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Mood disorders and physical functioning difficulties as predictors of complex activity limitations in young U.S. adults

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Abstract

Background: There is established research that shows associations between basic physical functional difficulties and complex activity limitations. In addition, there is some research that shows associations between mood disorders and complex activity limitations. However, there is limited research looking at the joint association between mood disorders and physical functioning and complex activity limitations. Furthermore, because mood disorders and physical functioning limitations increase with age, there is a lack of information available on younger adults.

Objectives: We assess the impact of mood disorders and physical function difficulties as predictors of complex activity limitations in young U.S. adults, using data from a national survey.

Methods: We use data from the Third National Health and Nutrition Examination Survey (NHANES III) among young U.S. adults 17 to 39 years of age. Selected basic actions difficulties include physical functioning difficulties (motor, visual, or hearing difficulties) and mood disorders (major depressive disorder, dysthymia, or bipolar disorder). Selected complex activity limitations include limitations in activities of daily living (ADLs) (walking inside the home, standing from a chair, getting into and out of bed, eating, and dressing), instrumental activities of daily living (IADLs) (doing chores around the house, preparing meals, and managing money), and/or specific major life activities (limitations in the kind or amount of work or housework they could perform, or being limited in any way because of an impairment or health problem).

Results: The prevalence of basic actions difficulty (physical functioning and/or mood disorder difficulties) among young adults is 34%. Among the young adults with basic actions difficulty, nearly 39% have mood disorders. The prevalence rates for ADL/IADL, major life activities, and any complex activity limitation are 8.6%, 8.1%, and 13.6%, respectively. Compared with young adults with no basic actions difficulties, the results showed that young adults with mood disorders alone had elevated adjusted odds ratios (2.5) for limitations in ADLs and/IADLs. For all the complex activity limitations analyzed, compared to those with no basic actions difficulties, young adults with physical functioning difficulties alone had substantially higher adjusted odds ratios (5.4-8.7) and young adults with comorbid mood disorder and physical functioning difficulties had the highest observed odds ratios (9.7-14.0).

Conclusions: The data suggest a stronger risk of complex activity limitations when mood disorders coexist with physical functioning difficulties, leading to potential interference with a person's ability to accomplish the ADLs/IADLs or major life activities measured in this study. Given the magnitude of basic actions difficulty prevalence, and particularly the substantial contribution of mood disorders to this prevalence, further examination of the mental health component of basic actions difficulty is warranted. A possible area for future research could explore coordinated efforts to reduce physical and mental difficulties and facilitate the accomplishment of complex activities. Published by Elsevier Inc.

Keywords: Mood disorders; Physical functioning; Basic actions difficulty; Complex activity limitations; NHANES III

The current discourse on disability measurement embraces a biopsychosocial paradigm and adopts a multidimensional, functional approach [1-3]. The measurement of disability focuses on the operationalization of two constructs: basic actions and complex activities. Basic actions difficulty relates to specific acts of physical and mental functioning and includes sensory, movement, emotional, intellectual, and cognitive difficulties. Complex activity limitations represent a more complicated level of measurement and incorporate organized and multiple tasks. For example, complex activity limitations could include challenges in the combined use of sensory activities, physical movement, intellectual activity, and the use of assistive devices in an organized process to achieve a recognized goal such as getting dressed, going to the doctor, working, or participating in social activities [4,5].

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In these analyses, physical functioning includes indicators of sensory and movement (seeing, hearing and mobility difficulty) that meet current criteria and have been used extensively [2,6]. For mental functioning, mood disorders (major depressive episode, dysthymia, and bipolar I-II disorders) are used to represent emotional difficulty. While these disorders do not capture the full spectrum of challenges in mental functioning, as the only available measures of mental functioning in the data in our study, they represent indicators of deficits in mental functioning that meet *Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III)* criteria.

Established research shows associations between basic physical functional difficulties and complex activity limitations [7]. Other research shows associations between mood disorders and complex activity limitations [8-10]. General population-based surveys [11-13] and surveys of the adult population specifically [14,15] have assessed the comorbidity of mood disorders and physical functioning. There is limited research, however, that looks at the joint association between mood disorders, physical functioning, and complex activity limitations. Additionally, because of the strong association between mood disorders, physical functioning, and increasing age, disability research has focused on the older population. However, when younger adults (17-39 years old) experience participation restriction, its impact is magnified (relative to older adults) by the length of time that employment and participation in everyday life are affected [10]. Research has not yet been able to determine the extent of complex activity limitations among young adults with basic actions difficulties, particularly those with mood disorders or with comorbid mood disorders and physical functioning difficulties. These conditions may have important policy ramifications because of the potential long-term impact of these difficulties for young adults. Here, we analyze the impact of selected basic actions difficulties on the risk of complex activity limitations in young U.S. adults, using data from a national survey.

Methods

Survey Sample

The data for this study are from the Third National Health and Nutrition Examination Survey (NHANES III). The NHANES III is a cross-sectional survey conducted by the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC), from 1988 to 1994. The survey collected data in two phases (Phase 1 from 1988 to 1990 and Phase 2 from 1991 to 1994). NHANES III used a complex, multistage sampling design of the civilian, noninstitutionalized U.S. population of all ages. Non-Hispanic blacks and Mexican Americans were oversampled to improve the precision of estimates for these subpopulations. The survey used a household interview and a standardized physical examination conducted in a mobile examination center to collect data. Response rates for the interview and examination portions of the survey were 86% and 78%, respectively. Further details about the survey and its methods appear elsewhere [16].

Mood disorder measures were only available for young adults, aged 17 to 39. Therefore, the analytic sample was limited to this subpopulation. This report used data from Phase 2 for its analyses because Phase 1 of the NHANES III did not ask participants under 60 years of age questions about the activities of daily living (ADLs), instrumental activities of daily living (IADLs), or functional limitation questions. During a household interview, trained interviewers administered a series of questionnaires to a total of 4379 persons (Phase 2) between 17 and 39 years of age. Of these, 4096 had complete information on the relevant measures of basic actions and complex activities. Respondents were then invited to undergo extensive physical examinations and further health assessments in special mobile examination trailers. Of these 4096 persons with relevant measures of basic actions and complex activities, 3931 participated in the examination and completed the Diagnostic Interview Schedule (DIS) in a private room. Comparisons of the distributions of age, sex, and race/ethnicity were virtually identical between the 4379 persons with completed questionnaires and the 3931 persons with valid assessments for both basic actions and complex activity measures and the DIS. These 3931 persons comprise the study sample for this report.

Indicators of Mood Disorders

The selected mood disorders identified as indicators of mental functioning come from the DIS [17]. The DIS, one component of the NHANES III [16], is a structured psychiatric interview schedule that provides diagnostic criteria for a series of mood disorders. Two versions exist: one uses the same criteria used by clinicians as found in the *DSM-III* and the other uses the same criteria used by clinicians as found in the *DSM Revised Edition (DSM-III-R)* [18,19]. The *DSM-III* version of the DIS was used in the NHANES III.

Lifetime prevalence estimates, defined as the proportion of the sample who ever experienced a given disorder, covered six mood disorders: (a) major depressive episode (MDE), (b) major depressive episode with severity (MDE-s), (c) dysthymia, (d) MDE-s with dysthymia, (e) any bipolar disorder, and (f) any mood disorder. The study did not classify respondents as having MDE if MDE criteria were met solely due to bereavement. We defined ''any bipolar disorder'' as having either bipolar disorder type I or bipolar disorder type II (atypical bipolar disorder). In the NHANES III data, the majority of persons with any bipolar disorder (86.3%) met the criteria for bipolar disorder, type I. ''Any mood disorder'' was defined as the diagnosis of one or more of MDE, dysthymia, or any bipolar disorder. Further details regarding the diagnosis of these mood disorders appear elsewhere [17].