Published in final edited form as:

Am J Community Psychol. 2012 June ; 49(3-4): 483–493. doi:10.1007/s10464-011-9442-1.

System-Level Change in Cultural and Linguistic Competence (CLC): How Changes in CLC are Related to Service Experience Outcomes in Systems of Care

Crystal L. Barksdale,

Maryland Child & Adolescent Community Innovations Institute, University of Maryland School of Medicine, Baltimore, MD, USA

Phyllis Gyamfi Ottley,

ICF Macro, Atlanta, GA, USA

Robert Stephens,

ICF Macro, Atlanta, GA, USA

Tesfayi Gebreselassie,

ICF Macro, Atlanta, GA, USA

Imogen Fua,

Walter R. McDonald & Associates, Inc., Rockville, MD, USA

Melissa Azur, and

Mathematica Policy Research, Inc., Washington, DC, USA

Christine Walrath-Greene

ICF Macro, Calverton, MD, USA

Abstract

As US demographic trends shift toward more diversity, it becomes increasingly necessary to address differential needs of diverse groups of youth in mental health service systems. Cultural and linguistic competence (CLC) is essential to providing the most appropriate mental health services to youth and their families. The successful implementation of CLC often begins at the system level. Though various factors may affect change and system-level factors set the tone for broad acceptance of CLC within systems, there is limited empirical evidence linking culturally competent practices to outcomes. The purpose of the present study was to examine system-level CLC changes over time within systems of care and their associations with service experiences among youth and their families. Participants were 4,512 youth and their families enrolled in the national evaluation of the Children's Mental Health Initiative (CMHI). Results suggest that implementation of CLC at the system level improves over time in funded systems of care. Further, variation exists in specific system-level components of CLC. In addition, the changes in CLC at the system level are related to family/caregiver participation in treatment. Implications for supporting positive changes in CLC among systems of care communities, and specific strategies for community psychologists, are discussed.

Keywords

Cultural and linguistic competence; Children's mental health; Mental health services; System of care

Introduction

As the US becomes more diverse, it is imperative that providers understand how clients' social and cultural backgrounds shape their interpretation of illness, health, and well-being, and utilize culturally and linguistically appropriate practices (e.g., Betancourt et al. 2005). This is especially relevant for children's mental health, as youth are among the most rapidly growing diverse sub-populations in terms of race, ethnicity, national origin, immigration, and socioeconomic status (Pumariega et al. 2009). Historically, the mental health system has not effectively addressed the needs of culturally diverse populations (President's New Freedom Commission on Mental Health 2003; Pumariega et al. 2009) which have contributed to significant racial and ethnic disparities in mental health utilization and mental illness outcomes among youth (Pumariega et al. 2009; US Dept of Health Human Services 2001). Consequently, cultural and linguistic competence (CLC) has long been identified as critical to improving the quality of health care and eliminating racial/ethnic disparities in health (Brach and Fraserirector 2000; Betancourt et al. 2003; Pumariega et al. 2005; Smedley et al. 2003; Sue 1998; Sue et al. 2009).

In systems of care, where the service delivery model is based on meeting the individualized needs of children and families, cultural awareness, sensitivity, and acceptance of cultural differences are critical to the successful delivery of services (Cross et al. 1989). While the concept of CLC has gained widespread appeal, and is a core value in systems of care (e.g., Stroul and Blau 2010; Stroul and Friedman 1986), there remains limited empirical evidence linking culturally and linguistically competent system practices to better service and clinical outcomes (e.g., Hernandez et al. 2006; Isaacs 1998; President's New Freedom Commission on Mental Health. 2003). Similarly, it remains unclear how well the principle of CLC is implemented and changes over time within system of care programs.

While numerous definitions and models of CLC have evolved over time, most build upon a definition developed for the Child and Adolescent Service System Program (CASSP) by (Cross et al. 1989). Though this conceptualization of CLC as a "set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enable effective interactions in cross-cultural relations" (p. 13) is fundamental, it does not explicitly address the larger system context within which culturally and linguistically competent behaviors, attitudes, and policies are developed and implemented.

The successful implementation of CLC often begins at the system, or organizational, level. Hernandez et al. (2006) suggested that organizational CLC in mental health systems is the degree of compatibility between the community, the cultural and linguistic characteristics of the population served, the organizational infrastructure, and the direct services provided. The emphasis of this conceptualization is on the system context; an organizational infrastructure component is incorporated, which includes factors such as organizational values and policies, and a direct service component is incorporated, which includes issues related to consumer access, availability, and utilization (Hernandez et al. 2006; 2009). A culturally and linguistically competent mental health system is characterized by careful attention to both infrastructure and service components. Staff diversity at all levels in the organization, a monitoring system for hiring and promoting racial/ethnic minority staff, and the presence of a committee comprised of racial/ethnic minorities that is dedicated to

maintaining diversity and CLC (e.g., Darnell and Kuperminc 2006; Whaley and Longoria 2008) are key features of CLC within the organizational infrastructure. CLC within the service delivery component is often manifested through: (1) organizational values and policies that support CLC (Hernandez et al. 2006, 2009), (2) the recognition of cultural differences and characteristics in the service population, and (3) ongoing assessment of the organization's ability to meet the needs of racial/ethnic minorities (e.g., Cross et al. 1989; Siegel et al. 2000; Sue and Sue 1999). Consideration of these overall system-level factors in the development of CLC in systems of care is important because such factors can determine whether culturally and linguistically competent attitudes and practices are accepted and maintained. This may ultimately lead to better clinical practices and consumer experiences at the service delivery level. Without such consideration in mental health systems of care, therapist-level interventions promoting CLC, and methods of addressing the needs of culturally diverse youth and families, may be undermined and neglected.

There is a paucity of literature available exploring the effect of CLC on mental health and service outcomes (e.g., President's New Freedom Commission on Mental Health 2003; Sue and Sue 1999; US Dept of Health Human Services 2001), with even less research linking system-level CLC to clinical or service outcomes. The extant literature suggests that in general culturally and linguistically competent care can increase the effectiveness of mental health services by increasing the likelihood of help-seeking behaviors among racial/ethnic minorities, boosting consumer satisfaction, and increasing racial/ethnic minorities' perceptions of receiving competent care (e.g., Cauce et al. 2002; Constantine 2002; US Dept of Health Human Services 2001). While the studies linking CLC, especially system-level CLC, to specific service outcomes are minimal, they provide a foundation for exploring what and how organizational practices may change a system and help reduce client barriers to care.

Because the limited available literature on system-level CLC does not describe how well CLC principles and components are implemented and developed in the course of service delivery (Whaley and Longoria 2008) and does not examine the association between CLC and key clinical or service outcomes, the critical value of CLC remains tentative. Within children's mental health, particularly in the system of care framework, there is a clear need to improve our understanding of the implementation of CLC principles and how CLC improves services for diverse youth and families. Specifically, it is necessary to understand how system-level CLC develops, what specific system-level components of CLC are sensitive to change over time, and how these changes are related to service experience outcomes in systems of care. The purpose of the present paper is to add to the extant literature on CLC at a system level by exploring how system-level CLC develops and changes over time and its association with service outcomes within a system of care framework. Specifically, the present study examines the following research questions:

1. (a) How does system-level CLC change over time in systems of care? (b) Which system-level CLC indicators change and which remain stable over time?
2. How does family/caregiver participation in services differ between programs with CLC scores that improve over time and programs with CLC scores that remain the same (either high or low) over time?
3. How does family/caregiver perception of receipt of culturally competent care differ between programs with CLC scores that improve over time and programs with CLC scores that remain the same (either high or low) over time?

Methods

Data Source

The data were collected from the national evaluation of the Comprehensive Community Mental Health Services for Children and their Families Program (Children's Mental Health Initiative [CMHI]). The CMHI funds communities to develop and enhance systems of care to treat children with serious emotional disturbances and their families. Funded communities include entire states, large metropolitan cities, multi-county areas, rural communities, tribal locations, and United States territories.

The national evaluation of the CMHI is designed to examine the development and implementation of the systems of care approach, as well as to examine child and family outcomes. As part of the national evaluation, longitudinal system-level and individual-level data are collected from all funded communities. Individual-level data are collected from a subsample of children and families enrolled in services within funded communities. A detailed description of the national evaluation protocol and data collection procedures can be found elsewhere (Center for Mental Health Services 2006; Holden et al. 2001; Manteuffel et al. 2002).

Sample Selection

At the system level, the current sample included 55 systems of care communities that were initially funded between 2002 and 2006. At the individual level, the sample included 4,512 White, Black, and Hispanic youth and their families, enrolled in the longitudinal study of the CMHI, and with complete data on the variables of interest in the current study. Nearly 44% of the sites ($n = 24$) had majority (more than 50%) non-white staff members. At the individual level, 42% of youth were White (42%) and a majority of the youth were male (67%), with an average age of 11 years old. Nearly 50% were in the custody of their biological mother only, another 26% were in the custody of two parents. Less frequently, grandparents (6%), adoptive parents (6%), or the child's biological father (4%) held custody. Approximately 4% of children were wards of the State.

Measures

System-Level Cultural and Linguistic Competence—Information on system-level CLC was obtained from *the System of Care Assessment (SOCA)*. The SOCA is an assessment tool used to describe approaches used by communities to implement system of care principles, including cultural and linguistic competence and the extent to which communities achieve these principles. The SOCA includes two domains of CLC (Hernandez et al. 2006, 2009): Infrastructure and Service Delivery. The Infrastructure domain assesses organizational and administrative level indicators that support and facilitate service delivery. The Service Delivery domain includes indicators that assess activities and processes directly related to the provision of services to youth and families.

Data are collected during comprehensive interviews conducted at three site visits (i.e., years 2, 4 and 6 of the 6-year funding cycle) in all grant communities. During the site visits, trained interviewers conduct interviews with multiple stakeholders, including agency representatives, project directors, direct service providers, and families and youth receiving program services. The interview items pertain to each indicator comprising the domain, which measure the key principles of system of care. For example, the management and operations indicator on the Infrastructure domain includes the item "Efforts are made to recruit staff who reflect the cultural background of the intended population" as one measure of the cultural competence principle. For each interview, more than one stakeholder completed the interview. The stakeholder interviewee rated responses to these items using a

5-point scale, with 1 being the lowest possible rating reflecting “little/no efforts made,” and 5 the highest possible rating, reflecting “sufficient and effective efforts made.” All respondents’ ratings were averaged across indicators within each domain, resulting in a total mean score for the Infrastructure and Service Delivery domains. These domain scores were then averaged to obtain an overall system-level cultural competence score. The present study uses SOCA data from the first and second site visit assessment; data from the third site visit assessment was excluded because visits are not complete across all funded communities.

Demographic Characteristics—Information on youth age, gender, and race/ethnicity was obtained from administrative record reviews at the youth’s entry into services. Information on custody status and family household income was obtained via structured caregiver interview at the youth’s intake into services. For the purposes of this study, youth race/ethnicity was dichotomized as White or non-White, and custody status was dichotomized as biological parent (if the child was in the custody of one or both biological parents) or non-biological parent (if the child was in the custody of other family relatives, friends, or the state). Family household income was also a binary variable, categorized as less than \$15,000 per year or \$15,000 or more per year. The proportion of non-White staff members in grantee sites was determined, and used as a level 2 continuous covariate in the multilevel models.

Service Experiences (Participation in Treatment and Perception of Receiving Culturally Sensitive Services)—Information on caregivers’ service experiences was obtained from the Youth Services Survey for Families (YSS-F; Brunk et al. 2000). The YSS-F is a 21-item measure that assesses caregiver perception of service experiences in the past 6 months, across five domains/subscales: access, participation in treatment, cultural sensitivity, satisfaction, and outcomes (Brunk et al.). The YSS-F is administered at 6 months after entry into system of care services, and at 6-month intervals until the youth completes services. For the present study, only data from the first administration (i.e., 6-month interview) of the participation in treatment and cultural sensitivity domains from the YSS-F were used to examine service experiences. Participation in treatment assesses the caregiver’s involvement in his/her child’s treatment, services, or treatment goals. Cultural sensitivity assesses the caregiver’s perception of the culturally sensitive manner in which providers interact with him/her. Items are rated on a 5-point scale ranging from (1) *strongly disagree* to (5) *strongly agree*, and items for each subscale are averaged to yield an overall subscale score. Reliability analysis indicates that Cronbach’s alpha measuring participation in treatment is .772; cultural sensitivity of staff is .907.

Analytic Procedure

To address research questions 1a and 1b, which explored how system-level CLC changes over time and which CLC indicators are more likely to change or remain stable, means and *t* tests were calculated. Specifically, the initial status and the change in the overall system-level CLC score, CLC domain scores (i.e., Infrastructure and Service Delivery scores), and the CLC indicator scores were examined.

To address research questions 2 and 3, a multi-step process was completed. These questions explored how participation in services and perception of receipt of culturally competent care differ between programs with CLC scores that improve over time and programs with CLC scores that remain stable over time. A single variable was created to represent both the magnitude of the initial status and the direction of change over time. The variable was conceived as categorical and represented a high or low initial status that either persisted over time or showed improvement. Therefore, in the first step of the process, sites were classified into categories that characterized their type of change in implementation of system-level

CLC over time. Sites were then clustered based on the change in overall system-level CLC score from the first and second site visit assessment using Ward's clustering. Ward's clustering is an alternative method of cluster analysis that takes an analysis of variance (ANOVA) approach rather than using distance metrics or measures of association, creating clusters by maximizing within-cluster homogeneity (i.e., within-group sums of squares). The process entailed first determining two clusters using the overall SOCA score at assessment 1, and then determining the minimum and maximum scores for the two clusters. The maximum score for cluster 1 (low scores at assessment 1) was used as a cut-off to classify sites into low and high performers for each assessment point (assessment visits 1 & 2). Finally, the two groups from each assessment were cross-classified to create clusters of sites based on initial status and change in SOCA scores over time. The cross-classification of site clusters at assessment 1 and 2 generated three categories of cluster membership: (1) a cluster of sites persistently low on overall system-level CLC scores (low scores during the two visits) ($n = 14$ sites) (2) a cluster of sites that improved in overall system-level CLC scores (moved from low to high score) ($n = 16$ sites), and (3) a cluster of sites persistently high on overall system-level CLC scores ($n = 25$ sites).

Next, hierarchical linear modeling (HLM; Raudenbush and Bryk 2002) was used to assess the relationship between system-level CLC improvement and services outcomes, while accounting for individual and site-level covariates. The multilevel nature of the data collected at the levels of individuals and sites suggests that variation in outcomes among individuals nested within communities/sites. This data structure results in a two-level model with individuals at level 1 and grant communities (i.e., sites) at level 2. Observations are correlated among individuals within the same community because they share similar group characteristics (Raudenbush and Bryk). When participants in one community have more in common with each other than with participants in other communities the result is non-independence of observations, which is a violation of the assumptions of standard multiple linear regression analysis approaches. Multilevel analysis has emerged as one analytical strategy that may partly address this issue by allowing the simultaneous examination of site-level and individual-level factors. The proposed analytic strategy controls for site-level heterogeneity in the current sample since it allows for more than one component of variation.

The current application of the approach involved estimation of a multilevel logistic regression model with a random intercept. The first-level equation examined individual-level predictors of the outcomes. The outcomes (i.e., participation and perception of receiving culturally sensitive services) were dichotomized to represent high and low levels of participation in services and perception of receiving cultural sensitive of services. The intercept of this model represents average log-odds of the outcomes for the service experience measures across all individuals at the 6-month assessment wave. Individual-level covariates included child's age, and binary variables indicating gender, race/ethnicity, custody status, family income, and when the child entered services relative to the first system of care site visit. The second-level equations examined system-level predictors of the random intercept from level 1. Site-level covariates included the proportion of non-White staff members, and binary variables representing cluster membership. The level 2 intercepts represented the average log-odds of high levels of participation and perceived cultural sensitivity given a unit change in system-level characteristics. Stata's GLLMM (generalized linear latent and mixed models) module was used to estimate the two-level hierarchical linear models (Rabe-Hesketh et al. 2004; StataCorp 2007). Unconditional models (i.e., models that included only the outcome, a random intercept for level 1, and a level 2 intercept) were estimated first. Then, individual-level and system-level predictors were added to estimate the fully conditional models.

Results

System-Level Cultural and Linguistic Competence over Time

Research question 1a assessed the extent to which system-level CLC changes over time across the Infrastructure and Service Delivery domains individually, and overall (i.e., the domains combined). As shown in Table 1, the results show that both Infrastructure ($t(56) = -9.23, p < .001, d = -1.10$) and Service Delivery domains ($t(56) = -4.27; p < .001, d = -$.56) scores improved significantly from the first to the second site visit, as did the overall system-level CLC score ($t(56) = -7.01, p < .001, d = -.80$). While the mean Service Delivery ($M = 3.13, SD = .66$) domain score was significantly higher than the mean Infrastructure domain score ($M = 2.80, SD = .73$) at the first site visit ($t(56) = -3.78, p < .001, d = -.23$), the reverse was true at the second site visit; the mean Infrastructure domain score ($M = 3.58, SD = .70$) was higher than mean Service Delivery domain scores ($M = 3.45, SD = .44$). However, the difference between the mean Infrastructure and Services Delivery domain scores at the second site visit was not statistically significant at the .05 level, $t(56) = 1.69, p < .10, d = .12$. Analyses indicated that among those sites that improved in their overall CLC scores, there were significant improvements in outreach to cultural groups ($F = 11.59; p < .001$), use of culture in service provision ($F = 12.57; p < .001$), assessing culture ($F = 14.24; p < .001$), and use of culture in the development of the service array ($F = 13.55; p < .001$). Comparatively, sites that sustained high overall CLC scores at both time points showed significant improvement in the use of culture in development of the service array ($F = 11.25; p < .001$), while sites that sustained low overall CLC scores improved significantly in their outreach to cultural groups ($F = 6.38; p < .01$) and use of culture in development of the service array ($F = 10.26; p < .001$). Therefore, the sites that improved in their overall CLC scores may be differentiated from those sites that sustained low and high scores by not only the number of indicators on which there was improvement, but also the types of indicators.

Research question 1b explored the changes in specific indicators comprising the Infrastructure and Service Delivery domains, to determine which indicators improve or remain stable over time. As presented in Table 1, results suggest that three of the six indicators measured changed significantly over time. Specifically, outreach to cultural groups ($t(55) = -4.53, p < .001, d = -.65$), use of culture in the provision of services ($t(53) = -3.58, p = .001, d = -.52$), and use of culture in the development of the service array ($t(54) = -6.81, p < .001, d = -.99$), each improved significantly over time. Though not statistically significant, accommodating client's language preferences in service planning and provision ($t(43) = -1.97, p = .06, d = -.34$) and assessing cultural needs of the youth and his/her family ($t(53) = -1.74, p = .09, d = -.30$) emerged as trends.

Multilevel Modeling Results

Random intercept models were used to answer research questions 2 and 3, which examined the relationship between caregiver's participation in treatment and caregiver's perception of cultural sensitivity and child/family-level and site-level characteristics, respectively (see Tables 2 and 4). Intraclass correlation coefficients (ICCs) were computed to estimate the proportion of site-level variation out of the total variation explained by the models.

Caregiver Participation in Treatment—Results from the unconditional model (i.e., without adjusting for child/family-level and site-level characteristics) and conditional models (i.e., with covariates at level 1 and level 2) are presented in Table 2. Results from the unconditional model suggested significant variation across sites in caregiver's participation in treatment (ICC = 14%). To examine the relationship between child/family level and site-level factors and participation in treatment, a fully conditional model was estimated. Age

and custody status of the child at entry into services were the only individual-level covariates significantly associated with participation in treatment. The findings indicate that caregivers are less likely to participate in treatment of older children (AOR = 0.94, 95% CI [0.91, 0.96]), whereas biological parents are more likely to do so (AOR = 1.35, 95% CI [1.09, 1.66]). Among the site-level covariates, caregivers from sites that showed improvement in their overall system-level CLC scores between site visit assessment 1 and 2 were more likely to participate in treatment of their child (AOR = 1.63, 95% CI [1.07, 2.47]) compared to caregivers from sites that had low overall system-level CLC scores at both site visit assessments. Caregivers from sites whose overall system-level CLC scores remained high over time, however, did not have significantly different scores than caregivers from sites whose overall system-level CLC scores remained the persistently low.

Exploratory Post-hoc Analyses of Caregiver Participation in Treatment—The findings with regard to the influence of type of site-level change (i.e., persistently low, improving, persistently high) in overall CLC scores on caregivers' ratings of participation were contrary to our hypothesis regarding CLC implementation on caregiver participation in treatment. While caregivers of families served by sites in the improved scoring cluster were more likely to participate in their child's treatment compared to those caregivers served by sites in the persistently low scoring cluster, there were no differences in participation between sites in the persistently high scoring cluster and the persistently low scoring cluster. As a result, an exploratory post-hoc analysis was conducted in an attempt to further elucidate the finding. Specifically, we explored the possibility that relevant characteristics of sites (e.g., site-level variation in the proportion of racial/ethnic minority youth served, proportion of non-white staff, average ages of youth served) in the persistently high scoring cluster were more similar to those sites in the persistently low scoring cluster, than to those of sites in the improved scoring cluster, and therefore potentially confounded in the original clustering of sites.

Differences in characteristics of the three, site cluster groups were explored using ANOVA (see Table 3). The results from this exploratory post-hoc analysis suggest there are several individual and site-level demographic differences between the persistently high scoring sites and the other sites. Sites in the persistently high overall system-level CLC scoring cluster served significantly older youth, and served a significantly larger proportion of non-White youth, than sites in the other clusters. Further, while the sites in the persistently high scoring cluster had significantly larger proportions of non-White staff and non-White governance board members, the ratio of non-White staff to non-White children was actually *lower* in persistently high scoring sites on average (and more similar to sites in the persistent low cluster) than sites in the improved cluster.

Cultural Sensitivity—Results from the unconditional model suggested significant variation across sites in caregivers' ratings of the cultural sensitivity of their service experience (ICC = 7%). The two-level model (See Table 4), adjusted for child/family-level and site-level covariates, suggested that age of the child and family income at entry into services were the only significant covariates, either individual-level or site-level, that is related to caregivers' ratings of cultural sensitivity. Specifically, caregivers of older youth were less likely to perceive the youth's services as culturally sensitive (AOR = 0.95; 95% CI = 0.92, 0.99), as were caregivers with family incomes below \$15,000 per year (AOR = 0.68; 95% CI = 0.53, 0.88). While the site-level *random* effect for the conditional model was significant suggesting variation across sites in caregivers' ratings of the cultural sensitivity of the youths' services, none of the site-level covariates were significant.

Discussion

Understanding the implementation and development of CLC within systems of care is critical to ensuring that the needs of diverse youth and their families are appropriately met. While most research has focused on describing and operationalizing CLC, measuring the degree of implementation and development and systematically linking CLC to service and clinical outcomes has been lacking (e.g., Hernandez et al. 2006; Isaacs 1998; President's New Freedom Commission on Mental Health 2003). The present study attempted to fill this gap in the literature by exploring system-level changes in CLC, and how such changes are associated with service experiences of families receiving services within systems of care.

Results from this study suggest that at the system level, early in grantee sites' funding cycles and development, there are differences with regard to how well the Infrastructure and Service Delivery domains of CLC are implemented. Specifically, on average, the Service Delivery domain is better implemented initially, than the Infrastructure domain, which is consistent with findings from Telfair and colleagues demonstrating that it is more difficult to create system-level structures that address CLC (Telfair et al. 2009). Yet, greater improvement over time occurred in the Infrastructure domain, resulting in higher Infrastructure domain scores at the second site visit assessment. The shift in scores between the Infrastructure and Service Delivery domains may reflect the fact that in implementation of any new service system and its associated principles, it may be difficult to develop and employ all aspects of those principles equally. While grantee sites were adept at putting into practice many key aspects of both the Infrastructure and Service Delivery domains during their launching and establishment period, it might have been difficult to implement aspects of the Infrastructure domain, which require more comprehensive structural and systemic changes. In addition, it is likely that the changes in Infrastructure and Service Delivery domains over time are reflective of both the broad differences in the larger community context within which grantee sites operate, and the process of system-level change characteristic of implementing the system of care approach, which often has been described as incremental (Hernandez and Hodges 2003; Hernandez et al. 2009; Lourie 1994). Lastly, such a finding is particularly useful within a community psychology context. It has implications for community psychologists, who could for example play a key role in helping grantee sites understand the diverse needs of the communities they serve and how to elicit key stakeholders' opinions and assistance in implementing CLC principles to meet those needs.

Grantee sites also varied in their initial status of implementation of CLC and in their change in implementation over time. Nearly half of all sites scored consistently high across assessment time points, while nearly a third showed improvement, and a quarter scored consistently low. Importantly, the variation among sites in their implementation was also associated with aspects of the service experiences of the youth and families they served.

With regard to multilevel findings, results suggested that caregiver participation in treatment varied significantly among individuals and across sites, and site-level variation was associated with differences in implementation and manifestation of CLC. The cluster variable that represented type of site-level change was related to caregiver participation, such that sites demonstrating improvement in overall system-level CLC implementation had a higher likelihood of caregiver participation in treatment relative to sites remaining persistently low in their overall system-level CLC implementation. Additional analyses found differences among the improved and sustained low and high groups. Sites that improved on their overall CLC implementation showed significant change over time on CLC indicators such as assessing culture, providing out-reach to cultural groups, using culture in service provision and developing the service array. Consistently high sites showed

significant change in developing the service array and consistently low sites showed significant change in providing outreach to cultural groups and using culture to develop the service array. On a broader level, this finding suggests that community-based organizations and providers implementing system of care services carefully attend to the development of CLC as one strategy to improve caregiver and family participation in the treatment process. Increased engagement in the provision of system of care services may help empower caregivers and families in general, and encourage them to participate in other facets of systems of care. For example, a caregiver receiving services in those grantee sites that improved in their system-level CLC over time may also be more likely to participate on steering committees, policy boards, and evaluation efforts, as well as more likely to share their positive experiences with others in the community. This potential increase in caregiver participation in all aspects of systems of care could subsequently improve sites' efforts to attend to the family involvement principle of systems of care (Stroul and Blau 2010; Stroul and Friedman 1986). Increasing caregiver participation in the service provision component of systems of care might encourage system of care sites to adopt more authentic participatory research approaches such as inviting families who have completed services to provide feedback and specific suggestions for enhancing local evaluation efforts (Pullman 2009).

Unexpectedly, the sites demonstrating persistently high overall system-level CLC did not differ from those sites that were persistently low in likelihood of caregiver participation. Post-hoc analyses suggest that this finding may be explained by important site-level demographic differences between CLC clusters. Specifically, caregiver participation was associated with youth age in the individual-level model, which may be confounded with the clustering of sites. For example, sites in the persistently high cluster served significantly older youth, on average, than sites in the other clusters. Alternatively, this surprising finding may also be attributed to a possible interaction between caregiver motivation to participate in treatment and the ongoing changes in the system. For example, it may be that caregivers receiving services in sites that demonstrated improvement in overall system-level CLC, were more motivated to participate in the treatment process because of perceived proactive changes in the systems in which they were receiving services. Thus, a limitation of the present study was the inability to assess and account for internal factors, such as motivation for treatment, that influence caregivers' experiences. More broadly, such results may highlight that a key factor to consider in the continued development of the national evaluation is that the measurement and conceptualization of system-level CLC is limited in its ability to consider important contextual factors that affect both the family's and the providers' perception of CLC.

While caregivers' experiences of cultural sensitivity in their services also varied significantly at the individual level and site level, only a small amount of the variation was attributable to the site level, and this variation was not related to differences in implementation and manifestation of CLC. Caregivers of older youth, and those with family incomes below \$15,000 per year, were less likely to rate the youth's services as culturally sensitive. While examining system-level implementation of CLC is helpful in understanding the external context that influences caregivers' perceptions of receiving culturally sensitive and appropriate care, the absence of a relationship between these constructs in the present study suggests that perhaps even more important is appreciating the caregivers' internal conceptualizations of culturally and linguistically competent care. Specifically, perhaps the concept of receiving culturally sensitive care is best captured by more precise and comprehensive measures of CLC that focus, not only on issues related to race and ethnicity, but also on the families' perceptions of how the system addresses cultural issues related to income and serving the needs of older youth.

Limitations and Implications of Current Study Findings

While the findings from the current study highlight the complex nature of site-level variation in implementation and expression of CLC within systems of care, they should be interpreted taking study limitations into account. While site-level characteristics are clearly important in differentiating those sites that improve in their system-level implementation of CLC and those sites that remain stable, it remains unclear whether these, or other unmeasured, site-level characteristics predict change and stability since these characteristics were not measured before sites became systems of care grantee communities. It may be, for example, that sites that have a long history of targeting particular demographics of the population (e.g., older youth, racial/ethnic minority youth) are more likely to experience consistently high system-level CLC, because their system has more experience in developing the necessary infrastructure and service delivery practices to meet the needs of the youth and families served. Therefore, in conceptualizing system-level CLC, all sites may need to focus more on the cultural nuances related to factors such as income and age. In addition, though the current study focused on the development of CLC over time, it is difficult to conclude that there are causal relationships between system-level CLC and individual level characteristics given that the individual-level data was collected before the system-level data. As such, it would be useful to assess and describe sites' infrastructure and service delivery elements supporting CLC principles before, and at the time of, becoming systems of care grantee communities, to better control for variation in how well sites implement system-level CLC principles.

Future research exploring these issues and using findings to guide the development of technical assistance around system-level CLC implementation within systems of care, can be facilitated by community psychologists and community stakeholders. For example, there is a clear need for improved technical assistance that targets those groups of sites that possess characteristics related to persistently low overall CLC implementation. Community psychologists using an ecological perspective and knowledge base in interventions to improve the social and community contexts of individuals through systematically changing the social and political circumstances of disenfranchised communities (e.g., Kelly 1968; Prilleltensky and Prilleltensky 2006; Trickett 2009) may help inform such technical assistance efforts. For example, in addition to actively participating on grantee sites' governance boards as suggested by Cook and Kilmer (this issue), community psychologists could help grantee sites identify and collaborate with community stakeholders. Community psychologists could also facilitate sites' implementation of system-level CLC by: (1) educating staff about participatory research and assessment; (2) helping sites develop interventions to maximize stakeholder buy-in through empowerment and collaboration, and (3) educating sites about how culture affects mental health, mental illness and service utilization behavior (Cook and Kilmer 2010; Pullman 2009; Trickett 2009). In addition, community psychologists may help sites and communities recognize that true system change requires shifting and realigning key system factors (e.g., system norms, system resources, system operations, etc.) away from the status quo (Foster-Fishman et al. 2007). Then, by encouraging sites to acknowledge the status quo, identify those factors that are consistent and inconsistent with the status quo, and guide interventions (such as peer-to-peer cultural learning collaborative) to change those factors, true system change can occur.

Acknowledgments

This work was supported in part by contracts #280-97-8914, #280-00-8040, and #280-99-8023 to ICF Macro from Center for Mental Health Services within SAMHSA, and NIMH 1R01MH075828-01A1 (PI: Philip J. Leaf).

References

- Betancourt JR, Green AR, Carrillo JE, Ananeh-Firempong O. Defining cultural competence: A practical framework for addressing racial/ethnic disparities in health and health care. *Public Health Reports*. 2003; 118:293–302. [PubMed: 12815076]
- Betancourt JR, Green AR, Carrillo JE, Park ER. Cultural competence and health care disparities: Key perspectives and trends. *Health Affairs*. 2005; 24:499–505. doi:10.1377/hlthaff.24.2.499. [PubMed: 15757936]
- Brach C, Fraserirector I. Can cultural competency reduce racial and ethnic health disparities? A review and conceptual model. *Medical Care Research and Review*. 2000; 57(Supplement 1):181–217. doi: 10.1177/107755800773743655. [PubMed: 11092163]
- Brunk, M.; Koch, JR.; McCall, B. Report on parent satisfaction with services at community services boards. Virginia Department of Mental Health, Mental Retardation, and Substance Abuse Services; Charlottesville, VA: 2000.
- Cauce AM, Domenech-Rodriguez M, Paradise M, Cochran BN, Shea JM, Srebnick D, et al. Cultural and contextual influences in mental health help seeking: A focus on ethnic minority youth. *Journal of Consulting and Clinical Psychology*. 2002; 70:44–55. [PubMed: 11860055]
- Center for Mental Health Services. Annual report to congress on the evaluation of the comprehensive community mental health services for children and their families program. ORC Macro; Atlanta, GA: 2006.
- Constantine MG. Predictors of satisfaction with counseling: Racial and ethnic minority clients' attitudes toward counseling and ratings of their counselors' general and multicultural counseling competence. *Journal of Counseling Psychology*. 2002; 49:255–263.
- Cook JR, Kilmer RP. Systems of care: New partnerships for community psychology. *American Journal of Community Psychology*. 2010
- Cross, T.; Bazron, B.; Dennis, K.; Isaacs, M. Towards a culturally competent system of care volume I. Georgetown University Child Development Center, CASSP Technical Assistance Center; Washington, D.C.: 1989.
- Darnell AJ, Kuperminc GP. Organizational cultural competence in mental health service delivery: A multilevel analysis. *Journal of Multicultural Counseling and Development*. 2006; 34:194–207.
- Foster-Fishman P, Nowell B, Yang H. Putting the system back into systems change: A framework for understanding and changing organizational and community systems. *American Journal of Community Psychology*. 2007; 39:197–216. doi:10.1007/s10464-007-9109-0. [PubMed: 17510791]
- Hernandez M, Hodges S. Building upon the theory of change for systems of care. *Journal of Emotional and Behavioral Disorders*. 2003; 11:19–26.
- Hernandez, M.; Nesman, T.; Isaacs, M.; Callejas, LM.; Mowery, D., editors. Examining the research base supporting culturally competent children's mental health services. (Making children's mental health successful series, FMHI pub. No. 240-1). University of South Florida, Louis de la Parte Florida Mental Health Institute, Research & Training Center for Children's Mental Health; Tampa, FL: 2006.
- Hernandez M, Nesman T, Mowery D, Acevedo-Polakovich ID, Callejas LM. Cultural competence: A literature review and conceptual model for mental health services. *Psychiatric Services*. 2009; 60:1046–1050. [PubMed: 19648191]
- Holden EW, Friedman RM, Santiago RL. Overview of the national evaluation of the comprehensive community mental health services for children and their families program. *Journal of Emotional and Behavioral Disorders*. 2001; 9:4–12.
- Isaacs, M. The state of the states: Responses to cultural competence and diversity in child mental health. Georgetown University Child Development Center, National Technical Assistance Center for Children's Mental Health; Washington, DC: 1998.
- Kelly, JG. Toward an ecological conception of preventive interventions. In: Carter, J., Jr, editor. Research contributions from psychology to community mental health. Behavior Publications; New York: 1968. p. 77-99.

- Lourie, IS. Principles of local system development for children, adolescents, and their families. Kaleidoscope; Chicago: 1994.
- Manteuffel B, Stephens RL, Santiago R. Overview of the national evaluation of the comprehensive community mental health services for children and their families program and summary of current findings. *Children's Services: Social Policy, Research, and Practice*. 2002; 5:3–20.
- President's New Freedom Commission on Mental Health. Achieving the promise: Transforming mental health care in America. Final report. US Department of Health and Human Services; Rockville, MD: 2003.
- Prilleltensky, I.; Prilleltensky, O. Promoting well-being: Linking personal, organizational, and community change. Wiley; New York: 2006.
- Pullman MD. Participatory research in systems of care for children's mental health. *American Journal of Community Psychology*. 2009; 44:43–53. [PubMed: 19533331]
- Pumariega AJ, Rogers K, Rothe E. Culturally competent systems of care for children's mental health: Advances and challenges. *Community Mental Health Journal*. 2005; 41:539–556. [PubMed: 16142537]
- Pumariega AJ, Rothe E, Rogers K. Cultural competence in child psychiatric practice. *Journal of American Academy of Child and Adolescent Psychiatry*. 2009; 48:362–366. doi:10.1097/CHI.0b013e31819aaca8.
- Rabe-Hesketh, S.; Skrondal, A.; Pickles, A. GLLAMM Manual. Oct. 2004 U.C. Berkeley Division of Biostatistics Working Paper Series 2004 Working Paper 160. Available at <http://www.bepress.com/ucbbiostat/paper160>
- Raudenbush, SW.; Bryk, AS. Hierarchical linear models: Applications and data analysis methods. 2nd ed. Sage Publications; Thousand Oaks, Calif: 2002.
- Siegel C, Davis-Chambers E, Haugland G, Bank R, Aponte C, McCombs H. Performance measures of cultural competency in mental health organizations. *Administration and Policy in Mental Health*. 2000; 28:91–106. [PubMed: 11194126]
- Smedley, BD.; Stith, AY.; Nelson, AR., editors. Unequal treatment: Confronting racial and ethnic disparities in health care. National Academy Press; Washington, DC: 2003.
- StataCorp, LP. Stata statistical software: Release 10. StataCorp LP; College Station, TX: 2007.
- Stroul BA, Blau GM. Defining the system of care concept and philosophy: To update or not to update. *Evaluation and Program Planning*. 2010; 33:59–62. doi:10.1016/j.evalprogplan.2009.06.003. [PubMed: 19836078]
- Stroul, BA.; Friedman, RM. A system of care for children and youth with severe emotional disturbances. CASSP Technical Assistance Center for Child Health and Mental Policy, Georgetown University Child Development Center; Washington, D.C.: 1986.
- Sue S. In search of cultural competence in psychotherapy and counseling. *American Psychologist*. 1998; 53:440–448. [PubMed: 9572007]
- Sue, DW.; Sue, D. Counseling the culturally different: Theory and practice. 3rd ed. John Wiley; New York: 1999.
- Sue S, Zane N, Hall G. C. Nagayama, Berger LK. The case for cultural competency in psychotherapeutic interventions. *Annual Review of Psychology*. 2009; 60:525–548. doi:10.1146/annurev.psych.60.110707.163651.
- Telfair J, Bronheim SM, Harrison S. Implementation of culturally and linguistically competent policies by State Title V children with special health care needs (CSHCN) programs. *Maternal and Child Health Journal*. 2009; 13:677–686. doi:10.1007/s10995-008-0407-4. [PubMed: 18780171]
- Trickett EJ. Community psychology: Individuals and interventions in community context. *Annual Review of Psychology*. 2009; 60:395–419. doi:10.1146/annurev.psych.60.110707.163587.
- US Dept of Health Human Services. Mental health: Culture, race, and ethnicity—A supplement to mental health: A report of the surgeon general. Author; Rockville, MD: 2001.
- Whaley AL, Longoria RA. Assessing cultural competence readiness in community mental health centers: A multidimensional scaling analysis. *Psychological Services*. 2008; 5:169–183. doi:10.1037/1541-1559.5.2.169.

Table 1

Grantee Sites' overall CLC and domain System of Care Assessment (SOCA) scores at first and second site visits 1 and 2

	n	Site Visit Mean		t value
		First <i>M</i> (SD)	Second <i>M</i> (SD)	
<i>CLC indicators</i>				
Language	44	3.81 (.83)	4.08 (.73)	-1.97 [†]
Outreach	56	2.81 (.95)	3.40 (.87)	-4.53**
Culture provision	54	2.37 (.63)	2.70 (.61)	-3.58*
Culture assessed	54	3.79 (.70)	3.97 (.49)	-1.74 [†]
Service array	55	2.62 (1.02)	3.58 (.93)	-6.81**
Recruit staff	52	3.56 (1.10)	3.82 (1.13)	-1.37
<i>CLC domains and overall CLC score</i>				
Infrastructure	57	2.80 (.73)	3.58 (.70)	-9.23**
Service delivery	57	3.13 (.66)	3.45 (.44)	-4.28**
Overall CLC	57	3.06 (.60)	3.48 (.44)	-7.01**

* $p < .05$;

** $p < .001$,

[†] $p < .10$

Table 2
Multilevel logistic regression analyses predicting caregiver's participation in treatment

	Unconditional		Conditional	
			AOR	95% CI
Level 1 (Child/family Specific)				
Child age			0.94**	[0.91, 0.96]
Child gender (female)			1.03	[0.86, 1.24]
Child race (non-white)			0.95	[0.77, 1.18]
Biological parent custody status			1.35*	[1.10, 1.66]
Family income (below \$15 K)			0.90	[0.75, 1.08]
Entry to service (On/before 1st site visit)			0.92	[0.75, 1.13]
Level 2 (Site-level Specific)				
Improved scoring vs. Low scoring cluster			1.65*	[1.08, 2.51]
High scoring vs. Low scoring cluster			1.26	[0.87, 1.82]
Proportion of non-White staff			0.65	[0.35, 1.18]
<i>Site-level variance component</i>				
Level-2 variance		0.57** (.10)	0.36** (.07)	
ICC (%)		14.45%	9.80%	

Standard errors are in parentheses

* $p < .05$;
** $p < .001$,
‡ $p < .10$

Table 3

Demographic characteristics by site-level change in CLC score cluster

	Cluster			F(2, 4,509)
	Persistently low scorers	Improved scorers	Persistently high scorers	
Independent variables				
Child/family characteristics				
Average age of child	10.57 ^a	10.43 ^a	11.52 ^b	34.91 ^{**}
Proportion female children	.32	.34	.34	.90
Proportion non-White children	.45 ^a	.49 ^a	.71 ^b	135.30 ^{**}
Proportion of children in custody of one or both biological parent(s)	.78	.80	.80	.80
Proportion family income below \$15 K	.42	.43	.45	1.09
Proportion of children entering service on/before 1st site visit	.21 ^a	.32 ^b	.26 ^c	24.10 ^{**}
Site-level characteristics				
Proportion non-white staff	.31 ^a	.35 ^b	.47 ^c	169.79 ^{**}
Proportion non-white members of governing body	.22 ^a	.22 ^b	.35 ^b	159.36 ^{**}
Dependent variables				
Proportion of caregivers with high participation in treatment	.85 ^a	.89 ^b	.84 ^a	6.39 [*]
Proportion of caregivers with high cultural sensitivity	.93	.94	.94	.13

^aFor post-hoc comparisons a similar letter designation (such as) indicates clusters are not significantly different, while dissimilar letters indicate statistically significant difference between (or among) clusters with respect to the variable. *CG* caregiver

* $p < .05$,

** $p < .01$

Table 4
Multilevel logistic regression analyses predicting caregiver's perception of receiving culturally sensitive services

	Unconditional		Conditional	
			AOR	95% CI
Level 1 (child/family specific)				
Child age			0.95*	[0.92, 0.99]
Child gender (female)			1.21	[0.93, 1.58]
Child race (non-white)			1.05	[0.78, 1.42]
Biological parent custody status			1.12	[0.83, 1.52]
Family income (below \$15 K)			0.68*	[0.53, 0.88]
Entry to service (on/before 1st site visit)			0.91	[0.68, 1.21]
Level 2 (site-level specific)				
Improved scoring versus low scoring cluster			1.27	[0.78, 2.09]
High scoring versus low scoring cluster			1.29	[0.77, 2.14]
Proportion of non-White staff			1.66	[0.74, 3.72]
Site-level variance component				
Level-2 variance	0.25** (.12)		0.22** (.08)	
ICC (%)	6.94%		6.22%	

Standard errors are in parentheses
* $p < .01$