Alignment of mental health and HIV services 1

From surviving to thriving: integrating mental health care into HIV, community, and family services for adolescents living with HIV

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Adolescents are a crucial generation, with the potential to bring future social and economic success for themselves and their countries. More than 90% of adolescents living with HIV reside in sub-Saharan Africa, where their mental health is set against a background of poverty, familial stress, service gaps, and an HIV epidemic that is now intertwined with the COVID-19 pandemic. In this Series paper, we review systematic reviews, randomised trials, and cohort studies of adolescents living with and affected by HIV. We provide a detailed overview of mental health provision and collate evidence for future approaches. We find that the mental health burden for adolescents living with HIV is high, contributing to low quality of life and challenges with adherence to antiretroviral therapy. Mental health provision is scarce, infrastructure and skilled providers are missing, and leadership is needed. Evidence of effective interventions is emerging, including specific provisions for mental health (eg, cognitive behavioural therapy, problem-solving, mindfulness, and parenting programmes) and broader provisions to prevent drivers of poor mental health (eg, social protection and violence prevention). We provide evidence of longitudinal associations between unconditional government grants and improved mental health. Combinations of economic and social interventions (known as cash plus care) could increase mental health benefits. Scalable delivery models include task sharing, primary care integration, strengthening families, and a pyramid of provision that differentiates between levels of need, from prevention to the care of severe disorders. A turning point has now been reached, from which complacency cannot persist. We conclude that there is substantial need, available frameworks, and a growing evidence base for action while infrastructure and skill acquisition is built.

Introduction

The global HIV pandemic continues, and is now embedded within the COVID-19 pandemic—increasing mental health challenges worldwide. Adolescents (aged 10–19 years) living with HIV are caught up in this syndemic. Of the 1·7 million adolescents living with HIV globally, 90·5% live in sub-Saharan Africa,[1] where they face additional, substantial challenges in terms of adherence to antiretroviral therapy (ART),[2] risk behaviour, vulnerability to violence, early pregnancy, discrimination, substance use, and stigma. High rates of mental health problems in this population have been reported, with poor service provision and resource allocation.[3–5] Consequently, unaddressed mental health needs are detracting from public health gains in HIV treatment and care.[6] In this Series paper, we summarise current research on the mental health of adolescents living with HIV and explore evidence for action. We find that the integration of interventions improving mental health into HIV care is an urgent and non-negotiable need.

Mental health in adolescents living with HIV

Evidence from several countries shows pervasive mental ill health and cognitive challenges among adolescents living with HIV (panel 1).[7] Mental health problems encompass internalising and externalising disorders, mood disorders, emotional distress, cognitive disability, and substance misuse. Mental health itself is also a continuum, spanning

Key messages

- Adolescents living with HIV have high rates of psychological distress, with around 25% meeting criteria for a psychiatric disorder, but there is currently almost no provision of mental health services for them.
- Evidence-based interventions include psychosocial approaches such as problem-solving and cognitive behavioural therapy, parenting programmes, social protection, and palliative care.
- Evidence for effective delivery approaches suggests a need to integrate across clinic and community-delivered services, including peer supporter programmes, lay health workers, and support groups.
- Helpful models exist in the broader field of mental health integration, such as the Mental Health Gap Action Programme and the Programme for Improving Mental Health Care approach for primary health care.
- Adolescents living with HIV have great potential to live healthy and happy lives as part of the world's demographic dividend. Now is the time to move from reviews to scaled-up delivery.

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Panel 1: Adolescent experiences of mental health as integral to HIV care retention

"In 2021 I want to start the daily habit of speaking positively about myself to tell myself how great of a job after every accomplishment, no matter how small it may seem. Ezonto zindenza ndihlale ndikwi [Those things keep me in] good shape because i speak highly of myself i want to live a healthy life so i can be able to produce a healthy milk to my baby so she can live a HIV-free life i don't want to make the same mistake my mom did. Taking my pills everyday is how i can manage to live a healthy life ndingenza ngcono [and do better]"

Adolescent advisory group member, South Africa

acute disorders to positive coping, resilience, and well-being. Within the past five years, four systematic reviews have provided detailed insight on the prevalence of mental health challenges in adolescents with HIV. The first,[8] based on 37 papers from sub-Saharan Africa, found a high prevalence of depression, anxiety, emotional and behavioural problems, post-traumatic stress, and suicidal behaviour, exacerbated by orphanhood and conflict environments. A second global review,[4] with most studies from high-income settings, found associations between poor mental health and non-adherence to ART, driven by stigma. The review described severe limitations in mental health provision, but also some promising evidence-based interventions.

The third systematic review[7] identified a high prevalence of mental health problems among adolescents living with HIV in eight sub-Saharan African countries (Uganda, Kenya, South Africa, Namibia, Zambia, Rwanda, Nigeria, and Malawi), with 25% of such individuals meeting criteria for a psychiatric disorder and 30–50% having emotional or behavioural distress. Psychiatric disorders were associated with stigma, bullying, poverty, interruption of schooling, and family problems, whereas support and good parenting were protective. The fourth review, a meta-analysis of ten studies[9]—seven from Africa and one from each of China, Thailand, and the USA—substantiated a psychiatric disorder prevalence rate of 26%, noting higher distress among females and older adolescents. An additional meta-analysis[10] of suicidality in 14 studies found that one in four adolescents with HIV had lifetime suicidal ideation and one in ten had current suicidal ideation; these findings were supported by other reviews that included participants from wider age ranges.[11]

The cognitive effects of HIV might especially affect vertically infected adolescents. Although data vary by context,[12] meta-analyses show that young children infected with HIV have more language deficits and lower cognitive functioning, motor scores, and executive functioning than uninfected children,[13] and these factors are likely to lead to challenges in decision-making and treatment adherence and increases in risk-taking as adolescents. Furthermore, these cognitive effects could worsen mental health through accelerating school dropout and increasing the risks of adolescent pregnancy, unemployment, and poverty. Cognitive difficulties could also affect access to and efficacy of mental health interventions that require more complex information-processing skills, such as cognitive behavioural therapy (CBT), mindfulness, or psychoeducation platforms that require literacy.

Several HIV-related factors contribute to psychological distress in adolescents.[3] Studies show more parenting violence towards children in AIDS-affected families than in non-affected families.[14] Depression in parents living with HIV can negatively affect parent–child interactions.[15] Related drivers of poor adolescent mental health include illness and deaths of family members with AIDS, adolescent illness, bullying, and family conflict.[16,17] Externalised and internalised stigma can be particularly damaging during adolescence and early parenthood,[18] inhibiting disclosure of HIV status in relationships and early parenthood.[19] The adolescent advisory groups for this Series paper emphasised the severe effects of stigma related to HIV and sexual activity, especially for adolescent girls and young mothers (panel 2). The over-representation of HIV in low-income settings brings additional stressors of poverty, violence, and limited access to health care. Psychological distress is, in turn, a key driver of adolescent disengagement with HIV health services,

Panel 2: Integrating mental health care for pregnant adolescents living with HIV

When early pregnancy and motherhood co-occur with HIV, adolescent girls and young women face compounded stigma and reduced access to health,[20] education, and social support and services.[21] Mental health problems, which can emerge or be exacerbated during this time, cause additional barriers to health-care access.[22] Peer-delivered support has emerged as a promising means to improve HIV-related outcomes among adolescents living with HIV,[23] but evidence on mental health outcomes for young mothers is needed.[24] Promising clinic and community-based models exist.[25] One promising approach known as Ask-Boost-Connect-Discuss, a community-based initiative that is linked to HIV clinics, equips and mentors peer supporters to reach adolescent mothers living with HIV.[21] Peer supporters deliver the WHO-endorsed Thinking Healthy intervention, adapted with adolescent mothers and peer supporters. Pilot evidence from implementation of this intervention in Malawi, Tanzania, Uganda, and Zambia showed high levels of acceptability and retention among peer supporters and participating mothers.[26] Rapid, pragmatic research that assesses the effect of mental health care for adolescent mothers living with HIV, especially during the COVID-19 pandemic, is needed to advance mental health for this highly vulnerable group.

non-adherence to ART, unsuppressed viral load, and high-risk sexual behaviour,[27] exacerbated by low levels of HIV-status disclosure.[28]

HIV is a lifelong infection, during which there can be particular periods of heightened vulnerability—such as testing, disclosure, and transitioning from paediatric into adult HIV care. Emerging evidence suggests that COVID-19 has increased adolescent mental health challenges worldwide, through interrupting care access[29] and education,[30] and increasing poverty and violence against children. Adolescents in our advisory groups highlighted experiencing extreme psychological distress associated with stockouts and limited availability of ART in health-care settings. At a minimum, adolescents need the security of knowing that they can access their life-saving medications. Deaths associated with COVID-19 have led to 10·4 million children globally losing a primary caregiver as of June 13, 2022, according to the COVID-19 Orphanhood tool. These challenges could be particularly salient for adolescents living with HIV,[31,32] who could be further at risk of vulnerability given the high rates of grandparental care for children who have already been orphaned as a result of AIDS.

Current mental health provision for adolescents living with HIV

Only a very small proportion of adolescents living with HIV receive any mental health services or support,[33] as provision is hampered by the scarcity of financing and trained personnel.[34] This treatment gap reflects a broader gap in adolescent mental health services,[8,35] the evidence for which is less than that for adult mental health care.[36,37] For the most vulnerable groups of adolescents living with HIV who face layered stigma—such as adolescent sex workers, adolescents living with disabilities, and adolescents living on the streets—there is an almost complete absence of evidence about their mental health in general and about service provision. Pressure from HIV advocacy groups to include end-users in the development of interventions and service delivery is increasing, but this practice remains rare in adolescent HIV programming.[38,39]

However, in low-income countries, there are pockets of evidence-based services[40] and increasing recognition of adolescent mental health needs at the policy level. Examples of non-governmental organisations and governments using task-sharing, ringfencing mental health resources, supporting facility and community provision,[41] and strengthening governance have been reported.[42] A situational analysis from five low-income and middle-income countries identified both challenges and opportunities for integrating mental health provision within primary health care.[43] WHO has established a population-level action plan to integrate mental health service provision for children and adolescents in low-income countries into primary health-care,[44] and published new service delivery guidelines for people living with HIV, with a strong recommendation that psychosocial services be adopted for all adolescents.[45] This recommendation was informed by a systematic review and consultations with adolescents living with HIV in 45 countries, who reported the need for sustained psychosocial support (eg, counselling, support groups, and mental health check-ins) to promote engagement in care and viral suppression.[46]

With compelling evidence for a high burden of mental ill health among adolescents living with HIV, and a scarcity of mental health service provision for this group, it is clear that the time for talk is now over, and the time for action is overdue.

Evidence of interventions

Parenting, peer support, and mental health interventions

Evidence from systematic reviews and meta-analyses is emerging for effective mental health services for adolescents living with HIV, including interventions that promote positive mental health or prevent the onset of mental health disorders, and broader-based psychosocial interventions aimed at promoting adherence to and

For the **COVID-19 Orphanhood tool** see https://imperialcollegelondon.github.io/orphanhood_calculator/#/country/Global

***Panel 3*: Evidence for effective mental health interventions**

Evidence-based interventions

- Problem-solving and cognitive behavioural therapy[47]
- Social protection and economic strengthening[48,49]
- Evidence-based parenting programmes[50-53]
- Bereavement support[54] and memory work[55]
- Mindfulness[56,57]

Additional protective factors

- Government cash transfers[58]
- Caregiver support[59,60]
- Good parenting[7,61,62]
- Good caregiver mental health[61]
- Palliative care for pain and end of life[63]
- Respect and non-stigmatising health care[64]

Evidence-based delivery approaches

- Peer supporters and mentor mothers[65,66]
- Community and clinic lay health workers[67]
- Support groups[59]
- Community-based organisations[62]
- Initial evidence for digital delivery
- Professional support where available[68]

Strategies for incorporation into HIV care

- Support health-care staff to understand mental health[25]
- PRIME model—integration into primary care[69]
- Routine mental health screening[70,71]
- Training health-care staff in the Mental Health Gap Action Programme[36,69]
- Simple, immediate referral systems[25]

PRIME=Programme for Improving Mental Health Care.

engagement in care, or reducing risk behaviour (panel 3).[72] A meta-analysis of psychosocial interventions for adolescents living with HIV found small-to-moderate benefits in terms of improved adherence to ART and reduced viral load,[73] leading to a strong recommendation of psychosocial interventions for young people living with HIV.[45] A review conducted for WHO's Helping Adolescents Thrive initiative, to support the development of guidelines for adolescent mental health, found three small-scale randomised controlled trials (RCTs)—including a mindfulness-based programme in the USA (in HIV clinics),[56] a parent and child programme in South Africa,[50] and the Zvandiri peer-support programme in Zimbabwe[65] (both community-based and linked to HIV clinics)—all of which showed improvements in mental health outcomes.[74] Because of limited evidence, no HIV-specific recommendations were made, but the guidelines recommended that generalised adolescent mental health programmes become integrated into HIV care.[71] However, evidence of cost-effectiveness remains scarce (panel 4).

Four RCTs of community-based programmes linked to HIV clinics have recently contributed to the evidence base. In Zimbabwe, a trial[47] combined the Zvandiri peer-supporter programme with the locally developed Friendship Bench mental health provision. After 1 year, symptoms of common mental disorders among adolescents (aged 10–19 years) living with HIV had reduced from a prevalence of 72% to 10% with standard peer counselling, and from 68% to 2% with peer counselling and problem-solving therapy.[47] These findings suggest that trained, mentored peer counsellors can help to reduce psychological distress, and that these effects can be boosted by problem-solving therapy. An RCT of a family-based savings programme with matched cash transfers in Uganda found reductions in depression and HIV viraemia at 36 months in adolescents aged 11–14 years at baseline.[48,80] In Thailand, a pilot RCT investigated the implementation of a family-based programme based on the South African CHAMP+ intervention in an HIV clinic by health-care staff, and found improvements in adolescent mental health (as measured by the Strengths and Difficulties Questionnaire total difficulties score) and adherence to ART.[51] In addition, a pilot trial in Tanzania with doubly-orphaned adolescents living with HIV found that memory work and narrative therapy were beneficial for reducing psychological symptoms.[55]

See Online for appendix

Panel 4: Cost-effectiveness of integrating mental health care into HIV care

Evaluations of the cost-effectiveness of integrating mental health care into adolescent HIV services are needed. We found one study for this age group, comparing the cost-effectiveness ratio of two versions of a Uganda-based economic empowerment programme.[75] This study found a cost of US$211 per 0·2 SD decrease in depression and US$371 per 0·2 SD decrease in hopelessness. However, this approach could mask benefits when multiple outcomes are considered simultaneously. A cost-effectiveness analysis of the Zvandiri–Friendship Bench trial[47] in Zimbabwe is underway. Among adults living with HIV, a study in Uganda showed that the cost-effectiveness of group psychotherapy for depression delivered by lay health workers in clinic services was US$13 per disability-adjusted life year.[76] This study assessed reductions in depression, but did not examine ART adherence or subsequent health benefits. The potential for considerable return on investment for adolescent-focused interventions is perhaps greater, given the application at a crucial period in the lifecourse that is known to influence long-term outcomes. Indirect benefits are seen for interventions that improve mental health, including reduced HIV risk behaviours related to both prevention[77] and adherence to ART,[78] possibly improved school retention[79] and, for family-based interventions, there are also additional benefits for adults.[5]

Parenting, economic support, bereavement, and interventions for AIDS-affected adolescents

Valuable evidence about the wider group of adolescents living in AIDS-affected families[42]—who face challenges including ill health, caregiver psychological distress, poverty, and stigma—has also been reported.[5] A 2021 scoping review identified 13 mental health interventions for adolescents living with or affected by HIV—all of which were community-based and linked to services for either HIV or orphaned and vulnerable children.[5] In Rwanda, an RCT found that a family support programme reduced adolescent depression;[53] similarly, in China, a resilience-based intervention with a youth component, parenting programme, and community advocacy improved child and caregiver mental health.[52] In Uganda, an economic empowerment and family support programme reduced adolescent hopelessness,[81] and in South Africa a CBT-based bereavement support programme reduced depressive symptoms and behavioural problems in adolescents.[54] In Myanmar, a mindfulness-based programme improved adolescent emotional and behavioural outcomes,[57] and in Uganda and South Africa, economic support improved the mental health of orphaned children and those living with caregivers with HIV.[49]

Social protection

There is growing interest in the role of social protection and economic support in improving HIV prevention,[82] care outcomes in HIV-positive populations,[83] and mental health in general child and adolescent populations.[58] However, little evidence has been reported on the mental health effects of government-delivered social protection for adolescents living with HIV. In response to this information gap, we investigated associations between South Africa's unconditional government cash-transfer programme (delivered at a national level, linked to poverty not to HIV services) and mental health, with a cohort of 1046 adolescents living with HIV, followed-up for 36 months between 2015 and 2018 (933 adolescents retained throughout the study) with 3·4% mortality (for methods and descriptive statistics, see appendix pp 1–3).[84] We used a within-between logit regression model (hybrid model) to test associations between household access to a government grant (child support grant, foster child

grant, or pension) and adolescents' depression, anxiety, or suicidality (control variables in the model included age, sex, mode of HIV acquisition, rural residence, informal housing, timepoint, poverty, hunger, and caregiver type). Receiving a government grant was associated with reduced odds of having any mental health distress, in both within-person variation (adjusted odds ratio [aOR] 0·58 [95% CI 0·39–0·86], p=0·007) and between-person variation (0·61 [0·39–0·96], p=0·032). The adjusted predicted probability of having mental health distress for adolescents in households receiving a government social grant was lower (estimated to be 33·8%) than for adolescents in households not receiving a grant (49·5%), giving an adjusted risk difference of 15·7% (95% CI 4·4–26·7, p=0·006).

Cohort and case-control studies of adolescents living with HIV indicate additional protective factors at the community and family level, including good parenting and good caregiver mental health. In South Africa, social support for the adolescent, participation in an HIV support group, positive parenting, and parent–child communication were predictive of reductions in depression and suicidality in adolescents.[59,60] A systematic review in sub-Saharan Africa identified social support and parental competence as protective factors.[7] In Uganda, good caregiver mental health and better caregiver–adolescent relationships were associated with fewer adolescent behavioural disorders.[61] In South Africa, Malawi, and Zambia, access to community-based organisations was associated with improved psychosocial health.[62] Although evidence for mitigating the cognitive effects of HIV during adolescence is very scarce, screening and special-needs support in schools could reduce stigma and school dropout, and for children (aged 2–16 years), cognitive rehearsal and rehabilitation show promise.[85]

The latest evidence points to the effectiveness of integrating or layering community mental health interventions adapted for adolescents living with HIV, family-based parenting support programmes, and cash-based economic support. Notably, the effective psychosocial programmes discussed in this Series paper all include evidence-based mental health intervention components, such as problem-solving, mindfulness, CBT approaches, and family support. Simple combinations of these services could benefit mental health, and also function as so-called development accelerators—simultaneously improving retention in HIV care and reducing the risks of being a victim of violence and of high-risk sexual behaviours (figure).[84]

Integration of mental health into HIV services: a pyramid of provision

On the basis of increasing evidence, we propose a strategy that includes respectful provider–patient relationships and the integration of assessment, targeted prevention, and treatment of mental health problems

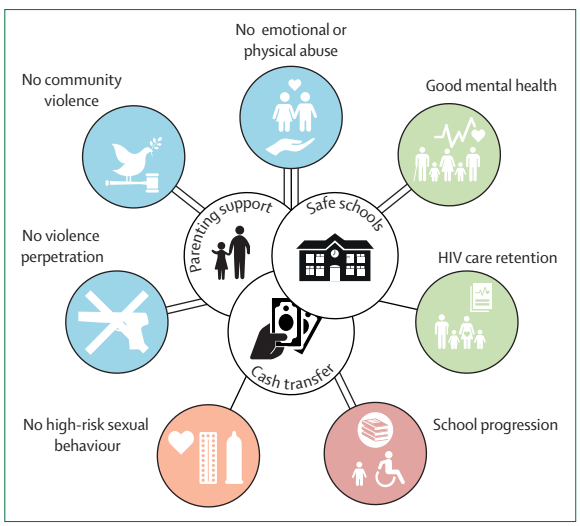

Figure: **Positive effects of development accelerators on mental health and other targets associated with Sustainable Development Goals among adolescents living with HIV in the Eastern Cape, South Africa**
Double lines indicate a synergy effect of two accelerators, triple lines indicate a synergy effect of all three accelerators. Adapted from Cluver and colleagues.[84]

(eg, response to generalised challenges, family support, responding to severe mental health challenges, and palliative care) into HIV care at the facility, family, health-system, and community levels.[2] Because mental health problems include various disorders, prevalence, and levels of severity, we visualise service provision in a pyramid, according to the intensity of need and the skills required.

Any plan for integration should recognise that the structure of HIV services themselves for adolescents is varied and changing, including tertiary facilities, decentralised primary care, and increasing examples of differentiated care during the COVID-19 pandemic. The evidence base suggests a need for adaptive approaches to integration, for example through use of existing community-based organisations, building health-provider capacity to screen and refer, and exploring opportunities for digital provision. Specialised training and continuing professional development training are seen as crucial for building up a workforce, in addition to continued support for evidence-based task-sharing approaches.

Provider–patient relationships

At all levels, respectful and warm health-care experiences can build patient–provider trust and support mental health care. However, such experiences are uncommon within the health-care infrastructure in many low-income countries, where increased pressure to reach high numbers of adolescents adds to provider burden. Our consultations with adolescents in South Africa highlight the importance of respectful and non-stigmatising treatment within the clinic, from health-care providers and staff including receptionists and security guards.[64] Sensitisation, capacity sharing, training, and supervision

of health-care staff should support some understanding of the lived experience of HIV infection and illness, and emotional reactions to the journey of HIV care.

Assessment and targeted prevention

Mental health problems among adolescents living with HIV are often undiagnosed and untreated. A key step in care integration is the inclusion of routine screening of mental health in clinical care for adolescents living with HIV;[86] however, providers highlight that, for screening to be beneficial, available services are required into which adolescents can be referred if necessary. Validated, non-commercialised, and locally relevant measures can be used and adapted,[27,87] in addition to generalised wellbeing measures that are widely used in adolescent health and HIV care, such as the HEADSS and HEADSS+ scales, which include questions about mood and psychosocial health.[88,89] Preventative care also includes identifying crucial moments at which psychological distress can occur—including developmentally appropriate disclosure of the HIV-positive status of the parent and adolescent,[90] pre-test and post-test counselling, change points along the care cascade, and bereavement support in the frequent context of parental loss[54]—and ensuring adequate support.

Responding to generalised mental health problems

Adolescents have low engagement with health care and HIV care, often fearing stigma.[54] Integrated services might be better taken up in community settings, or through remote services. Evidence supports trans-diagnostic mental health services for adolescents and young people as effective;[67] these services often include task-sharing approaches in which trained community-based lay workers provide support for various common mental health problems. Similarly, evidence for peer supporter programmes is increasing, in which young people living with HIV are trained in problem-solving and CBT.[66] Effective referral processes between clinics, social work services where available, and community-based programmes supported by the government or by non-governmental organisations are essential. Referral systems might work best when they are simple, immediate, and do not rely solely on adolescent initiative.

Potential for remote mental health services is emerging, including digital technologies; such services could be especially relevant in contexts of COVID-19 and future global disruptions, in which there is emerging evidence of successful remote adaptations for HIV care.[91] In general adolescent populations, self-help problem-solving booklets delivered through schools were found to reduce mental health problems among vulnerable adolescents in India.[92] Digitally delivered mental health interventions for adolescents are being piloted in community settings in upcoming trials in India and Kenya. However, current technology-based approaches often rely on access to smartphones, web platforms, and data. Delivering mental health care at scale through remote platforms requires ensuring access to digital and non-digital remote support, to enable use by individuals with a range of literacy and cognitive capabilities. Digital programmes should be offline-first, open-source, and locally adaptable. With extended COVID-19 epidemics and delayed vaccine coverage,[93] practical strategies for delivering remote mental health and HIV care are likely to remain a pressing need.

Responding to severe mental health problems

A subset of adolescents living with HIV will have severe mental health problems, including post-traumatic stress disorder, major depression, psychosis, or suicidality. This distress could be particularly severe in humanitarian settings, in which evidence is very scarce (panel 5). A study based in the USA showed that young people (aged 9–28) with perinatally acquired HIV had twice as many lifetime suicide attempts as their uninfected peers.[70] Screening for suicidal ideation, planning, and attempts is important for all adolescents living with HIV,[70] particularly for those in gender and sexual minority groups, who have higher rates of suicidality than the general population.[97] Asking about suicidality does not increase risk, and can be life-saving.[98]

Where human and financial resources are available, integrating screening and referral to qualified psychiatric or psychological staff is beneficial for adolescents who have acute distress.[68] However, a severe scarcity of psychiatric professionals persists in low-income countries, with 1·4 mental health workers per 100 000 people in the WHO African region,[99] and almost no adolescent inpatient wards.

Panel 5: Integrating mental health care for adolescents living with HIV in conflict and humanitarian settings

In 2015, adolescents accounted for 18% of the people living with HIV who were affected by humanitarian crises,[94] a figure which is probably increasing given crises in many sub-Saharan African countries. For adolescents living with HIV in conflict areas, the breakdown of health services makes treatment almost impossible, and the COVID-19 pandemic has compounded this challenge. These service limitations have far-reaching effects on mental health. For example, in South Sudan, 98% of adolescents living with HIV reported unhappiness and tearfulness. Mental health care is yet to be integrated into HIV services. However, good evidence exists for the effectiveness of psychosocial interventions for adolescents in humanitarian emergencies,[71] and emerging examples suggest opportunities to deliver mental health care in ways that include adolescents living with HIV. In South Sudan, a community-based programme (linked to HIV clinics) supported by the United States President's Emergency Plan For AIDS Relief (PEPFAR) provides psychosocial counselling and parenting programmes to adolescents and their families living with HIV, and has found initial positive effects on mental health.[95] In northern Nigeria, non-governmental organisations such as the International Organization of Migration and Médecins du Monde have responded to the mental health needs of adolescents affected by the Boko Haram insurgency, through training frontline health workers in internally displaced persons camps following the WHO Mental Health Gap Action Programme (mhGAP) Humanitarian Intervention Guide.[96] Expanding such services to deliberately include adolescents living with HIV could be a promising and cost-effective approach.

An innovative model for addressing this generalised mental health gap is the Programme for Improving Mental Health Care,[69] which works with ministries of health and partners in five low-income and middle-income countries to integrate evidence-based psychosocial and pharmacological interventions into existing primary health-care systems, following WHO's Mental Health Gap Action Programme guidelines.[100] Other ongoing work with adult HIV services includes the training of medical staff in the WHO Mental Health Gap Action Programme.[36] These models are likely to provide the blueprints for a health-systems approach to supporting adolescents living with HIV and severe psychological distress.

Parenting support

The adolescent advisors to this Series paper highlighted the need to provide information and skills to parents and caregivers, the need to support adolescents living with HIV with their mental health, and the linked challenges of sexual reproductive health and adherence to ART. Owing to COVID-19 lockdowns and movement restrictions, adolescents have seen their access to health and community services interrupted, and social support from school, peers, and communities reduced. Good parenting and positive family functioning can act as a buffer for even severe mental health risks,[70,101] and families might need to be a primary source of mental health support. However, caregivers face a cascade of additional COVID-19-related stressors and challenges to their own mental health.[102] Therefore, strengthening the capacity of caregivers to support both their own mental health and that of their adolescents through evidence-based parenting programmes can increase resilience and reduce family-related risks.[103] Evidence for the delivery of evidence-based parenting programmes through government health and social services and for remote delivery is also increasing; systematic reviews report that digitally delivered parenting programmes have similar effectiveness to in-person versions in terms of improving parenting and preventing violence, but the evidence base remains limited to high-income countries.[104,105]

Palliative care

AIDS is the leading cause of death among adolescents in sub-Saharan Africa.[106] Palliative care remains an essential, and often ignored, part of the HIV care continuum,[107] and includes care for emotional and spiritual facets and pain management at the end of life.[108] A systematic review found potential for the integration of end-of-life psychosocial and physical palliative care for adolescents living with HIV into hospital and hospice services, but provision of these services was very rare.[63]

Discussion

With continuing high rates of new HIV infections and increasing access to ART, the population of adolescents living with HIV is increasing.[109] These adolescents face considerable challenges, but also have the potential for positive mental wellbeing in terms of coping, resilience, hope, and happiness.[53,110] The new challenge for the HIV care cascade is therefore to not only support access to and retention in biomedical treatment, but also to address wellbeing, so that these adolescents can thrive.[110]

Although considerably more research is needed,[111] an increasing number of effective interventions exist, which have been evaluated in large-scale RCTs and which target the mental health of adolescents living with HIV. RCT evidence is supplemented by quasi-experimental evidence from cohort studies, and evidence regarding the overlapping group of adolescents in HIV-affected families. Together, these studies highlight core content and strategies that can inform the integration of mental health services into HIV care. Evidence-based interventions include problem-solving, CBT, provision of social protection or other economic strengthening, parenting programmes, memory work, and mindfulness. In contexts of severe poverty, combining economic support with psychosocial and parenting support could be more effective than either intervention alone.

Adolescent consultations identify a strong need for routine mental health screening, check-ins, and support. In addition, key moments in adolescents' HIV journeys (eg, at testing, disclosure, and during palliative care) and life stages (eg, adolescent parenthood and bereavement) are crucial life events when they are likely to need mental health care. Primary, secondary, and tertiary prevention of psychological distress is an essential need.

Evidence from HIV and the broader mental health field is helping to identify how mental health care can be integrated into HIV care. Increasing evidence in adolescent HIV populations supports task-sharing approaches with trained and supervised peer supporters, mentor mothers, and lay health workers, through community and clinic-associated services. New digital platforms could present opportunities for flexible delivery and bundling of services during periods of disruption such as pandemics or natural emergencies, but more research is needed. Evidence-based strategies include training and support for health-care workers in adolescent-specific issues, use of simple and immediate referral systems such as the Friendship Bench, and systems-based approaches such as those used in the Programme for Improving Mental Health Care for integrating broader mental health provision into primary care. Emerging examples exist for these strategies in even the most challenging settings, such as humanitarian contexts.

Research suggests substantial intersection in effective services for adolescents living with HIV, and the wider group of adolescents living in families affected by HIV. HIV care provision could extend mental health care support across both these overlapping groups. The COVID-19 pandemic has increased awareness of mental health challenges worldwide and could present an

Search strategy and selection criteria

We used search strategies consistent with methods used in other systematic reviews of the integration of health services. We searched MEDLINE, Embase, and PubMed for articles published between Jan 1, 1990, and Nov 24, 2021; we also included WHO guidelines and grey literature for subject areas in which published studies were scarce. We placed no language restrictions on searches, and did not exclude on the basis of study design, but did disaggregate by systematic reviews, experimental, and observational studies for the narrative synthesis. We did several searches for review focus areas, primarily rates and types of mental health challenge among adolescents living with HIV ("mental health*", "depress*", "anx*", "disord*", "suicide*", "internalis*", "externalis*", "adolesc*", "HIV*", and "AIDS*"), evidence-based interventions for mental health among adolescents living with HIV ("intervention*", "servic*", "program*", and "palliat*"), and among adolescents living in families affected by HIV ("orphan*", "bereave*", and "AIDS-illness"). For panels 2–4, we also used the search terms "pregnan*", "adolesc*", "mother", "humanit*", "conflict", "cost-effect*", and "cost*".

opportunity to advocate for interventions. Encouraging signs include the United States President's Emergency Plan For AIDS Relief now promoting the integration of mental health and psychosocial support into HIV clinical care and parenting programmes, and WHO guidelines for adolescent mental health[71] and for HIV prevention, treatment, service delivery, and monitoring[45,112] to identify an urgent need for mental health care for adolescents living with HIV.[113]

In the past two decades, ART has turned HIV from a death sentence to a manageable chronic health condition. We now have the opportunity to bring about a further transformation for adolescents living with HIV—from living with a stigmatised mental health burden to a life experience that enables them to be stronger, happier, and more resilient.[114]

Contributors

LDC and LS conceived the Series paper, conducted the first set of reviews, prepared the first draft, and integrated and edited revisions from the coauthors. SZ conducted and reported the original data analyses. ET, CL, OO, CD, XL, and SB prepared drafts of panels 2–4. C-AM, ET, XL, TT, WA, NW, CL, and MT conducted additional reviews on specific areas, and contributed to specific sections of the Series paper. The Adolescent Advisory Groups gave input on experience of health care and mental health, with support from NM, ET, and SZ. All authors reviewed the drafts and approved the final manuscript.

Declaration of interests

We declare no competing interests.

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