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Community-based HIV/AIDS interventions to promote psychosocial well-being among people living with HIV/AIDS: a literature review

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Background: This review explores the current community-based psychosocial interventions among people living with HIV/ AIDS (PLWHA) across the globe. *Methods*: Evaluation studies were retrieved and reviewed regarding study location, characteristics of participants, study design, intervention strategies, outcome indicators, and intervention findings. *Results*: The 28 studies spanned a broad range of intervention strategies, including coping skills, treatment and cure, cultural activities, community involvement, knowledge education, voluntary counseling and testing, peer-group support, three-layered service provision, child-directed group intervention, adult mentoring, and support group interventions. Regardless of study designs, all studies reported positive intervention effects, ranging from a reduction in HIV/AIDS stigma, loneliness, marginalization, distress, depression, anger, and anxiety to an increase in self-esteem, self-efficacy, coping skills, and quality of life. *Conclusion*: Although the existing studies have limitation with regard to program coverage, intensity, scope, and methodological challenges, they underscore the importance of developing community-based interventions to promote psychosocial well-being among PLWHA. Future studies need to employ more rigorous methodology and integrate contextual and institutional factors when implementing effective interventions.

Keywords: HIV/AIDS; community-based; intervention; prevention; psychological; psychosocial; literature review

Introduction

Although the past decade (2001–2010) has witnessed a significant reduction in the HIV epidemic in terms of new HIV infections (down from 3.15 m in 2001 to 2.67 m in 2010), AIDS-related deaths (1.85 m in 2001 to 1.76 m in 2010), new infections in children (0.55 m in 2001 to 0.39 m in 2010), the total number of people living with HIV/AIDS (PLWHA) is increasing from 28.6 m in 2001 to 34 m in 2010, and more than half of people eligible for antiretroviral treatment are not receiving it (UNAIDS, 2011). In addition, accumulating evidence has suggested that regardless of age, PLWHA were more likely to report symptoms of depression, stress, stigma, discrimination, isolation, marginalization, and suicidal ideation (Catalan et al., 2011; Clucas et al., 2011; Cluver, Gardner, & Operatio, 2007; Sherr, Clucas, Harding, Sibley, & Catalan, 2011a; Sherr et al., 2011b; Thurman et al., 2008). The importance of addressing their psychosocial needs has been underscored in the literature (Fox, 2001). Adult PLWHA with psychosocial problems are at increased risk of HIV transmission, mental health

problems, drug adherence, and more likely to be living in poverty (Foster, 2005; MacNeil, Mberesero, & Kilonzo, 1999; Sweat, Gregorich, & Sangiwa, 2000). This issue is even more salient in resource-poor settings since PLWHA encounter life-threatening challenges such as poverty and starvation, not to mention psychological care (Horizons, 2006; MEASURE, 2009a, 2009b, 2009c, 2009d, 2009e; Mueller, Alie, Jonas, Brown, & Sherr, 2011). Children and youth with limited resources are particularly vulnerable to lack of psychological support which may prevent them from developing cognitive capacity, building life skills, deriving a sense of purpose and positive future orientation, and becoming a productive adult in the future (Horizons, 2006; MEASURE, MEASURE, 2009a, 2009b, 2009c, 2009d, 2009e; Schenk, 2009).

Strategies enhancing the psychological well-being of PLWHA are varied, including individual-level intervention, group-level intervention (GLI), and community-level intervention. A growing body of literature highlights that the community-based psychological interventions continue

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to serve as the next safety net after families for PLWHA (UNAIDS, UNICEF, & USAID, 2004). According to Centers for Disease Control and Prevention, the community-level interventions attempt to improve risk conditions, affect systems, and/or influence norms in a specific community of persons with identified shared risk behaviors. Specifically, the community refers to 'a group of people who have something in common and will act together in their common interest' (UN, 2003). In practice, community can be viewed as cultural identity such as a community of men who have sex with men and women (MSMW) or as a geographic sense of place such as orphans, vulnerable children, and youth (OVCY) living in the same village.

In response to the HIV/AIDS endemic, thousands of grassroots groups or international organizations take initiative by collaborating with local communities (health agencies, schools, religious groups, traditional healers, and non-governmental organizations (NGOs)) to reinforce the capacity of communities to support, protect, and provide care to PLWHA. Rather than focusing on individual responsibility, the community-level interventions promote a sense of community responsibility for care and support, endorse culturally competent practices, treat the family as a unit of intervention, and strengthen extended family ties. Since families are usually allied with communities, the necessity of community-based care has been stressed by researchers and implementers (UNAIDS/UNICEF, 1999). In particular, community-based approaches focusing on OVCY are declared by the United Nations Children's Fund (UNICEF) as the only viable and sustainable alternative for providing care and protection for children made vulnerable by the HIV/AIDS epidemic (UNICEF, 1999). Considering the widespread stigma and discrimination against PLWHA in resource-constrained areas (Valdiserri, 2002), the community-level interventions turn out to be more sustainable and effective to remove the sociocultural obstacles and empower those vulnerable residents (UNICEF, 1999).

In assessing the content of the articles that deal with community-based HIV/AIDS interventions and psychosocial well-being among PLWHA, many of the articles did not address generalizations of good practices and the need to consider how such practices may vary given each community's unique political, socioeconomic, cultural, and historical context. By reviewing the effectiveness of various interventions, this study can fill the gap by identifying differences in terms of program participants, location, study design, intervention strategies, and findings. This is particularly relevant to areas with high prevalence of HIV/AIDS and very limited health infrastructure (UNAIDS, 1999).

This paper reviews evaluations of community-based interventions aimed at improving psychosocial well-being of PLWHA. By examining the program characteristics, this paper intends to identify factors which promote or hinder the PLWHA's psychosocial well-being and provide researchers and practitioners with insightful information, especially concerning study design, intervention strategies, and findings.

Methods

Inclusion criteria

A comprehensive literature search was conducted and studies were included if they met the following selection criteria: (1) the study was published in English language peer-reviewed journals prior to March 2012 or unpublished and accessible on the websites of implementers and/or evaluators; (2) the HIV/AIDS prevention or intervention study was community-based; (3) the intervention aimed at improving HIV/AIDS-relevant psychosocial well-being can be measured by any of nine identified outcomes: self-esteem, self-efficacy, social support, hope, quality of life, stigma, depression, anxiety, and loneliness; and (4) both quantitative and qualitative studies were included. The sample of the study was composed of only HIV-infected patients and their families.

Data source

The literature search was conducted in the following electronic databases: JSTOR, PsyInfo, PubMed, Proquest, Sociological Abstracts, and Social Work Abstracts. Each database was searched by using combinations of the following search items to identify relevant articles: HIV, AIDS, sexually transmitted infections (STI), community-based, psychological, psychosocial, intervention, participation, prevention, and evaluation. Additional articles were found by searching the references cited in relevant articles.

According to these criteria, a total of 28 research studies were identified in the review, including 19 published journal articles and 9 unpublished policy reports. Out of 28, 22 studies were quantitative and 6 were qualitative. In the following sections of this paper, these articles are reviewed in terms of study location, participant characteristics, study design, intervention strategies, outcome indicators, and intervention findings.

Results

Study location

This review has identified intervention studies from ten countries and five continents. Most of the interventions were conducted in sub-Saharan Africa (18 studies) and the USA (nine studies), and only a few in other countries (one study in Peru, one study in Australia, and two studies in Thailand). It is worth mentioning that one study involves multiple sites – Thailand and three

African countries (Maman et al., 2009). The African sites covered studies from six countries, including Tanzania (five studies), Kenya, Rwanda, and South Africa (three studies each), and Uganda and Zimbabwe (two studies each). The study sites in Africa were mainly rural and the local population was largely dependent on subsistence farming. Unlike Africa, AIDS cases in the USA had been concentrated primarily in large metropolitan areas such as New York (six studies), Washington, DC, Philadelphia, Los Angeles, Oakland, Chicago, Florida, and New Jersey (one study each). Among the nine US studies, three studies belonged to multiple-site research.

Participants

These interventions all targeted those populations infected and/or affected by HIV/AIDS, including a wide range of age groups from OVCY, adolescents and youth, adults to older adults. Most of the intervention initiatives in Africa took child-oriented approach focusing on OVCY (12 out of 16 studies) and four studies were solely based on HIV + adults. In contrast, the majority of the US studies (8 out of 10) focused on adults and only two studies dealt with adolescents whose parents were infected with or died of HIV/AIDS. Also, the US studies were ethnically diverse, including one study for African-American men, two studies for Latino men, one study for low-income women of color, and the other six studies representing the overall population. Although most of adult participants lived in traditional family structures, participants in three studies were self-identified as sexual minorities – gay men in two studies and MSMW in one study. Nevertheless, both the at-risk population and the general population were represented in these studies.

Study design

There are five types of study designs implemented among the 22 quantitative interventions and they are: (1) pre–post design by comparing the outcome indicators of the same participants before and after the intervention (Allen et al., 2009; Operario, Smith, Arnold, & Kegeles, 2010); (2) cluster randomized controlled trial (RCT) with schools (Kumakech, Cantor-Graae, Maling, & Bajunirwe, 2009) and villages (Apinundecha, Laohasiriwong, Cameron, & Lim, 2007) as the randomization unit, respectively; (3) RCT at the individual level (Lee, Detels, Rotheram-Borus, & Duan, 2007; Munoz et al., 2010; Rotheram-Borus, Stein, & Lester, 2006; Sacks, McKendrick, Vazan, Sacks, & Cleland, 2011; Weiss et al., 2011); (4) post-intervention cross-sectional survey (Horizons, 2006, 2007; MEASURE, 2009a, 2009b, 2009c; Ramirex-Vallez et al., 2005; Thurman et al., 2006); and (5) quasi-experimental design with a comparison group (Clacherty & Donald, 2006; Heckman et al., 2006; Lavin,

Kali, & Haas, 2010; MEASURE, 2009d, 2009e; Mueller et al., 2011). Among these quasi-experimental studies, only two reported both baseline and single point follow-up information with the follow-up periods ranging from 3 to 18 months. The remaining studies only collected post-test data for both the intervention group and comparison group. Although following up participants longitudinally made it possible to track changes, the majority of the studies did not adopt this methodology. The underlying reason may include household dissolution associated with high mortality rate among HIV/AIDS patients and high mobility for temporary jobs. Two studies had multiple follow ups.

For the six qualitative studies, two applied semi-structured interviews (Hyde, Appleby, Weiss, Bailey, & Morgan, 2005; Maman et al., 2009), another two used in-depth interviews (Airhihenbuwa et al., 2009; Ramirez-Valles & Brown, 2003), and the remaining two used a participatory approach (Kaleeba et al., 1997; Waterman et al., 2007). Along with the in-depth interviews, focus group discussion was also reported in one study (Airhihenbuwa et al., 2009).

Intervention strategies

These studies spanned a broad range of intervention strategies, reflecting stakeholders' priorities and the timely HIV prevention and policy issues. Broadly speaking, these intervention approaches included coping skills (Heckman et al., 2006; Hyde et al., 2005; Lee et al., 2007; Rotheram-Borus et al., 2006; Weiss et al., 2011), treatment and cure (Allen et al., 2009; Munoz et al., 2010; Sacks et al., 2011), cultural activities (Airhihenbuwa et al., 2009; Mueller et al., 2011), community participation such as volunteerism and activism (Apinundecha et al., 2007; Ramirez-Valles, Fergus, Reisen, Poppen, & Zea, 2005), HIV/AIDS knowledge education and risk reduction counseling (Operario et al., 2010), voluntary counseling and testing (VCT) (Maman et al., 2009), peer-group support intervention (Kumakech et al., 2009), three-layered service (Kaleeba et al., 1997), child-directed group intervention (Clacherty & Donald, 2006), the introduction of home-based care (HBC) professionals (Waterman et al., 2007), and adult mentoring and support group (Horizons, 2006, 2007; Lavin et al., 2010; MEASURE, 2009a, 2009b, 2009c, 2009d, 2009e; Thurman et al., 2006). Since this section is lengthy, we distinguish quantitative studies from qualitative studies and report adult and children studies separately.

Intervention strategies focusing on quantitative studies of adults only (Table 1, panel A)

There are eight quantitative studies that focus on adult individuals living with HIV/AIDS. Totally, four different types

Table 1.   Key characteristics of HIV/AIDS interventions from 22 quantitative studies (organized by study design).

Author/date	Study location/age range	Sample	Intervention strategy	Outcome measurements	Main findings
Panel A: Focusing on adult PLWHA only (eight quantitative studies)					
Pre/post one group study (two studies)					
Allen et al. (2009)	Australia; adult mean age 40	$N = 41$	Community-based mental health drug and alcohol nurse role with 6–8 week FU	Depression; quality of life; health	Improvement in impairment and social problems No effect on depression or quality of life
Operario et al. (2010)	Oakland, CA; adult mean age 46.5	$N = 36$	The Bruthas project: information- and motivation–behavioral skills model of HIV preventive behavior change and the AIDS risk reduction model	Social support; self-esteem; loneliness	Increased social support, self-esteem at FU Reduced loneliness at FU
Cluster RCT (one study)					
Apinundecha et al. (2007)	Thailand; adult mean age 44.8	Intv: $n = 32$, Cntl: $n = 34$	Community participation intervention of HIV knowledge and stigma reduction education	Five stigma indices	Reduction in HIV/AIDS stigma
RCT at the individual level (three studies)					
Munoz et al. (2010)	Peru; adults mean age 32	Intv: $n = 60$; Cntl: $n = 60$	Cntl: controls from a neighboring district; Intl: community-based CASA	Depression; stigma; social support; quality of life; self-efficacy	Improvements in all five outcome indices
Sacks et al. (2011)	Philadelphia; adult mean age 39.8	Intv: $n = 42$; Cntl: $n = 34$	The MTC-A program	Depression; mental health component	MTC-A clients with greater psychological functioning and stable physical health at baseline had greater improvement overall than counterparts in the comparison group
Weiss et al. (2011)	Florida, New York, New Jersey in the USA; adult aged 18+	SWPI: RCT; Intv: $n = 212$; Cntl: $n = 239$ SWPII: RCT; total $n = 482$	Cntl: the SMART/EST women's program (SWP) Intv: cognitive-behavioral stress management/expressive-supportive therapy	Distress; social support; self-efficacy; coping skills; quality of life	Improved social support, self-efficacy, coping skills, and quality of life Reduced distress
Post-intervention cross-sectional survey (one study)					
Ramirez-Valles et al. (2005)	New York city and Washington, DC; adult mean age 40	$N = 155$	Community participation in AIDS and gay-related organizations (volunteerism and activism)	Self-esteem; depression; loneliness	It compensated for the association between stigma, depression, and loneliness It buffered the negative association between stigma and self-esteem
Quasi-experimental design with a comparison group (one study)					

Heckman et al. (2006)	Four sites in the USA (Ohio, Pennsylvania, Arizona, New York); older adults 50+	Immediate trt: $n = 44$; Delayed trt: $n = 46$	Twelve-session telephone-delivered coping improvement group intervention with 3 mth FU	Psychological symptoms; life stressor burden, coping self-efficacy, avoidance coping	Higher coping self-efficacy Fewer psychological symptoms Lower levels of life stressor burden Less frequent use of avoidance coping

Panel B: Focusing on OVCY, adolescents, and/or their adult caregivers (14 quantitative studies)

Cluster RCT (one study)

Kumakech et al. (2009)	Uganda; AIDS orphans aged 10–15	Total orphans: $n = 326$; Intv: $n = 159$; Cntl: $n = 167$	School-based peer-group support intervention	Self-concept; anxiety; depression; anger	Improvement in depression, anger and anxiety; no effect on self-concept

RCT at the individual level (two studies)

Lee et al. (2007)	New York city; adolescent mean age 14.7, parent mean age 38	Parents: Intv: $n = 153$; Cntl: $n = 154$; adolescents: Intv: $n = 206$; Cntl: $n = 207$	Cntl: standard care group; Intv: coping skills interventions with 2-yr FU	Depression	Lower levels of depression
Rotheram-Borus et al. (2006)	New York city; adolescents mean age 14.77	Intv: $n = 153$; Cntl: $n = 135$	Project TALC; Cntl: standard care condition; Intv: coping skills intervention	Emotional distress; positive expectations	Reduced emotional distress at 3 yrs and increased positive future expectations at 6 yrs

Post-intervention cross-sectional survey (six studies)

Horizons (2007)	Rwanda; youth aged ≤24	Baseline: $n = 692$; FU: $n = 593$	Adult mentoring program for YHHs	Perception of adult support; grief; marginalization; maltreatment; depression	A decrease in feelings of marginalization, depressive symptoms, and feelings of grief
Horizons (2006)	Zimbabwe; youth aged 14–20	$N = 1258$	STRIVE/community-level efforts project. – PSS – Residential camps	Psychosocial well-being; psychosocial distress; lingering grief	A greater improvement in self-confidence, especially among males Limited association between intervention and hopefulness, self-efficacy, and ability to hope
Thurman et al. (2006)	Rwanda; youth aged 12–24	$N = 692$	Trained adult volunteers from the community provide mentoring to YHHs	Depression; grief; marginalization	An improvement in overall psychosocial outcomes
MEASURE (2009a)	Mbeya, Tanzania; OVC aged 8–14; caregivers mean age 41.4	OVC: $n = 564$; caregivers: $n = 488$	The Mama Mkubwa community-centered psychosocial support program implemented by TSA program staff – Volunteer home visits – Kids club participation	Self-esteem; psychosocial outcomes (positive, negative, marginalization, community stigma)	Home visit were positively associated with OVC's global self-esteem, and made caregivers have better emotional health, feel less marginalized Kids club: no effect
MEASURE (2009b)	Kilifi, Kenya; OVC aged 8–14; guardians mean age 41.6	OVC: $n = 1036$; guardians: $n = 771$	Kilifi OVC project: – Volunteer CHWs – Guardian support groups	Self-esteem; pro-social behavior; total difficulties; social isolation; perceived stigma	OVC: increased pro-social behavior, reduced behavioral problem, lower social isolation, and perceived negative attitudes. No effect on self-esteem Caregivers: lower marginalization and perceived negative attitudes

(*Continued*)

Table 1. Continued.

Author/date	Study location/age range	Sample	Intervention strategy	Outcome measurements	Main findings
MEASURE (2009c)	Thika, Kenya; OVC aged 8–14; guardians: aged 18+	OVC: N = 3423; guardians: n = 2487	The IAP – Home visit – School-based HIV education – OVC care and support community sensitization meeting	Child protection; child social isolation; extended family support; in-kind transfer	OVC: reduced social isolation, more family support, and in-kind transfers from the community Caregivers: reduced stigma
Quasi-experimental design with a comparison group (five studies)					
Clacherty and Donald (2006)	Kagera, Tanzania; older child group 13–18; younger child group 9–12	Older group: Intv: n = 78, Cntl: n = 78; younger group: Intv: n = 60, Cntl: n = 60	VSI project: child-led organizations providing HIV counseling	Emotional stress; social networks	A significant lower level of emotional stress, more emotional and practical support from adults, a greater variety of strategies for solving their problems, and a stronger internal locus of control
Lavin et al. (2010)	Rwanda; OVCY aged 10–17	Intv: n = 95; Cntl: n = 83	COSMO program	Marginalization; adult support; peer relationship; authority assistance; CES-D score	Less frequently experienced people speaking badly of them or their families or making fun of them. More frequently reported having a reliable adult in their life, stronger peer relationship, jealousy, experienced certain psychological symptoms at very high levels
MEASURE (2009d)	Iringa, Tanzania; OVC aged 8–14; caregivers mean age 44.1	Caregivers: total n = 845; OVC: Intv: n = 552, Contl: n = 552	Allamano/Tumaini HBC program – Home visit by volunteers – Kids club – Link community to the Allamano health clinic – Ensuring possession of basic school materials	Self-esteem (two measures); psychosocial outcomes (positive, negative, marginalization, perceived community sigma)	Home visits: better psychosocial outcomes for caregivers; no effect on OVC's global self-esteem or family related self-esteem Kids club: reduced emotional problems and improved social behavior Link to health clinic: no effect School supplies: better psychosocial outcomes
MEASURE (2009e)	Kagera, Tanzania; MVC aged 7–15; caregivers mean age 43.4	Caregivers (766): Intv: 335, Cntl: 431; OVC (895): Intv: n = 434, Cntl: n = 461	The SAWAKA Jali Watoto program – HIV/AIDS prevention, care and support activities – Direct support to MVC and caregivers	Self-esteem (two measures); psychosocial outcomes (positive, negative, marginalization, stigma)	OVC: better global self-esteem, more positive feelings about life, feeling more community jealousy and resentments Caregivers: More positive feelings about life, feeling more jealousy and more negative community attitudes toward HIV-affected families
Mueller et al. (2011)	South Africa; OVC aged 8–18	Intv: n = 177, Cntl: n = 120	MAD about ART program	Self-esteem; depression; self-efficacy; emotional problems	Increase self-efficacy No effect on self-esteem, depression, or emotional problems

Note: mth, month; yr, year; trt, treatment; FU, follow-up; INTV, intervention group; CNTL, control group; RCT, randomized controlled trial; OVC, orphans and vulnerable children; PWH, parents with HIV; PLWHA, people living with HIV or AIDS; VCT, voluntary counseling and testing; MVC, most vulnerable children; OVCY, vulnerable children and youth; MTC-R, modified therapeutic community residential treatment; MTC-A, modified therapeutic community aftercare program; SMART/EST, the stress management and relaxation training/expressive–supportive therapy; CES-D, Center for Epidemiologic Studies Depression Scale.

of intervention strategies were implemented: coping skills, treatment and care, community participation, and HIV education and risk reduction counseling.

Coping skills strategy among HIV-affected families was the first area of intervention reviewed (two studies). One coping strategy was the 12-session telephone-delivered coping improvement group intervention among older adults 50+ in the USA (Heckman et al., 2006) and the other was the stress management and relaxation training/expressive–supportive therapy (SMART/EST) to enhance the health of women living with HIV in the USA (Weiss et al., 2011).

The second type of intervention strategies focused on treatment and care for HIV+ patients (three studies). The study among Australian HIV+ adults explored the advanced practice mental health and drug and alcohol nursing roles in the care of HIV+ adults (Allen et al., 2009). Next, the study in Peru enrolled adult participants receiving antiretroviral therapy (ART) and provided them with Community-based Accompaniment with Supervised Antiretroviral (CASA) (Munoz et al., 2010). The only treatment and care study in the USA was the modified therapeutic community aftercare (MTC-A) program among adult clients in Philadelphia who were HIV+ with co-occurring mental and substance abuse disorders (Sacks et al., 2011).

The third type of intervention strategies concentrated on the community participation (two studies). The community intervention in Thailand (Apinundecha et al., 2007) involved the entire community by allowing participants to discuss and take actions at stages: leader engagement, information for decisions and actions, negotiable planning, management of community resources, operating activities, development for sustainability, evaluation, learning, and sharing. The community involvement study among HIV+ Latino gay men in New York and Washington, DC (Ramirez-Valles et al., 2005) explored the effects of participation in AIDS- and gay-related organizations (e.g. volunteerism and activism) on three psychological well-being indicators (depression, loneliness, and self-esteem).

The fourth type of intervention strategies applied HIV education and risk reduction counseling (one study). The study reviewed was the Bruthas Project (Operario et al., 2010), which targeted MSMW African-Americans in Oakland, CA, employed four weekly individualized risk reduction counseling sessions: general risk factors for HIV, dynamics with female partners, dynamics with male partners, and specific triggers of unsafe sex.

Intervention strategies focusing on qualitative studies of adults only (Table 2)

There were six qualitative studies that focused on adult individuals living with HIV/AIDS, each employing a unique intervention strategy. The six intervention strategies were coping skills, cultural activities, VCT, community involvement in volunteerism and activism, three-layered service, and the introduction of HBC professionals.

The study by Hyde et al. (2005) implemented coping skills intervention by providing small-group workshops and educational forums for HIV-positive adults with a mean age of 35 years old in the USA. The PEN-3 cultural model, examined the sociocultural and institutional contexts of stigma, underscored the cultural identities as a vital component of efforts to eliminate HIV/AIDS stigma (Airhihenbuwa et al., 2009). The multi-site community randomized trial, including Thailand, Tanzania, Zimbabwe, and South Africa, studied the reduction of HIV stigma and discrimination by applying community-based HIV VCT (Maman et al., 2009). The community involvement study among HIV+ Latino gay men in Chicago (Ramirez-Valles & Brown, 2003) explored the effects of participation in community-based organizations (e.g. volunteerism and activism) on psychological well-being. The AIDS Support Organization (TASO) model in Uganda provided three-layered service for PLWH: counseling, medical, and social support (Kaleeba et al., 1997). TASO was an indigenous NGO to deal with PLWH in Uganda. In addition to the traditional medical care to PLWH, TASO provided one-to-one counseling to increase emotional support and disease acceptance among the counseled clients and also provided social support services such as income generating activities to meet clients' economic needs. The introduction of HBC professionals was able to coordinate the delivery of HIV/AIDS services at a district level, educate community-based health workers, and make efforts to challenge stigma (Waterman et al., 2007).

Intervention strategies focusing on quantitative studies of OVCY, adolescents, and/or their adult caregivers (Table 1, panel B)

There are 14 studies that focus on OVCY, adolescents, and/or their adult caregivers. All 14 studies are quantitative. Intervention strategies implemented were: coping skills, cultural activities, peer-group intervention, child-directed group intervention, and the role of adult mentoring and support.

Two adolescent studies implemented intervention strategies related to coping skills. One was coping skills intervention among adolescents in New York (Lee et al., 2007) and the other was the Teens and Adults Learning to Communicate (TALC) coping skills intervention (Rotheram-Borus et al., 2006).

There was one child study emphasizing the role of cultural activities in reducing psychosocial problems. The Make A Difference (MAD) about ART program in South Africa facilitated art and education activities among children in order to build their self-esteem and self-efficacy (Mueller et al., 2011).

The peer-group intervention in Uganda aimed at reducing psychological distress in AIDS orphans through school-based peer-group support (Kumakech et al., 2009). Using participatory psychosocial approaches, this peer-group intervention facilitated the transformation of oppressive experiences into a liberating one in the forms of reflection, sharing of experiential knowledge, dialogue, participation, and development of critical awareness and empowerment. This intervention included 16 psychosocial exercises led by a primary school teacher and lasted for 10 weeks. This approach revealed significant improvement in depression, anger, and anxiety among school-aged AIDS orphans.

The Vijana Simama Imara (VSI) project in Tanzania was the only child-directed group intervention to support those distressed OVCY psychologically and to develop their own capacity to cope with the loss of parents (Clacherty & Donald, 2006). With the assistance of Humuliza staff, children aged 13–18 in a village were organized to form the cluster, the basic structure of VSI program, and receive five different activities: group counseling, peer counseling in HIV/AIDS prevention and reproductive health, self-defense for girls, the mobile farm school, and material support activities. For younger children aged 9–12, a similar organization was formed as the Rafiki Mdogo (*Little Friends*) and comparable training activities were implemented among them.

The remaining nine quantitative studies concentrated on the role of adult mentoring and support in ameliorating challenges faced by HIV/AIDS OVCY. Among them, three interventions solely targeted OVCY themselves and six considered both OVCY and their caregivers. The following are the details of the nine interventions.

The three interventions only targeting OVCY occurred in Rwanda (two studies) and Zimbabwe (one study). The adult mentoring program in Rwanda operated in a southwestern province and targeted youth-headed households (YHHs) by providing sensitization activities, discussions, and referral services through regular mentor visits (Horizons, 2007). Another program in Rwanda, the Community Support and Mentoring for Orphans and Vulnerable Children (COSMO), operated in the northern province of Rwanda and delivered services primarily through regular home visits of trained volunteers. Specific areas of intervention included both psychosocial support and other aspects of support such as education and vocational training, advocacy and protection, economic security, health and HIV prevention, emergency assistance, medical, and shelter (Lavin et al., 2010). The support to replicable and innovative village (STRIVE)/community-level efforts project in Zimbabwe (Horizons, 2006) developed three intervention groups: youth exposed to community psychosocial support programs (PSS), youth exposed to the Salvation Army Masiye Camp – a residential PSS program, and youth who attended Masiye Camp and went on to become

youth peer leaders. Different intervention activities were introduced among these three groups: (1) the community PSS program implemented the following activities: training teachers to recognize and respond to psychosocial distress among students, running kids' club for group recreation and socialization, group counseling, and problem solving; (2) the residential Masiye Camp sessions encouraged personal growth in areas such as self-esteem, trust, effective communication, conflict resolution, problem-solving, and grief resolution; and (3) the peer leadership program allowed youth to lead kids' clubs for younger vulnerable children, serve as peer counselors or peer educators.

The remaining six interventions considered both OVCY and their caregivers: three in Tanzania, two in Kenya, and one in Rwanda.

The first comprehensive program reviewed in Tanzania was the Salvation Army's Mama Mkubwa community-centered PSS, providing assistance to OVC and their families and communities. The basic structure of the Salvation Army (TSA) program was the Mama Mkubwa (*big aunt*) volunteer committee team consisting of 10–30 volunteers. Volunteers were trained to deliver home visit, counsel OVC and their caregivers, provide educational support such as homework assistance and encouragement to school-age OVC, offer HIV-prevention education, provide referrals for other specialized services, and run kids' club aiming to enhance social skills, and reduce social isolation, stigma, and discrimination (MEASURE, 2009a). The Allamano/Tumaini HBC program in Tanzania was the second program studied, which also focused on both OVC and their caregivers. In this program, there were totally four intervention strategies implemented, including providing HBC and other support services, running kids' club, linking the community to outpatient health clinic within the Allamano Health Center, and ensuring that school-age children have the necessary school materials (MEASURE, 2009d). The third program in Tanzania – SAWAKA Jali Watoto program – was designed to strengthen community-based responses to meet the psychosocial, emotional, and material needs of OVC and their elderly caregivers. Two key intervention strategies were implemented, including community-focused HIV/AIDS prevention, care, support, and direct child-focused support. All support activities were aimed at reducing HIV/AIDS-related stigma by informing, training, and educating people on anti-stigma strategies and messages, along with medical and food support. The mentoring program in Rwanda revealed the psychosocial consequences for youth lacking an adult in their lives who cares for them. The network of social connections was missing for those OVCY. Without support from the community those OVCY belonged to, the complex needs of OVCY could not be met (MEASURE, 2009e).

Two projects in Kenya aimed to support and build the capacity of OVC guardians: one was the Kilifi OVC

Table 2.   Key characteristics of HIV/AIDS community interventions from six qualitative studies (adults only).

Author/date	Study location/age range	Sample	Intervention strategy	Study design	Outcome measurements	Main findings
Airhihenbuwa et al. (2009)	South Africa; adults with wide age range	$N = 453$	The PEN-3 cultural model: – Cultural identify – Relationships and expectations – Cultural empowerment	Focus group, informant interviews	Stigma	A community dialogue was one strategy used to reduce stigmatization of PLWHA in South Africa
Hyde et al. (2005)	Los Angeles, CA; adult mean age 35	$N = 35$	GLIs – Educational forums – Multi-session small-group workshop	Semi-structured interviews	Social isolation; depression	Benefited from social support networks with a reduction in feelings of social isolation and depression
Kaleeba et al. (1997)	Uganda; adult mean age 32.3	Clients: $n = 324$; caregivers: $n = 232$	TASO model: – An NGO-supported clinical service – Providing counseling, medical and social supports to PWAs	A participatory approach	Coping skills; plan for future	High level of acceptance in families and communities, high percentage of making plan for the future, and high coping of clients and families
Maman et al. (2009)	Four sites in Africa, one in Thailand; adult aged 18–32	Total $n = 655$	A multi-site community randomized trial of community-based HIV VCT	Semi-structured interviews	Stigma	Lower HIV stigma
Ramirez-Valles and Brown (2003)	Chicago, USA; adult volunteers	Total Org $n = 62$; total men: $n = 13$	Community involvements in volunteerism and activism	In-depth interviews	Self-esteem; sense of empowerment	Increased self-esteem and sense of empowerment
Waterman et al. (2007)	Kenya; adult health professionals	$N = 27$	HBC professionals	A PAR study	Stigma	Reducing stigmatizing behavior in the context of delivering and coordinating HIV HBC

Note: NGO, non-governmental organization; VCT, voluntary counseling and testing; PWA, people living with HIV/AIDS; Org, organizations; HBC, home-based care; PAR, participatory action research.

project and the other was the Integrated AIDS Program (IAP) Thika project. The Kilifi OVC project implemented two key interventions: volunteer community health workers (CHWs) and guardian support groups. Additionally, a wide range of activities were covered such as home visits, social support, counseling, group therapy as well as provisions of school essentials and medical care (MEASURE, 2009b). In contrast, the IAP Thika project mainly delivered community education and sensitization in community forums as an OVC care and support strategy. Along with this core strategy, other support services were also provided such as VCT, group therapy, nutritional support, income generating opportunities, educational support, and vocational training (MEASURE, 2009c).

In addition to the comprehensive programs in Tanzania and Kenya, adult mentoring to YHH in Rwanda examined social support and marginalization with YHH age 13–24 who were beneficiaries of a basic needs program (Thurman et al., 2006).

Outcome indicators

The majority of the outcome measurements followed standardized instruments, including social support, self-esteem, loneliness, depression, stress, quality of life, self-efficacy, and coping skills. Social support indicators were measured using the 12-item Multidimensional Scale of Perceived Social Support with a five-point scale (Operario et al., 2010) or the Duke University of North Carolina Social Support Scale (Munoz et al., 2010). The self-esteem indicator was measured using the 10-item Rosenberg Self-Esteem Scale (1965) with five-point response option (Mueller et al., 2011; Operario et al., 2010; Ramirez-valles et al., 2005). The loneliness indicators were measured using the three-item Loneliness Scale with a three-point scale (Operario et al., 2010), the six-item loneliness and isolation scale developed by Diaz et al. (Ramirez-valles et al., 2005), or the 10-item version of the University of California, Los Angeles Loneliness Scale (Heckman et al., 2006). The depression indicators were measured using the Depression Anxiety Stress Scales (Allen et al., 2009), the Hopkins Symptom Checklist for Depression and the Berger Stigma Instrument (Munoz et al., 2010), the Short Form-36 Health Survey (SF-36) mental health component, the Beck Depression Inventory II (Ramirez-valles et al., 2005), the Global Severity Index total score, the 30-item Geriatric Depression Scale with a yes/no response format for older adults (Heckman et al., 2006), the six-item Brief Symptom Inventory Depression Subscale for Adolescents (Lee et al., 2007), the 10-item Child Depression Inventory among children (Mueller et al., 2011), or the 20-item scale of the 1977 CES-D (Horizons, 2007). The stress indicators were measured using the Emotional Stress Scale (Clacherty & Donald, 2006) or the 19-item five-point scale HIV-Related Life-Stressor Burden

Scale (Heckman et al., 2006). The mental health indicator was measured using the Health of the Nation Outcome Scales. The quality of life scale was based on the WHOQoL BREF (an abbreviated generic Quality of Life scale developed through World Health Organization). The self-efficacy scale was measured according to the HIV Self-Efficacy Questionnaire (Munoz et al., 2010), 26-item Coping Self-Efficacy Scale (Heckman et al., 2006), or the 14-item Self-Efficacy Questionnaire for Children (Mueller et al., 2011). The final area of coping skills was measured using the 29-item Ways of Coping Checklist (Heckman et al., 2006).

Some programs did not use standardized instruments for outcome measures, but instead employed their own outcome measures. For example, the VSI project measured the social support network, using the number of regular friends, the number of supportive adults for emotional needs, the number of supportive adults for survival needs, and the coping skills using the multiple-choice money budgeting awareness (Clacherty & Donald, 2006). For the community participation intervention in Thailand, the HIV/AIDS stigma scores were measured by five subjective indicators: community stigma towards PLWHA, family stigma towards PLWHA, community stigma towards the family of PLWHA, PLWHA stigma towards themselves (self-stigma), and PLWHA perceptions of stigma by their community.

All the interventions for OVCY and their families in sub-Saharan Africa adopted multiple outcome indicators measuring psychosocial well-being. For those three programs with a sole focus on OVCY, they utilized different measures of psychosocial well-being: five outcome variables in youth-headed programs in Rwanda (perception of adult support, marginalization, grief, maltreatment, and symptoms of depression), four measures in COSMO program in Rwanda (marginalization, adult support, peer relationship, and authority assistance), and three domains and outcomes in Zimbabwe STRIVE project (psychosocial well-being, psychosocial distress, and lingering grief).

The three interventions in Tanzania – Mama Mkubwa program, Tumaini home-based program, and SAWAKA Jali Watoto program – employed the identical set of outcome measurements to assess caregivers' psychosocial well-being and children's psychosocial well-being. The four indicators for caregivers' psychosocial well-being included positive, negative, marginalized feelings, and perceived community stigma and the four indicators for children's psychosocial well-being included family-related and global self-esteem subscales, emotional symptoms, and pro-social behavior.

The two projects in Kenya used different outcome indicators. The Kilifi OVC projects assessed the psychosocial well-being of children through five indicators (two guardian-reported measures concerning child behavior; child-reported self-esteem, social isolation, and perceived negative community attitudes concerning OVC and PLWHA).

The psychosocial well-being of guardians was assessed with four indices (guardian reports of their positive and negative feelings, marginalization from the community, and perceived negative community attitudes concerning OVC and PLWHA). In contrast, the IAP Thika project evaluated impacts both on psychosocial well-being and on other aspects of well-being. There were totally six indices with three assessing child protection and another three assessing community support, respectively.

Intervention findings

All intervention studies reported positive findings regarding the improvement in participants' psychosocial well-being. In the next section, we ordered the findings separately by quantitative vs. qualitative studies and adult vs. children studies.

Intervention findings focusing on quantitative studies of adults only (Table 1, panel A)

Two studies using coping skills discovered positive impacts such as improvements in social support, self-efficacy, coping skills, and quality of life among young adults (Weiss et al., 2011) and fewer psychological symptoms, lower levels of life stressor burden, higher levels of coping self-efficacy, and less frequent use of avoidance coping among older adults (Heckman et al., 2006).

All three treatment care evaluations reported substantial improvements in certain aspects of psychological well-being: an improvement in social difficulties (Allen et al., 2009), an increase in social support and a reduction in HIV-associated stigma (Munoz et al., 2010), and a bigger progress in mental health for clients with greater psychological functioning and stable health at treatment entry (Sacks et al., 2011).

The two studies concentrating on the community participation intervention strategies reported that interactions between PLWHA and other community members were effective strategies to increase tolerance and reduce stigma of PLWHA (Apinundecha et al., 2007; Ramirez-Valles et al., 2005).

As the only intervention implementing HIV education and risk reduction counseling program, the Bruthas project in California demonstrated benefits among the participants: reduced loneliness and increased feelings of social support and self-esteem at the end of four weekly counseling sessions (Operario et al., 2010).

Intervention findings focusing on qualitative studies of adults only (Table 2)

All six qualitative studies reported some favorable findings to reduce psychosocial problems: a reduction in feelings of social isolation and depression (Hyde et al., 2005), a decrease in stigmatization of PLWHA (Airhihenbuwa et al., 2009; Maman et al., 2009; Waterman et al., 2007), an increase in self-esteem and sense of empowerment (Ramirez-Valles & Brown, 2003), a high level of acceptance in families and communities, high percentage of making plans for the future, and high coping of clients and families (Kaleeba et al., 1997).

Intervention findings focusing on quantitative studies of OVCY, adolescents, and/or their adult caregivers (Table 1, panel B)

Two interventions of delivering coping skills among adolescents and teenagers revealed significant improvements in psychological well-being: a lower level of depression (Lee et al., 2007) and a reduction in emotional distress and an increase in positive future expectations (Rotheram-Borus et al., 2006).

The introduction of culture in the intervention produced distinct effects. The research findings from the MAD program were mixed and varied by different outcome indicators (Mueller et al., 2011). On the one hand, there was an increase in self-efficacy among children and on the other hand, no association existed in the domains of self-esteem, depression, and emotional problems. In contrast, the PEN-3 cultural model discovered that the intersection of culture and identity was an effective intervention to eliminate HIV/AIDS – related stigma among adults (Airhihenbuwa et al., 2009). This difference among children and adults may be explained by the intensity of cultural immersion.

As the only child-centered program in Uganda, the peer-group intervention among school-aged AIDS orphans revealed improvements in such indicators as depression, anger, and anxiety (Kumakech et al., 2009).

The VSI project in Tanzania, as the only child-directed group interventions to support OVCY, helped children to reduce emotional stress, promote a strong internal locus of control, along with learning a variety of practical strategies for solving their problems (Clacherty & Donald, 2006). Group members consistently showed having a wider circle of friends and a larger number of adult relationships offering both emotional and practical supports, higher level of confidence in terms of having solutions or attempted solutions to their problems, higher survival skills (e.g. income generation and budgeting awareness), and a more detailed understanding of future orientation.

The three interventions solely targeting OVCY (two in Rwanda and one in Zimbabwe) yielded impressive results. Youth heads of households in Rwanda, who participated in the adult mentoring program, reported a significant decrease in feelings of marginalization, depressive symptoms, and grief (Horizons, 2007). Participants in the COSMO program, another intervention in Rwanda, were also described to have higher levels of adult support,

stronger peer relationships and perceived authority assistance, and feel less marginalized (Lavin et al., 2010). However, the STRIVE project in Zimbabwe generated mixed evidence among subgroups of OVCY (Horizons, 2006): (1) females reported more trauma, stress, and psychosocial distress than males; (2) orphaned youth were more likely than non-orphaned peers to report greater stress, isolation, and psychosocial distress; (3) older youth showed greater signs of strength than younger youth; and (4) most youth displayed a good deal of resilience (confidence in themselves, capacity to help themselves, and hopefulness for the future).

For other interventions targeting both OVCY and their caregivers, the results were also promising despite some outcomes being insignificant (three in Tanzania, two in Kenya, and one in Rwanda). The first program in Tanzania – Mama Mkubwa – observed a positive association between volunteer visit and kids' global self-esteem score, while no significant effect of the interventions on kids' emotional problem subscales, pro-social behavior scale, social support networks, feelings of social isolation, and perceived community stigma (MEASURE, 2009a). Caregivers who were visited by the Mama Mkubwa volunteers and received trainings in any psychosocial, counseling, and OVC care felt less marginalized than those who were not trained even after controlling for confounders. The second program in Tanzania – Allamano/Tumaini HBC – showed no association between home visits and OVC's global self-esteem (MEASURE, 2009d). However, the provision of necessary school materials served as a significant predictor of better psychosocial outcomes, positive feelings, and more adult support. Surprisingly, caregivers who were visited by an Allamano volunteer felt more marginalized compared with those not visited, and perceived that the community rejected HIV-affected families and that people were jealous of services given to OVC and their families. The third program in Tanzania – SAWAKA program – showed that OVC in the intervention group had slightly better global self-esteem and caregivers in the intervention group had better emotional health (more positive feelings) and higher perceived jealousy from the community (MEASURE, 2009e).

Similarly, the two community-based interventions in Kenya suggested a positive trend toward the desired program effect. The Kilifi OVC project had demonstrated separate effects on children and guardians: (1) children with a guardian in support groups or CHW visits had less behavioral difficulties, lower social isolation and perceived negative attitudes concerning OVC and PLWHA than those without, although no intervention effect was found toward child-reported self-esteem and (2) guardians in support groups reported lower marginalization and perceived negative attitudes concerning OVC and PLWHA than non-participants, although no intervention effect was associated with a significant difference on measures of positive and

negative feelings among guardians (MEASURE, 2009b). Among the six outcome indices used in the IAP Thika project, participating children reported lower abuse and their guardians reported lower perceived negative attitudes toward OVC and PLWHA (MEASURE, 2009c). Lastly, the adult mentoring program for youth heads of household in Rwanda had confirmed an improvement in overall psychosocial outcomes such as depression, grief, and marginalization (Thurman et al., 2006).

Discussion

The existing literature has revealed that the community-based intervention is an effective approach to improve the well-being of PLWHA regardless of their age. Despite part of the results being insignificant, all studies under review reported significant positive intervention effects for some domains of psychosocial indicators. Many intervention strategies can serve as good practices and make good suggestions of trends. For example, the volunteer home-visiting approach was effective in strengthening PLWHA's psychological well-being through support services such as counseling, HIV education, medical referral, and homework assistance. The support group meeting for OVC caregivers provided an opportunity for guardians facing similar adversities to meet and support each other on a regular base. The reciprocal support for OVC and caregivers persisted among participants even after the intervention finished and improved the community in which they grow and develop. The regular kid's club meeting with a standardized curriculum and a trained facilitator turned out to be a good approach to encourage the community to accept and integrate OVC, and increase beneficiaries' psychological well-being.

The literature suggests that existing studies are limited in terms of coverage, intensity, and scope (Horizons, 2006; MEASURE, 2009a, 2009b, 2009c, 2009d, 2009e; Schenk, 2009). The literature also suggests that lack of program effect may be a reflection of publication bias or little exposure to intervention. Five underlying factors leading to a low intensity of program exposure have been identified:

- Follow-up periods were too short to reveal the long-term effect. A number of post-intervention assessments were conducted soon after the intervention was completed. For instance, the interval between baseline and follow-up in the study of community-based mental health drug and alcohol nurse role among adults in Australia (Allen et al., 2009) only lasted 6–8 weeks, as a result the absence of change in outcome indicators may be due to the insufficient time for the effectiveness of interventions to be demonstrated. In addition, some programs may have a delayed effect, so that the full impact of an

intervention may not be realized at the end of treatment.

- Activities with low frequencies may reduce the program effectiveness. For instance, participants in the adult mentoring and support program in sub-Saharan Africa often reported limited association between volunteer home visits and psychosocial outcomes among caregivers and/or OVC (MEASURE, 2009d). Additionally, caregivers in the TSA Mama Mkubwa program reported that volunteers for home visits seemed to be in a rush to leave as a result of the pre-designed budget constraint. More visits or prolonged visits may help to disseminate the program information more intensively. Since many home visit volunteers also face severe economic difficulties and heavy care burden by themselves, it may be more realistic to reduce the household-to-volunteer ratio.

- The impact of the program may be weakened by low attendance of kids' club. For instance, the Mama Mkubwa Program showed that OVCY attended the club meeting intermittently and had a disproportionately high percentage of most vulnerable children (MVC) even if the activity was open to all eligible children in the community (MEASURE, 2009a). Program implementers needed to find out why some OVCY chose to attend while some did not and develop solutions to boost attendance rate. In addition, the curricula and agendas need to incorporate psychosocial messages into popular kids' club activities such as playing games, singing, and dancing, and as a result, OVCY may become more emotionally expressive, physically active, make friends, and reduce depression and stigma.

- As a result of limited training, volunteers may be prevented from offering PLWHA effective supports. Volunteers may utilize a variety of training techniques, each being appropriate for the target populations that are age and gender responsive and culturally sensitive. For example, rather than simply filling out the check lists, volunteers for home visiting may provide participants with opportunities to ask questions and engage in interactive discussions and conversations.

- The potential added vulnerability among female OVCY may reflect gender disparity in outcomes. To this point, the STRIVE program in Zimbabwe found that females were particularly disadvantaged in terms of worse family conditions, less social support, and more sources of stress in daily lives (Horizons, 2006). Gender-specific activities may be useful to help reduce females' vulnerability.

The methodological limitations may also curtail the effectiveness of interventions. As this review illustrates, there remain many methodological challenges hindering the program effectiveness, including causality mechanism, selection bias, lack of consensus on outcome measurement, confounding factors, and ethical concerns. These five limitations are explained in the following paragraphs.

First, caution should be used when interpreting the causality of intervention findings. It is also noteworthy that most of program effects are evaluated according to changes in outcomes resulting from program exposure. Some changes are through the comparison of baseline and follow-up data (pre–post study), while other changes are based on differences between the intervention group and control group in the post-intervention period (quasi-experimental design). Except the five studies using RCT, differences between those who were exposed and unexposed to the intervention strategy limit inferences of causality. For cross-sectional design, there is no way to establish a causal relationship between program exposure and psychosocial outcomes. For participatory qualitative study, it has obvious disadvantage in terms of possible biased response in favor of the program. Since researchersor facilitators and clients jointly participated in data collection and analysis, they tended to overestimate the positive evaluation findings (Kaleeba et al., 1997; Waterman et al., 2007).

The second limitation concerns selection bias. Interventions were not randomized except the five RCTs. Participants were either self-selected or selected by providers into the intervention based on a number of measurable attributes. If the unobservable attributes determining whether participants end up in the intervention vs. comparison group were also attributes affecting the outcomes, it was impossible to know if the associations identified were due to the services received or pre-existing unknown differences. For instance, the Bruthas project (Operario et al., 2010) reached out to prospective participants in public spaces where African-American MSMW congregated in Oakland, and then recruited eligible participants by screening those who called the organization back. In this process, the participants receiving counseling sessions may have had an increased need for these interventions, higher risk of infection, and initially worse off with respect to the outcomes of interest. Another obvious selection bias existed among those community-based psychosocial interventions for HIV-affected children and their caregivers in sub-Saharan Africa. For example, implementing agencies and community volunteers selected the MVC to participate in the intervention, which may mean that the intervention group may have been more vulnerable to start with and more likely to benefit than the comparison group.

Third, there are limitations in outcome measurements. For most of the studies, the psychosocial outcomes were measured multi-dimensionally. Even if some studies exclusively focused on a single dimension of psychosocial well-being such as stigma (Apinundecha et al., 2007), they utilized multiple indicators capturing the complex facets of stigma. With multiple indices, it was often that

interventions had significant effects for some indices while insignificant for others in the multivariate analysis. The sharp contrast may reflect the complexity and multi-facets of psychosocial well-being measures. The differences in outcome may reflect whether the intervention employed standardized indicators, single-item indicator, or other subjective indicators. Although single-item indicator also delivers relevant information, standardized indicators can allow for cross-comparisons of findings and measure multiple domains of well-being. Lastly, self-reported data are subject to biases due to recall bias or social desirable preferences. Unlike variables based on individuals' actual choices and decisions, psychosocial well-being measurements are based on subjective reports of likes and dislikes and levels of satisfaction. A large body of literature from behavioral economics and psychology has shown that people often make inconsistent choices, fail to learn from experience, and behave not as a rational agent. Although the Cronbach's α presents some level of internal consistency or reliability of a psychometric test score, caution should be used when interpreting intervention effects of a multi-item indicator.

Fourth, it is worth mentioning that most of the evaluations did not mention whether other programs were operating in the intervention or comparison areas. All 10 interventions in the USA occurred in large metropolitan areas, and it is very common for urban-based agencies to implement various programs targeting PLWHA. If participants attended another HIV/AIDS-related intervention prior to the study reviewed, it was important to acknowledge that current evaluation did not cover all possible impacts. Without excluding delayed effects caused by the previous program, the evidence was not conclusive and should be interpreted with great caution.

Fifth, there exists community envy and backlash to PLWHA as a result of their receipt of services. It is time to reconsider the NGO assistance to OVCY and their families in resource-poor communities regarding service delivery method and negative outcomes. As has been found in evaluating psychosocial benefits among OVCY in seven sub-Saharan African countries, both OVCY and their caregivers reported jealousy of NGO aid among people in their community. Despite poor families in need of assistance, the differential aids to PLWHA caused resentment among neighbors, relatives, and peers. If the provision of services can contribute to marginalization, program implementers should consider the power dynamics within the community and may seek solutions to counteract the negative influence of discrimination. It is important that service providers do not perceive those vulnerable families simply as recipients of assistance, but also mobilize them to give back to the community (e.g. cutting wood and fetch water for the elderly). Other mechanisms may include intensified community sensitization about HIV/AIDS and expanded support network.

The reviewed evaluations of community-based interventions toward improving psychosocial well-being of PLWHA reflect diversity in terms of their study location, participants, study design, outcome indicators, and intervention strategies and findings. The significant positive intervention effects of the 28 studies provide strong evidence that psychosocial well-being of PLWHA can be improved, despite the fact that outcomes are sensitive to differences related to culture, gender, age, and the vulnerabilities of PLWHA. In addition, evidence supports the benefits of delivering a comprehensive set of interventions to PLWHA, along with their family members, caregivers, and other members within the community. It is feasible to scale up some programs and implement them in resource-limited settings. While designing methodologically sound evaluation as well as service delivery, researchers and implementers may consider existing limitations concerning program coverage, intensity, and scope utilize more rigorous research designs and measurements to make more definite conclusions about program impacts.

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Appendix

Search terms.

The combination of the following search items is used to identify relevant articles.

(a) The union of the following terms using the 'or' function
   AID
   HIV
   STI
   Acquired immunodeficiency syndrome
   Sexual transmitted infections
(b) Community
   Community-based
(c) Intervention
   Participation
   Prevention
   Evaluation
(d) Psychosocial
   Psychological