See article by Arnaud et al

The Relationship Between Major Depressive Disorder and Multiple Medical Conditions:
A Call to Improve Integrated Care Services

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Depression is the most common mental health disorder in the United States and is the leading cause of disability worldwide.[1] Annually, it accounts for 10% of physician office visits and is costly to the patient, health systems, and society.[2,3] Many risk factors for and correlations with depression have been identified, including associations with common medical illnesses as well as other psychiatric illnesses.[4] Although the relationship between physical and mental health is well established, the review by Arnaud and colleagues[5] provides greater clarity about the overlap between major depressive disorder (MDD) and medical comorbidities.

The systematic literature review by Arnaud et al is one of the most comprehensive reviews that attempts to summarize the relationship between medical comorbidities and MDD. The scope of this analysis is impressive: the authors' initial search of over 6,700 studies yielded 199 conducted between 2005 and 2020. The authors reviewed the relationship between depression and a broad array of medical disorders. They focused on two questions that have a complex relationship to one another: (1) Does the presence of a medical disorder or syndrome increase the risk of developing a depressive syndrome? and (2) What is the impact of having a depressive disorder syndrome on the severity and course of medical disorders? One of the most important findings of this review is the authors' documentation of the gaps present in the existing literature. There are certain areas of investigation, such as the relationship between depression and cardiovascular disease, that have been extensively investigated, but there are other areas in which our fund of knowledge is derived from 1 or 2 small clinical studies. As one would expect, the most compelling associations between depressive disorders and medical comorbidities occurred when there was the greatest number of large, carefully controlled studies. Thus, the authors observed that MDD was a risk factor for developing certain medical comorbidities, including diabetes, obesity, cardiovascular disease, dementia, and substance use disorders, and adversely impacted the course of these same disorders. This article importantly points out that the impact of depressive syndromes on medical disorders may be multifactorial, involving both biological perturbations to a variety of key processes, including the hypothalamic-pituitary-adrenal axis and immune system function, and the effect of depressive syndromes on motivation to adhere to care plans and improve healthy behaviors. A comprehensive and thoughtful discussion of these important potential relationships should be the focus of future in-depth scholarly work.

There are some unique features of this review that merit discussion. The authors combine the discussion of results from previously published meta-analyses with summaries from articles published after the publication of those meta-analyses. Thus, one has results from meta-analyses that used different inclusion and exclusion criteria combined with articles that may or may not meet criteria for inclusion, and so one is "mixing apples and oranges." Given this approach, interpretations must be made with caution. Another feature that is important to acknowledge is that the authors included studies that employed a variety of ways of identifying a depressive episode as well as a heterogeneous series of definitions of depression from MDD defined in *DSM-IV* and *DSM-5* to dysthymia and definitions based on *ICD* criteria. We believe that this approach is reasonable for a review article since depression itself is a heterogeneous syndrome in which symptoms may wax and wane, yet the presence of even subsyndromal and minor depressive symptoms is associated with impaired quality of life and functioning.[6–8] A third important caveat that the authors address is the difficulty of ascertaining the true causal relationship bewteen depression and the medical comorbidity—the "chicken or the egg" conundrum. This clearly is an area that requires careful thoughtful investigation.

Given these important and complex associations between MDD and other medical disorders, the authors suggest it is imperative that we improve mental health screening and integrated care in medical settings. Recommendations for screening for depression in primary care are well established, but implementation has been slow to be adopted universally.[9,10] Despite several decades' worth

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of knowledge that integrating mental health services into medical care is effective in improving access and clinical outcomes, as well in as lowering costs, implementation has lagged.[11] Some of the factors prohibiting widespread implementation of integrated care include questions about financial sustainability and lack of knowledge about how to bill for these services.[11] Other barriers include the historical separation of mental health treatment from physical health treatment, both structurally and culturally. This separation includes a tendency for many clinicians, unlike what occurs with diabetes or hypertension, to refer any clinical problem suggestive of mental health concern to specialized mental health care settings rather than providing initial assessment and treatment in these medical and surgical settings. This leads to fragmentation of care, increases stigma, and exacerbates the already existing access problem for people with mental disorders. In addition, health systems may be reluctant to make the initial investment in integrated care if they do not fully appreciate the longer-term downstream cost savings associated with treating mental health disorders early in their course.

Although there are many types of treatment available for patients with MDD, there are two successful integrated care approaches worth further discussion. Collaborative care has been a breakthrough development in care delivery in the treatment of depression in primary care settings and consistently demonstrates improved access and outcomes compared to care as usual.[12] In addition, the Improving Access to Psychological Therapies (IAPT) program has been effective in treating over one million people with depression in the United Kingdom per year utilizing a stepped-care approach with a critical focus on measuring and improving clinical outcomes.[13] An overall mental health integration suite of services should include not only collaborative care, but also electronic and other forms of asynchronous psychiatric consultation and digital mental health access through guided and unguided self-help. By focusing on the importance of measurement-based assessment of the severity of illness, one can titrate the intensity of treatment to take advantage of the entire spectrum of psychiatric services, including expert care in specialty programs when indicated.

However, even with improving access through integrated care, there is a growing awareness that demand for mental health treatment will continue to outstrip supply in coming years.[14] Increasing emphasis should be directed toward improving community-based interventions to prevent depression from developing or worsening as well as augmenting traditional treatment.[15] Given the pervasive impact that childhood adversity can have on many of the conditions examined in this study, efforts toward reducing child abuse and adversity should be a primary area of focus for prevention.[16,17] To effectively move beyond a one-size-fits-all approach of medication management and individual psychotherapy for depression, we need to take a more comprehensive approach that requires many more community partners, including integration of legal, occupational, educational, and case management services within communities. Health economists will be critical in building the business case for integrating community-based services with mental health services due to the potential for societal cost savings through decreased medical costs and improved worker productivity.[18] Also needed are new treatment models to reach underserved and rural communities through the training of community health workers and paraprofessionals to deliver some aspects of mental health care.[19]

In conclusion, this review by Arnaud and colleagues enhances the knowledge of the association of MDD with both the development and the worsening of a number of medical comorbidities. There has been an increasing amount of attention given to the question of how to effectively integrate mental health treatment into medical and other settings, and this timely review highlights the importance of strengthening these efforts.

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