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Review

Disparities in Latino substance use, service use, and treatment: Implications for culturally and evidence-based interventions under health care reform

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ABSTRACT

Background: The goal of this systematic literature review was to enhance understanding of substance use, service use, and treatment among Latino subgroups to improve access to care and treatment outcomes in an era of health care reform.
Methods: The authors used 13 electronic databases and manually searched the literature from January 1, 1978, to May 30, 2013. One hundred (69%) of 145 primary research articles met the inclusion criteria. Two blinded, independent reviewers scored each article. Consensus discussions and a content expert reconciled discrepancies.
Results: Current rates of alcohol and substance abuse among Latinos are comparable to or surpass other U.S. ethnic groups. Disparities in access and quality of care are evident between Latinos and other ethnic groups. As a heterogeneous group, Latinos vary by geographic region in terms of substance of choice and their cultural identity takes precedence over general ethnic identity as a likely determinant of substance abuse behaviors. There is growing research interest in systems influencing treatment access and adherence among racial/ethnic and gender minority groups. However, studies on Latinos' service use and immediate treatment outcomes have been both limited in number and inconsistent in findings.
Conclusions: This review identified human capital, quality of care, and access to culturally responsive care as key strategies to eliminate disparities in health and treatment quality. Implications are discussed, including the need for effectiveness studies on Latinos served by systems of care that, under health care reform, are seeking to maximize resources, improve outcomes, and reduce variation in quality of care.
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1. Introduction

Despite national concern in the United States regarding health disparities, research evidence focused on substance abuse treatment (SAT) among Latinos is limited. The minimal but growing evidence available has indicated that Latinos report significant substance abuse problems and experience more barriers than Whites to accessing and engaging in treatment services (Guerrero et al., 2013b; Marsh et al., 2009; Wells et al., 2001). Service use research has shown that compared to Whites, Latinos are less likely to seek and complete treatment, receive fewer services overall, and are less satisfied with treatment. In addition, findings have indicated that Latinos remain in treatment for shorter periods than Whites; nonetheless, they demonstrate positive outcomes in terms of reduced substance use as well as improved health and social functioning when accessing services that are adequate in number and quality (Campbell and Alexander, 2002; Guerrero, 2012; Guerrero et al., 2012a; Howard, 2003; Marsh et al., 2009).

Overall, understanding Latino substance use, service use, and treatment outcomes has been challenging. The paucity of data sets with adequately sized Latino samples and subsamples has been a primary barrier to the development of evidence-based substance abuse services for Latinos (Alegría et al., 2006; Amaro et al., 2006). Hence, there is little evidence relevant to (a) tailoring processes of care to the needs of Latino clients to achieve the best outcomes and (b) the development of culturally competent interventions, i.e., those designed to meet the specific needs of specific groups. Significant questions remain about substance use patterns, access, and strategies to improve the effectiveness of SAT for Latinos. As one of the principles of health care reform is to improve client outcomes among underserved populations (Andrulis et al., 2010), these questions are particularly important to increasing access and quality of care for Latinos.

The goal of this literature review was to enhance understanding of substance use, service use, and treatment among Latino subgroups highly represented in the SAT system in the United States. This review was also intended to inform the design, implementation, and testing of treatment programs serving these culturally diverse clients. Finally, the review provided support for efforts to enhance the standard of care for vulnerable and generally low-income Latino populations in a new era of health care service delivery. We sought to address the following questions. (1) How do findings in the literature contribute to understanding substance abuse patterns as well as ways to improve SAT use and outcomes among Latinos? (2) What are the implications of these findings for the development of evidence-based SAT practices in an era of health care reform?

2. Methods

A comprehensive strategy, including the exploration of 13 online databases and a manual search of appropriate literature, guided the search for pertinent articles that addressed the study questions. The 13 databases were PubMed, MEDLINE, MANTIS, MD Consult, Web of Science, Embase, CINAHL, BIOSIS Previews, PsycINFO, OSTMED, OCLC FirstSearch, ProQuest Dissertations and Theses, and Cochrane Library. The inclusion/exclusion criteria were adapted, modified, and developed after review and discussion of guidelines published by leaders in the field of systematic reviews (Alegría et al., 2006; Amaro et al., 2006). Inclusion criteria were: articles in any language that pertained to Latino substance use, service use, and treatment in the United States that were published between January 1, 1978, and May 30, 2013, in a peer-reviewed journal article, monograph, or dissertation. The full search yielded 145 research articles, from which one hundred (69%) met the inclusion criteria. Articles were excluded if they were inconsistent with the inclusion criteria or anecdotal, speculative, or editorial in nature. To address inconsistencies and standardize the review procedures, the authors pilot-tested a brief but clear definition and coding protocol.

3. Substance use disparities among Latinos

In 2012, the U.S. Census Bureau reported that 64.3 million Americans identified as Latino, comprising approximately 16.8% of the total U.S. population. Reflecting their diversity, Latinos trace their ethnic origins to various regions, including Mexico (64%), Puerto Rico (9%), Cuba (3.4%), Dominican Republic (2.8%), Central America (7.6%), South America (5.5%), and other Latino countries (7.7%; U.S. Census Bureau, 2009). Latinos represent the fastest-growing population entering SAT, doubling in size and reaching 12% of the total treatment population during the past 10 years (Guerrero, 2010).

Despite growth in the number of Latinos entering SAT, there are clear disparities in the prevalence of alcohol and substance abuse between Latinos and other racial and ethnic groups. Although substance use among all Latinos is lower than other groups, certain Latino subgroups and younger Latinos have higher rates of use. According to the National Survey on Drug Use and Health, the most comprehensive longitudinal source of information in the field (National Institute on Drug Abuse, 2008), among people 12 years old or older, 8.1% of Latinos reported using illicit drugs during the previous month compared to 10.7% of African Americans and 9.1% of Whites (Substance Abuse and Mental Health Services Administration [SAMHSA], 2011). Despite their lower rates of illicit drug use, Latinos reported higher rates of substance abuse or dependence (9.7%) than Whites (8.9%) and African Americans (8.2%; SAMHSA, 2011). On the other hand, consistent with other studies, binge drinking was most common among Latinos (26%), compared to 21.3% of non-Latino Whites (Chartier and Caetano, 2010).

Substance of choice among Latinos varies by geographic region and thereby by Latino subgroup due to the distribution of Latino subgroups throughout the United States. In 2006, in urban and ethnically diverse areas such as Los Angeles County, California, Latinos were more likely to report using heroin than other drugs, African Americans were more likely to report using cocaine/crack, and Whites were more likely to report using amphetamines (Bluthenthal et al., 2007). In other areas highly populated by Latinos, such as Texas, heroin use was also most common among Latinos, whereas on the East Coast, use of cocaine was higher among Latinos than any other group (Alegría et al., 2006; Amaro et al., 2006). Despite these patterns, there are no established accounts

indicating that one racial group has a consistent pattern of use or abuse in relation to any given substance.

Latinos comprise a heterogeneous population of individuals with diverse ethnic, linguistic, and nationality backgrounds that is geographically distributed throughout the United States. Latino subgroups report significant differences in substance use and abuse based on place of birth and language (Alvarez et al., 2007; Vega and Sribney, 2005). For instance, Caribbeans, Central Americans, and Cubans reported lower rates of illicit drug use in comparison to Whites, whereas the highest rates of illicit drug use among Latino subgroups were reported by Mexican Americans and Puerto Ricans (Alvarez et al., 2007). Further, Mexican Americans and Puerto Ricans reported heavier and more consistent alcohol consumption and were more likely to engage in binge-drinking behaviors in comparison to Cubans, Central Americans, and South Americans (Alvarez et al., 2007). In urban and diverse areas, Cubans and Puerto Ricans reported higher use of heroin and cocaine, whereas Mexicans reported higher use of amphetamines, particularly in the Southwest (Guerrero et al., 2012b). Thus, differences in patterns of use and drug of choice may require distinct intervention models depending on geographical location.

3.1. Sociodemographic characteristics

When exploring differences in the prevalence of substance use among Latino subgroups, it is also important to consider variations based on gender, cultural values, birthplace, and other sociodemographic characteristics (Amaro et al., 1999). Possible factors contributing to the increased risk of illicit drug use and abuse among Mexican Americans and Puerto Ricans include specific demographics such as younger age, fewer years of formal education, and higher rates of unemployment and concentrated poverty in comparison to other Latinos living in the United States (Alvarez et al., 2004; Guerrero et al., 2011; Vega and Sribney, 2005).

Other characteristics that shape Latino substance use includes the historically observed acculturation and gender gaps in substance use rates, which seem to be higher among Latinos with greater acculturation, broadly defined by place of birth and language spoken. These disparities have a particularly detrimental effect on Latinas born in the United States. Studies have suggested that foreign-born Latinas are more likely than their male counterparts to abstain from substances and illicit drugs and less likely to participate in heavy drinking (Alvarez et al., 2004; Amaro et al., 1999; Vega et al., 1998). Cultural norms are associated with the discouragement of substance and alcohol use among foreign-born Latinas (Alvarez et al., 2004; Amaro et al., 1999). Nonetheless, when compared to any other female racial group in the United States, some studies have suggested that Latinas report higher rates of lifetime use of alcohol and illicit drugs (Alvarez et al., 2004). Studies have reported higher severity rates of untreated drug use at intake among Latinas compared to their male counterparts (Kosten et al., 1993). Overall, the negative effect of acculturation on women is a critical issue; evidence has suggested that among Latinos, alcohol and substance use tends to increase disproportionately among women compared to men, corresponding to similar rates of acculturation to American lifestyles (Chartier and Caetano, 2010; Vega et al., 1998).

Migration patterns also predict substance use and abuse among Latinos (Alegría et al., 2007). Studies revealed that individuals born in the United States or who immigrated to the country at a young age are significantly more likely to experiment with alcohol or illicit drugs than Latinos who immigrated as adults (Alvarez et al., 2004, 2007). Similarly, individuals who immigrated to the United States at a young age (infancy to 16 years old) have an increased likelihood of a 12-month diagnosis of a substance use disorder (Alegría et al., 2007). Furthermore, U.S.-born Latinos are more likely to use marijuana and cocaine than Latinos born in either Mexico or Puerto Rico (Alvarez et al., 2007). Although there have been mixed reports on the relationship between birthplace and substance use and abuse among Latinos, one consistent finding has been that Latinas born outside the United States are more likely to abstain from substance use than U.S.-born Latinas (Alvarez et al., 2007; Vega and Sribney, 2005). Experts have suggested that this difference is mainly attributable to prescribed social roles and behaviors in immigrant Latino families (Oetting and Beauvais, 1990) and the role of stigma in Latina substance use (Mora, 2002; Valdez et al., 2000). Nonetheless, there is limited research to date that has directly addressed this question.

In sum, when considering risk factors that contribute to alcohol and drug abuse among Latinos, cultural identity takes precedence over general racial identity as a likely determinant of substance abuse behaviors. As the literature has suggested, place of birth and age at migration to the United States are among the strongest predictors of substance use because they indicate the likelihood of acculturation into American society, which is believed to be a strong determinant of alcohol and illicit drug use. Data on drinking and drug use among Latinas have also supported this finding and stressed the influence of sex roles. Overall, limited research has explored variations among Latino subgroups based on gender and regional and contextual settings. Place-based interventions that consider the context in which Latinos access, use, and recover from alcohol and drugs are critical to enhancing treatment effectiveness and closing the health disparity gap.

4. Treatment disparities

Individual-level factors such as lower human capital are also known to disproportionally affect efforts by Latinos to access and engage in treatment (Guerrero, 2012; Marsh et al., 2009). Differences in human capital and experience with social services may also place minorities at a disadvantage in terms of meeting the demands of a structured treatment program. Latinos entering treatment report lower human capital than Whites—specifically, less education and lower levels of employment (Bluthenthal et al., 2007; Tonigan, 2003). In addition, Latinos are more likely to enter treatment at a younger age and without previous treatment experience (Fosados et al., 2007; Jacobson et al., 2007a; Marsh et al., 2009; Niv et al., 2009). Lastly, Latinos are more likely than Whites to experience involvement with the criminal justice system before and after treatment (Niv et al., 2009). The distinct sociodemographic characteristics of young, less-educated, and treatment-naive Latinos entering SAT have significant implications for health literacy and intervention tolerability, fidelity, and acceptability.

4.1. Service access, use, and satisfaction

Racial/ethnic and gender comparisons regarding service use and immediate treatment outcomes have been both limited in number and inconsistent in findings. In terms of service use, some evidence has suggested that Latinos have greater or equal access to SAT compared to Whites (Daley, 2005; Niv and Hser, 2006). However, a significant majority of studies showed they are less likely to seek treatment (Agosti et al., 1996; Kleinman et al., 1992; Rebach, 1992; Wickizer et al., 1994), have less access to treatment (Robles et al., 2006; Wu et al., 2003), receive fewer services (Jerrell and Wilson, 1997; Wells et al., 2001), and are less likely to report overall satisfaction with treatment (Tonigan, 2003; Wells et al., 2001). These inconsistencies may be attributable to regional variations. Untreated addiction and mental health issues are part of the larger health equity problem in the United States. When care is provided to Latinos, it tends to be lower in quality and influenced by a lack

of cultural sensitivity, with high negative evaluations by clients (Alegría et al., 2006; Marsh et al., 2009; Quist and Law, 2006).

Research on the treatment process, such as duration in treatment, has indicated that all racial/ethnic groups benefit from SAT in terms of improved outcomes. However, there is significant variability across groups, including by gender, in terms of treatment duration and completion and key factors that influence treatment outcomes. Time spent in treatment was shown to be a robust predictor of posttreatment drug use and health outcomes for all groups (Price, 1997; Simpson, 1979; Simpson et al., 1997; Zhang et al., 2003). However, treatment duration varies among racial and ethnic groups, with Latinos reporting shorter service duration compared to Whites (Agosti et al., 1996; McCaul et al., 2001; McKay et al., 2003; Tonigan, 2003). Latinos also make fewer visits to their provider, are less likely to complete treatment, and are more likely to express unmet service needs (Agosti et al., 1996; Bluthenthal et al., 2007; Jacobson et al., 2007a; Kleinman et al., 1992; Marsh et al., 2009; Niv et al., 2009; Rebach, 1992; Shim et al., 2009; UCLA Integrated Substance Abuse Programs, 2007; Wickizer et al., 1994). Conversely, Whites, particularly those of higher socioeconomic status (Jacobson et al., 2007a), have higher rates of treatment completion than Latinos of comparable socioeconomic status (SAMHSA, 2009) and report greater access to high-quality and comprehensive services (Jacobson et al., 2007a,b; Marsh et al., 2009). Although emerging evidence has suggested that Latinas benefit more than other racial and ethnic groups when receiving comprehensive services such as prenatal care, mental health services, transportation, and day care during treatment (Guerrero et al., submitted for publication), the literature has consistently illustrated disparities in treatment duration and completion. These adverse outcomes may place Latinos at a disadvantage in terms of achieving and maintaining long-term sobriety (Guerrero et al., 2013b; Saloner and Lê Cook, 2013).

4.2. Treatment for co-occurring disorders

The lifetime prevalence of co-occurring disorders is generally lower among Latinos than Whites (Vega et al., 2009). Treatment for the co-occurrence of alcohol or drug use and a physical or mental health disorder, known as "dual diagnosis" (Vega et al., 2009), historically has been more limited among Latinos than Whites (Daley, 2005; Marsh et al., 2009). However, studies across numerous social and medical fields have found that racial and ethnic minorities are less likely to receive treatment for dual diagnoses for numerous reasons, including a lack of health insurance, lower socioeconomic status, and consistently high rates of unemployment (Daley, 2005). Moreover, racial and ethnic minorities are less likely to have a regular health care provider but more likely to receive treatment for psychiatric disorders in an emergency room via a primary care physician, rather than receiving specialized mental health treatment (Daley, 2005). These inconsistencies in care are further reflected in high rates of misdiagnosis among racial and ethnic minorities. Individuals in these communities are less likely to be treated in outpatient settings and receive psychiatric medications, but more likely to experience expensive inpatient hospitalization as treatment for dual diagnoses (Daley, 2005). These general findings highlight the delayed, fragmented, and inadequate quality of services for minority patients with a dual diagnosis, suggesting unequal access to various levels of treatment and greater severity of co-occurring disorders upon entry to treatment (Daley, 2005; Warren et al., 2007).

Factors that may contribute to the lack of treatment for co-occurring disorders in the Latino community include lack of awareness of treatment options, dissatisfaction with services, language limitations, and a lack of culturally tailored services (Alegría et al., 2006; Vega and Lopez, 2001). Although there are variations in factors contributing to treatment disparities among racial and ethnic minorities with co-occurring disorders, the overall message emerging from the literature has been the importance of giving clients a voice in terms of treatment options (Warren et al., 2007). Clients should be consulted on the language used to provide services, the duration of treatment, their cultural preferences regarding appropriate involvement of family members in treatment, and selection of a provider to ensure their satisfaction with services (Alegría et al., 2006; Amaro et al., 2006; Vega and Lopez, 2001). By addressing these basic issues through dialog with the client, the likelihood of clients meeting their treatment goals could be significantly increased (Guerrero et al., 2012b, 2013b).

5. Risk and protective factors

Risk is conceptualized as something that maintains an undesirable condition or influences an undesirable outcome (Kirby and Fraser, 1997). Risk factors can be described as individual, familial, or environmental characteristics that predispose an individual to engage in negative behavior. Conversely, protective factors are characteristics that help preserve health and build resilience to adverse experiences. Defined as the noticeable capability of a person who has been exposed to trauma or lives in a high-risk environment (Masten and Coatsworth, 1998), resilience has been explored through discussion of social factors including emotional support, sociodemographics, and environment. During treatment, these factors are often intertwined, with ambiguous and contradictory influences. Treatment may deal with individual-level risk or protective factors, but falls short in terms of addressing environmental conditions, especially social determinants (e.g., housing, employment, and transportation) that confer risk or protection. As a consequence, place-based interventions have become an attractive approach to addressing substance use-related risk.

6. Interventions to reduce substance use

Several studies have concluded that typical SAT for Latinos is less effective compared to other populations. Specific interventions designed to reduce substance abuse among Latinos have been limited (SAMHSA, 2012). In particular, there has been limited availability of interventions that incorporate linguistic and cultural aspects of substance use within the heterogeneous Latino community (Amaro et al., 2006; Guerrero et al., 2012b). However, there are some emerging adaptations that show promise. New developments in the measurement of client acculturation and adaptation of interventions to increase engagement, response, and outcomes have indicated a growing understanding of the role of culture, linguistics, and the socially embedded problem of stigma in the prevalence and treatment of substance abuse-related problems. For instance, Guerrero et al. (2012b) suggested the development of culturally specific recovery models to address potential disparities experienced by Latino subgroups to help them meet their recovery goals during treatment. Even as the field seems to be moving away from culture-specific interventions and toward "tailored" treatment by adapting extant interventions, it is critical to understand and implement sociocultural and linguistic factors in interventions for Latinos.

6.1. Motivational enhancement

The growing issue of substance use among various subpopulations has led to the adaptation of evidence-based interventions such as motivational enhancement (also referred to as motivational interviewing) to address substance use problems and other addictive behaviors. The Latino population is generally

underrepresented in research and clinical populations; hence there is limited data on the effectiveness of empirically tested treatment for substance abusers (Carroll et al., 2009). Integrated motivational enhancement interventions tested in randomized controlled trials led to substantially better retention among different ethnic groups 28 days after admittance compared to standard treatment (Carroll et al., 2006).

In particular, a study conducted with Latinos by Carroll et al. (2009) compared three sessions of motivational enhancement therapy with three sessions of counseling in a multisite randomized trial. Results suggested that the service effectiveness of individual treatments was mainly due to the delivery of services in Spanish. This finding underscores the importance of improving access to linguistic and culturally responsive treatment interventions to increase the attractiveness of treatment to heterogeneous groups of Latino adults. However, the effectiveness of motivational enhancement therapy may be limited to individuals with substance use problems.

6.2. Cultural and linguistic competence

Cultural competence has become a chief national strategy to eliminate health disparities. As a result, the field of cultural competence has shifted its primary emphasis from enhancement of clinical skills to management, organizational policy, and processes of care. As part of the Patient Protection and Affordable Care Act, scholars and practitioners have been asked to collect data on race, ethnicity, and language proficiency and to diversify the field's workforce and train staff in cultural competence (Andrulis et al., 2010; Osborn et al., 2011). Cultural competence, defined by Cross et al. (1989, p. 13) as "a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enable that system, agency, or those professionals to work effectively in cross-cultural situations," has been tested in different health care settings. Findings have suggested that organizational cultural competence may improve client retention by providing a more positive treatment experience for clients from racial and ethnic minority groups (Brach and Fraser, 2000; Lewin Group, 2002; Office of Minority Health, 2001). Cultural competence among staff has been linked to better communication, more accurate diagnosis, positive therapeutic alliance, and higher client satisfaction (Brach and Fraser, 2000; González et al., 2010; Saha et al., 1999, 2000). Indeed, recent research has suggested that clients from racial and ethnic minority groups may be more likely to remain in treatment when the services they receive are responsive to their needs. Culturally competent practices such as race/ethnicity matching and language congruence have been linked to increased retention in behavioral health care, particularly when combined with congruence in other dimensions such as regional culture, socioeconomic status, and belief systems (Guerrero et al., 2012a; Sue et al., 1991). However, these relationships have not been rigorously tested in SAT. Because the Culturally and Linguistically Appropriate Services (CLAS) standards have been revised to make them more concrete and applicable to health care services (Office of Minority Health, 2013), testing of their implementation should be anticipated in the reorganization of services under health care reform.

6.2.1. Accessing culturally and linguistically responsive care. The disparity in availability of treatment services in Latino communities versus non-Latino White communities is compounded by other barriers to treatment (Guerrero et al., 2011). Transportation is one of the most noted barriers to treatment for Latinos and other minorities, particularly in regions with poor public transportation systems. Latino clients are more likely than other groups to lack driver's licenses and auto insurance and may need to travel significant distances to engage in treatment that is culturally and linguistically responsive to their service needs (Guerrero et al., 2013a). Furthermore, research has demonstrated that language concordance has a strong effect on health care communication and perceived quality of care by Latinos in the United States (González et al., 2010).

Emerging research exploring ways to develop capacity to improve the cultural and linguistic competence of SAT programs has suggested that public funding, professional regulation, culturally sensitive and highly trained leaders (Guerrero and Andrews, 2011), and involvement in minority communities (Guerrero, 2013) result in shorter wait times and longer duration in treatment for Latinos. Furthermore, other studies showed that Latinos report higher treatment completion rates in the court-mandated treatment system when programs offer linguistically appropriate practices, particularly Spanish-language translation (Guerrero et al., 2012a). Evaluating system performance by testing the relationship between provisions of culturally and linguistic responsive practices and client outcomes is consistent with the principles of health care reform and represents a promising area for future research (Osborn et al., 2011).

Amaro et al. (2006) stated that for treatment to be efficacious with the Latino population, cultural and linguistic modifications to treatment are needed and effectiveness should be assessed based on different criteria. For instance, they suggested conducting follow-up analyses to determine whether treatment is effective with various Latino subgroups, Latinos with different levels of acculturation, and Latinos from varied socioeconomic backgrounds and different co-occurring conditions. Wallis et al. (2012) further examined the need for cultural modification in treatment and suggested the development of culturally specific programs. Cultural adaptation would not only provide better congruence among the client's experiences, engagement, and treatment interventions, but it would also increase empirical evidence of the effects these programs have on ethnocultural populations.

6.3. Integrated care

The literature on dual diagnosis has indicated that 50% of individuals from all backgrounds with severe mental illness such as schizophrenia, bipolar disorder, or severe depression also experience substance abuse at some point during their lifetime (Drake et al., 2004). Although people who abuse drugs have poor physical health requiring co-occurring treatment specific to physical health problems more often than psychiatric issues, the literature on integrated primary and substance abuse care has been fairly limited. In this section, we mainly focus on integrated substance abuse and mental health treatment.

Among Latinos, acculturation factors are associated with prevalence of dual diagnoses. Latinos with high acculturation to the United States were more likely to report a dual diagnosis than Latinos with low acculturation, primarily because they have higher rates of substance abuse (Ortega et al., 2000). A comprehensive review suggested that integrated treatments for dual disorders are among the most effective strategies for decreasing both substance use and mental health symptoms (Drake et al., 2004).

Research in the areas of medical care, substance abuse, and mental health has demonstrated that racial and ethnic differences are significant factors to consider when designing and implementing services of care (Amaro et al., 2005). Findings further indicated that integrated services in substance abuse treatment are generally beneficial for individuals across various racial groups that include African Americans, Latinos, and Whites (Amaro et al., 2007; Morrissey et al., 2005). Specifically, substance abuse and mental health symptoms improve with increased duration of treatment, yet retention in treatment continues to be a challenge for Latinos with co-occurring disorders (Amaro et al., 2007). Although

these are important implications, few studies have examined racial and ethnic variations in terms of co-occurring substance abuse and mental health disorders (Amaro et al., 2005; Morrissey et al., 2005).

There has been a recent emphasis on brief dual-disorder treatment. In this model, substance abuse interventions are brief in duration but fully integrated within a continuing care approach (Drake et al., 2004). This approach generally represents continuation of services at the community level by social service agencies and peer support groups. Ongoing research has focused on relapse prevention, implementation, costs of interventions, treatment, and targeted strategies for racial minorities and women with dual mental health and substance abuse diagnoses (Drake et al., 2004). Promising research in this area has shown that longer stays in residential treatment and participation in aftercare services, including outpatient mental health treatment, have been associated with better posttreatment outcomes among Latinos and individuals of other ethnicities with dual disorders up to 5 years after treatment (Grella and Stein, 2006). That study measured the effect of program services (i.e., on-site dual-diagnosis groups) on the outcomes of patients with comorbid mental health and substance use disorders and identified various program and patient characteristics related to treatment outcomes. Improvement in mental health status was linked to a significantly higher number of counselors trained in the treatment of co-occurring disorders, as well as increased use of mental health services. In comparison to other treatments, residential substance abuse programs provided more on-site mental health services, leading to higher rates of service use and improved outcomes (Grella and Stein, 2006).

Results of studies exploring integrated mental health treatment and SAT have varied across populations. Studies on treatment efficacy among Latinos have been limited, but randomized controlled studies with samples of ethnic minority clients with both mental health and substance use disorders have reported the strongest evidence supporting the effectiveness of integrated care compared to usual care (Mueser et al., 2003). Findings have indicated the need for a consensus of active protocols for integrated treatment programs that serve patients with both mental health disorders and substance use (Drake et al., 2001; Minkoff, 2001). Specifically, the most comprehensive reviews of this literature have concurred that to develop an effective integrated care treatment system, programs need to have a team of clinicians with expertise in both mental health and substance abuse issues to diagnose, treat, and support clients using a systematic approach to tailor treatment to specific client needs (Drake et al., 2001). For example, Barrowclough et al. (2001) described a program of integrated treatment (motivational interviewing, individual cognitive–behavioral therapy, and family therapy) for patients with schizophrenia and substance abuse and found that at 12 months, integrated care patients had fewer symptoms of schizophrenia than patients that did not receive this type of care.

Further research has suggested that critical components of evidence-based treatment for dual diagnosis associated with better outcomes include staged interventions, assertive outreach, motivational interviewing, and active counseling (Drake et al., 2001). Initially, staged intervention is used to address client needs and help form a therapeutic relationship between clinician and client. Assertive outreach is used to engage clients as well as their family members throughout the duration of the treatment program, regardless of length, even though programs are generally not reimbursed for aftercare. Lastly, motivational interviewing helps motivate clients to stay involved in treatment and active counseling uses evidence-based treatment to effectively administer the treatment. Generally, effective treatments tailor services specifically to the client population that is being served; however, the preceding components remain essential components of the treatment process (Barrowclough et al., 2001; Drake et al., 2001).

At the U.S. national, state, and regional levels, providers of substance abuse and mental health disorders generally have not provided specialized services to patients with co-occurring disorders, generally due to a lack of payment system integration and cross-training of staff regarding these conditions (Grella and Stein, 2006). In the public sector, these services have been limited, and services for comorbidity provided in the private sector frequently have involved patient referrals to external providers rather than on-site treatment (Grella and Stein, 2006).

In general, the literature has highlighted the ongoing evolution of treatment for comorbid substance abuse and mental health issues, shifting from a divided treatment approach that individually addressed each ailment with little to no collaboration to an ongoing effort to develop treatment for multiple mental health and substance abuse disorders. Integrating our current system of care and adding the cultural and linguistic components necessary to improve Latino outcomes is the next challenge for research and practice in the current implementation of integrated care under health care reform.

7. Limitations of existing studies

Several methodologies have been employed to identify disparities in process outcomes in SAT, and several longitudinal studies have contributed to baseline knowledge of interventions designed to decrease disparities in service use and outcomes. However, the lack of datasets with adequate samples of Latinos has led to a paucity of research exploring issues of Latino substance use, treatment use, and outcomes (Alegría et al., 2006; Amaro et al., 2006). Of significance is the inability of existing recruitment strategies to attract bilingual Latinos to participate in rigorous and federally funded research, as well the geographic locations in which most large-scale treatment studies are conducted. For instance, study samples from the National Institute on Drug Abuse's Clinical Trials Network include very few Latinos, with most coming from a site located in Miami, FL.

A second methodological limitation has been the limited comparative analyses focusing on heterogeneity among Latino subgroups. Datasets and analytic models tend to measure and conceptualize Latinos as a homogenous group, thus missing an opportunity to identify distinct differences that may better inform health disparities based on national origin, acculturation, English language proficiency, and other demographic characteristics (Ulmer et al., 2009).

Ethnic differences can also influence the effectiveness of SAT. Research by McCaul et al. (2001) suggested that greater importance should be placed on tailoring treatment to a patient's gender, cultural, and vocational needs rather than the type of substance used. Similarly, Milligan et al. (2004) collected data from two trials ($N = 111$ each) in which African American and White patients were randomly assigned to receive cognitive–behavioral treatment, 12-step facilitation, or pharmacotherapies. The results suggested few differences between the two groups in terms of help-seeking behaviors; however, in both studies, African American patients completed considerably fewer days of treatment. This further implied that treatment retention and compliance are important issues among ethnic minority populations, because the data indicated a relationship between ethnicity and outcomes in SAT (Milligan et al., 2004). To address these issues, more emphasis is needed on cultural adaptations in substance abuse programs to aid minority populations (McCaul et al., 2001; Milligan et al., 2004).

8. Practice and research implications

This critical review explored the current state of disparities in substance abuse patterns, service use, and treatment outcomes for Latino populations. An exploration of variations in substance abuse based on ethnic identity within these populations allowed for in-depth analysis and a broader understanding of the unique substance use issues faced by the Latino community. Additionally, this critical review outlined the current state of treatments and interventions focused specifically on addressing cultural and linguistic issues and comorbid disorders, highlighting the overall need for policy and practice interventions that increase the accessibility, availability, and effectiveness of culturally responsive treatments for co-occurring disorders among Latino subgroups.

During the past 20 years, racial and ethnic disparities in SAT have received increased attention due to growing awareness of the gaps in access to care (Chow et al., 2003). Despite the growing body of research highlighting these disparities, few policy and practice interventions have been implemented at the national, state, or local levels. Meanwhile, Latinos have become the fastest-growing and third-largest group entering SAT nationwide (Chow et al., 2003). They require linguistic and culturally responsive interventions that address regional drug use patterns, well-documented limited access to treatment, and poor engagement in treatment, all of which contribute to their status as the ethnic group at highest risk of dropout.

Studies have repeatedly highlighted the need for culturally adapted practices to enhance the effectiveness of SAT for minority populations (McCaul et al., 2001; Milligan et al., 2004). Evidence-based practices using motivational interviewing, cognitive–behavioral approaches, and contingency management have shown great promise in treatment for Latinos. Yet, these interventions need to be tested with subgroups of Latinos based on acculturation, country of origin, sex, age, English proficiency, and region of residence (Amaro et al., 2006) and translated and disseminated into community-based care to have a lasting effect on reducing the burden of disease posed by drug abuse and inadequate care.

8.1. Implications for funding research, recruitment, analysis, and interpretations

This review has highlighted the importance of Latino-specific research in the United States. Funding for effectiveness studies from federal agencies has been limited; considering the current fiscal environment, such funding is likely to be further reduced. Researchers have had trouble recruiting Latinos, particularly low-income, Spanish-speaking clients and providers. In addition, the geographic locations in which studies are conducted may not have a significant representation of Latinos. This has limited the representation of Latinos in large studies and our understanding of their patterns and service needs. In addition, limited funding has constrained the health care sector in terms of implementing training programs for substance abuse counselors to improve cultural competence and develop skills in assessing, diagnosing, and treating Latinos with co-occurring conditions.

In the current era of health care reform, there has been growing interest in patient-centered system approaches that influence treatment access and adherence among racial/ethnic and gender minority groups (Guerrero et al., 2012b; Guerrero et al., submitted for publication). One service system factor gaining attention is the administrative and individual monitoring that the criminal justice system offers through drug and probation courts. More than 30% of all referrals to treatment originate in this system, which has been associated with increased initial access to SAT and treatment completion in some cases across different states (Arndt, 2010; Evans et al., 2008, 2009; SAMHSA, 2009). In California, where Proposition 36 was implemented to reduce drug-related crimes by requiring treatment for first- and second-time offenders with nonviolent drug possession charges (Drug Policy Alliance, 2011), court-supervised treatment has proved effective (Evans et al., 2008, 2009). However, this type of treatment is contingent upon the needs of the individual participant, i.e., how effective treatment is for them and if they are motivated to attend treatment and not drop out (Evans et al., 2012). Under Proposition 36, first-time offenders (more than 38% are Latino) who received treatment for substance abuse problems and showed commitment to the treatment process reported lower conviction rates and produced more savings in terms of incarceration costs (Evans et al., 2008; Longshore et al., 2006; UCLA Integrated Substance Abuse Programs, 2007). Compassionate and consistent monitoring by the criminal justice system is yet another intervention that needs to be considered when working with Latinos.

Considering that more than 38% of the overall population entering SAT reports mental health or physical conditions (Grella and Gilmore, 2002; Grella et al., 2004), SAT in an era of health care reform needs to be discussed within an integrated framework that includes not implementation of integrated care service (Rawson and McLellan, 2010) but also the opportunity to rely on universal electronic medical record reporting and informatics to examine various aspects of equity in treatment for Latinos. Use of a health information system is critical to reduce disparities in access, quality of care, and treatment outcomes among Latinos, whose unmanaged substance abuse, mental health, and physical health problems have a significant effect on their short- and long-term prognosis (Amaro et al., 2006).

Finally, expanding Medicaid as part of health care reform is expected to increase access to SAT for Latinos and provide further impetus to conduct rigorous effectiveness research to maximize the investment in promising integrated models. However, it is not clear how health care reform will improve access for Latinos to such promising integrated interventions, particularly those that consider cultural, linguistic, integrated, and pharmaceutical approaches to addiction treatment based on drug of choice. Innovative interventions that consider both technical and cultural aspects in psychosocial and medication-assisted treatment are necessary to strengthen the evidentiary base for culturally and linguistically tailored interventions that serve the needs of Latinos. Systematic studies are also needed on the effectiveness of integrated care among providers most likely to serve low-income Latinos, including state and county systems as well as federally qualified health centers, to identify trends in access, retention, and outcomes during the current era of health care reform.

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Contributors

Erick Guerrero and Jeanne Marsh reviewed the research literature, framed the scope of the paper, conducted the preliminary selection, and were the primary text authors. Tenie Khachikian, Hortensia Amaro and William Vega provided additional literature review, supervised systematic approach to selection and review

of the full sample of articles, and provided support in writing the manuscript, including revisions.

Conflict of interest

None of the authors have any financial, personal, or other relationships with other people or organizations that could constitute a conflict of interest in the production of this manuscript.

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