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Journal

The American Journal of Geriatric Psychiatry, 24(1)

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Publication Date

2016

DOI

10.1016/j.jagp.2015.07.003

Peer reviewed



HHS Public Access

Author manuscript

Am J Geriatr Psychiatry. Author manuscript; available in PMC 2017 January 01.

Published in final edited form as:

Am J Geriatr Psychiatry. 2016 January ; 24(1): 18–30. doi:10.1016/j.jagp.2015.07.003.

Directions for effectiveness research to improve health services for late-life depression in the United States

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Abstract

Considerable progress has been made in the treatment of late-life depression over the past 20 years, yet considerable gaps in care remain. Gaps in care are particularly pronounced for older men, certain racial and ethnic minority groups or those with comorbid medical or mental disorders. We reviewed the peer-reviewed literature and conducted interviews with experts in late-life depression to identify promising directions for effectiveness research to address these gaps in care. We searched PubMed, PsychInfo and CINAHL databases between January 01, 1998 – August 31, 2013 using terms related to late-life depression and any of the following: epidemiology, services organization, economics of care, underserved groups including health disparities, impact on caregivers, and interventions. The results of this selective review supplemented by more current recommendations from national experts highlight three priority research areas to improve health services for late-life depression: focusing on the unique needs of the patient through patient-centered care and culturally sensitive care, involving caregivers outside the traditional clinical care team, and involving alternate settings of care. We build on these results to offer five recommendations for future effectiveness research that hold considerable potential to advance intervention and health services development for late-life depression.

Keywords

late-life depression; research directions; health services development

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PRESENTATION: Results from this review were presented by the first author at the American Association for Geriatric Psychiatry 2014 Annual Meeting in Orlando, FL.

CONFLICTS OF INTEREST AND SOURCE OF FUNDING: The authors declare no conflicts of interest and acknowledge funding support from the Archstone Foundation (L. Hinton) and National Institute of Mental Health (NIMH) T-32 program - MH073553 (T. Hoelt).

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Background

Depression is common in older adults and comes at a high cost to patients and their families. Major depression affects 2–5% of community dwelling older adults and 5–10% of older adults in primary care settings (1–4). Late-life depression impairs quality of life (5) and the ability to function and enjoy old age (6). It is associated with increased healthcare costs (7, 8), family stress and increased suicide risk, especially among older white men (9). Depression is also the most important, and arguably the most treatable risk factor for completed suicide (10). The public health importance of late-life depression is underscored by the projected growth in the older adult population in the U.S. and the expected increase in Americans living with chronic illnesses, including depression (11).

Over the past two decades, substantial progress has been made in the development and delivery of care for late-life depression yet many older adults do not receive effective care for depression. For example, considerable work has helped develop and test evidence-based programs of collaborative care for late-life depression (12–14). These programs incorporate care managers working under psychiatric supervision to improve depression treatment either in primary care or in the home and have the potential to advance depression care for the growing, diverse older population in the U.S. (15). Despite these advances in our knowledge about effective care for late-life depression, many older adults lack access to evidence-based treatment or receive ineffective care (16). Older men, for example, are considerably less likely to engage in care for depression compared with older women (17–20). Certain ethnic minority populations, including African Americans and Latinos, are less likely to receive optimal care and face different cultural barriers to care as well as health systems with differing levels of cultural competency in late-life depression care (21–29). The sources of ethnic and racial disparities in the quality of care are complex and include patient, provider and health system factors. Acculturation and other sources of internal diversity within ethnic and racial groups also play a role in understanding and addressing gaps in depression care (23). Other groups facing barriers to care include the oldest old and frail older adults (25, 30–32), those with a disability (9) or dealing with other comorbidities (25), as well as those living on a low income (33, 34) or in rural areas (33). Those with comorbid medical or mental health disorders are more likely to have persistent depression, even with treatment (35). Such comorbidities may impinge on access to care through functional decline, fragmented care and treatment burden (36). Physicians may under-prescribe antidepressants to those with medical comorbidities due to concerns about side effects despite evidence that these medications are safe and efficacious (25).

Even when older adults receive evidence-based treatments, many do not experience complete remission of depression or functional recovery. Even under ideal treatment conditions, fewer than 50% of older adults respond adequately to first-line pharmacotherapy (37). Such findings highlight a need for care that encourages continued engagement, discussion of treatment side-effects, drug-drug interactions, and changes in treatment strategy (e.g. medications, psychotherapy) until depression symptoms are addressed for those with late-life depression. Many experts in the field of late-life depression highlight treatment resistant depressions as a high priority for the field (34, 37–51).

Updated recommendations are needed for future effectiveness research to help close the remaining gaps in depression care for older adults. While efficacy studies will also move the field forward through developing new treatment options for late-life depression, we focus on effectiveness studies of existing treatments in real world settings. We reviewed the literature from the past two decades to identify such effectiveness research recommendations.

Methods

We conducted a selective review of peer-reviewed articles and semi structured interviews with a small purposive sample of national experts. Published articles were identified from PubMed, PsychInfo and CINHALL databases, searching for key search terms identified by the authors and operationalized with the help of a medical librarian. Search terms related to late-life depression / depression in older adults and any of the following: epidemiology, services organization, economics of care, underserved groups including health disparities, impact on caregivers, and interventions. The search boundaries were set to include English language articles dating between January 01, 1998 – August 31, 2013, and studies involving humans age 55 and above. Our search strategy included empirical studies along with systematic reviews including Cochrane Review articles, commentaries and editorials that made recommendations for research. The January 1998 date corresponds with the end of the review period for an earlier comprehensive literature review by Unützer and colleagues (52). Our goal was to identify promising areas for future effectiveness research that will improve health services for late-life depression and we focused our review on treatment effectiveness studies (studies of interventions and treatment programs under real world circumstances with representative populations) and excluded reports of treatment efficacy studies (studies establishing the efficacy of new treatments under ideal, controlled conditions). Such a focus aligns with national attention on comparative effectiveness research which can ultimately inform development of health services by offering information on the relative effectiveness, benefits and harms of different treatment strategies (53, 54). The distinction between efficacy and effectiveness studies is not a dichotomy but instead they fall on a continuum (55). For this review we excluded treatment trials that involved a study follow-up period of less than 12 weeks as these largely represent efficacy studies of promising new treatments. We also excluded studies that focused on subsyndromal depression as the review focused on treatment for major depression. We included international literature if the article came from other high income countries based on GDP as findings in these countries could be particularly relevant to care for late-life depression in the U.S. In addition to this selective review of the peer-reviewed published literature, we interviewed four national experts in the area of late-life depression with the aim to comment on existing recommendations and to identify additional research recommendations. The sampling of experts for the interviews was purposive with the intent of interviewing at least one expert each in the areas of epidemiology, primary care, and specialty care. Experts were contacted by email in October 2013. Four of six experts contacted agreed to a telephone interview and to be acknowledged in this paper for their contributions. Telephone interviews took place in late October 2013, lasted between 25 and 40 minutes, and were recorded. The interviews were semi-structured and facilitated by the use of an interview guide. Experts were asked about promising directions for research and about important articles to include in the review in order to

highlight up-to-date research recommendations that may not be published and important articles to include in our search. Detailed notes were immediately developed from both the interviewer's notes and the supporting audio. One interview was not recorded due to extenuating circumstances, however two co-authors attended the interview and took detailed notes during and immediately after the interview.

We used a coding process involving several steps to derive research recommendations from the peer-reviewed literature and interviews with experts. In the initial step, the articles were divided among the co-authors and independently coded to identify any recommendations from each article related to research. The coded material on effectiveness research recommendations was incorporated into tables for ease of display and comparison in discussions among three of the co-authors (TH, LH, JU). Next, co-authors met to discuss their coding and, through a consensus process, developed a broader set of descriptive categories. Two co-authors (TH, LH) also coded the interviews with experts and identified research recommendations. While there was considerable overlap with the peer-reviewed literature, interviews with the experts did identify several additional research recommendations and helped to amplify the review of the peer-reviewed literature by providing good illustrations.

The literature review took a historical look at research recommendations over the past 20 years while the group of experts were included to give us a look forward and identify future directions.

Results

The library database search yielded 478 possible titles from PubMed and 294 from PsychInfo and CINAHL. Once duplicates were removed and titles and abstracts reviewed for relevance, 222 articles were included from these sources for full review. Fourteen additional relevant articles were located by the authors and 8 additional articles were highlighted by the expert interviews and added to the review for a total of 244 peer reviewed articles reviewed. Of the 244 peer reviewed articles reviewed in full, 33 held recommendations for future effectiveness research to improve health services for depression among older adults. Research recommendations published in these 33 peer reviewed articles are presented in Table 1.

The majority of research recommendations fell into one of three broad areas highlighting 1) ways that care can meet the unique needs of the patient, 2) care that involves caregivers outside the traditional care team (e.g. family and community health workers (CHWs)), and 3) care in different settings outside typical health care settings. To meet the unique needs of patients, research recommendations highlighted both patient-centered care and culturally sensitive care as important research directions. These research areas are also outlined in more detail in Table 1 where specific research recommendations from each article are detailed.

Ways care can meet the unique needs of the patient

Patient-centered care—Patient-centered care is a promising area of research and approach to late-life depression care for diverse populations, including those likely to develop treatment resistant depression. Patient-centered care can be defined as “care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions” (56). Advances in patient-centered care should take into account differences, or heterogeneity, among patients with late-life depression such as comorbid medical conditions and complex psychosocial needs. In relation to pharmacotherapy, care may be enhanced through research into the effects of medical burden from comorbidities (e.g. anxiety) or declines in executive function on depression treatment (37). Addressing complex psychosocial needs is another important focus for future research (34, 57, 58). One example of addressing patients’ complex psychosocial needs involves adding case management to problem solving treatment (PST) which can be useful for tailoring treatment for low-income older adults living with disabilities (34). Patient-centered care may also involve shared decision making as a means to enhance the patient-provider relationship, understand patient values and preferences, and inform clinical decision making (58–61). While patient-centered care can improve access to care through engaging patients who are at risk of “falling through the cracks” it is also a potentially promising treatment approach for those who are more likely to develop treatment resistant depression when receiving evidence-based treatment (e.g. those with comorbid anxiety or declines in executive function). New research could inform inclusion of treatment recommendations based on patient heterogeneity into clinical guidelines to enable more tailored treatments for different patients (e.g. based on comorbidities) (62, 63).

The interviews with experts also highlighted areas for research development in patient-centered care. One expert stressed the importance of better understanding the role of medical comorbidities in depression diagnosis and treatment while another expert advocated for more longitudinal studies of the natural course of depression as a way to identify heterogeneity in both the expression and trajectories of depression.

Culturally sensitive care—The literature also highlighted the benefits of new approaches that will reach a wider and more diverse group of older adults through offering more culturally sensitive and linguistically competent care (23, 64). The evidence regarding the impact of sociocultural adaptations to depression treatments on depression outcomes for older minorities is still emerging (65). Developments could focus on expanding culturally sensitive services (64) and education to patients and families about depression (23). Qualitative research can look more closely at how people view depression as this may influence culturally sensitive materials for providers, patients, and families (23). To assess the effectiveness of depression interventions in older minority populations it is important to include enough individuals from the population of interest while also assessing treatment outcomes among these groups (65).

The experts we interviewed also focused on the need to develop treatments that are culturally-attuned and the need to better understand how older adults conceptualize and express their depressive symptoms, and the implications of this for adapting treatment.

Involving caregivers outside the traditional clinical care team

Other promising approaches to improve care may focus on involving others in the care process such as family members and caregivers (21, 60, 64, 66–70) or the broader community (48, 64, 69, 71–73). For example, a community-based program may involve non-professionals to conduct outreach to frail and at-risk older adults (71, 73). A consensus statement from the Depression and Bipolar Support Alliance highlighted the benefits of partnerships with community agencies in order to reach underserved older adults, particularly as a way to overcome mistrust among minority populations (64). As older adults often turn to religious or spiritual leaders for counsel, these leaders lie within an underdeveloped mental health referral network that may be developed in future work and could be engaged as effective collaborators in depression care (69). Religious leaders are thus another potential community resource who could increase demand by helping motivate, educate and support depressed individuals (64, 69).

Some on the expert panel also stressed this outreach to community as a needed area of focus. As part of these efforts, researchers need to find ways to strengthen the connections between primary care clinics and to provide adequate training and support to staff who deliver these interventions. Community bridging and outreach was viewed as something that might be accomplished by like-ethnic lay or peer counselors, community health workers, or family members and others in the depressed person's social network.

Care in alternate settings

Primary care and home-based care are relatively well studied settings of care where many older adults may be reached, however the review identified other settings for reaching older adults with depression. These settings may include nursing homes (31, 52, 61, 69, 74–77), medical inpatient units (78), or community settings such as senior centers, adult day health, day treatment programs, rehabilitation services and assisted living facilities (16, 52, 69, 74, 79). Research within the nursing home setting could look at risks / benefits and appropriate use of antidepressant treatment in nursing home populations (31, 61, 76) while also focusing on psychosocial interventions and training more mental health providers in nursing home settings (61). Others have also recommended a need for universal screening and appropriate triage for depression in long term care (69). Treatment in community settings may offer the added benefit of developing social connections (79) while broadening access to care for older adults. Opportunities to improve care for patients recognized as depressed in inpatient settings continue in the community post-discharge (78). Community settings are highlighted as a preferable location for reaching those with late-life depression compared to in-patient settings (79). In one review of community-based interventions, mixed effectiveness findings for some community-based interventions may be attributed to different levels of training and supervision of intervention personnel in these community settings (i.e. in lieu of master's level, manual trained providers (16)). Determining who can screen and deliver care in these settings and the training and support needed to support providers in these settings is thus an important area for further research.

Several members of the expert panel also stressed the need to expand depression interventions, both pharmacological and particularly psychotherapy, to settings in the

community where they have the potential to reach larger numbers of diverse depressed older adults, particularly those from ethnic and racial minorities who suffer from disparities in depression care. Community settings that were mentioned included meals on wheels programs, faith-based organizations and home-based care programs.

Additional area identified by national experts—An additional recommendation that emerged from the expert interviews focused on the importance of prevention research to identify and intervene with populations at risk for depression or for treatment resistant depression. Prevention is an important area of research that falls outside our review criteria focused on areas for intervening among those with clinical depression but it was identified as an important topic in our expert interviews and the literature they recommended for this review (80, 81).

Discussion

Our selective review identified a number of research recommendations for future effectiveness research that we organized into three broad areas related to addressing unique patient needs, including caregivers outside the traditional care team, and involving different settings in care. These areas hold promise for new research to improve health services for older adults with depression, particularly those who are not receiving effective treatment or are not responding to evidence-based treatments. Building on gaps in the published research recommendations that remain pressing priorities and recommendations from the group of experts interviewed for this review, we present a few additional considerations for the best directions forward for effectiveness research to improve late-life depression care.

Recommendations for future research

We recognize a need for more providers to meet the growing needs of older adults with depression both in their patient-centered primary care settings and the variety of community settings where they may be reached. It is likely that technology will assist the delivery of depression treatment for this group but given the lack of literature in this area, we recommend further studies focused on if and how technology will be helpful in development of treatment for late-life depression. More specifically we recommend the following research directions to move the field forward.

- Build on continued interest in patient-centered care to address multiple care needs among differing populations through patient-centered outcomes research (PCOR)
- Extend care and outreach via community health workers (CHWs) and family members
- Develop models that can treat depression across settings, with a focus on the growing importance of transitions in care and care in community settings
- Determine if and how to involve technology in late-life depression care
- Study the mechanisms of existing and developing interventions to encourage development of scalable, cost-effective models of care that can be disseminated to a wide variety of communities

Patient-centered care: We highlight patient-centered care and the role of PCOR in developing health care to meet patient preferences, needs, culture and values around late-life depression care. Patient, family and clinical stakeholders are critical to the developing field of PCOR (53, 56). Adaptations developed through PCOR can focus on various populations that still face gaps in care (e.g. those with multiple morbidities, treatment resistant depression, and coming from different racial / ethnic groups). Gaps in care still remain for these populations and models of care should develop to meet these unique needs. For example, further research might address the unique challenges faced by older adults with comorbid depression and physical health morbidities (e.g. chronic pain) (82). Models of care can be developed to more effectively address medication management challenges and other medical management issues among this subgroup Anxiety is another important comorbidity to address in continued development of health services for late-life depression (49, 57). Alexopoulos highlights strategies for addressing anxiety, among other predictors of response to interventions such as hopelessness, suggesting clinicians can offer interventions to target these predictors while also offering more vigilant follow-up (57). Shared decision making (SDM) is another important aspect of patient-centered care that helps articulate the patient's values and preferences, and inform clinical decision making (83–85). SDM aspects of patient-centered care can be a valuable focus for addressing multiple morbidities, treatment resistant depression or differing cultural needs. While SDM surfaced in the late-life depression literature back in 2003 (61), most recommendations around SDM did not appear until later (58–60). We recommend developing models of SDM that incorporate cultural adaptations such as active inclusion of family members in decision-making when one's culture places a value on family involvement. In addition, both the literature and experts highlighted talking with different cultural groups to learn how they understand and talk about depression. Such qualitative or mixed-methods PCOR may be particularly helpful for adapting SDM on depression treatment to these groups and guide other adaptations of patient-centered care to meet their diverse needs and preferences.

Involve CHWs and family: Models that hope to meet the needs of a growing, diverse population of older adults, including those with depression, may have a greater chance of reaching these individuals if they include caregivers outside the traditional care team. Including community resources such as community health workers (CHWs) and possibly family members holds considerable promise in improving reach of depression care efforts, access to care, engagement in care, and overall quality of care. Involving these community resources in the care team can extend and strengthen evidence-based models such as collaborative care. For example, family involvement in care can help with patient education, issues of stigma around mental illness, and engagement in care, while possibly also addressing caregiver burden for family members of older adults with depression (86, 87). Community health workers can work in a variety of settings and often are employed by public health departments, primary care clinics, or community-based organizations working with older adults (88). Increasing support for CHWs (89) along with increasing interest within this profession on reaching out to address mental health concerns in the community (90) highlight the potential for shifting some depression care tasks to this developing workforce. CHWs can help identify older adults with depression, engage them in care, and assist in offering evidence-based depression treatment. Similar to work with family

members in care, CHWs can also help address issues of stigma around mental illness and caregiver burden for family of older adults with depression.

The 2012 IOM workforce report titled “The mental health and substance use workforce for older adults: In whose hands?” highlights the potential for including a diverse team of providers to meet the growing workforce shortages for an aging population (91). Peer support providers, CHWs, and family caregivers are all highlighted as less highly skilled members of the workforce for older adults with mental health and substance use disorders (91). Bartels also highlights this growing need among an aging population (92). We were surprised by the lack of reference to involving peers in outreach and care in the review, though one expert highlighted the need for involving like-ethnic lay or peer counselors in care. Inclusion of peers or CHWs in the care team would require adequate training, supervision and support, and the appropriate level of support is still undetermined, especially in the area of mental health care. Lay health workers will need training in establishing clinical boundaries and self-care when working with individuals with mental health needs, though training CHWs in mental health outreach can have a positive impact on mental health outcomes of CHWs as well (93). We recommend research into appropriate supervision, support and self-care when including peers or CHWs in mental health services. CHWs may hold more promise as an added workforce however given the allocation of funds in section 5313 of the Patient Protection and Affordable Care Act (ACA) to expand this workforce (89) along with the structures of supervision and support that exist and are continuing to develop for these lay health providers.

Transitions and care in community settings: Older adults are often facing transitions in care as medical conditions lead them to in-patient, nursing home, and community-based care (e.g. adult day health, home-based care). Depression is likely to have profound effects on such transitions, such as through the impact of depression on rehospitalization (94), and we recommend research on improving depression care within the context of such transitions. Studies in nursing homes find high use of antidepressants among depressed residents (95) but also highlight a need for further development of quality metrics to also report on monitoring of depression symptoms (61, 95). The question remains as to what is the best setting for addressing depression as older adults transition between settings and how can care be coordinated across these settings. The development nationally of Accountable Care Organizations (ACOs) to improve coordination of care and reduce overall costs continues to highlight the need for further research into transitions of care (96). CHWs in connection with primary care or public health departments may be a promising direction forward for this research around transitions and continued depression monitoring and treatment possibly across settings. Broadening models of care in primary care (12) and through the home-based services (97) to involve CHWs and other community settings such as adult day health centers and residential assisted living facilities may hold considerable promise for meeting the needs of older adults out in the community and improving depression treatment during transitions in care. These settings in the community offer services to older adults in times of less acute stress compared to periods immediately post-discharge or near transitions in / out of nursing home settings.

Technology—One area with a considerable absence of research recommendations in the literature involves the use of technology among older adults. While the literature search highlighted a few articles focused on this topic (98, 99), there were surprisingly few mentions of this in the articles reviewed. Given the rapid rise in the use of technology to improve health and mental health and the potential for a deepening digital divide for older adults (100), this is an area that may deserve additional attention and research. Approaches highlighted in this literature search around technology involve new and existing technologies to help deliver care for late-life depression, such as computerized or telehealth supported therapies (98, 99). We also highlight work on ePST (101) as a promising direction for exploring the acceptability and effectiveness of such technology assisted therapy delivery with older adults. As research involving CHWs in outreach to communities develops, studies can focus on ways CHWs may assist older adults using these technologies out in the community along with the role of technology in education and continued support for CHWs in primary care or the community.

Mechanisms—Research on new models of care should account for the intervention components and mechanisms that offer the most benefit. Studies on mechanisms in collaborative care, for example, identified care management and active psychiatric supervision as the active ingredients that lead to greater gains for health systems in implementations, though further work on the active ingredients of collaborative care would be helpful (15). Future research with SDM, other patient-centered care developments, incorporating CHWs and family in care, and technology should fine-tune these developing models of care to achieve the greatest gains for the investment while also minimizing up-front investments in implementation to encourage greater uptake of these models in diverse settings. Such research is particularly relevant when working with low resource settings that may face greater barriers to implementing resource intense models of care. Questions about scalability of models of care have surfaced locally and globally in mental health services. For models of care that are more complex, efforts should be taken to improve descriptions of these models to aid systematic reviews of the potential mechanisms driving positive results (102).

Demand for medical care (103) is influenced by perceived need for care, perceived quality of care, and access to care. Patient-centered care can drive demand as care becomes more focused on the patient's unique needs and preferences. Shared decision making in mental health care holds potential for increasing demand for care by accurately describing treatment options including benefits, possible side effects, and strategies to help address possible side effects of treatments. Work out in the community may have considerable influence on increasing demand for care among those who may not seek care in a primary care setting or who may need more encouragement to talk with their primary care provider about depression symptoms. Finally, some aspects of care such as incorporating technology or cultural adaptations that may be needed in certain settings have the potential to also impact demand for care if they improve access to care and patient satisfaction.

Limitations

Our review offers several promising directions for research but it also has important limitations. We excluded efficacy studies such as short term clinical trials of specific antidepressant medications or psychotherapies from this review to focus on real-world effectiveness studies of treatment programs, prior reviews of the literature with a focus on effectiveness of treatment programs, and commentaries that included promising future research ideas to improve the effectiveness of late-life depression care. Our goal was to identify gaps in knowledge that point towards future research such as randomized controlled trials of strategies to close the gaps in depression care for those populations of older adults who do not benefit from services available today. In taking this focus, we also excluded studies focused on prevention of depression in late-life. Prevention is an important area of research highlighted through interviews with experts as a part of this review. A separate review dedicated to prevention strategies is warranted given the importance of this topic for a growing older adult population in the U.S. Additional limitations of this review include the inclusion of a relatively small sample of experts in our interviews. Although purposefully selected, this group is certainly not representative of all experts in the field. We did not use rating scales or formal consensus processes with this small sample of experts. We did not search the Cochrane Library for systematic reviews. While these review articles should have surfaced in our review of PubMed, PsychInfo and CINAHL databases, the Cochrane Library could also pull from the EMBASE database which may include additional reviews. As EMBASE tends to focus on drugs, devices and more basic science articles, this likely limits the articles we have missed. Finally, we did not search the literature for promising new efficacy studies that will advance the field. As one member of our expert panel noted, we have “good” rather than “great” treatments for depression with respect to the significant numbers of older adults who do not respond adequately to evidence-based care for depression. Thus even with efforts to improve the effectiveness of health services for late-life depression, we will need additional efficacy research to develop new treatments for patients who do not respond to adequate trials of currently available evidence-based care. Such interventions may ultimately help us personalize care to the patient's unique biological needs (57). They may include new biological treatments for treatment resistant depression (e.g. rTMS, DBS) (38), treatment strategies that utilize genetic factors to personalize pharmacotherapy (37), and neuropsychological tests administered before treatment to help guide the most effective treatment strategies (50).

Conclusion

Our review identified several promising research strategies to help close important gaps in care for late-life depression. Our recommendations for future research build on suggestions from the literature review as well as the recommendations from the group of experts interviewed to offer the most pressing and innovative directions forward for effectiveness research on late-life depression care. These recommendations reflect momentum in late-life depression research as the field grows and responds to developments in patient-centered care, involvement of CHWs in outreach and care, efforts aimed at enhancing coordination of care and transitions between settings, and the development of technology and telehealth opportunities and capabilities. Such research involving community partnerships and

community outreach through patient-centered outcomes research holds considerable promise for broadening access to effective depression care and demand for care among a growing, diverse older population.

Acknowledgments

We would like to thank Drs. Dan Blazer II, Martha Bruce, Joseph Gallo, and Charles Reynolds III for their time and insights on the most promising and pressing research directions. We would also like to acknowledge administrative support from Edward Elizarraras.

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Table 1

Priority Research Areas in Late-Life Depression (LLD)*

<i>Focus on unique needs of the patient</i>	Citation no.
<i>Patient-centered care</i>	
Develop interventions that personalize care to the patient's unique psychosocial needs	57
Incorporate patient / consumer values in care	61
Develop interventions that personalize care to the patient's unique and complex psychosocial needs. Such developments could be especially helpful for those with treatment resistant depression.	34
Measure depression severity and comorbidities (e.g. anxiety) to help develop and guide patients toward targeted interventions. Such developments could be especially helpful for those at risk for treatment resistant depression.	49
Determine if adding social and instrumental support for subgroups of LLD patients affects remission	60
In pharmacotherapy, incorporate the moderating role of clinical factors (e.g. comorbidities and executive function) to inform treatment	37
Develop greater shared decision making in LLD care and test whether it improves adherence and outcomes	59
Increase understanding of patient preferences for treatment to enhance engagement in treatment	58
Address pain interference in depression treatment to potentially improve depression outcomes	82
Assess a broad range of spiritual/religious preferences to determine how individuals might want to incorporate spiritual coping in depression care	48
Develop a classification of depression based on severity and clinical experience to help develop treatment guidelines tailored to this classification	62
Determine if specific classes of maintenance monotherapy work for certain individuals with persistent depression	63
<i>Culturally sensitive and linguistically competent care</i>	
Expand culturally competent services	64
Provide culturally sensitive education to patients and family about depression. Study how people view depression and whether depression measures are valid in an older Hispanic population while also studying positive and negative aspects of acculturation and its influence on mental health.	23
Increase the number of older minorities in depression treatment studies and report treatment outcomes for these groups	65
<i>Involve caregivers outside the traditional clinical care team</i>	
Find ways to share care tasks with family and caregivers	21
Develop community-based programs to involve lay health providers in outreach to frail and at-risk older adults	71
Collaborate with family and care providers and forge relationships with community leaders to better reach people, motivate and support them in depression care	64
Engage family as partners in depression care	66
Develop tailored treatments that meet the needs of caregivers and patients as caregiver burden can lead to physical health issues for caregivers as well as impede recovery for older adults with depression	67
Develop relationships with religious leaders and community members helping older adults with activities of daily living as a network to better reach people, motivate and support depression care. Connect community long term care case managers with primary care providers to improve care for this population with LLD.	69
Engage family members to help with patient engagement and adherence to depression treatment	70
Involve the home health nurse in care for LLD	72
Involve mobile nurses in the community to help with adherence to treatment while involving local staff in residential buildings to help identify cases of depression in older adults	73
Develop procedures to actively involve family in the depressed patient's decision	59
Determine how religion/spirituality and leaders in these communities fit into depression treatment	48
Develop interventions that consider and address caregiving activities to reduce caregiver burden	68

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<i>Focus on unique needs of the patient</i>	Citation no.
<i>Care in alternate settings</i>	
Develop pharmacological and psychosocial interventions to advance mental health care in nursing homes	61
Study several community-based interventions for LLD where interventions showed mixed effectiveness or where surprisingly little research was found (e.g. in adult day health programs)	16
Continue to study LLD treatment in day health clinics in comparison with inpatient treatment	79
Study the effectiveness of antidepressant prescribing in nursing home settings	31
Study the risks and benefits of antidepressant use in nursing homes	76
Develop better communication among providers involved in care for those living in nursing homes, while also working to improve appropriate detection and treatment of depression in this population	77
Study costs associated with not diagnosing and treating depression both during hospital stay and after discharge in an outpatient setting	78
Determine which elements of the shared care intervention in a residential care setting are effective in treatment of LLD while also studying the impact of shared care interventions on the entire population in the residential care setting, not just those with depression	74
Continue to develop treatment for depression for nursing home residents to address disparities in care within this setting and to improve depression care for all residents	75
Study how LLD can be treated for those in the long term care system, possibly including primary care, adult day health or day treatment centers and the networks of providers across these settings	69
Link those with LLD in primary care with community services such as meals on wheels, senior centers and day programs via a care manager while taking a population-based disease management approach to allocate resources in effective ways to these settings	52

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