MS Depression Screening: Influence on Provider Interventions and Clinical Outcomes
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Introduction

- Depression is a frequent comorbid condition in multiple sclerosis (MS) that if undetected and/or untreated can complicate clinical outcomes.
- Challenges in detecting depression among patients with MS may include the overlap between symptoms of depression and MS, the prioritization of MS disease-specific concerns as presented during clinic visits and the lack of depression screening.
- For providers, depression screening can facilitate the identification of patients most in need of depression interventions.
- However, research on screening in medical settings is inconsistent regarding clinical impact and little is known of the impact of screening in MS clinics.

Purpose of the Study

The goals of this study were to use patient chart data from a MS clinic depression screening service to examine:

- 1) the relationship between depression screening scores and frequency and type of provider intervention behaviors (e.g., medication change, referrals, etc.).
- 2) changes in depression symptoms over time and the association between specific provider intervention behaviors and these changes.

Methods

Archival patient chart data were abstracted for 308 patients with MS who were screened for depression between 1/2006 and 1/2011:

- 283 patients were “positive” for depressive symptomatology (Beck Depression Inventory-Fast Screen; BDI-FS ≥ 4). [83% females; 67% Caucasian, 52% had MS for ≥ 5 years, mean age of 46].
- 25 random negative “controls” (BDI-FS < 4) were selected to detect differences on provider intervention behavior outcomes.
- For 135 patients with positive screens, a second BDI-FS screen was available at least 4 months after the initial screening to assess change over time.

Abstracted Chart Variables Included:

- Patient demographics (e.g., age, gender, education level)
- Depression symptoms (from the BDI-FS)
- Mental health & MS history
- MS & psychotropic medication usage
- Provider depression intervention behaviors (MD, PA, RN). (See Figure 1 for most frequently occurring interventions).

Results

Goal 1a: What is the relationship between depression screening scores, and frequency and type of provider intervention behavior?

- Depression-related provider intervention behaviors (chart from initial BDI-FS screen to four months post-screen) were documented in 43.5% of charts.
- Patients who screened positive on the BDI were more likely to have a provider intervention behavior than those who screened negative (OR=3.16; 95%CI: (1.13-8.86).
- Provider intervention behaviors occurred more frequently among patients with a history of mental health problems (OR=3.30; 95% CI: (1.30-8.36) and patients reporting use of psychotropic medication at time 1 (OR=10.57; 95%CI: (2.19-51.16).
- Chi-square analysis revealed that females and patients not currently on psychotropic medications, were more likely to receive a provider intervention (p = 0.05).
- There was a clear increasing trend in the proportion of individuals who had a provider intervention as BDI depression level increased (p = 0.02).

Goal 1b: What is the relationship between positive depression scores and type of provider intervention behaviors?

- BDI-FS scores were positively correlated (r = .132, p < .05) with documented provider intervention behaviors (specifically, referral for in clinic psychology services (p = 0.01).

Results Continued

Goal 2: For MS patients with an initial (Time 1) and follow-up (Time 2) screening, is there an improvement in depression symptoms over time and is this associated with specific provider intervention behaviors?

- As a group (N = 135), the mean BDI-FS score decreased 1.86 between time 1 and time 2, t(134)=5.35, p < 0.001
- For those who got better (N = 86), there was a mean BDI-FS score decrease of 4.11 from T1 to T2, t(85) = 14.37, p < 0.001.
- However, only referral to in-clinic psychological consultation as a provider intervention trended toward association with this change (p=0.06).
- Patients, regardless of provider intervention, had an improvement in depression from baseline (Mean±SD=7.2±3.1) to follow-up (Mean±SD=5.8±3.6), p < .001.

Conclusions

The results of this study demonstrated that:

- Depression screening is linked to provider behavior intervention frequency, which increases with depression severity.
- In-clinic psychological consultation was the most prevalent provider intervention at time 1.
- Aggregate depression symptoms improved regardless of provider intervention suggesting the need for further investigation.

This study has many limitations common to archival chart methodology, including but not limited to: 1) lack of power to detect differences in less frequently occurring provider behaviors, 2) lack of consistency in duration between Time 1 and Time 2-screening administration, and 3) lack of ability to draw causal conclusions regarding the directionality of the association between screening and provider behaviors.

Future research should include a research design that facilitates understanding of the causal relationships between screening, provider behaviors, and depression outcomes.

Figure 1: Frequency of most common types of provider depression-related interventions identified within 4 months of a depression screening