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Peer Navigators and Integrated Care to Address Ethnic Health Disparities of People with Serious Mental Illness

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Abstract

People of color with serious mental illnesses experience high rates of morbidity and mortality. Patient navigators, developed for cancer care, may help this group benefit from integrated care. This review examined patient navigators' key ingredients for cancer care for relevance to patients of color for application of peer services to psychiatric goals. Among cancer patients, navigators lead to greater treatment engagement and improved health outcomes for ethnic minority groups. Research also suggests peers can improve integrated care by providing effective psychiatric services to individuals with mental illness. Ongoing research examines peer navigators' impact on integrated care for patients of color.

Keywords

People with serious mental illnesses have significant physical health problems leading to much higher rates of morbidity and mortality compared to similar age cohorts. These problems seem to be worse when the person with mental illness is from a minority ethnic group. Integrated medical and mental health care is one solution to addressing these disparities. However, minorities with serious mental illness experience myriad issues that make it difficult to access and receive appropriate healthcare. Cancer care studies shows that peer patient navigators – individuals with lived experience of cancer – help patients make sense of complicated healthcare systems, enhance treatment engagement, and improve clinical outcomes. Given the growing literature documenting the positive role of peer providers in improving mental health treatment outcomes, peer navigators – individuals with

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mental illness who have comorbid physical health problems – may be an innovative approach to helping minorities with mental illness access and use healthcare services. This paper reviews research on peer navigators as to meet the integrated care needs of people with serious mental illness from minority ethnic groups.

Morbidity and Mortality of People with Serious Mental Illness

People with serious psychiatric disorders have inordinate rates of co-occurring physical illnesses that often worsen disabilities or lead to death (Martens, 2001; WHO, 2005). They show higher incidence and prevalence in cardiovascular and respiratory illness (Badiaga et al., 2009; Diez-Roux, Northridge, Morabia, Bassett, & Shea, 1999), gastro-intestinal disorders (Weinreb, Goldberg, Bassuk, & Perloff, 1998), cancer (Schanzer, Dominguez, Shrout, & Caton, 2007), and orthopedic illnesses including those due to accidents (Takano, Nakamura, Takeuchi, & Watanabe, 1999). As a result, people with serious mental illness are hospitalized for physical health problems at much higher rates (Mai, Homan, Sanfilippo, & Emery, 2011) and die, on average 15 to 30 years younger than their cohort (Saha, Chant, & McGrath, 2007).

There has been some attempt to explain high rates of illness and death in terms of the course of psychiatric disorder. Rate of physical morbidity and mortality may parallel severity of psychiatric illness; research has shown, for example, that physical illness seems worse in people with more serious psychiatric disorders such as schizophrenia (Saha et al., 2007) and bipolar disorder (Weiner, Warren, & Fiedorowicz, 2011). Earlier onset seems to be associated with greater morbidity and mortality (Hudson, 2012). What about psychiatric disease leads to greater physical illness? Research implicates some biological pathways. For example, genetically some people with psychiatric conditions are predisposed toward some physical health conditions (e.g., diabetes) (Chacón, Mora, Gervás-Ríos, & Gilaberte, 2011; Fagiolini & Goracci, 2009). Alternatively, long term use of psychotropic medication seems to be associated with cardiovascular illness (Hansen, Maciejewski, Yu-Isenberg, & Farley, 2012) and a metabolic syndrome that heightens risk of heart disease, diabetes, and cerebrovascular accidents (Smith et al., 2008).

More common is research that examines the impact of psychiatric symptoms, disabilities, and associated lifestyle on physical health. Some people with serious mental illnesses make risky life choices related to work, driving, substance use, and interpersonal (including sexual) relations (Lipsky, Caetano, & Roy-Byrne, 2011). People with serious mental illness smoke at much higher rates, as large as 59.1% for people with schizophrenia compared with 18.3% of general population adults (Schroeder & Morris, 2010). Diet (Cerimele & Katon, 2013) and exercise (Wright, Everson-Hock, & Taylor, 2011) are typically worse than the overall American population.

Social Determinants of Illness

In addition to mental-health-related indicators, four social disadvantages contribute to the high rates of illness and death experienced by people with serious mental illness. (1) Poverty and unemployment. People with psychiatric disabilities have prolonged periods of unemployment making workforce re-entry problematic (Nordt, Müller, Rössler, & Lauber,

2007) and are three times more likely to be a member of a family in poverty (Vick, Jones, & Mitra, 2012). (2) <u>Homelessness</u>: Adults with mental illness have greater risk for homelessness which compounds morbidity and mortality (Martens, 2001). (3) <u>Criminal Justice</u>. People with mental illnesses have greater involvement in the criminal justice system which limits health care access (Constantine et al., 2010). They are also at significant risk of crime victimization (Maniglio, 2009). (4) <u>Substance abuse</u>. People with mental illness are at significantly greater risk of substance abuse which is associated with markedly greater physical illness (Carrà & Johnson, 2009).

Ethnic disparities—Impact of these determinants may be even greater among people with mental illness from minority ethnic groups. Compared to Caucasians, twice as many African Americans and Latinos are below the poverty level (U.S. Census Bureau, 2012). African Americans are three times more likely to experience homelessness; Latinos make up 15.7% of people who are homeless (U.S. HUD, 2010). People of color with mental illness are more likely to be involved with the criminal justice system (Warf, Clark, Herz, & Rabinovitz, 2009) and be victims of or generally more exposed to crime (Biafora & Warheit, 2007).

Social factors also lead to barriers in health care for people of color: as limitations in available services or in cultural competence. Both mental and primary care services are less available to patients of color because of poverty (Lanouette, Folsom, Sciolla, & Jeste, 2009). People from ethnic minority groups are less insured than the majority culture (Lee, O'Neill, Park, Scully, & Shenassa, 2012) and services that should be provided by the government safety net are lacking (Darnell, 2011). As a result, clinics are not geographically available (Jerant, Fenton, & Franks, 2012) and access to those that can be found are hindered by inadequate public transportation (Bazzoli, Lee, Hsieh, & Mobley, 2012) or may be located in high crime areas (Hanson & Self-Brown, 2010). Patients of color are less able to establish ongoing relationships with primary care providers necessary to promote engagement between patient, family, and provider team, especially for chronic disorders (Jerant et al., 2012). Integrated behavioral and primary care is notably missing from low income communities (Manderson, Mcmurry, & Piraino, & Stolee, 2012) as are social work or nurse practitioner support teams often responsible for maintaining integrated services (Stange et al., 2010).

Many systems of health care lack cultural competence. Factors leading to alienation from health care clinics and providers in many North American settings include preferences for Western healing beliefs (Padela, Gunter, Killawi, & Heisler, 2012) to the point that alternative, non-Western treatments may be denigrated (Bartels, 2004; Su & Li, 2011), diminished trust (Musa, Schulz, Harris, Silverman, & Thomas, 2009), different reactions to mental illness stigma (Abdullah & Brown, 2011), diverse understandings of mental illness (Martin, 2009), and Western providers missing culturally-specific symptom expression (Tófoli, Andrade, & Fortes, 2011). Exacerbating these differences may be a lack of culturally-matched providers though research on the size of this effect continues to be mixed (Cabral & Smith, 2011). Lack of language proficiency obviously hampers quality care (Kim et al., 2011).

Integrated Care and Patient Navigators

Many barriers prevent people of color with serious mental illness from receiving quality primary and other physical health care. Integrated care is a promising practice for addressing these concerns defined as mental health and general medical care providers working together to address the physical and behavioral health care needs of patients (Butler et al., 2008; Gilbody, Bower, Fletcher, Richards, & Sutton, 2006). Integrated care varies along two axes: decision making (consensual, coordinated, or provider-directed) and location (onsite versus separate mental health/primary care practices). Patient navigation is a strategy that may further enhance the potential of integrated care. Briefly, patient navigators are trained service providers that escort and support patients through multi-levels of care and entitlements, an especially important service for individuals with chronic and serious conditions. Navigators evolved in the cancer clinic to meet the complex needs of its patients; the first navigation program is often attributed to Harold Freeman a New York City oncologist at Harlem Hospital (Freeman, 2006). We briefly review the research literature on cancer navigators and then seek to apply lessons learned for people with mental illness navigating the primary care system.

Research has described its key ingredients and expected effects. Literature reviews (Robinson-White, Conroy, Slavish, & Rosenzweig, 2010; Wells et al., 2008; Pedersen & Hack, 2010), practitioner interviews (Parker et al, 2010), consensus panels of the National Cancer Institute (NCI, 2012), and the Patient Navigator Outreach and Disease Prevention Act of 2005 have yielded two fundamental dimensions of peer navigation (Parker et al., 2010). First are the individual and organizational entities with whom the navigator interacts. Successful navigators essentially serve as interface between patients (and often their family and friends) and a slew of others. These include providers of many kinds: the physician or nurse practitioner leading the treatment team, ancillary diagnosticians and treatment specialists, behavioral health care providers, hospice and palliative care workers, community support services, and faith-based ministry. They include nonclinical staff: receptionists, secretaries, and insurance/entitlement representatives. They include paper or electronic medical record systems, which, in the eye of some navigators, can take on the role of a provider that needs to be regularly consulted and informed to allow care to progress seamlessly. Second is the characterization of tasks performed by navigators. The Patient Navigator Outreach and Disease Prevention Act specified six tasks. (1) Assist in the coordination of health care services. (2) Facilitate the involvement of community organizations to help the patient access care. (3) Notify individuals of clinical trials. (4) Anticipate and help patients overcome barriers. (5) Coordinate with insurers. (6) Conduct ongoing outreach especially to health disparity populations.

Literature reviews have summarized studies done on navigation for cancer care examining both its degree of acceptance and its impact (Robinson-White et al., 2010; Wells et al., 2008) yielding 22 different studies almost entirely as adjunct to cancer care. Results showed patient navigators improved screening rates, diagnostic test participation, or genetic counseling (Dignan et al., 2005; Jandorf, Gutierrez, Lopez, Christie, & Itzkowitz, 2005; Rahm, Sukhanova, Ellis, & Mouchawar, 2007; Tingen et al., 1998; Weinrich et al., 1998). Navigation led to better adherence to ongoing treatment (Battaglia et al., 2007; Ell,

Vourlekis, Lee, & Xie, 2007; Ferrante, Chen, & Kim, 2008; Giese-Davis et al., 2006). Although one might think patient navigation has been extended to other health care domains, our review of the literature found only one paper each discussing its application to orthopedic (Jester, 2007), renal (Browne, 2009) and asthma care (Black et al., 2010).

Cancer researchers have argued that patient navigators are an excellent tool for addressing ethnic health disparities (Fischer, Sauaia, & Kutner, 2007; Freund, 2011; Jean-Pierre et al., 2011; Natale-Pereira, Enard, Nevarez, & Jones, 2011); in 2002, the NCI Center to Reduce Health Care Disparities established patient navigators as a training and development priority. Navigators help patients from minority ethnic group better access clinics and coordinate services in disadvantaged communities (Ferrante et al., 2008; Natale-Pereira et al., 2011) and better avail insurance and entitlement benefits (Saunders & Alexander, 2009; Schwaderer & Itano, 2007; Wells et al., 2008). Of equal importance, patient navigators seem to enhance cultural competence in cancer treatments. Patients of color report emotional support, "being there", and feeling heard as essential elements of successful navigators, qualities often perceived as absent in traditional clinics (Carroll et al., 2010; Natale-Pereira et al., 2011). These all translated to perceptions of trust (Han, Lee, Kim, & Kim, 2009; Nguyen, Tran, Kagawa-Singer, & Foo, 2011), perceptions that there were provider "insiders" understanding their perspective and looking out for their concerns (Fischer et al., 2007; Jean-Pierre et al., 2011; Petereit et al., 2008). Navigators also seemed more sensitive to family issues which may be pronounced in some minority cultural groups (Whitt-Glover et al, 2009). Research showed patient navigators to have positive effects on disparity-related concerns; patients from ethnic minority groups had fewer disruptions in care and greater likelihood of completing prolonged treatment regimens as a result of patient navigators (Han et al., 2009). An additional benefit of navigators may be gender competence.

Patient navigators were originally providers specially trained for navigation duties drawn from the ranks of nurse practitioners, social workers, or trained paraprofessionals (Darnell, 2007; Seek & Hogle, 2007). Peers – patients with past experiences with cancer care – soon joined these ranks. In one study, 39 women with a history of breast cancer and treatment (an average of 52 months post diagnosis) were partnered with "sojourners," patients recently diagnosed with breast cancer (M=2.2 months); contacts occurred about once weekly for up to six months (Giese-Davis et al., 2006). Slope analyses over the six months showed sojourners had significantly improved experiences of diagnosis and treatment, better quality of life, and enhanced personal resources. Results of qualitative interviews with 110 Cambodian, Laotian, and Vietnamese women diagnosed with cancer and having received navigator services believed information and support provided by peers was vital for the course of their care: "in my country, I never know what a Pap smear or mammogram is… however, a navigator helped me understand" (Nguyen et al., 2011). Two studies showed underserved women matched with same group (African Americans, Latinas, and Native Americans) were more likely to pursue regular mammography (Burhansstipanov et al., 1998, 2010). In the one randomized controlled trial, impact of peer navigators on Korean American women with breast cancer was assessed (Maxwell, Jo, Crespi, Sudan, & Bastani, 2010). Among the findings, 97% receiving navigator services completed follow-up treatments compared to 67% in the control arm.

Although careful research of <u>peer</u> navigators in cancer care is limited, clinics are incorporating this strategy into its practices. One review of the literature showed seven out of eleven U.S. demonstration projects on patient navigators used lay or peer navigators (Dohan & Schrag, 2005). Training seemed to be important to anecdotal success and included preservice education to meet certification requirements along with regular inservice training and supervision to maintain standards. Peer navigators are typically supervised by a senior community health worker with broad knowledge of the care system in which navigators work.

Peer Navigator Services and Integrated Care

Peer services play an emerging and prominent role in psychiatric interventions in a manner that parallels aspects of cancer navigation. Peer services usually include practical and emotional support for the person traversing various psychiatric rehabilitation programs. Table 1 summarizes eight randomized controlled trials of peer-led services for people with serious mental illness, highlighting the sample's racial/ethnic characteristics, methodological considerations (i.e., study eligibility criteria, intervention features), and main findings. Review of validity threats would strengthen the review, but this was not included as not all papers clearly reported these limitations.

Four randomized clinical trials (RCT) showed people who received versions of psychiatric case management services from peers demonstrated the same level of functional and symptom stability as those provided by professional or paraprofessional staff. Clarke et al. (2000) randomized people with serious mental illness to one of two conditions, assertive community treatment staffed by consumers or non-consumers of mental health services. Another study by Davidson and colleagues (2004) recruited socially withdrawn people with psychiatric disabilities randomizing participants to either professional or peer-led supported socialization. O'Donnell et al., (1999) enrolled participants with serious mental illness into 12-months of consumer or professional support. A fourth RCT completed by Solomon and colleagues (1995) randomized participants with serious mental illness into 2-years of case management either professional or peer-led. Overall, findings from these four RCTs showed that professional and peer mentor services were not significantly different yet these findings have to be interpreted conservatively because they fundamentally represent support of a null hypothesis (no difference between peer and professional case managers). More recently, Sledge et al. (2011) reported on an intervention that enrolled people with serious mental illness who had two or more psychiatric hospitalizations during the past 18 months. Participants were randomized to weekly support of peer mentors or aftercare as usual. Results showed those receiving peer mentoring had significantly fewer rehospitalizations and inpatient days during the nine months of the study.

Navigation has also appeared as a way to assist the integrated care needs of people with serious mental illness. Assertive community treatment (ACT) teams have been proposed as a strategy for addressing the physical health care needs of people with serious mental illness: a collection of providers including a nurse practitioner intervene in the person's community to tackle personal health needs over time (Shattell, Donnelly, Scheyett, & Cuddeback, 2011; Weinstein, Henwood, Cody, Jorday, & Lelar, 2011). Despite its promise, researchers have

not yet tested the impact of ACT on integrated care. Two sets of studies, however, have examined the effect of variations of navigator programs on the health care needs of people with mental illness. The first used a paraprofessional case navigator to connect people presenting with psychiatric emergency to primary care who also had not had a primary medical doctor for six or more months (Griswold et al., 2005). Participants were randomized to aftercare as usual or patient navigation that included education about fees and services, facilitation to primary care with shared decision making, index cards for primary care providers with psychiatric information about the patient, and ongoing follow-up including in-home visits and mobile outreach. Three-month results showed 57% of participants receiving patient navigation, compared to 16% in the comparison group, was successfully linked to primary care (Griswold et al., 2005). One-year follow-up showed 62% in the treatment group, compared to 37% in the control were linked to primary care (Griswold, Homish, Pastore, & Leonard, 2010).

Another set of studies used peers to help people with serious mental illness improve medical self-management skills. Investigators adapted the Chronic Disease Self-Management Program (CDSMP: Lorig et al., 1999; Lorig, Hurwicz, Sobel, Hobbs, & Ritter, 2005); a six-session program led by people with chronic, general-medical conditions to teach peers interpretation of symptoms, disease management techniques, regular action planning, and problem solving. Druss and colleagues (2010b) modified CDSMP to address possible gaps in health literacy and cognitive limitations of people with serious mental illness with physical health concerns. The investigators then randomized 80 people with serious psychiatric disorder and one or more chronic medical illness to adapted-CDSMP led by peers with mental illness or usual care. Results showed those receiving peer-led CDSMP had significantly more primary care visits at six month follow-up. The intervention group also had better physical activity, medication adherence, and physical health related quality of life. Another RCT with 63 participants examined an alternative adaptation of CDSMP called Living Well (Goldberg et al., 2013) with a 13-session format. Results showed significant improvements in health attitudes and illness self-management techniques at post-test, with many of these benefits still evident at two-month follow-up.

Implications for Better Integrated Care

These studies show navigators have promise for helping people with serious mental illnesses including patients of color meet their primary care needs. Navigation may help this group better manage primary care providers and clinics so physical health outcomes are enhanced. Peers might play an especially important role in facilitating the navigation process. Given the promise of the limited research reviewed herein, ample work remains. First, what we are calling navigation for integrated care differs from the way it evolved in cancer. The research by Griswold and colleagues (2005, 2010) in the integrated care arena largely limited navigation services to connecting people after psychiatric crisis to primary care; the studies on modified CSDMP (Druss et al., 2010a; Goldberg et al., 2013) was a peer-based attempt at skills training. Key ingredients and goals of navigation for cancer treatment is yet to be developed and tested for integrated care; i.e., using in-the-field navigators to help people with serious mental illness manage physical health concerns by fully engaging in primary care over a longer term. Outcome variables need to expand beyond simply documenting

connection-to-clinics to the nature of engagement. Assessment needs to broaden to include measures of the course of physical illness and related functioning and quality of life measures. Ways in which improved physical health impact mental health also should be assessed; for example, does one's profile of depression and anxiety progress with better physical health? Research also needs to consider program format and fidelity. What key ingredients identified by cancer researchers also work well for health navigation services for people with serious mental illness? How do these services change when provided by peers?

The question about key ingredients and fidelity suggests examination of program mediators is necessary as research matures. Patient care needs and navigation are likely to be mediated by the nature of the physical illness. Patient navigators are mostly designed and tested for cancer clinics while integrated services begin with the multi-faceted practice of primary care and patients presenting with differing disorders affecting all organic systems. These illnesses vary in levels of impact, pain, distress, and disability. Some physical disorders are treated effectively in the short term, others recur sporadically, while a third requires prolonged tracking and intervention. Some illnesses can be managed well by primary care providers and their teams while others need specialists across multiple clinics and institutions. In each case, the navigation task changes.

Mental illness may further mediate navigation services and integrated care. Druss and colleagues (2010a) adapted CDSMP to be address cognitive limitations of some participants by simplifying the manual's reading level and adding a user-friendly log to better track self-management tasks. Other symptoms and disabilities of serious mental illness might interact with navigation services. Some people with psychiatric disorders are challenged by anxiety and depression which interfere with health care plans. Others have interpersonal dysfunctions which hinder engagement. Many of these wax and wane with the course of the disorder, dynamic variables that need to be included in models of navigation services. People with serious mental illness often abuse alcohol and other drugs, factors that might also mediate patient navigation. The stigma of mental illness interferes with psychiatric services and so might interfere with patient navigation. Alternatively, research must consider how cognitive, emotional and interpersonal challenges of peers with mental illness impact their navigation skills. Research does not seem to suggest these kinds of problems hamper peer duties (Davidson et al., 2006) but specific effects on navigation of the primary care system will need to be examined.

The third important mediator of concern in this paper is ethnic group and other social determinants of illness. Although innovators from the cancer field believe patient navigators are a valuable tool for engaging patients of color (Natale-Pereira et al., 2011), careful research on cancer clinic navigation and ethnic status is still thin. Research has largely not examined the impact of navigation services of any kind (for integrated care or as case management for psychiatric disabilities) as they interact with ethnic factors. This work needs to not only examine cultural and language factors, but also the social disadvantages that are experienced by people of color that often drive health and health disparities. Research needs to not only examine potential benefits across all ethnic groups, but how the unique character of specific cultures impact patient navigators.

Adapting patient navigation for integrated care is the challenge. Community based participatory research (CBPR) is one solution (Minkler & Wallerstein, 2008). CBPR is a philosophy and approach to science that believes research on any group can only be done validly when professional researchers partner with that group: i.e., people of color with serious mental illness. As partners, co-investigators with lived experience have shared leadership roles in all elements of research design and implementation: defining research questions and subsequent hypotheses, developing interventions meant to reflect hypotheses, describing measures and design that will test interventions, conducting statistical analyses to make sense of data collected per design, and interpreting findings leading to recommendations with public health significance.

CBPR among people of color with serious mental illness offers intriguing methodological questions. First, the kind of social disadvantage that describes this disenfranchised group, at its most extreme leading to homelessness, seems to challenge notions of community in CBPR. By virtue of their alienation, people who are homeless do not seem to constitute an organization or discrete community like, for example, Native American Tribes or ethnic community organizations that are partners in other program development efforts. Existing research, however, contradicts this concern showing that homeless people comprise unique and diverse communities that have worked collaboratively with researchers seeking to improve their capacities and resources (Ravenell, Whitaker, & Johnson, 2008; Washington, Moxley, Garriott, & Crystal, 2009). Second, might the deficits of serious mental illness undermine a CBPR process like they alter patient navigation? For example, do the cognitive dysfunctions or interpersonal difficulties experienced by some people with serious mental illnesses undermine participation in the partnership process? This is an important empirical question that needs to be examined alongside other moderators of navigator programs. A recent review suggests, however, that people with serious mental illnesses are able to fully participate in and add to the CBPR process especially when provided reasonable accommodations (Corrigan & Shapiro, 2010).

CBPR poses a third, ironic question; does adapting an intervention based on minority group feedback distort its real world manifestation compared to evidence-based standards and fidelity assessments? For example, CBPR with African Americans with serious mental illness could lead to peer navigators that are different from the cancer care model. Research has shown, for example, that people with mental illness from cultural minority groups experience peer support differently than the white majority; people of color often report feeling not "belonging" to traditional care while Whites were more likely to prefer professional rather than peer services (Jonikas et al., 2010). This is the kind of question embodied in comparative effectiveness research: what aspects of evidence based practices work best for different groups of people?

References

Abdullah T, Brown TL. Mental illness stigma and ethnocultural beliefs, values, and norms: An integrative review. Clinical Psychology Review. 2011; 31(6):934–948. [PubMed: 21683671]

Badiaga S, Richet H, Azas P, Zandotti C, Rey F, Charrel R, Benabdelkader EH, Drancourt M, Raoult D, Brouqui P. Contribution of a shelter-based survey for screening respiratory diseases in the homeless. European Journal of Public Health. 2009; 19(2):157–160. [PubMed: 19164432]

Bartels SJ. Caring for the whole person: Integrated health care for older adults with severe mental illness and medical comorbidity. Journal of the American Geriatrics Society. 2004; 52(Suppl. 12):S249–S257. [PubMed: 15541165]

Battaglia TA, Roloff K, Posner MA, Freund KM. Improving follow-up to abnormal breast cancer screening in an urban population: a patient navigation intervention. Cancer. 2007; 109(Suppl. 2): 359–367. [PubMed: 17123275]

Bazzoli GJ, Lee W, Hsieh H, Mobley L. The effects of safety net hospital closures and conversions on patient travel distance to hospital services. Health Services Research. 2012; 47(1):129–150. [PubMed: 22091871]

Biafora F, Warheit G. Self-reported violent victimization among young adults in Miami, Florida: Immigration, race/ethnic and gender contrasts. International Review of Victimology. 2007; 14(1): 29–55.

Black HL, Priolo C, Akinyemi D, Gonzalez R, Jackson DS, Garcia L, George M, Apter AJ. Clearing clinical barriers: Enhancing social support using a patient navigator for asthma care. Journal of Asthma. 2010; 47(8):913–919. [PubMed: 20846085]

Browne TA. Social networks and pathways to kidney transplantation. Dissertation Abstracts International: Section A. 2009; 69(11-A):4502.

Burhansstipanov L, Dignan MB, Schumacher A, Krebs LU, Alfonsi G, Apodaca CC. Breast screening navigator programs within three settings that assist underserved women. Journal of Cancer Education. 2010; 25(2):247–252. [PubMed: 20300914]

Burhansstipanov L, Wound DB, Capelouto N, Goldfarb F, Harjo L, Hatathlie L, Vigil G, White M. Culturally relevant "navigator" patient support. The native sisters. Cancer Practice. 1998; 6:191–194. [PubMed: 9652252]

Butler M, Kane RL, McAlpine D, Kathol RG, Fu SS, Hagedorn H, Wilt TJ. Integration of mental health/substance abuse and primary care. Evidence Reports/Technology Assessments. 2008; 173 Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK38632/#_ncbi_dlg_citbx_NBK38632.

Cabral RR, Smith TB. Racial/ethnic matching of clients and therapists in mental health services: A meta-analytic review of preferences, perceptions, and outcomes. Journal of Counseling Psychology. 2011; 58(4):537–554. [PubMed: 21875181]

Carrà G, Johnson S. Variations in rates of comorbid substance use in psychosis between mental health settings and geographical areas in the UK: A systematic review. Social Psychiatry and Psychiatric Epidemiology. 2009; 44(6):429–447. [PubMed: 19011722]

Carroll JK, Humiston SG, Meldrum SC, Salamone CM, Jean-Pierre P, Epstein RM, Fiscella K. Patients' experiences with navigation for cancer care. Patient Education & Counseling. 2010; 80(2):241–247. [PubMed: 20006459]

Cerimele JM, Katon WJ. Associations between health risk behaviors and symptoms of schizophrenia and bipolar disorder: A systematic review. General Hospital Psychiatry. 2013; 35(1):16–22. [PubMed: 23044246]

Chacón F, Mora F, Gervás-Ríos A, Gilaberte I. Efficacy of lifestyle interventions in physical health management of patients with severe mental illness. Annals of General Psychiatry. 2011; 10:22. [PubMed: 21929761]

Clarke GN, Herinckx HA, Kinney RF, Paulson RI, Cutler DL, Lewis K, Oxman E. Psychiatric hospitalizations, arrests, emergency room visits and homelessness of clients with serious and persistent mental illness: Findings from a randomized trial of two ACT programs vs. usual care. Mental Health Services Research. 2000; 2(3):155–164. [PubMed: 11256724]

Constantine RJ, Petrila J, Andel R, Givens EM, Becker M, Robst J, Howe A. Arrest trajectories of adult offenders with a serious mental illness. Psychology, Public Policy, and Law. 2010; 16(4): 319–339.

Corrigan PW, Shapiro JR. Measuring the impact of programs that challenge the public stigma of mental illness. Clinical Psychology Review. 2010; 30(8):907–922. [PubMed: 20674114]

Darnell JS. Patient navigation: A call to action. Social Work. 2007; 52(1):81–84. [PubMed: 17388086]

Darnell J. What is the role of free clinics in the safety net? Medical Care. 2011; 49(11):978–984. [PubMed: 22005605]

Davidson L, Chinman M, Sells D, Rowe M. Peer support among adults with serious mental illness: a report from the field. Schizophrenia Bulletin. 2006; 32(3):443–450. [PubMed: 16461576]

Davidson L, Shahar G, Stayner DA, Chinman MJ, Rakfeldt J, Tebes J. Supported socialization for people with psychiatric disabilities: Lessons from a randomized controlled trial. Journal of Community Psychology. 2004; 32(4):453–477.

Diez-Roux AV, Northridge ME, Morabia A, Bassett MT, Shea S. Prevalence and social correlates of cardiovascular disease risk factors in Harlem. American Journal of Public Health. 1999; 89(3): 302–307. [PubMed: 10076477]

Dignan MB, Burhansstipanov L, Hariton J, Harjo L, Rattler T, Lee R, Mason M. A comparison of 2 Native American navigator formats: Face-to-face and telephone. Cancer Control. 2005; 12(Suppl. 2):28–33. [PubMed: 16327748]

Dohan D, Schrag D. Using navigators to improve care of underserved patients. Cancer. 2005; 104:848–855. [PubMed: 16010658]

Druss BG, von Esenwein SA, Compton MT, Rask KJ, Zhao L, Parker RM. A randomized trial of medical care management for community mental health settings: The Primary Care Access, Referral, and Evaluation (PCARE) Study. The American Journal of Psychiatry. 2010a; 167(2): 151–159. [PubMed: 20008945]

Druss BG, Zhao L, Silke A, Bona JR, Fricks L, Jenkins-Tucker S, Lorig K. The Health and Recovery Peer (HARP) Program: A peer-led intervention to improve medical self-management for persons with serious mental illness. Schizophrenia Research. 2010b; 118(1–3):264. [PubMed: 20185272]

Ell K, Vourlekis B, Lee P, Xie B. Patient navigation and case management following an abnormal mammogram: A randomized clinical trial. Preventive Medicine: An International Journal Devoted to Practice and Theory. 2007; 44(1):26–33.

Fagiolini A, Goracci A. The effects of undertreated chronic medical illnesses in patients with severe mental disorders. Journal of Clinical Psychiatry. 2009; 70(Suppl. 3):22–29. [PubMed: 19570498]

Ferrante JM, Chen PH, Kim S. The effect of patient navigation on time to diagnosis, anxiety, and satisfaction in urban minority women with abnormal mammograms: A randomized controlled trial. Journal of Urban Health. 2008; 85:114–124. [PubMed: 17906931]

Fischer SM, Sauaia A, Kutner JS. Patient navigation: A culturally competent strategy to address disparities in palliative care. Journal of Palliative Medicine. 2007; 10(5):1023–1028. [PubMed: 17985954]

Freeman HP. Patient Navigation: A community centered approach to reducing cancer mortality. Journal of Cancer Education. 2006; 21(Suppl. 1):S11–S14. [PubMed: 17020496]

Freund KM. Patient navigation: the promise to reduce health disparities. Journal of General Internal Medicine. 2011; 26(2):110–112. [PubMed: 21161422]

Giese-Davis J, Bliss-Isberg C, Carson K, Star P, Donaghy J, Cordova MJ, Stevens N, Wittenberg L, Batten C, Spiegel D. The effect of peer counseling on quality of life following diagnosis of breast cancer: An observational study. Psycho-Oncology. 2006; 15(11):1014–1022. [PubMed: 16555366]

Gilbody S, Bower P, Fletcher J, Richards D, Sutton AJ. Collaborative care for depression: A cumulative meta-analysis and review of longer-term outcomes. Archives of Internal Medicine. 2006; 166(21):2314–2321. [PubMed: 17130383]

Goldberg RW, Dickerson F, Lucksted A, Brown CH, Weber E, Tenhula WN, Dixon LB. Living well: An intervention to improve self-management of medical illness for individuals with serious mental illness. Psychiatric Services. 2013; 64(1):51–57. DOI: 10.1176/appi.ps.201200034 [PubMed: 23070062]

Griswold KS, Homish GG, Pastore PA, Leonard KE. A randomized trial: Are care navigators effective in connecting patients to primary care after psychiatric crisis? Community Mental Health Journal. 2010; 46(4):398–402. [PubMed: 20204511]

Griswold KS, Servoss TJ, Leonard KE, Pastore PA, Smith SJ, Wagner C, Stephan M, Thrist M. Connections to primary medical care after psychiatric crisis. Journal of the American Board of Family Practice. 2005; 18(3):166–172. [PubMed: 15879563]

Han H, Lee HH, Kim MT, Kim KB. Tailored lay health worker intervention improves breast cancer screening outcomes in nonadherent Korean-American women. Health Education Research. 2009; 24(2):318–329. [PubMed: 18463411]

Hansen RA, Maciejewski M, Yu-Isenberg K, Farley JF. Adherence to antipsychotics and cardiometabolic medication: Association with health care utilization and costs. Psychiatric Services. 2012; 63(9):920–928. [PubMed: 22706887]

Hanson RF, Self-Brown S. Screening and assessment of crime victimization and its effects. Journal of Traumatic Stress. 2010; 23(2):207–214. [PubMed: 20336706]

Hudson CG. Declines in mental illness over the adult years: An enduring finding or methodological artifact? Aging & Mental Health. 2012; 16(6):735–752. [PubMed: 22401309]

Jandorf L, Gutierrez Y, Lopez J, Christie J, Itzkowitz SH. Use of a patient navigator to increase colorectal cancer screening in an urban neighborhood health clinic. Journal of Urban Health. 2005; 82:216–224. [PubMed: 15888638]

Jean-Pierre P, Hendren S, Fiscella K, Loader S, Rousseau S, Schwartzbauer B, Sanders M, Carroll J, Epstein R. Understanding the processes of patient navigation to reduce disparities in cancer care: Perspectives of trained navigators from the field. Journal of Cancer Education. 2011; 26(1):111–120. [PubMed: 20407860]

Jerant A, Fenton JJ, Franks P. Primary care attributes and mortality: A national person-level study. Annals of Family Medicine. 2012; 10(1):34–41. [PubMed: 22230828]

Jester, R. Advancing practice in rehabilitation nursing. Oxford, UK: Blackwell Publishing; 2007.

Jonikas JA, Kiosk S, Grey DD, Hamilton MM, McNulty J, Cook JA. Cultural competency in peer-run programs: Results of a web survey and implications for future practice. Psychiatric Rehabilitation Journal. 2010; 34(2):121–129. [PubMed: 20952365]

Kim G, Worley CB, Allen RS, Vinson L, Crowther MR, Parmelee P, Chiriboga DA. Vulnerability of older Latino and Asian immigrants with limited English proficiency. Journal of the American Geriatrics Society. 2011; 59(7):1246–1252. [PubMed: 21718269]

Lanouette NM, Folsom DP, Sciolla A, Jeste DV. Psychotropic medication nonadherence among United States Latinos: A comprehensive literature review. Psychiatric Services. 2009; 60(2):157–174. [PubMed: 19176409]

Lee S, O'Neill A, Park J, Scully L, Shenassa E. Health insurance moderates the association between immigrant length of stay and health status. Journal of Immigrant and Minority Health. 2012; 14(2):345–349. [PubMed: 22512006]

Lipsky S, Caetano R, Roy-Byrne P. Triple jeopardy: Impact of partner violence perpetration, mental health and substance use on perceived unmet need for mental health care among men. Social Psychiatry and Psychiatric Epidemiology. 2011; 46(9):843–852. [PubMed: 20582398]

Lorig KR, Hurwicz M, Sobel D, Hobbs M, Ritter PL. A national dissemination of an evidence-based self-management program: A process evaluation study. Patient Education and Counseling. 2005; 59(1):69–79. [PubMed: 16198220]

Lorig KR, Sobel DS, Stewart AL, Brown BR, Bandura A, Ritter P, Gonzalez VM, Laurent DD, Holman HR. Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization. Medical Care. 1999; 37(1):5–14. [PubMed: 10413387]

Mai Q, Holman CD, Sanfilippo FM, Emery JD. The impact of mental illness on potentially preventable hospitalisations: A population-based cohort study. BMC Psychiatry. 2011; 11:163. [PubMed: 21985082]

Manderson B, Mcmurray J, Piraino E, Stolee P. Navigation roles support chronically ill older adults through healthcare transitions: A systematic review of the literature. Health & Social Care in the Community. 2012; 20(2):113–127. [PubMed: 21995806]

Maniglio RR. Severe mental illness and criminal victimization: A systematic review. Acta Psychiatrica Scandinavica. 2009; 119(3):180–191. [PubMed: 19016668]

Martens WJ. Homelessness and mental disorders: A comparative review of populations in various countries. International Journal of Mental Health. 2001; 30(4):79–96.

Martin S. Illness of the mind or illness of the spirit? Mental health-related conceptualization and practices of older Iranian immigrants. Health & Social Work. 2009; 34(2):117–126. [PubMed: 19425341]

Maxwell AE, Jo AM, Crespi CM, Sudan M, Bastani R. Peer navigation improves diagnostic follow-up after breast cancer screening among Korean American women: Results of a randomized trial. Cancer Causes & Control. 2010; 21(11):1931–1940. [PubMed: 20676928]

Minkler, M., Wallerstein, N., editors. Community-based participatory research for health: From process to outcomes. San Francisco, CA: Jossey-Bass; 2008.

Musa D, Schulz R, Harris R, Silverman M, Thomas SB. Trust in the health care system and the use of preventive health services by older Black and White adults. American Journal of Public Health. 2009; 99(7):1293–1299. [PubMed: 18923129]

Natale-Pereira A, Enard KR, Nevarez L, Jones LA. The role of patient navigators in eliminating health disparities. Cancer. 2011; 117(Suppl. 15):3543–3552. [PubMed: 21780089]

National Cancer Institute. Patient navigator program background. 2012. Retrieved from http://crchd.cancer.gov/pnp/background.html

Nguyen TN, Tran JH, Kagawa-Singer M, Foo M. A qualitative assessment of community-based breast health navigation services for Southeast Asian women in Southern California: Recommendations for developing a navigator training curriculum. American Journal of Public Health. 2011; 101(1): 87–93. [PubMed: 21088273]

Nordt C, Müller B, Rössler W, Lauber C. Predictors and course of vocational status, income, and quality of life in people with severe mental illness: A naturalistic study. Social Science & Medicine. 2007; 65(7):1420–1429. [PubMed: 17583402]

O'Donnell M, Parker G, Proberts M, Matthews R, Fisher D, Johnson B, Hadzi-Pavlovic D. A study of client-focused case management and consumer advocacy: The Community and Consumer Service Project. Australian and New Zealand Journal of Psychiatry. 1999; 33(5):684–693. [PubMed: 10544992]

Padela AI, Gunter K, Killawi A, Heisler M. Religious values and healthcare accommodations: Voices from the American Muslim community. Journal of General Internal Medicine. 2012; 27(6):708–715. [PubMed: 22215274]

Parker VA, Clark JA, Leyson J, Calhoun E, Carroll JK, Freund KM, Battaglia TA. Patient navigation: Development of a protocol for describing what navigators do. Health Services Research. 2010; 45(2):514–531. [PubMed: 20132342]

Pedersen A, Hack TF. Pilots of oncology health care: A concept analysis of the patient navigator role. Oncology Nursing Forum. 2010; 37(1):55–60. [PubMed: 20044339]

Petereit DG, Molloy K, Reiner M, Helbig P, Cina K, Miner R, Spotted, Roberts CR. Establishing a patient navigator program to reduce cancer disparities in the American Indian communities of western South Dakota: Initial observations and results. Cancer Control. 2008; 15:254–259. [PubMed: 18596678]

Rahm AK, Sukhanova A, Ellis J, Mouchawar J. Increasing utilization of cancer genetic counseling services using a patient navigation model. Journal of Genetic Counseling. 2007; 16:171–177. [PubMed: 17277995]

Ravenell JE, Whitaker EE, Johnson WR. According to him: Barriers to healthcare among African-American men. Journal of the National Medical Association. 2008; 100(10):1153–1160. [PubMed: 18942276]

Robinson-White S, Conroy B, Slavish KH, Rosenzweig M. Patient navigation in breast cancer: A systematic review. Cancer Nursing. 2010; 33(2):127–140. [PubMed: 20142736]

Saha S, Chant D, McGrath J. A systematic review of mortality in schizophrenia: Is the differential mortality gap worsening over time? Archives of General Psychiatry. 2007; 64(10):1123–1131. [PubMed: 17909124]

Saunders MR, Alexander GC. Turning and churning: loss of health insurance among adults in Medicaid. Journal of General Internal Medicine. 2009; 24(1):133–4. [PubMed: 19096899]

Schanzer B, Dominguez B, Shrout PE, Caton CL. Homelessness, health status, and health care use. American Journal of Public Health. 2007; 97(3):464–469. [PubMed: 17267724]

Schroeder SA, Morris CD. Confronting a neglected epidemic: Tobacco cessation for persons with mental illnesses and substance abuse problems. Annual Review of Public Health. 2010; 31:297–314.

Schwaderer KA, Itano JK. Bridging the healthcare divide with patient navigation: Development of a research program to address disparities. Clinical Journal of Oncology Nursing. 2007; 11(5):633–639. [PubMed: 17962171]

Seek AJ, Hogle WP. Modeling a better way: navigating the healthcare system for patients with lung cancer. Clinical Journal of Oncology Nursing. 2007; 11:81–85. [PubMed: 17441399]

Shattell MM, Donnelly N, Scheyett A, Cuddeback GS. Assertive community treatment and the physical health needs of persons with severe mental illness: Issues around integration of mental health and physical health. Journal of the American Psychiatric Nurses Association. 2011; 17(1):57–63. [PubMed: 21659295]

Sledge WH, Lawless M, Sells D, Wieland M, O'Connell MJ, Davidson L. Effectiveness of peer support in reducing readmissions of persons with multiple psychiatric hospitalizations. Psychiatric Services. 2011; 62(5):541–544. [PubMed: 21532082]

Smith MM, Hopkins DD, Peveler RC, Holt RG, Woodward MM, Ismail KK. First- vs. second-generation antipsychotics and risk for diabetes in schizophrenia: Systematic review and meta-analysis. The British Journal of Psychiatry. 2008; 192(6):406–411. [PubMed: 18515889]

Solomon P, Draine J, Delaney M. The working alliance and consumer case management. Journal of Mental Health Administration. 1995; 22(2):126–134. [PubMed: 10142126]

Stange KC, Nutting PA, Miller WL, Jaén CR, Crabtree BF, Flocke SA, Gill JM. Defining and measuring the patient-centered medical home. Journal of General Internal Medicine. 2010; 25(6):601–612. [PubMed: 20467909]

Su D, Li L. Trends in the use of complementary and alternative medicine in the United States: 2002–2007. Journal of Health Care for the Poor and Underserved. 2011; 22(1):296–310. [PubMed: 21317523]

Takano T, Nakamura K, Takeuchi S, Watanabe M. Disease patterns of the homeless in Tokyo. Journal of Urban Health. 1999; 76(1):73–84. [PubMed: 10091192]

Tingen MS, Weinrich SP, Heydt DD, Boyd MD, Weinrich MC. Perceived benefits: A predictor of participation in prostate cancer screening. Cancer Nursing. 1998; 21:349–357. [PubMed: 9775485]

Tófoli L, Andrade L, Fortes S. Somatization in Latin America: A review on the classification of somatoform disorders, functional syndromes, and medically unexplained symptoms. Revista Brasileira De Psiquiatria. 2011; 33(Suppl. 1):S70–S80.

Vick B, Jones K, Mitra S. Poverty and severe psychiatric disorder in the U.S.: Evidence from the Medical Expediture Panel Survey. Journal of Mental Health Policy and Economics. 2012; 15(2):83–96. [PubMed: 22813941]

Warf CW, Clark LF, Herz DC, Rabinovitz SJ. The continuity of care to nowhere: Poverty, child protective services, juvenile justice, homelessness and incarceration: The disproportionate representation of African American children and youth. International Journal of Child and Adolescent Health. 2009; 2(1):49–64.

Washington OM, Moxley DP, Garriott L, Crystal JP. Building a responsive network of support and advocacy for older African American homeless women through developmental action research. Contemporary Nurse. 2009; 33(2):140–160. [PubMed: 19929159]

Weiner M, Warren L, Fiedorowicz JG. Cardiovascular morbidity and mortality in bipolar disorder. Annals Of Clinical Psychiatry. 2011; 23(1):40–47. [PubMed: 21318195]

Weinreb L, Goldberg R, Bassuk E, Perloff J. Determinants of health and service use patterns in homeless and low-income housed children. Pediatrics. 1998; 102(3):554–562. [PubMed: 9738176]

Weinrich SP, Boyd MD, Weinrich M, Greene F, Reynolds WA Jr, Metlin C. Increasing prostate cancer screening in African American men with peer-educator and client-navigator interventions. Journal of Cancer Education. 1998; 13:213–219. [PubMed: 9883780]

Weinstein L, Henwood BF, Cody JW, Jordan M, Lelar R. Transforming assertive community treatment into an integrated care system: The role of nursing and primary care partnerships. Journal of the American Psychiatric Nurses Association. 2011; 17(1):64–71. [PubMed: 21659296]

Wells KJ, Battaglia TA, Dudley DJ, Garcia R, Greene A, Calhoun E, Mandelblatt JS, Paskett ED, Raich PC. Patient navigation: State of the art or is it science? Cancer. 2008; 113(8):1999–2010. [PubMed: 18780320]

Whitt-Glover, MC., Beech, BM., Bell, RA., Jackson, SA., Loftin-Bell, KA., Mount, DL. Health disparities and minority health. In: Shumaker, SA.Ockene, JK., Riekert, KA., editors. The handbook of health behavior change. 3rd. New York, NY: Springer; 2009. p. 589-606.

Wright KA, Everson-Hock ES, Taylor AH. The effects of physical activity on physical and mental health among individuals with bipolar disorder: A systematic review. Mental Health and Physical Activity. 2009; 2(2):86–94.

Census Bureau, US. Income, Poverty, and Health Insurance Coverage in the United States: 2011. 2012. Retrieved from http://www.census.gov/prod/2012pubs/p60-243.pdf

U.S. Department of Housing and Urban Development. The 2010 annual homeless assessment report to congress. 2010. Retrieved from http://www.hudhre.info/documents/2010HomelessAssessmentReport.pdf

World Health Organization. How can health care systems effectively deal with the major health care needs of homeless people?. 2005. Retrieved July 2, 2012 from http://www.euro.who.int/__data/assets/pdf_file/0009/74682/E85482.pdf

Table 1

Summary of randomized controlled trials of peer-based support services for people with serious mental illness.

1st Author Year	N	Race/Ethnic Characteristics	Study Eligibility Criteria	Intervention Features	Main Findings
Clarke 2000	114	82% Caucasian, 8% African American, 10% Other/multiple	SMI	Assertive Community Treatment staffed by consumer or non-consumer	No difference between peer and professional case managers
Davidson 2004	260	82% Caucasian, 11% African American. 2% Latino 1% Asian/PI	Psychiatric disability; social withdrawal	Supported socialization	No differences between peer and professional case managers
Druss 2010	80	73% African American 25% Caucasian	SMI and chronic illness	6 session illness self-management	Peer-led services more primary care visits at follow-up
Goldberg 2013	63	67% African American, 29% Caucasian, 3% Multiple, 2% Latino	SMI and chronic illness	13 session illness self-management	Improvement in health attitudes and self-management
Griswold 2005, 2010	101	37% African American, 9% Latino	primary care psychiatric Emergency; no PMD visit last 6 months	Ongoing Peer-based health care support by phone and home visit	Receipt of peer navigation led to more primary care linkage
O'Donnell 1999	119	None reported	SMI	12 months of consumer advocate support	No differences between peer and professional case managers
Sledge 2011	74	None reported	SMI & 2+ psychiatric hospitalizations in past 18 months	Weekly peer support	Peer services related to fewer hospitalizations and inpatient days
Solomon 1995	90	79% African American 19% Caucasian 2% Latino	SMI	Two years of service consumer case management	No differences between peer and professional case managers