treatment of Hot Flushes and Night Sweats in Primary Care ★ Certificate Course on Practical Ultrasound Approach to Common Clinical Problems 2026 - from Basic to Advance (Video Lectures) 14	15	★ Certificate Course on Latest Advancement of Nuclear Medicine 2026 (Video Lectures) 16	17	18
19	20	★ Certificate Course on Practical Ultrasound Approach to Common Clinical Problems 2026 - from Basic to Advance (Video Lectures) 21	22	★ In-person The HKMA CME Lecture in Physical Attendance Mode Topic: Shoulder Pain, Frozen Shoulder, Shoulder Sports Injuries ★ Certificate Course on Latest Advancement of Nuclear Medicine 2026 (Video Lectures) ★ FMSHK Foundation Meeting ★ FMSHK Executive Committee Meeting 23	24	25
26	27	★ In-person / HKMA CME Portal (Online) HKMA-HKWC CME Hybrid Lecture Topic: PHI and Prostate Cancer Survivorship ★ Certificate Course on Practical Ultrasound Approach to Common Clinical Problems 2026 – from Basic to Advance (Video Lectures) 28	29	★ Certificate Course on Latest Advancement of Nuclear Medicine 2026 (Video Lectures) 30	31	

Date / Time	Function	Enquiry / Remarks
6 MON 2:00 PM	**HKMA CME Portal (Online)** **HKMA-KWC CME Online Lecture Series on Common Medical Conditions for GP in 2026** Topic: Common Hematological Problems: Paraproteinemia, Thrombocytopenia, Thrombocytosis, Neutropenia and Macrocytosis Organisers: The Hong Kong Medical Association and Kowloon West Cluster of HA Speaker: Dr Vivien Wai-man MAK	HKMA CME Dept. Tel: 2527 8452 1 CME Point
7 TUE 2:00 PM	**In-person / HKMA CME Portal (Online)** **HKMA-HKSH CME Programme 2026** **Topic: The Crying Child - Decoding the Paediatric Acute Abdomen** Organisers: The Hong Kong Medical Association and Hong Kong Sanatorium & Hospital Speaker: Dr Yvonne Chi-lun LEUNG Venue: The HKMA Wanchai Premises, 5/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	HKMA CME Dept. Tel: 2527 8452 1 CME Point
7:00 PM	**Certificate Course on Practical Ultrasound Approach to Common Clinical Problems 2026 - from Basic to Advance (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & Hong Kong Society for Ultrasound in Medicine Speaker: Dr Grace HO	Tel: 2527 8898
8 WED 7:30 AM	**The Hong Kong Neurosurgical Society Monthly Academic Meeting - To be confirmed** Organiser: Hong Kong Neurosurgical Society Speaker(s): Dr Ivy Kai-yi HUANG Chairman: Dr Tony Kam-tong CHAN Venue: Seminar Room, G/F, Block A, Queen Elizabeth Hospital; or via Zoom meeting	CME Accreditation College: 1.5 points College of Surgeons of Hong Kong Dr Jason Chow Tel: 2595 6456 Fax. No.: 2965 4061
9 THU 7:00 PM	**Certificate Course on Latest Advancement of Nuclear Medicine 2026 (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & Hong Kong Society of Nuclear Medicine and Molecular Imaging Speaker: Dr Gary CHAN	Tel: 2527 8898
14 TUE 2:00 PM	**In-person** **The HKMA CME Lecture in Physical Attendance Mode** **Topic: Bridging the Gap: Evidence-Based Treatment of Hot Flushes and Night Sweats in Primary Care** Organiser: The Hong Kong Medical Association Speaker: Dr Menelik Man-hin LEE Venue: The HKMA Wanchai Premises, 5/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	HKMA CME Dept. Tel: 2527 8452 1 CME Point
7:00 PM	**Certificate Course on Practical Ultrasound Approach to Common Clinical Problems 2026 - from Basic to Advance (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & Hong Kong Society for Ultrasound in Medicine Speakers: Dr Francis MOK & Dr Wisely TANG	Tel: 2527 8898
16 THU 7:00 PM	**Certificate Course on Latest Advancement of Nuclear Medicine 2026 (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & Hong Kong Society of Nuclear Medicine and Molecular Imaging Speaker: Dr Tsz-kit CHOW	Tel: 2527 8898
21 TUE 7:00 PM	**Certificate Course on Practical Ultrasound Approach to Common Clinical Problems 2026 - from Basic to Advance (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & Hong Kong Society for Ultrasound in Medicine Speaker: Dr Nicholas SO	Tel: 2527 8898
23 THU 2:00 PM	**In-person** **The HKMA CME Lecture in Physical Attendance Mode** **Topic: Shoulder Pain, Frozen Shoulder, Shoulder Sports Injuries** Organiser: The Hong Kong Medical Association Speaker: Dr Kam-to SIU Venue: Chalet, Lower Lobby Level, Langham Hotel, 8 Peking Road, Tsim Sha Tsui, Kowloon	HKMA CME Dept. Tel: 2527 8452 1 CME Point
7:00 PM	**Certificate Course on Latest Advancement of Nuclear Medicine 2026 (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & Hong Kong Society of Nuclear Medicine and Molecular Imaging Speaker: Dr Julio KWOK	Tel: 2527 8898
7:00 PM	**FMSHK Foundation Meeting** Organiser: The Federation of Medical Societies of Hong Kong Venue: Council Chamber, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms Mabel TSANG Tel: 2527 8898
8:00 PM	**FMSHK Executive Committee Meeting** Organiser: The Federation of Medical Societies of Hong Kong Venue: Council Chamber, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms Mabel TSANG Tel: 2527 8898
28 TUE 2:00 PM	**In-person / HKMA CME Portal (Online)** **HKMA-HKWC CME Hybrid Lecture** **Topic: PHI and Prostate Cancer Survivorship** Organisers: The Hong Kong Medical Association and Hong Kong West Cluster Speaker: Dr John Shung-lai LEUNG Venue: Central & Western District Health Centre, 7/F & 8/F, 308 Central Des Voeux, No. 308 Des Voeux Road Central, Sheung Wan, Hong Kong	HKMA CME Dept. Tel: 2527 8452 1 CME Point
7:00 PM	**Certificate Course on Practical Ultrasound Approach to Common Clinical Problems 2026 - from Basic to Advance (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & Hong Kong Society for Ultrasound in Medicine Speakers: Dr Richard IP & Dr Alan CHONG	Tel: 2527 8898
30 THU 7:00 PM	**Certificate Course on Latest Advancement of Nuclear Medicine 2026 (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & Hong Kong Society of Nuclear Medicine and Molecular Imaging Speaker: Dr Wai-ip LI	Tel: 2527 8898

Answers to Dermatology Quiz

Answers:

1. Xanthelasma palpebrarum
   This is the most common cutaneous xanthoma, characterised by well-demarcated yellowish plaques over eyelids, most commonly over the inner canthus of the upper lid.

2. Clinically the diagnosis is usually straightforward. In an atypical case, the differential diagnoses include necrobiotic xanthogranuloma, periocular xanthogranuloma, syringomas, palpebral sarcoidosis, and sebaceous hyperplasia.

3. Lipid profile must be done. Other tests like blood sugar, liver function test and thyroid function test should be considered. Xanthelasma by itself is harmless, but it can be linked to dyslipidaemia, diabetes mellitus, fatty liver disease, hypothyroidism, or cardiovascular disease. However, about 50 % of patients have normal serum lipid levels. In patients with hyperlipidaemia should be treated accordingly. Nevertheless, the patient should be informed that even if the lipid levels are normalised, xanthelasma usually persists.

4. Xanthelasma, though harmless, causes cosmetic concern for most patients. Various treatment options include chemical peeling with trichloroacetic acid (TCAA), cryotherapy, laser or radiofrequency treatment, or surgical excision with or without blepharoplasty and medial epicanthoplasty. Each modality has its own advantages and disadvantages. Patients must be informed beforehand about the possible complications and the chance of recurrence. Post-operative risks include persistent erythema, dyspigmentation, scarring or ectropion. Recurrence is common regardless of mode of treatment, and about one quarter occurs within the first year.

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面對全球醫療領域最迫切的挑戰與機遇，本屆高峰會以「躍變：從突破發現到影響全球 EXPONENTIAL – From Breakthrough Discoveries to Global Impact」為主題，匯聚來自臨床、科技、高校、藥械、保險、資本、政策等七大關鍵領域的全球領導者，共同探索全球醫療保健鏈。

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