

Mental Health Services	Pg
Service Category Definition – DSHS State Services	1
2016 Houston HIV Care Services Needs Assessment ⇒ Mental Health Services	5
Mental Health Care Chart Review, The Resource Group 2017	6
HIV and Mental Health - AIDSinfo, March 2017	13
Mental Health Challenges Among Adolescents Living with HIV - Journal of the International AIDS Society, 2017	15
Mental Health, a Crucial Component to Ending HIV Epidemic - mdmag.org, March 2018	25

**Service Category Definition - DSHS State Services Grant
September 1, 2017 - August 31, 2018**

Local Service Category:	Mental Health Services
Amount Available:	To be determined
Unit Cost	
Budget Requirements or Restrictions (TRG Only):	Maximum of 10% of budget for Administrative Cost.
DSHS Service Category Definition	<p>Mental Health Services include psychological and psychiatric treatment and counseling services offered to individuals with a diagnosed mental illness, conducted in a group or individual setting, based on a detailed treatment plan, and provided by a mental health professional licensed or authorized within the State to provide such services, typically including psychiatrists, psychologists, and licensed clinical social workers.</p> <p>Mental health counseling services includes outpatient mental health therapy and counseling (individual and family) provided solely by Mental Health Practitioners licensed in the State of Texas.</p> <p>Mental health services include:</p> <ul style="list-style-type: none"> • Mental Health Assessment • Treatment Planning • Treatment Provision • Individual psychotherapy • Family psychotherapy • Conjoint psychotherapy • Group psychotherapy • Psychiatric medication assessment, prescription and monitoring • Psychotropic medication management • Drop-In Psychotherapy Groups • Emergency/Crisis Intervention <p>General mental health therapy, counseling and short-term (based on the mental health professionals judgment) bereavement support is available for family members or significant others of people living with HIV.</p>
Local Service Category Definition:	<p>Individual Therapy/counseling is defined as 1:1 or family-based crisis intervention and/or mental health therapy provided by a licensed mental health practitioner to an eligible person living with HIV.</p> <p>Support Groups are defined as professionally led (licensed therapists or counselor) groups that comprise people living with HIV, family members, or significant others for the purpose of providing emotional support directly related to the stress of caring for people living with HIV.</p>
Target Population (age, gender, geographic, race, ethnicity, etc.):	People living with HIV and affected individuals living within the Houston HIV Service Delivery Area (HSDA).
Services to be Provided:	Agencies are encouraged to have available to clients all modes of counseling services, i.e., crisis, individual, family, and group. Sessions may be conducted in-home. Agency must provide professional support group sessions led by a licensed counselor.
Service Unit Definition(s) (TRG Only):	<p>Individual and Family Crisis Intervention and Therapy: A unit of service is defined as an individual counseling session lasting a minimum of 45 minutes.</p> <p>Group Therapy: A unit of service is defined as one (1) eligible client attending 90 minutes of group therapy. The minimum time allowable for a single group session is 90</p>

	<p>minutes and maximum time allowable for a single group session is 120 minutes. No more than one unit may be billed per session for an individual or group session.</p> <p>A minimum of three (3) clients must attend a group session in order for the group session to be eligible for reimbursement.</p> <p>Consultation: One unit of service is defined as 15 minutes of communication with a medical or other appropriate provider to ensure case coordination.</p>
Financial Eligibility:	Income at or below 300% Federal Poverty Guidelines.
Client Eligibility:	<p>For individual therapy session, person living with HIV or the affected significant other of a person living with HIV, resident of Houston HSDA.</p> <p>Person living with HIV must have a current DSM diagnosis eligible for reimbursement under the State Medicaid Plan.</p> <p>Client must not be eligible for services from other programs or providers (i.e. MHMRA of Harris County) or any other reimbursement source (i.e. Medicaid, Medicare, Private Insurance) unless the client is in crisis and cannot be provided immediate services from the other programs/providers. In this case, clients may be provided services, as long as the client applies for the other programs /providers, until the other programs/providers can take over services.</p> <p>Medicaid/Medicare, Third Party Payer and Private Pay status of clients receiving services under this grant must be verified by the provider prior to requesting reimbursement under this grant. For support group sessions, client must be either a person living with HIV or the significant other of person living with HIV. Affected significant other is eligible for services only related to the stress of caring for a person living with HIV.</p>
Agency Requirements (TRG Only):	<p>Agency must provide assurance that the mental health practitioner shall be supervised by a licensed therapist qualified by the State to provide clinical supervision. This supervision should be documented through supervision notes. Keep attendance records for group sessions.</p> <p>Must provide 24-hour access to a licensed counselor for current clients with emotional emergencies.</p> <p>Clients eligible for Medicaid or 3rd party payer reimbursement may not be billed to grant funds. Medicare Co-payments may be billed to the contract as ½ unit of service.</p> <p>Documentation of at least one therapist certified by Medicaid/Medicare on the staff of the agency must be provided in the proposal. All funded agencies must maintain the capability to serve and seek reimbursement from Medicaid/Medicare throughout the term of their contract. Potential clients who are Medicaid/ Medicare eligible may not be denied services by a funded agency based on their reimbursement status (Medicaid/Medicare eligible clients may not be referred elsewhere in order that non-Medicaid/Medicare eligible clients may be added to this grant). Failure to serve Medicaid/Medicare eligible clients based on their reimbursement status will be grounds for the immediate termination of the provider's contract.</p> <p>Must comply with the State Services Standards of Care.</p> <p>Must provide a plan for establishing criteria for prioritizing participation in</p>

	<p>group sessions and for termination from group participation.</p> <p>Providers and system must be Medicaid/Medicare certified to ensure that Ryan White funds are the payer of last resort.</p>
<p>Staff Requirements:</p>	<p>It is required that counselors have the following qualifications: Licensed Mental Health Practitioner by the State of Texas (LCSW, LMSW, LPC PhD, Psychologist, or LMFT).</p> <p>At least two years experience working with HIV disease or two years work experience with chronic care of a catastrophic illness.</p> <p>Counselors providing family sessions must have at least two years experience in family therapy.</p> <p>Counselors must be covered by professional liability insurance with limits of at least \$300,000 per occurrence.</p>
<p>Special Requirements (TRG Only):</p>	<p>All mental health interventions must be based on proven clinical methods and in accordance with legal and ethical standards. The importance of maintaining confidentiality is of critical importance and cannot be overstated unless otherwise indicated based on Federal, state and local laws and guidelines (i.e. abuse, self or other harm). All programs must comply with the Health Insurance Portability and Accountability Act (HIPAA) standards for privacy practices of protected health information (PHI) information.</p> <p>Medicare and private insurance co-payments are eligible for reimbursement under this grant (in this situation the agency will be reimbursed the client's co-payment only, not the cost of the session which must be billed to Medicare and/or the Third party payer). Extensions will be addressed on an individual basis when meeting the criteria of counseling directly related to HIV illness. Under no circumstances will the agency be reimbursed more than two (2) units of individual therapy per client in any single 24-hour period.</p> <p>Agency should develop services that focus on the Special Populations identified in the <i>2012 Houston Area Comprehensive Plan for HIV Prevention and Care Services</i> including Adolescents, Homeless, Incarcerated & Recently Released (IRR), Injection Drug Users (IDU), Men who Have Sex with Men (MSM), and Transgender populations. Additionally, services should focus on increasing access for individuals living in rural counties.</p> <p>Must comply with the Houston EMA/HSDA Standards of Care. The agency must comply with the DSHS Mental Health Services Standards of Care. The agency must have policies and procedures in place that comply with the standards <i>prior</i> to delivery of the service.</p>

FY 2019 RWPC “How to Best Meet the Need” Decision Process

Step in Process: Council		Date: 06/14/18
Recommendations:	Approved: Y _____ No: _____ Approved With Changes: _____	If approved with changes list changes below:
1.		
2.		
3.		
Step in Process: Steering Committee		Date: 06/07/18
Recommendations:	Approved: Y _____ No: _____ Approved With Changes: _____	If approved with changes list changes below:
1.		
2.		
3.		
Step in Process: Quality Improvement Committee		Date: 05/15/18
Recommendations:	Approved: Y _____ No: _____ Approved With Changes: _____	If approved with changes list changes below:
1.		
2.		
3.		
Step in Process: HTBMN Workgroup		Date: 04/24/18
Recommendations:	Financial Eligibility:	
1.		
2.		
3.		

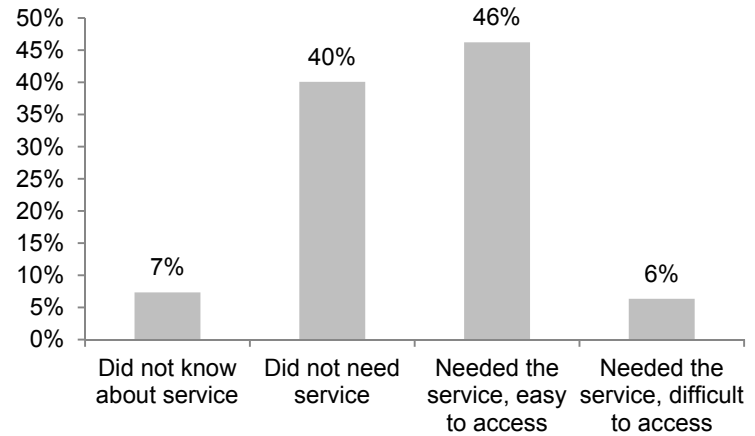
MENTAL HEALTH SERVICES

Mental health services, also referred to as *professional mental health counseling*, provides psychological counseling services for persons living with HIV (PLWH) who have a diagnosed mental illness. This includes group or individual counseling by a licensed mental health professional in accordance with state licensing guidelines.

(**Graph 1**) In the 2016 Houston HIV Care Services Needs Assessment, 53% of participants indicated a need for *mental health services* in the past 12 months. 46% reported the service was easy to access, and 6% reported difficulty. 7% stated that they did not know the service was available.

(**Table 1**) When barriers to *mental health services* were reported, the most common barrier types were administrative (25%) and wait-related barriers (25%). Administrative barriers reported include hours of operation, complex processes, and staff changes without notification to the client. Wait-related barriers reported include placement on a waitlist.

GRAPH 1-Mental Health Services, 2016



(**Table 2 and Table 3**) Need and access to services can be analyzed for needs assessment participants according to demographic and other characteristics, revealing the presence of any potential disparities in access to services. For *mental health services*, this analysis shows the following:

- More females than males found the service accessible.
- More other/multiracial PLWH found the service accessible than other race/ethnicities.
- More PLWH age 18 to 24 found the service accessible than other age groups.
- In addition, more rural and unstably housed PLWH found the service difficult to access when compared to all participants.

TABLE 1-Top 5 Reported Barrier Types for Mental Health Services, 2016

	No.	%
1. Administrative (AD)	6	25%
2. Wait (W)	6	25%
3. Health Insurance Coverage (I)	2	8%
4. Interactions with Staff (S)	2	8%
5. Resource Availability (R)	2	8%

TABLE 2-Mental Health Services, by Demographic Categories, 2016

Experience with the Service	Sex		Race/ethnicity				Age		
	Male	Female	White	Black	Hispanic	Other	18-24	25-49	50+
Did not know about service	8%	6%	4%	8%	9%	0%	13%	8%	6%
Did not need service	40%	39%	29%	41%	47%	40%	33%	39%	43%
Needed, easy to access	46%	48%	57%	45%	39%	60%	54%	47%	44%
Needed, difficult to access	6%	8%	10%	6%	5%	0%	0%	6%	7%

TABLE 3-Mental Health Services, by Selected Special Populations, 2016

Experience with the Service	Unstably Housed ^a	MSM ^b	Out of Care ^c	Recently Released ^d	Rural ^e	Transgender ^f
Did not know about service	11%	5%	0%	3%	0%	14%
Did not need service	25%	37%	50%	22%	50%	18%
Needed, easy to access	53%	51%	50%	69%	35%	68%
Needed, difficult to access	10%	6%	0%	6%	15%	0%

^aPersons reporting housing instability ^bMen who have sex with men ^cPersons with no evidence of HIV care for 12 mo.

^dPersons released from incarceration in the past 12 mo. ^eNon-Houston/Harris County residents ^fPersons with discordant sex assigned at birth and current gender



MENTAL HEALTH SERVICES
2017 CHART REVIEW

PREFACE

DSHS Monitoring Requirements

The Texas Department of State Health Services (DSHS) contracts with The Houston Regional HIV/AIDS Resource Group, Inc. (TRG) to ensure that Ryan White Part B and State of Texas HIV Services funding is utilized to provide in accordance to negotiated Priorities and Allocations for the designated Health Service Delivery Area (HSDA). In Houston, the HSDA is a ten-county area including the following counties: Austin, Chambers, Colorado, Fort Bend, Harris, Liberty, Montgomery, Walker, Waller, and Wharton. As part of its General Provisions for Grant Agreements, DSHS also requires that TRG ensures that all Subgrantees comply with statutes and rules, perform client financial assessments, and delivery service in a manner consistent with established protocols and standards.

As part of those requirements, TRG is required to perform annual quality compliance reviews on all Subgrantees. Quality Compliance Reviews focus on issues of administrative, clinical, consumer involvement, data management, fiscal, programmatic and quality management nature. Administrative review examines Subgrantee operating systems including, but not limited to, non-discrimination, personnel management and Board of Directors. Clinical review includes review of clinical service provision in the framework of established protocols, procedures, standards and guidelines. Consumer involvement review examines the Subgrantee's frame work for gather client feedback and resolving client problems. Data management review examines the Subgrantee's collection of required data elements, service encounter data, and supporting documentation. Fiscal review examines the documentation to support billed units as well as the Subgrantee's fiscal management and control systems. Programmatic review examines non-clinical service provision in the framework of established protocols, procedures, standards and guidelines. Quality management review ensures that each Subgrantee has systems in place to address the mandate for a continuous quality management program.

QM Component of Monitoring

As a result of quality compliance reviews, the Subgrantee receives a list of findings that must be address. The Subgrantee is required to submit an improvement plan to bring the area of the finding into compliance. This plan is monitored as part of the Subgrantee's overall quality management monitoring. Additional follow-up reviews may occur (depending on the nature of the finding) to ensure that the improvement plan is being effectively implemented.

Scope of Funding

TRG contracts with one Subgrantee to provide hospice services in the Houston HSDA.

INTRODUCTION

Description of Service

Mental Health Services are treatment and counseling services offered to individuals with a diagnosed mental illness, conducted in a group or individual setting, and provided by a mental health professional licensed or authorized within the State to render such services. **Individual Therapy/counseling** is defined as 1:1 or family-based crisis intervention and/or mental health therapy provided by a licensed mental health practitioner to an eligible HIV positive or HIV/AIDS affected individual. **Support Groups** are defined as professionally led (licensed therapists or counselor) groups that comprise HIV positive individuals, family members, or significant others for the purpose of providing emotional support directly related to the stress of caring for an HIV positive person.

Tool Development

The TRG Mental Health Services Tool is based upon established local standards of care.

Chart Review Process

All charts were reviewed by Bachelors-degree registered nurse experienced in treatment, management, and clinical operations in HIV of over 10 years. The collected data for each site was recorded directly into a preformatted computerized database. The data collected during this process is to be used for service improvement.

File Sample Selection Process

Using the ARIES database, the file sample was created from a provider population of 293 who accessed mental health services in the measurement. The records of 59 clients were reviewed, representing 20% of the unduplicated population. The demographic makeup of the providers was used as a key to file sample pull.

NOTES: DSHS changed the file sample percentage which will result in a lower number of files being reviewed in 2017.

Demographics- Mental Health

2016 Annual		
-------------	--	--

Total UDC: 404 Total New: 137

Age	Number of Clients	% of Total
Client's age as of the end of the reporting period		
Less than 2 years	0	0.00%
02 - 12 years	0	0.00%
13 - 24 years	11	2.72%
25 - 44 years	176	43.56%
45 - 64 years	200	49.50%
65 years or older	17	4.21%
Unknown	0	0.00%
	404	100%
Gender	Number of Clients	% of Total
"Other" and "Refused" are counted as "Unknown"		
Female	43	10.64%
Male	354	87.62%
Transgender FTM	0	0.00%
Transgender MTF	7	1.73%
Unknown	0	0.00%
	404	100%
Race/Ethnicity	Number of Clients	% of Total
Includes Multi-Racial Clients		
White	157	38.86%
Black	148	36.63%
Hispanic	75	18.56%
Asian	23	5.69%
Hawaiian/Pacific Islander	1	0.25%
Indian/Alaskan Native	0	0.00%
Unknown	0	0.00%
	404	100%

From 01/01/16 - 12/31/16

2017 Annual		
-------------	--	--

Total UDC: 293 Total New: 104

Age	Number of Clients	% of Total
Client's age as of the end of the reporting period		
Less than 2 years	0	0.00%
02 - 12 years	0	0.00%
13 - 24 years	5	1.71%
25 - 44 years	116	39.59%
45 - 64 years	159	54.27%
65 years or older	13	4.44%
Unknown	0	0.00%
	293	100%
Gender	Number of Clients	% of Total
"Other" and "Refused" are counted as "Unknown"		
Female	10	3.41%
Male	278	94.88%
Transgender FTM	0	0.00%
Transgender MTF	5	1.71%
Unknown	0	0.00%
	293	100%
Race/Ethnicity	Number of Clients	% of Total
Includes Multi-Racial Clients		
White	131	44.71%
Black	94	32.08%
Hispanic	67	22.87%
Asian	1	0.34%
Hawaiian/Pacific Islander	0	0.00%
Indian/Alaskan Native	0	0.00%
Unknown	0	0.00%
	293	100%

From 01/01/17 - 12/31/17



RESULTS OF REVIEW

Psychosocial Assessment

Psychosocial Assessment completed no later than third counseling session.

	Yes	No	N/A
Clients with assessment completed no later than the 3 rd appt.	59	-	-
Client records reviewed that included in this measure.	59	-	-
Rate	100%	-	-

Psychosocial Assessment: Required Elements

Psychosocial Assessment included assessment of all elements in the Mental Health Standards.

	Yes	No	N/A
Clients with assessment completed no later than the 3 rd appt.	59	-	-
Client records reviewed that included in this measure.	59	-	-
Rate	100%	-	-

Treatment Plan

Treatment Plan completed no later than third counseling session.

	Yes	No	N/A
Clients with treatment plans completed no later than the 3 rd counseling session.	52	-	7
Client records reviewed that included in this measure.	52	-	59
Rate	100%	-	12%

Treatment Plan: Signed by Therapist

Treatment Plan was signed by the mental health professional who rendered service.

	Yes	No	N/A
Clients with treatment plans signed by the mental health professional rendering service.	52	-	7
Client records reviewed that included in this measure.	52	-	59
Rate	100%	-	12%

Treatment Plan: Reviewed/Modified

Treatment Plan was reviewed and/modified at least every ninety (90) days.

	Yes	No	N/A
Clients with treatment plans reviewed/modified every 90 days.	50	2	7
Client records reviewed that included in this measure.	52	52	59
Rate	96%	4%	12%

Services Provided: Required Elements

Treatment included counseling covering all elements outlined in the Mental Health Standards.

	Yes	No	N/A
--	-----	----	-----

Clients who received counseling covering all elements.	59	-	-
Client records reviewed that included in this measure.	59	-	-
Rate	100%	-	-

Services Provided: Psychiatric Evaluation

Treatment included psychiatric evaluation was conducted/referral completed if needed.

	Yes	No	N/A
Clients who psychiatric evaluation was conducted/referral completed if needed.	1	-	58
Client records reviewed that included in this measure.	59	-	59
Rate	100%	-	-

Services Provided: Psychiatric Medication

Treatment included psychotropic medication management services, if needed.

	Yes	No	N/A
Clients who documented psychotropic medication management service was provided if needed.	-	-	59
Client records reviewed that included in this measure.	59	-	59
Rate	0%	-	100%

Services Provided: Progress Notes

Progress notes completed for each counseling session and contained all elements outlined in the Mental Health Standards.

	Yes	No	N/A
Clients with progress notes complete and containing all elements.	59	-	-
Client records reviewed that included in this measure.	59	-	-
Rate	100%	-	-

Services Provided: Medical Care Coordination

Evidence that care was coordinated as appropriate across all medical care coordination team members.

	Yes	No	N/A
Clients with care coordinated across team.	59	-	-
Client records reviewed that included in this measure.	59	-	-
Rate	100%	-	-

Referrals: Referrals Made As Needed

Documentation that referrals were made as needed to specialized medical/mental health providers/services.

	Yes	No	N/A
Clients with referral needed and made.	27	-	32
Client records reviewed that included in this measure.	27	-	59

Rate	100%	-	-
------	-------------	---	---

Referrals: Referrals Outcome

Documentation is present in client's record of the referral and the outcome of the referral.

	Yes	No	N/A
Clients with referral document with outcome of referral.	27	-	32
Client records reviewed that included in this measure.	27	-	59
Rate	100%	-	-

Discharge Planning

Documentation is present that discharge planning was completed with the client.

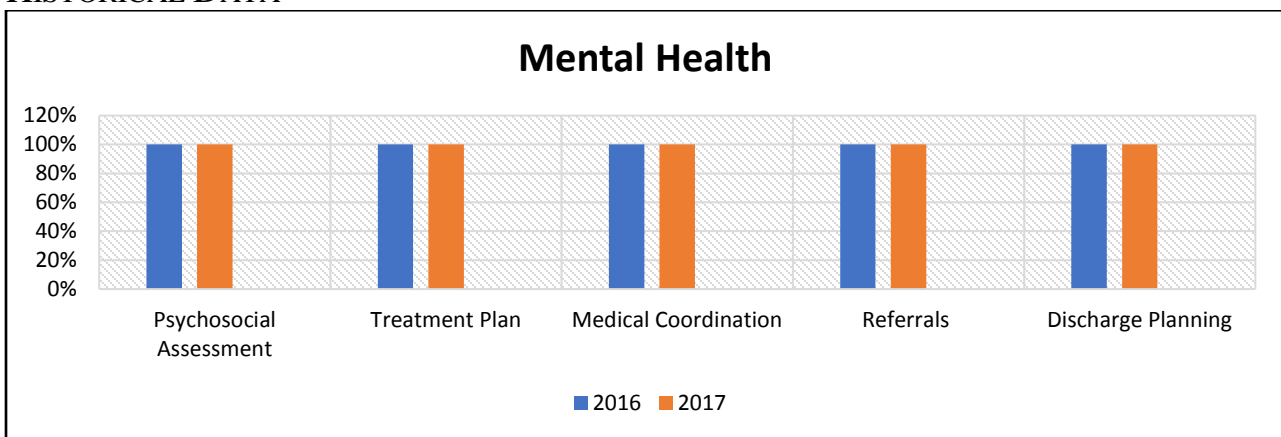
	Yes	No	N/A
Clients with documented discharge planning.	26	-	33
Client records reviewed that included in this measure.	26	-	59
Rate	100%	-	-

Discharge

Documentation is reason for discharge is located in the client's record and is consistent with agency policies.

	Yes	No	N/A
Clients with documented reason for discharge.	23	-	36
Client records reviewed that included in this measure.	23	-	59
Rate	100%	-	-

HISTORICAL DATA



CONCLUSION

Quality of mental health services continues to excellent. All clients reviewed (100%) completed a psychosocial assessment no later than the third counseling session, all clients had a treatment plan and medical care coordination was appropriate across all medical care coordination team members. Eleven data elements were met at 100%. Although 100% of clients had an appropriate treatment plan, 96% (50) had their plan reviewed and/or modified at least every ninety (90) days.



Living with HIV

HIV and Mental Health

Last Reviewed: December 6, 2017

Key Points

- Mental health is defined as a state of overall well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.
- If you have HIV, it's important to take care of both your physical health and your mental health.
- People with HIV have higher rates of mental health conditions than the general public.
- Mental health conditions are treatable, and people with mental health problems can recover.

What is mental health?

Mental health is defined as a state of overall well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.

Mental health has three main areas:

- Emotional well-being (life satisfaction, happiness, cheerfulness, peacefulness)
- Psychological well-being (self-acceptance, optimism, hopefulness, purpose in life, spirituality, self-direction, positive relationships)
- Social well-being (social acceptance, believing in the potential of people and society as a whole, personal self-worth and usefulness to society, sense of community)

If you are living with HIV, it is important to take care of not only your physical health but also your mental health.

Are people with HIV at risk for experiencing mental health conditions?

Anyone can have problems with mental health. Mental health conditions are common in the United States. According to the [National Institute of Mental Health \(NIMH\)](#), in 2015, approximately 18% of adults in the United States had a mental illness.

People with HIV, however, have higher rates of mental health conditions than the general public. People with HIV may experience depression, anxiety, post-traumatic stress disorder, suicidal thoughts, and insomnia. To learn more about specific mental health problems, visit [MentalHealth.gov](#).

It's important to remember that mental health conditions are treatable and that people who have mental health problems can recover.

What can negatively affect a person's mental health?

Stressful situations—such as the death of a loved one, loss of a job, difficulties at school, or exposure to violence or abuse—can have a negative effect on a person's mental health. Having a serious medical illness or condition, like HIV infection, can be another major source of stress that affects a person's mental health in a negative way.

Sometimes, HIV infection and related [opportunistic infections](#) can also directly impact the brain and nervous system. This may lead to problems in memory, thinking, and behavior and can be a challenge to a person's mental health. In addition, some medicines used to treat HIV may have side effects that affect a person's mental health.

When do I need help with my mental health?

When feelings become severe, won't go away, or limit your ability to stay healthy and carry out typical functions in your life, it's important to get help.

Changes to your mental health that may indicate that you need help include:

- No longer finding enjoyment in activities that usually make you happy
- Experiencing persistent sadness or feeling empty
- Feeling anxious or stressed
- Having suicidal thoughts

Mental health conditions can sometimes lead to alcohol or drug use. Talk to your doctor if you are having any problems with alcohol or drugs. For more information on the connection between HIV and alcohol and drug use, read the *AIDS info* fact sheet on [HIV and Drug and Alcohol Users](#).

What should I do if I need help or someone tells me I need help?

Talk to your doctor. Your doctor will consider whether any of your HIV medicines may be affecting your mental health. Your doctor can also help you find someone who has experience helping people with HIV with their mental health. For example:

- Psychiatrists, psychologists, social workers, and therapists can use therapy to help you cope with life challenges and mental health problems. (Psychiatrists can also prescribe medicines.)
- Case managers can help you find mental health treatment, housing and transportation programs, domestic violence shelters, and child care.

Other ways to improve your mental health include:

- Join a support group: A support group is a group of people who meet in a safe and supportive environment to provide support to each other. There are mental health support groups and HIV support groups.
- Practice meditation: Research suggests that meditation can help lessen depression, anxiety, and stress. For more information on meditation, view the [Meditation: In Depth](#) website from the National Center for Complementary and Integrative Health (NCCIH).
- Maintain healthy habits: Regular exercise, adequate sleep, and healthy nutrition are important ways to take good care of yourself and can help when dealing with stressful situations.

To find mental health treatment services, use these resources from [NIMH](#) and the [Substance Abuse and Mental Health Services Administration \(SAMHSA\)](#).

Review article

Mental health challenges among adolescents living with HIV

Rachel C. Vreeman^{1,2,3§}, Brittany M. McCoy^{1,2} and Sonia Lee⁴

[§]**Corresponding author:** Rachel C. Vreeman, Children's Health Services Research, Department of Pediatrics, Indiana University School of Medicine, 410 W. 10th Street, HITS Suite 2000, Indianapolis, IN, 46202, USA. (rvreeman@iu.edu)

Abstract

Introduction: Mental health is a critical and neglected global health challenge for adolescents infected with HIV. The prevalence of mental and behavioural health issues among HIV-infected adolescents may not be well understood or addressed as the world scales up HIV prevention and treatment for adolescents. The objective of this narrative review is to assess the current literature related to mental health challenges faced by adolescents living with HIV, including access to mental health services, the role of mental health challenges during transition from paediatric to adult care services and responsibilities, and the impact of mental health interventions.

Methods: For each of the topics included in this review, individual searches were run using Medline and PubMed, accompanied by scans of bibliographies of relevant articles. The topics on which searches were conducted for HIV-infected adolescents include depression and anxiety, transition from paediatric to adult HIV care and its impact on adherence and mental health, HIV-related, mental health services and interventions, and the measurement of mental health problems. Articles were included if the focus was consistent with one of the identified topics, involved HIV-infected adolescents, and was published in English.

Results and Discussion: Mental and behavioural health challenges are prevalent in HIV-infected adolescents, including in resource-limited settings where most of them live, and they impact all aspects of HIV prevention and treatment. Too little has been done to measure the impact of mental health challenges for adolescents living with HIV, to evaluate interventions to best sustain or improve the mental health of this population, or to create healthcare systems with personnel or resources to promote mental health.

Conclusions: Mental health issues should be addressed proactively during adolescence for all HIV-infected youth. In addition, care systems need to pay greater attention to how mental health support is integrated into the care management for HIV, particularly throughout lifespan changes from childhood to adolescence to adulthood. The lack of research and support for mental health needs in resource-limited settings presents an enormous burden for which cost-effective solutions are urgently needed.

Keywords: Adolescents; HIV; mental health; transition; stigma; mental health disorders

Received 9 September 2016; **Accepted** 14 February 2017; **Published** 16 May 2017

Copyright: © 2017 Vreeman RC et al; licensee International AIDS Society. This is an Open Access article distributed under the terms of the Creative Commons Attribution 3.0 Unported (CC BY 3.0) License (<http://creativecommons.org/licenses/by/3.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction

Mental health issues and adolescents with HIV

Mental health is a neglected global health priority, particularly for children and adolescents [1–3]. Mental health disorders, including psychiatric disorders, general psychological distress, emotional, and behavioural problems, are a leading cause of health-related disability, affecting 10–20% of children worldwide [4], and are predictive of mental health disorders and other morbidities in adulthood [5,6]. Research on mental health among children and adolescents lags considerably behind that of adults, particularly in resource-limited settings (RLS) [7,8]. A 2007 review of 11,501 intervention trials for the treatment or prevention of mental health disorders found that few targeted children and adolescents; the little research with children primarily focused on interventions

for developmental disabilities [9]. Furthermore, less than 1% of the studies of drug and psychological interventions for treating mental health disorders were conducted in “low-income” countries, with only 10% in “lower-middle-income” countries [9].

The need for a better understanding of mental health is especially important when its assessment and treatment are compounded by other comorbidities. Children and adolescents living with HIV may face an increased burden of mental and behavioural health disorders. The objective of this narrative review is to assess the current literature related to mental health challenges faced by adolescents living with HIV, including access to mental health services, the role of mental health challenges during transition from paediatric to adult care services and responsibilities, and the impact of mental health

interventions. This review focuses on adolescents who are themselves infected with HIV, with particular attention to: (1) the developmental phase of adolescence, and (2) to the specific challenge of transitioning primary responsibility of their medical care.

Methods

Individual searches were run using Medline and PubMed for each of the topics included in this review. The topics on which searches were conducted included the following: (1) depression and anxiety among HIV-infected adolescents, (2) transition from paediatric to adult HIV care and its impact on adherence and mental health, (3) HIV-related stigma and mental health, (4) mental health services for adolescents in RLS and interventions for HIV-infected adolescents, and (5) the measurement of mental health problems in adolescents with HIV.

Exact text and MeSH headings for search terms are available from the authors on request (also see Table 1.). Articles on measuring mental health problems in adolescents with HIV were taken from the preliminary results of an ongoing systematic review on the use of mental health screening instruments among HIV-infected, paediatric and adolescent populations in Africa.

Articles from these searches were included if the focus of the study or review was consistent with one of the identified topics, the study or studies reviewed involved adolescents, and the article was published in English. We then identified additional articles meeting our inclusion criteria from the bibliographies of articles identified in our searches, as well as by using the “cited by” function through PubMed. From each article identified, we extracted

information on the study design, population, geographical context, measurement methods, and study outcomes from each study.

Results and discussion

Prevalence of mental health challenges in HIV-infected children and adolescents: high-income countries

Studies from high-income settings generally suggest that children and adolescents with HIV face an increased burden of mental health challenges. HIV-infected children and youth are at higher risk of psychiatric hospitalizations, compared with the general paediatric population [10]. A 2013 systematic review of the literature on the mental health of adolescents living with HIV found few studies describing the prevalence of psychiatric diagnoses in HIV-infected adolescents, but the existing studies suggest that psychiatric disorders such as depression and anxiety are more prevalent among perinatally infected adolescents compared to non-infected adolescents [11]. With the advent of antiretroviral therapy (ART), despite a significant decline in the incidence of severe, AIDS-defining neurocognitive diseases like HIV encephalopathy [12,13], HIV-infected children may still experience neurocognitive complications, such as deficits in cognitive, speech, gross motor and fine motor functioning, that can substantially impact their quality of life (QoL), social relationships, academic achievements, and risks for abuse and substance use [14–18]. These complications can be seen despite early ART treatment and viral suppression [19]. Moreover, HIV-infected adolescents are growing up and developing in a milieu that includes exposure to biomedical, genetic, familial, economic, and social or environmental factors that may increase their risk for mental health problems [20].

Table 1. Search terms to identify articles.

Main topic	Specific search terms	Additional inclusion criteria/Steps
Depression and anxiety	<i>depression, mood disorders, depressive disorder, anxiety, anxiety disorders, HIV, HIV infections, adolescent</i>	
Transitioning to adult HIV care	<i>transition, transition to adult care, HIV, HIV infections</i>	Addressed mental health impact or impact on adherence to antiretroviral medication regimens
HIV stigma	<i>HIV, stigma, mental health, adolescents</i>	
Mental health services for adolescents in resource-limited settings	<i>mental health services, adolescent, resource-limited, low- and middle-income country</i>	
Mental health interventions for HIV-infected adolescents	<i>HIV, HIV infection, adolescent, mental health, intervention</i>	
HIV-infected adolescents	<i>HIV, HIV infections, depression, mood disorders, depressive disorder, anxiety, anxiety disorders, validation studies, reproducibility of results, predictive value of tests, sensitivity and specificity, psychometrics, mass screening, surveys and questionnaires, Africa</i>	Searched PsychINFO, EMBASE, Medline; Reviewed titles, followed by Abstract review

An older review of the prevalence of DSM psychiatric disorders among HIV-infected children and adolescents found prevalence of 29% for Attention Deficit Disorder, 24% for anxiety disorders, and 25% for depression; however, appropriate control groups were infrequently used [21]. In a large longitudinal cohort study of youth in New York who were perinatally exposed to HIV, 61% were found to have psychiatric disorders other than substance use on the Diagnostic Interview Schedule for Children (DISC-IV), but only the prevalence of ADHD was different between the HIV-infected and HIV-exposed groups [22]. Prevalences of anxiety, mood, and other behavioural disorders were the same between the HIV-exposed groups, with no inclusion of a non-HIV-exposed comparison group. A 2000 study in the United States found that among HIV-positive adolescents, 53% had received psychiatric diagnoses prior to HIV treatment, and 44% experienced ongoing depressive disorders [23].

Many of the studies of mental health in HIV-infected children and adolescents conducted to date lack comparison groups, which makes it difficult to compare the prevalence of mental health challenges in this population to the general population or to draw conclusions about the potential contribution of HIV on the observed rates of mental health challenges [11]. Due to the complexity of the effects of HIV, appropriate comparison groups could include adolescents who were perinatally exposed to HIV, but remain HIV uninfected, as well as adolescents without any history of HIV exposure, but from similar communities and backgrounds. Available studies that compare perinatally infected, HIV-positive adolescents with those perinatally exposed to HIV, but uninfected largely suggest that there are not significant differences in the rates or types of psychiatric disorders between these groups in comparison with those with no HIV exposure [11,22,24,25].

Prevalence of mental health challenges in HIV-infected children and adolescents: low- and middle-income countries

Most studies evaluating the prevalence of mental health challenges for HIV-infected adolescents have been done in the United States, rather than in the RLS where most of the world's HIV-infected adolescents live [11]. Fewer data are available on mental health among HIV-infected adolescents in RLS [11,26], which may be partially related to a lack of validated instruments for these contexts, lack of attention to or resources for mental health in resource-constrained healthcare settings, and additional stigma related to mental health conditions [27]. Despite these challenges, accumulating evidence from RLS does suggest that adolescents living with HIV also face particular emotional, behavioural, and mental health challenges.

Most studies of mental health challenges among adolescents living with HIV in low- and middle-income countries are cross-sectional and do not include comparison groups; however, they do indicate the need to address mental health within care systems addressing HIV or primary care. In a study of 162 HIV-infected children and adolescents in Kenya, 49% were reported to have at least one

psychiatric diagnosis or suicidality, with anxiety disorders most common (32.3%), followed by major depressive disorder (17.8%) [28]. A cross-sectional study of 562 HIV-infected adolescents from Malawi found a depression prevalence of 18.9% [29,30]. Within another study in Rwanda examining 100 HIV-infected children ages 7–14 years, the prevalence of depression reported was 25% [31]. A cross-sectional study of 82 HIV-infected adolescents ages 10–18-years old in Kampala, Uganda found that 51.2% had scores indicating significant psychological distress, 17.1% had attempted suicide in the past year, 19.5% had ever attempted suicide, and 30.5% had experienced psychotic symptoms in the past [32].

A cross-sectional study of 692 HIV infected, treated children ages 8–17 years in Botswana using a culturally-adapted and translated version of the Pediatric Symptom Checklist found that higher scores on the PSC (indicating psychosocial dysfunction) were associated with virologic failure, suggesting a critical link between psychosocial function and clinical outcomes [33]. In Tanzania, a cross-sectional study of 182 HIV-infected adolescents between 12 and 24 years old found multiple suggestions of mental health challenges in this group [34].

The few studies that use comparison groups in these settings do suggest certain increased risks of mental health challenges for those living with HIV. A study of 683 children ages 10–17 years of age in Rwanda compared a group with either HIV infection themselves (HIV-infected) or who were HIV affected (living with an HIV-infected caregiver or had a caregiver who had died from HIV) to a control group that was neither HIV infected nor living with anyone HIV infected [35]. Twenty per cent of the HIV-infected or HIV-affected adolescents were reported to have attempted suicide or engaged in self-harm in the past 6 months, compared to 13% of HIV-uninfected, unaffected children, with child-reported HIV-related stigma significantly increasing the risk of suicidal ideation and behaviours [27]. The HIV-infected or affected group of children also had significantly increased risks of depression, anxiety, and conduct problems compared to the HIV-uninfected/HIV-unaffected adolescents, but this did not differ whether the youth were themselves infected or had a HIV-infected caregiver or caregiver who had died from HIV [26]. In another study comparing HIV-positive Zambian adolescents with a control group from a British community sample, the HIV-infected Zambian adolescents had significantly higher reports of emotional symptoms, hyperactivity, and peer problems [36]. These combined studies suggest that, while HIV-infected adolescents in RLS are also at risk of developing mental health problems such as depression, anxiety, and ADHD, the aetiology extends beyond their HIV infection or health status and is likely impacted by the full range of their biopsychosocial experiences.

Measurement of mental health among adolescents: high-income settings

Measuring mental and behavioural health for adolescents remains a critical challenge that must be addressed in order

for mental health to be supported and improved. A 2015 systematic review examined depression screening instruments used to detect major depressive disorder in children and adolescents generally, for those ages 5–18 years [37]. The vast majority of studies evaluating the reliability and validity of depression measurement for children and adolescents have been conducted in the United States and Europe [37]. Four screening instruments, the Children's Depression Inventory (CDI), the Beck Depression Inventory (BDI), the Center for Epidemiological Studies – Depression Scale (CES-D), and the Reynold's Adolescent Depression Scale (RAD), were identified as the most commonly used tools and all were found to be reliable measures of Major Depressive Disorder in children and adolescents [37]. These four screening instruments are also commonly used to assess depression among HIV-infected adolescents in high-income countries. Though more often used with adults, the Patient Health Questionnaire (PHQ)-9 is a brief, well-validated screening measure that is available in more than 60 languages [38].

Measurement of mental health among adolescents: low- and middle-income settings

Few instruments to evaluate mental and behavioural health outcomes have undergone rigorous evaluation and validation for adolescents in RLS [39]. Research in these settings typically employs instruments and criteria developed in high-income settings that, if culturally inappropriate in a certain context, could lead to erroneous or misleading results [40,41]. The appropriateness of concepts and instruments may vary across different cultures [42] and across populations such as children and adolescents [43]. Betancourt *et al.* conducted a validation study to test the validity of the CES-DC as a depression screen for a general population sample of 367 children and adolescents in Rwanda, which included translation and cognitive testing of the screening items [44]. They found the CES-DC to be a valid screening tool, with a sensitivity of 81.9% and specificity of 71.9%, and made a recommendation that similar research efforts validate measures according to how well the measure items fit with local characterizations of mental health problems [44,45].

There is even more limited evidence for how to examine mental health outcomes among HIV-infected adolescents in RLS. Kim *et al.*, Mutumba *et al.*, and Binagwaho *et al.* tested the validity of these existing mental health measurement instruments within Malawi, Uganda, and Rwanda, respectively [29,31,46]. In Malawi, the validation findings suggested that the BDI-II had greater internal consistency and showed greater concordance with the CDRS-R results for this population [29]. The studies from Uganda and Rwanda highlighted the need for a process of cultural adaptation, such as included translation, expert panel review, cognitive interviewing, and pilot testing, followed by full evaluation to modify these instruments and generate sufficient sensitivity for use [31,46]. These studies highlight the importance of cross-cultural modification of instruments and local validation, while also demonstrating the need to employ rigorous measurement of mental health symptoms

for HIV-infected populations of children and adolescents in the RLS where most of these children live.

Mental health and sex-based differences across income settings

Sex-based differences in mental health challenges among HIV-infected youth have not been consistently identified although there seems to be a suggestion that females are at higher risk [47,48]. As Mellins *et al.* noted in their 2013 systematic review, some studies have found that, among HIV-infected youth, female sex is a risk factor for depression and anxiety, while male sex is a risk factor for behavioural problems [11]; however, other studies have had mixed or inconsistent results regarding gender differences.

There is more variation in the findings related to biological sex among HIV-infected adolescent in low-income settings. One study found male sex to be associated with a greater risk of depression than female sex in Kenya [28], while another found female sex to be associated with higher BDI-II scores in Malawi [30]. Another study found depression rates to be higher among HIV-infected adolescent females than males in Rwanda, but this difference was not significant [31], while another found no significant association between sex and suicidal ideation or behaviour in Rwanda [35].

Mental health associated with adolescents' ART adherence across income settings

Adherence to ART is critical to maintaining viral suppression and avoiding morbidity and mortality among HIV-infected patients. Among HIV-infected children and adolescents, depression and anxiety symptoms have been associated with lower adherence to ART [49–51] and higher substance abuse and risky sexual behaviours [52]. In a longitudinal study of 294 perinatally HIV-infected children and adolescents in the US and Puerto Rico, children with anxiety were 40% less likely to have unsuppressed viral load compared to other children [53]. Mental health disorders may be exacerbated by social exclusion and HIV stigma, which are associated with delayed HIV testing [54,55] and decreased treatment adherence [56]. Stigmatizing aspects of HIV infection or treatment, such as lipodystrophy, may also negatively impact mental health outcomes like depression and adherence to ART among adolescents, particularly during this developmental period when body image and the social desirability to “fit in” are strong motivators of behaviour [57]. Behaviourally HIV-infected youth who experience a combination of individual challenges such as low levels of self-efficacy and mental health disorders, in combination with environmental challenges such as homelessness or a history of time in detention facilities, have greater issues with maintaining adherence [58,59].

Based on a qualitative study of perinatally infected adolescents in Canada, how medication adherence is interpreted may be the key to whether the adolescent begins to take responsibility for his/her own HIV care, including adherence [60]. A positive mental framework towards adherence may be associated with autonomy and control over the adolescent's health and wellbeing. Conversely, a negative mental framework views adherence as a reminder of HIV infection,

difference from peers, and stigmatization. This interplay of mental health, adherence, and the adolescents' psychosocial environment suggests a critical role for mediating these risk factors and boosting mental and emotional health resilience for these adolescents.

HIV-related stigma and adolescent mental health across income settings

HIV-related stigma is a key issue that impacts adolescents living with HIV across country-income settings by affecting quality of life, healthcare access, and health outcomes. Stigma and discrimination experienced by HIV-infected youth through the broader community, as well as in clinical encounters, are significant barriers to HIV treatment, often leading to negative consequences and poor health outcomes [34,61]. Furthermore, HIV-related stigma is often intertwined with other sources of stigma, including those associated with mental health and/or substance use disorders. Research that investigates these impacts upon public health can guide the development of service delivery and provision of optimal healthcare appropriate for the resource setting. Such interventions to combat barriers due to stigma are especially relevant for adolescents transitioning their medical care to adult care settings, as the burden and interplay of physical, emotional, and social stressors during this vulnerable, developmental period increase. For example, due to the expectations of increased independence in navigating the healthcare systems, adolescents with HIV may need increased social support from family and friends. However, the availability and level of social support for adolescents and young adults living with HIV may be complicated by mental health issues, many of which may be emerging during this time, as well as stigma and disclosure [62]. Services to address stigma, social support, and mental health overall, are scarce, especially in low-resource settings [62,63]. Additional evidence on the impact of stigma, HIV related, as well as mental health related, on the transition process for adolescent to adult care settings and resultant health outcomes is needed.

Mental health within the transition from paediatric to adult medical care: high-income settings

Adolescents' mental health must be considered throughout the process of transitioning to adulthood with HIV, both in the general sense of their transition to adult, autonomous management of their disease as well as specific changes that may occur in the provision of their medical care. One of the first steps in adolescents' transition to managing their own HIV care is being informed of their own HIV status, also referred to as child HIV disclosure. Decisions around when to disclose HIV status to children are often impacted by caregivers' beliefs about the impact of disclosure on the child's mental health [64]. Studies suggest that disclosure of their own HIV status to children causes stress [65], but whether the disclosure process has a lasting negative impact on mental health is not clear [36,66]. In settings with higher HIV-related social exclusion and stigma, disclosure of HIV status to adolescents is also likely to be delayed [67].

In addition to this period of developmental transition from childhood to adulthood, adolescents may experience a physical transition in who provides their HIV care or where they receive medical services. Transitions that include an entirely new environment in which to receive medical care, potentially with fewer psychosocial supports, a new set of providers, or less "protective" HIV care compared to child-centred programmes, may create feelings of fear and anxiety for adolescents, even among those without any pre-existing mental health conditions [68]. In qualitative work, adolescents report feeling unprepared for transition and anxious about transitioning [69,70]. In addition to adjusting to new providers and care settings, the mental and emotional stressors may include the stress of disclosing their HIV status to providers within the new care system, the possibility of facing new HIV-related stigma or discrimination, and retelling their often-traumatic life story once again [65]. In addition, the new care systems in which adolescents find themselves may not provide care tailored to adolescents' specific needs, which may include sexual and reproductive healthcare, addressing specific populations such as young men who have sex with men, and adolescents' concerns about disclosing either their HIV status or sexual health issues to family members [65].

Mental health challenges likely complicate the navigation of these changes in medical care. In a systematic review of studies of HIV-infected youth transitions into adult care, the combined barriers to transition anticipated by providers and the adolescents included feelings of loss when separating from the paediatric provider, anxiety about increasing autonomy, and the logistic challenges of navigating the adult healthcare system – all of which may colour the mental and emotional health state of the adolescents [71]. A majority of providers of adolescent HIV care surveyed in the United States expressed concern that those adolescents who do have mental health problems or substance use issues would be at risk for being lost to care in the process of transition, especially as the adult care services might not follow the same multidisciplinary and integrated care models often seen in the paediatric HIV care models in this setting [72]. The preparedness of adult providers to address a population with higher rates of cognitive impairment, mental health problems, and adherence difficulties may be a challenge throughout the healthcare transition [65]. In a qualitative study of American HIV care providers, the following indicators of successful transition to adult care were identified: medication adherence, adherence to clinic visits, taking ownership of medical care, viral load, and CD4 count [73]. Adolescents with mental health problems or struggling with the multiple relational and environmental factors that make them more prone to mental health symptoms may be less likely to have these characteristics. In another qualitative study of clinical and programme staff providing adolescent HIV care at 12 clinical sites across the United States, the identified barriers to successful transition included mental health issues, substance abuse, paediatric providers being hesitant to transition care, and issues with insurance coverage [74].

Mental health within the transition from paediatric to adult medical care: low- and middle-income settings

Very few studies have examined the barriers and facilitators of transition in RLS, with even less data regarding potential mental health challenges. In many RLS, particularly in sub-Saharan Africa, there are not separate paediatric specialty services for HIV-infected children, nor is there specialized care for adolescents (with or without HIV), and so HIV-infected adolescents may not experience any changes in providers or care systems in these settings. One qualitative study in Thailand, which employed semi-structured interviews of users of ART services, policymakers, and caregivers of orphaned children, concluded that adherence, drug resistance, and psychosocial issues were important in caring for HIV-infected children long term, that services to help adolescents to transition into adult care were largely lacking, and that physicians did not have adequate skills or comfort to aid in this transition. However, mental health needs or issues were not considered in depth [75].

Mental health service access for adolescents: high-income countries

Considering how to ensure access to resources for mental health services for HIV-infected adolescents is a critical consideration [69]. A 2011 study used the World Health Organization Assessment Instrument for Mental Health Systems (WHO-AIM) in 13 low-, 24 lower-middle, and 5 upper-middle income countries. One indicator from this instrument included the treated child and adolescent prevalence in all mental health facilities for a one-year period. It found a one-year median treated prevalence for children and adolescents of 159 per 100,000 patients treated compared to 664 per 100,000 in adults, with greater differences in the low- and lower-middle-income countries than upper-middle-income countries [76]. Children were more likely to be treated in outpatient facilities and made up 12% of the mental health outpatient population, but none of the other facilities surveyed (e.g. inpatient facilities, day treatment) had any facilities devoted to children [76]. Even in resource-rich settings, there may be important disparities in mental health service access for minority populations; in the U.S. Adolescent Treatment Network, Black HIV-infected youth were less likely to receive care for mental health symptoms than non-Black youth [77]. Among 164 HIV-infected adolescents in 3 U.S. cities enrolled in the Adolescent Impact study, 31% had symptoms of psychopathology, but almost one-third of those reporting clinically significant symptoms did not receive care despite the availability of psychiatric medications, hospitalizations, counselling, or psychotherapy [78].

Mental health service access for adolescents: low- and middle-income countries

Mental health services for children and adolescents in resource-limited countries are extremely limited according to existing estimates, and thus, lead to severe limitations in not only access to, but also uptake of mental health services [76]. The availability of providers may be extremely limited; only 1% of schools in low- and middle-income countries had mental health professionals as

staff members, and less than 1% of professionals had attended any training on child and adolescent psychiatry in the last year [76]. Ratios of available psychiatrists are estimated at 1 psychiatrist per 4 to 5 million children in resource-limited countries, and training for mental health workers are limited and often out-of-date [79]. Qualitative inquiry among key education personnel and teachers in Nigeria suggests that, in some settings, these deficits in services may be further hampered by stigmatizing beliefs about mental health disorders, disbelief that children can have a mental illness, and overtly discriminating or derogatory language and treatment used in regards to mental illness [80]. Access to mental health services in low- and middle-income countries may also be affected by concerns regarding the use of psychotropic medications in conjunction with ART. Options to extend mental health services through alternative modes of delivery such as teleconsultations and telepsychiatry may offer particular benefits for RLS with adolescents in need of mental health screening and treatment [79]. An integrated mental healthcare approach within the primary HIV care setting to address gaps in mental health service access and treatment is another option worth investigating [81].

Mental health interventions for HIV-infected adolescents: high-income countries

Few mental health interventions, specifically for HIV-infected adolescents, have been studied. One pilot study from a resource-rich setting used health and wellness cognitive behavioural therapy for 8 HIV-infected participants aged 16–24 years and found significant improvement in depression symptoms as measured over 14 sessions by the Quick Inventory of Depressive Symptomatology-Clinician measure, as well as improved self-reported adherence [82]. In a literature review of studies evaluating the impact of service delivery interventions to improve the health of perinatally HIV-infected adolescents, the overall conclusion from the 12 studies examined was that youth-focused health services and individual-level interventions would improve adherence and retention in care; however, these were small studies with limited follow-up times, and the impact of the service delivery interventions on mental health were largely unexamined [83].

Mental health interventions for HIV-infected adolescents: low- and middle-income countries

Interventions to promote mental health show significant promise generally to improve child and adolescent mental health and wellbeing in RLS. A systematic review of mental health interventions and their effectiveness for adolescents in resource-limited studies identified 14 studies of school-based interventions and 8 studies of community-based interventions [84]. The majority of the school-based interventions led to improvements in student emotional and behavioural wellbeing, self-esteem, and coping skills [84]. Similarly, community-based interventions also showed significant improvements in youth mental health

and social wellbeing [84]. Cognitive-behavioural group therapy has been shown to improve externalizing symptoms and anxiety in low- and middle-income countries, though not depressive symptoms or quality of life [85]. Very few mental health interventions have been studied specifically for HIV-infected adolescents in RLS.

Conclusions

This review of the literature related to mental health, HIV-infected adolescents, and transition raises the critical importance of considering mental health as an integral component to adolescent care and to the transition process. While mental health disorders are often prevalent in this population, too little has been done to measure the impact of these disorders for adolescents, to evaluate interventions to best sustain or improve the mental health of this population, or to create healthcare systems with personnel or resources to promote mental health. Evidence-based studies confirming the link between poor mental health and deleterious health outcomes are still needed within the growing population of HIV-infected adolescents to inform guidelines and policies for HIV healthcare.

For the low- and middle-income countries in which the majority of the world's HIV-infected adolescents live – and the exact settings in which the rates of adolescent HIV-related deaths are a major concern – the absence of screening for mental health disorders, the lack of evidence for how to intervene to prevent or improve mental health problems, and the minimal healthcare infrastructure to address mental health are enormous obstacles. These limitations for mental health are all too-often complicated by HIV-related stigma, mental health-related stigma, sex and gender disparities, and the broader set of psychosocial challenges faced by adolescents living with HIV. Any effort to provide long-term care for these youth and to effectively support their transition into adulthood must address the adolescents' mental health. Validating mental health screening tools that can be used in routine care settings in RLS should be a priority research area.

Mental health is also likely critical for adolescents' successful transitions within the specific realm of medical care services as they face the long-term challenges of remaining in medical care, sustaining medication adherence, and achieving viral suppression. Further research to assess these connections and how to sustain them is urgently needed for this population, particularly in low- and middle-income countries. For transition processes to meet the full range of adolescents' mental health and emotional health needs, transition plans need to consider HIV-infected adolescents' risk of mental health disorders and psychiatric illness, the specific needs of adolescents, and the key issues of HIV-related stigma, HIV disclosure to others, adherence issues, and the range of factors that may increase or decrease resilience in the face of transitions in care [69]. For example, detailed recommendations for the medical transition process from the Johns Hopkins University HIV Clinical Guidelines Program (2000–2016) in the United

States emphasize the need for creating a plan for each adolescent that does the following: (1) "Address the individual barriers for each patient that may be preventing him/her from acquiring skills, such as anxiety, depression" and (2) Provide HIV care "in settings where patients can receive all services in one location from a multidisciplinary team. If a multidisciplinary team is not available, mental health and psychosocial support services should be available onsite or in an easily accessible location" [86]. A multidisciplinary team approach to the screening of mental health disorders, followed by an integrated treatment approach with primary HIV care along the transition continuum could improve access to and uptake of mental health services and interventions.

This review offers an update on previous systematic reviews of mental health challenges and interventions, which have focused on the more general population of children and adolescents [4,7,8], by assessing emerging work of those infected with HIV from RLS [11]. While this was not a traditional systematic review, we did use a standardized search strategy that could be replicated and have attempted to provide both a broad and thorough summary of the current literature. Many of the primary studies included within the review are limited by small sample sizes without comparison groups, in addition to the relative dearth of investigation from the settings where the bulk of HIV-infected children and adolescents live, particularly sub-Saharan Africa. We have tried to make clear these limitations when describing each study or content area, and to highlight the gaps in the existing research with recommendations for further investigation (Table 2). Our review emphasizes the need for mental health issues to be addressed proactively for all HIV-infected youth, and integrated into their overall HIV care.

Table 2.

Key Areas for Future Mental Health Research and Practice Improvement for HIV-Infected Adolescents

- Reliable and valid screening and assessment instruments of mental health that are culturally-appropriate for children and adolescents in resource-limited settings
- Measurement instruments, mental health interventions, and mental health services for HIV-infected adolescents must be patient centered and adapted to specific cultural and environmental contexts
- Longitudinal studies inclusive of perinatally infected and behaviourally infected youth with HIV to effectively monitor mental health outcomes across the lifespan
- Evidence-based models linking the importance of mental health to treatment adherence and physical health outcomes for HIV populations
- Integration of mental health services and interventions within adolescent-friendly healthcare services as youth with HIV transition to adult care
- Incorporation of factors such as stigma and disclosure of illness to access to mental health services during the transition process

Authors' affiliations

¹Indiana University School of Medicine, Department of Pediatrics, Indianapolis, Indiana, USA; ²Academic Model Providing Access to Healthcare (AMPATH), Eldoret, Kenya; ³Moi University, College of Health Sciences, School of Medicine, Department of Child Health and Paediatrics, Eldoret, Kenya; ⁴National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Maternal and Pediatric Infectious Disease Branch, Bethesda, Maryland, USA

Competing interests

The authors (RV, BM, and SL) have no financial relationships or other conflicts of interest relevant to this article to disclose.

Authors' contributions

RV provided the scientific leadership, conceptualized this review article, guided the literature review, led the drafting of the manuscript, and supervised all revisions. BM conducted the literature review, summarized relevant literature, and participated in the editing of the manuscript. SL provided additional scientific leadership, drafted sections of the manuscript, and edited the manuscript. All authors have read and approved the final manuscript and meet international criteria for authorship.

Acknowledgements

RV's contribution was supported in part by a grant entitled "Stigma in AIDS Family Inventory" (3R01MH099747-01S1) to Dr. Rachel Vreeman from the National Institute of Mental Health, Bethesda, MD, USA. The views expressed in this article are those of the authors and do not necessarily represent the view of the Indiana University School of Medicine, Moi University School of Medicine, or the National Institutes of Health.

Funding

This work was supported by the Stigma in AIDS Family Inventory; [3R01MH099747-01S1]; National Institute of Mental Health.

List of abbreviations

ART, antiretroviral therapy; BDI, beck depression inventory; CES-D, center for epidemiological studies – depression scale; CDI, children's depression inventory; HIV, human immunodeficiency virus; QoL, quality of life; RLS, resource-limited settings; RAD, reynold's adolescent depression scale

References

- Shatkin J, Belfer M. The global absence of child and adolescent mental health policy. *Child Adolesc Ment Health*. 2004;9:104–8.
- Prince M, Patel V, Saxena S, Maj M, Maselko J, Phillips MR, et al. No health without mental health. *Lancet*. 2007;370(9590):859–77.
- Patel V, Boyce N, Collins PY, Saxena S, Horton R. A renewed agenda for global mental health. *Lancet*. 2011;378(9801):1441–2.
- Kieling C, Baker-Henningham H, Belfer M, Conti G, Ertem I, Omigbodun O, et al. Child and adolescent mental health worldwide: evidence for action. *Lancet*. 2011;378(9801):1515–25.
- Kessler RC, Angermeyer M, Anthony JC, DE Graaf R, Demyttenaere K, Gasquet I, et al. Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's world mental health survey initiative. *World Psychiatry*. 2007;6(3):168–76.
- Kim-Cohen J, Caspi A, Moffitt TE, Harrington H, Milne BJ, Poulton R. Prior juvenile diagnoses in adults with mental disorder: developmental follow-back of a prospective-longitudinal cohort. *Arch Gen Psychiatry*. 2003;60(7):709–17.
- Remschmidt H, Belfer M. Mental health care for children and adolescents worldwide: a review. *World Psychiatry*. 2005;4(3):147–53.
- Belfer ML. Critical review of world policies for mental healthcare for children and adolescents. *Curr Opin Psychiatry*. 2007;20(4):349–52.
- Patel V, Araya R, Chatterjee S, Chisholm D, Cohen A, De Silva M, et al. Treatment and prevention of mental disorders in low-income and middle-income countries. *Lancet*. 2007;370(9591):991–1005.
- Gaughan DM, Hughes MD, Oleske JM, Malee K, Gore CA, Nachman S. Psychiatric hospitalizations among children and youths with human immunodeficiency virus infection. *Pediatrics*. 2004;113(6):e544–51.

- Mellins CA, Malee KM. Understanding the mental health of youth living with perinatal HIV infection: lessons learned and current challenges. *J Int AIDS Soc*. 2013;16:18593.
- Chiriboga CA, Fleishman S, Champion S, Gaye-Robinson L, Abrams EJ. Incidence and prevalence of HIV encephalopathy in children with HIV infection receiving highly active anti-retroviral therapy (HAART). *J Pediatr*. 2005;146(3):402–7.
- Shanbhag MC, Rutstein RM, Zaoutis T, Zhao H, Chao D, Radcliffe J. Neurocognitive functioning in pediatric human immunodeficiency virus infection: effects of combined therapy. *Arch Pediatr Adolesc Med*. 2005;159(7):651–6.
- Ettenhofer ML, Foley J, Castellon SA, Hinkin CH. Reciprocal prediction of medication adherence and neurocognition in HIV/AIDS. *Neurology*. 2010;74(15):1217–22.
- Malee K, Williams PL, Montepiedra G, Nichols S, Sirois PA, Storm D, et al. The role of cognitive functioning in medication adherence of children and adolescents with HIV infection. *J Pediatr Psychol*. 2009;34(2):164–75.
- Paramesparan Y, Garvey LJ, Ashby J, Foster CJ, Fidler S, Winston A. High rates of asymptomatic neurocognitive impairment in vertically acquired HIV-1-infected adolescents surviving to adulthood. *J Acquir Immune Defic Syndr*. 2010;55(1):134–6.
- Ruel TD, Boivin MJ, Boal HE, Bangirana P, Charlebois E, Havlir DV, et al. Neurocognitive and motor deficits in HIV-infected Ugandan children with high CD4 cell counts. *Clin Infect Dis*. 2012;54(7):1001–9.
- Bagenda D, Nassali A, Kalyesubula I, Sherman B, Drotar A, Boivin MJ, et al. Health, neurologic, and cognitive status of HIV-infected, long-surviving, and antiretroviral-naive Ugandan children. *Pediatrics*. 2006;117(3):729–40.
- Crowell CS, Malee KM, Yogev R, Muller WJ. Neurologic disease in HIV-infected children and the impact of combination antiretroviral therapy. *Rev Med Virol*. 2014;24(5):316–31.
- WHO. Risks to mental health: an overview of vulnerabilities and risk factors. Geneva, Switzerland: World Health Organization; 2012.
- Scharko AM. DSM psychiatric disorders in the context of pediatric HIV/AIDS. *AIDS Care*. 2006;18(5):441–5.
- Mellins CA, Brackis-Cott E, Leu C-S, Elkington KS, Dolezal C, Wiznia A, et al. Rates and types of psychiatric disorders in perinatally human immunodeficiency virus-infected youth and seroreverters. *J Child Psychol Psychiatry*. 2009;50(9):1131–8.
- Pao M, Lyon M, D'Angelo LJ, Schuman WB, Tipnis T, Mrazek DA. Psychiatric diagnoses in adolescents seropositive for the human immunodeficiency virus. *Arch Pediatr Adolesc Med*. 2000;154(3):240–4.
- Mutumba M, Bauermeister JA, Elkington KS, Bucek A, Dolezal C, Leu C-S, et al. A prospective longitudinal study of mental health symptoms among perinatally HIV-infected and HIV-exposed but uninfected urban youths. *J Adolesc Health*. 2016;58(4):460–6.
- Gadow KD, Chernoff M, Williams PL, Brouwers P, Morse E, Heston J, et al. Co-occurring psychiatric symptoms in children perinatally infected with HIV and peer comparison sample. *J Dev Behav Pediatr*. 2010;31(2):116–28.
- Betancourt T, Scorza P, Kanyanganzi F, Fawzi MCS, Sezibera V, Cyamatare F, et al. HIV and child mental health: a case-control study in Rwanda. *Pediatrics*. 2014;134(2):e464–72.
- Ngui EM, Khasakhala L, Ndeti D, Roberts LW. Mental disorders, health inequalities and ethics: a global perspective. *Int Rev Psychiatry*. 2010;22(3):235–44.
- Kamau JW, Kuria W, Mathai M, Atwoli L, Kangethe R. Psychiatric morbidity among HIV-infected children and adolescents in a resource-poor Kenyan urban community. *AIDS Care*. 2012;24(7):836–42.
- Kim MH, Mazenga AC, Devandra A, Ahmed S, Kazembe PN, Yu X, et al. Prevalence of depression and validation of the beck depression inventory-II and the children's depression inventory-short amongst HIV-positive adolescents in Malawi. *J Int AIDS Soc*. 2014;17:18965.
- Kim MH, Mazenga AC, Yu X, Devandra A, Nguyen C, Ahmed S, et al. Factors associated with depression among adolescents living with HIV in Malawi. *BMC Psychiatry*. 2015;15:264.
- Binagwaho A, Fawzi MCS, Agbonyitor M, Nsanizimana S, Karema C, Remera E, et al. Validating the children's depression inventory in the context of Rwanda. *BMC Pediatr*. 2016;16:29.
- Musisi S, Kinyanda E. Emotional and behavioural disorders in HIV seropositive adolescents in urban Uganda. *East Afr Med J*. 2009;86(1):16–24.
- Lowenthal E, Lawler K, Harari N, Moamogwe L, Masunge J, Masedi M, et al. Rapid psychosocial function screening test identified treatment failure in HIV+ African youth. *AIDS Care*. 2012;24(6):722–7.

34. Dow DE, Turner EL, Shayo AM, Mmbaga B, Cunningham CK, O'Donnell K. Evaluating mental health difficulties and associated outcomes among HIV-positive adolescents in Tanzania. *AIDS Care*. 2016;28(7):825–33.
35. Ng LC, Kirk CM, Kanyanganzi F, Fawzi MCS, Sezibera V, Shema E, et al. Risk and protective factors for suicidal ideation and behaviour in Rwandan children. *Br J Psychiatry*. 2015;207(3):262–8.
36. Menon A, Glazebrook C, Campain N, Ngoma M. Mental health and disclosure of HIV status in Zambian adolescents with HIV infection: implications for peer-support programs. *J Acquir Immune Defic Syndr*. 2007;46(3):349–54.
37. Stockings E, Degenhardt L, Lee YY, Mihalopoulos C, Liu A, Hobbs M, et al. Symptom screening scales for detecting major depressive disorder in children and adolescents: a systematic review and meta-analysis of reliability, validity and diagnostic utility. *J Affect Disord*. 2015;174:447–63.
38. Kroenke K, Spitzer RL, Williams JBW, Löwe B. The patient health questionnaire somatic, anxiety, and depressive symptom scales: a systematic review. *Gen Hosp Psych*. 2010;32:345–59.
39. Mabugu T, Revill P, Van Den Berg B. The methodological challenges for the estimation of quality of life in children for use in economic evaluation in low-income countries. *Value in Health Regional Issues*. 2013;2:231–9.
40. Simon GE, Goldberg DP, Von Korff M, Üstün TB. Understanding cross-national differences in depression prevalence. *Psychol Med*. 2002;32(4):585–94.
41. Van Ommeren M. Validity issues in transcultural epidemiology. *Br J Psychiatry*. 2003;182:376–8.
42. Bass JK, Bolton PA, Murray LK. Do not forget culture when studying mental health. *Lancet*. 2007;370(9591):918–9.
43. Schwab-Stone M, Ruchkin V, Vermeiren R, Leckman P. Cultural considerations in the treatment of children and adolescents. Operationalizing the importance of culture in treatment. *Child Adolesc Psychiatr Clin N Am*. 2001;10(4):729–43.
44. Betancourt T, Scorza P, Meyers-Ohki S, Mushashi C, Kayiteshonga Y, Binagwaho A, et al. Validating the Center for Epidemiological Studies Depression Scale for children in Rwanda. *J Am Acad Child Adolesc Psychiatry*. 2012;51(12):1284–92.
45. Ganguly S, Samanta M, Roy P, Chatterjee S, Kaplan DW, Basu B. Patient health questionnaire-9 as an effective tool for screening of depression among Indian adolescents. *J Adolesc Health*. 2013;52(5):546–51.
46. Mutumba M, Resnicow K, Bauermeister JA, Harper GW, Musiime V, Snow RC, et al. Development of a psychosocial distress measure for Ugandan adolescents living with HIV. *AIDS Behav*. 2015;19(2):380–92.
47. Mellins CA, Elkington KS, Leu C-S, Santamaria EK, Dolezal C, Wiznia A, et al. Prevalence and change in psychiatric disorders among perinatally HIV-infected and HIV-exposed youth. *AIDS Care*. 2012;24(8):953–62.
48. Gadow KD, Angelidou K, Chernoff M, Williams PL, Heston J, Hodge J, et al. Longitudinal study of emerging mental health concerns in youth perinatally infected with HIV and peer comparisons. *J Dev Behav Pediatr*. 2012;33(6):456.
49. Murphy DA, Wilson CM, Durako SJ, Muenz LR, Belzer M. Antiretroviral medication adherence among the REACH HIV-infected adolescent cohort in the USA. *AIDS Care*. 2001;13(1):27–40.
50. Williams PL, Storm D, Montepiedra G, Nichols S, Kammerer B, Sirois PA, et al. Predictors of adherence to antiretroviral medications in children and adolescents with HIV infection. *Pediatrics*. 2006;118(6):e1745–57.
51. Kang, E., et al. Factors associated with high rates of antiretroviral medication adherence among youth living with perinatal HIV in Thailand. *Int J STD AIDS*. 2015 Jul;26(8):534–41.
52. Murphy DA, Durako SJ, Moscicki AB, Vermund SH, Ma Y, Schwarz DF, et al. No change in health risk behaviors over time among HIV infected adolescents in care: role of psychological distress. *J Adolesc Health*. 2001;29(Suppl 3):57–63.
53. Kacanek D, Angelidou K, Williams PL, Chernoff M, Gadow KD, Nachman S. Psychiatric symptoms and antiretroviral nonadherence in US youth with perinatal HIV: a longitudinal study. *Aids*. 2015;29(10):1227–37.
54. Chesney MA, Smith AW. Critical delays in HIV testing and care: the potential role of stigma. *Am Behav Scientist*. 1999;42(7):1162–74.
55. Mall S, Middelkoop K, Mark D, Wood R, Bekker L-G. Changing patterns in HIV/AIDS stigma and uptake of voluntary counselling and testing services: the results of two consecutive community surveys conducted in the Western Cape, South Africa. *AIDS Care*. 2013;25(2):194–201.
56. Katz IT, Ryu AE, Onuegbu AG, Psaros C, Weiser SD, Bangsberg DR, et al. Impact of HIV-related stigma on treatment adherence: systematic review and meta-synthesis. *J Int AIDS Soc*. 2013;16(3 Suppl 2):18640.
57. Ammassari A, Antinori A, Cozzi-Lepri A, Trotta MP, Nasti G, Ridolfo AL, et al. Relationship between HAART adherence and adipose tissue alterations. *J Acquir Immune Defic Syndr*. 2002;31(Suppl 3):S140–4.
58. Lall P, Lim SH, Khairuddin N, Kamarulzaman A. Review: an urgent need for research on factors impacting adherence to and retention in care among HIV-positive youth and adolescents from key populations. *J Int AIDS Soc*. 2015;18(2 Suppl 1):19393.
59. Hussen SA, Andes K, Gilliard D, Chakraborty R, Del Rio C, Malebranche DJ. Transition to adulthood and antiretroviral adherence among HIV-positive young black men who have sex with men. *Am J Public Health*. 2015;105(4):725–31.
60. Fernet M, Lapointe N, Lévy JJ, Samson J, Otis J, Wong K, et al. The importance of meanings of antiretroviral treatment and care providers for adherence and transitioning to adult services among youth with perinatally acquired HIV infection. *J HIV AIDS Soc Serv*. 2015;14(3):257–76.
61. McHenry MS, Nyandiko WM, Scanlon ML, Fischer LJ, McAteer CI, Aluoch J, et al. HIV stigma: perspectives from Kenyan child caregivers and adolescents living with HIV. *J Int Assoc Provid AIDS Care*. 2016. DOI:10.1177/2325957416668995.
62. Rueda S, Mitra S, Chen S, Gogolishvili D, Globerman J, Chambers L, et al. Examining the associations between HIV-related stigma and health outcomes in people living with HIV/AIDS: a series of meta-analyses. *BMJ Open*. 2016;6(7):e011453.
63. Klasen H, Crombag AC. What works where? A systematic review of child and adolescent mental health interventions for low and middle income countries. *Soc Psychiatry Psychiatr Epidemiol*. 2013;48(4):595–611.
64. Vreeman RC, Gramelspacher AM, Gisore PO, Scanlon ML, Nyandiko WM. Disclosure of HIV status to children in resource-limited settings: a systematic review. *J Int AIDS Soc*. 2013;16:18466.
65. Dowshen N, D'Angelo L. Health care transition for youth living with HIV/AIDS. *Pediatrics*. 2011;128(4):762–71.
66. Mellins C, Brackis-Cott E, Dolezal C, Richards A, Nicholas SW, Abrams EJ. Patterns of HIV status disclosure to perinatally HIV-infected children and subsequent mental health outcomes. *Clin Child Psychol Psych*. 2002;7:101–14.
67. Tsai AC, Bangsberg DR, Kegeles SM, Katz IT, Haberer JE, Muzaora C, et al. Internalized stigma, social distance, and disclosure of HIV seropositivity in rural Uganda. *Ann Behav Med*. 2013;46(3):285–94.
68. Cervia JS. Easing the transition of HIV-infected adolescents to adult care. *AIDS Patient Care STDS*. 2013;27(12):692–6.
69. Lee S, Hazra R. Achieving 90-90-90 in paediatric HIV: adolescence as the touchstone for transition success. *J Int AIDS Soc*. 2015;18(Suppl 6):20257.
70. Machado DM, Galano E, De Menezes Succi RC, Vieira CM, Turato ER. Adolescents growing with HIV/AIDS: experiences of the transition from pediatrics to adult care. *Braz J Infect Dis*. 2016;20(3):229–34.
71. Hussen SA, Chahroudi A, Boylan A, Camacho-Gonzalez AF, Hackett S, Chakraborty R. Transition of youth living with HIV from pediatric to adult-oriented healthcare: a review of the literature. *Future Virol*. 2015;9(10):921–9.
72. Gilliam PP, Ellen JM, Leonard L, Kinsman S, Jevitt CM, Straub DM. Transition of adolescents with HIV to adult care: characteristics and current practices of the adolescent trials network for HIV/AIDS interventions. *J Assoc Nurses AIDS Care*. 2011;22(4):283–94.
73. Fair CD, Sullivan K, Gatto A. Indicators of transition success for youth living with HIV: perspectives of pediatric and adult infectious disease care providers. *AIDS Care*. 2011;23(8):965–70.
74. Tanner AE, Philbin MM, DuVal A, Ellen J, Kapogiannis B, Fortenberry JD. Transitioning HIV-positive adolescents to adult care: lessons learned from twelve adolescent medicine clinics. *J Pediatr Nurs*. 2016;31:537–43.
75. Tulloch O, Theobald S, Ananworanich J, Chasombat S, Kosalaraksa P, Jirawattanapaisal T, et al. From transmission to transition: lessons learnt from the Thai paediatric antiretroviral programme. *PLoS One*. 2014;9(6):e99061.
76. Morris J, Belfer M, Daniels A, Flisher A, Villé L, Lora A, et al. Treated prevalence of and mental health services received by children and adolescents in 42 low-and-middle-income countries. *J Child Psychol Psychiatry*. 2011;52(12):1239–46.

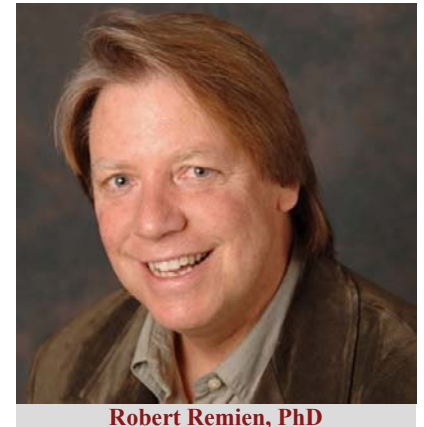
77. Whiteley LB, Brown LK, Swenson R, Kapogiannis BG, Harper GW. Mental health care among HIV infected youth in medical care: disparities and equalities. *J Int Assoc Provid AIDS Care*. 2013;13(1):29–34.
78. Marhefka SL, Lyon M, Koenig LJ, Orban L, Stein R, Lewis J, et al. Emotional and behavioral problems and mental health service utilization of youth living with HIV acquired perinatally or later in life. *AIDS Care*. 2009;21(11):1447–54.
79. Malhotra S, Padhy SK. Challenges in providing child and adolescent psychiatric services in low resource countries. *Child Adolesc Psychiatr Clin N Am*. 2015;24(4):777–97.
80. Ibeziako PI, Omigbodun OO, Bella TT. Assessment of need for a school-based mental health programme in Nigeria: perspectives of school administrators. *Int Rev Psychiatry*. 2008;20(3):271–80.
81. Verhaak PF, Van Dijk M, Walstock D, Zwaanswijk M. A new approach to child mental healthcare within general practice. *BMC Fam Pract*. 2015;16:132.
82. Kennard B, Brown L, Hawkins L, Risi A, Radcliffe J, Emslie G, et al. Development and implementation of health and wellness CBT for individuals with depression and HIV. *Cogn Behav Pract*. 2014;21(2):237–46.
83. Judd A, Sohn AH, Collins IJ. Interventions to improve treatment, retention and survival outcomes for adolescents with perinatal HIV-1 transitioning to adult care: moving on up. *Curr Opin HIV AIDS*. 2016;11:477–86.
84. Barry MM, Clarke AM, Jenkins R, Patel V. A systematic review of the effectiveness of mental health promotion interventions for young people in low and middle income countries. *BMC Public Health*. 2013;13:835.
85. De Souza MA, Salum GA, Jarros RB, Isolan L, Davis R, Knijnik D, et al. Cognitive-behavioral group therapy for youths with anxiety disorders in the community: effectiveness in low and middle income countries. *Behav Cogn Psychother*. 2013;41(3):255–64.
86. Transitioning HIV-Infected Adolescents Into Adult Care. 2011; Available from: <http://www.hivguidelines.org/clinical-guidelines/adolescents/transitioning-hiv-infected-adolescents-into-adult-care/>

Mental Health, a Crucial Component to Ending HIV Epidemic

March 07, 2018
Jenna Payesko

At the 25th Conference on Retroviruses and Opportunistic Infections, Robert Remien, PhD, stressed in his presentation that addressing mental health is a critical component to ending the HIV epidemic and achieving the UNAIDS 90-90-90 goals.

Despite all of the medical advances made to this day, there are still significant gaps along the HIV care continuum. Mental health problems, including substance abuse are one of the most significant areas of comorbidity for people living with HIV and are more prevalent than the general population.



Robert Remien, PhD

Among adolescents and young adults living with HIV, more than 60% of the population have some type of mental disorder. An estimated 50% of people living with HIV meet criteria for one or more mental or substance use disorder, which is associated with suboptimal HIV treatment outcomes that includes late antiretroviral therapy (ART) initiation and a delayed viral suppression.

“We know that we need to do better at all of the steps on the continuum to achieve our desired goals for better health outcomes as well as reduce incidence,” Remien [said](#). “Integration of services to screen and manage mental health and substance use disorders into HIV care settings is a promising strategy to improve mental health and HIV treatment outcomes among people living with HIV/AIDS, including in resource-constrained settings.”

Mental illness, according to Remien, is indeed a risk factor for HIV acquisition. In the US, the HIV prevalence among those with a serious mental illness (2–6%) compared to the general population (0.5%) is significantly higher.

Mental health impairment contributes to increased risk behaviors, delayed or lack of HIV testing and care initiation, poor retention in care, delayed ART initiation and poor ART adherence.

When there’s comorbid disorders, and other disorders, like mood disorders and alcohol and substance abuse, there’s a synergistic effect on HIV outcomes. In a study Remien discussed, that focused on 4295 men who have sex with men (MSM) from 6 US cities, when there are co-occurring conditions like depressive symptoms, heavy alcohol use, stimulant use, poly drug use and childhood sexual abuse, the probability of

staying HIV negative decreases significantly as the number of conditions increases.

In the context of PrEP adherence, depression is associated with higher sexual risk behavior and poorer adherence, indicating that screening and treating may be key to maximizing PrEP efficacy.

Depression is associated with increased mortality, and mortality rates for those living with HIV having a major depressive disorder (MDD) is twice as high for those without MDD. Relatively large cohorts of women have been studied over time and found that depression is associated with 2–3 times risk of mortality, compared to women without depressive symptoms, when on ART.

In the US WIHS prospective cohort (n=858), chronic depressive symptoms were associated with >3 times the hazard of mortality (women on ART) and >7 times the hazard of mortality (women not on ART) compared to those on ART with no depression.

The stigma embodied in discriminatory social structures, policy and legislation results in a disparity between physical and mental health care services with lower accessibility, availability and quality of services.

Integration of screening and management services into HIV care settings is a promising strategy, according to Remien, to improve mental health and HIV treatment outcomes, including in resource-constrained settings.

Positive mental health is associated with improved physical health outcomes across a range of chronic illnesses, but in addition to negative psychological responses to an HIV diagnosis, disease progression, associated stigma and loss of social support, chronic inflammatory response to HIV is estimated to contribute to elevated rates of mental health problems among patients.

Treatment for mental disorders and adherence interventions has an additive effect to those with HIV, positively affecting HIV health outcomes like PrEP treatment, reducing depression and anxiety, and ultimately increasing quality of life.

Challenges remain, specifically for meeting the high demand in resource-limited settings where HIV is most prevalent. Addressing mental health co-morbidities in the context of HIV prevention and care is essential for achieving optimal outcomes along the prevention and treatment continua.

“We may have the biological tools to ‘end AIDS,’ however we will not be able to achieve ‘ending the epidemic’ (EtE) goals, if we do not address mental health co-morbidities among our most vulnerable populations,” Remien concluded. “Integrating mental health assessment and treatment into HIV care should be routine and is essential to achieving ‘90 90 90 and EtE goals.’”