

Authors: Susan Grady, MSN, RN-BC; Jovana Lubarda, PhD; Richard O'Hara; Teresa Marshall: Medscape Education, New York, NY.

BACKGROUND

Major depressive disorder (MDD) is the most prevalent mental disorder in the United States, causing significant patient disability and caregiver burden, and requiring extensive utilization of healthcare resources.¹ Care of patients with MDD is suboptimal, and there are challenges in care coordination and communication among the entire healthcare team, as well as with patients.² Patient education in MDD, however, has been linked to improved clinical outcomes.³ In this study, we examined the effect of two online patient education programs on knowledge of MDD symptoms, and treatments and side effects.^{4,5} We also sought to determine whether patients and care partners had different educational needs based on demographic characteristics such as age and gender.^{4,5}

METHODS

- Two text-based with graphics educational activities focused on MDD symptoms and side effects of treatment were hosted on WebMD Education, a website dedicated to patient and care partner/family member education [Figure 1]
 - Activities were 5 to 7 minutes in length, written at a fifth to seventh grade reading level, and included actionable next steps to facilitate learning and behavior change
- On average, 1.56 million users visit the WebMD Depression channel each month. WebMD delivers relevant content to individual learners by use of contextual links to direct them to WebMD Education activities. In addition, learners can access content through WebMD newsletters and the site's search engine⁶
- Activities included demographic questions regarding age, gender, race/ethnicity, and interest (patient vs care partners/family member). "Patient" was defined as a learner who self-identified as "having this condition" [Figure 2]. A repeated pairs assessment question was included to measure impact of the education as defined by improvement in knowledge from pre- to post-activity [Figure 3]
- Statistical significance: A chi-square test determined if a statistically significant improvement ($P < .05$) occurred
- Effect size: Cramer's V determined the change in the proportion of participants who answered questions correctly from pre- to post-assessment (small = 0.6-0.15; medium = 0.16-0.30; large = >0.30)
- Participant data were collected between September 29, 2015, and July 1, 2016

RESULTS

- There were no significant gender-based differences observed
- Male and female patients with MDD aged ≥ 45 years answered correctly at a significantly higher rate than patients aged < 45 years ($P < .05$) [Figure 4]
- Average drop-off rate for patients and care partners/family members, 34% (pre-assessment N vs post-assessment N who answered the activity assessment question)
- Care partners/family members, regardless of gender, aged ≥ 45 years outperformed care partners/family members aged < 45 years ($P < .05$), and female care partners/family members of all ages underperformed other groups ($P < .05$) [Figure 5]

FIGURE 4. Patients Pre- and Post- Activity Responses

Patient Groups	Pre-Assessment N	Pre-Assessment Correct Response n (%)	Post-Assessment N	Post-Assessment Correct Response n (%)	P Value	Effect Size Cramer's V
Female < 45	1157	823 (71%)	735	587 (81%)	<.001	0.10
Female ≥ 45	1421	1110 (78%)	1008	845 (84%)	<.001	0.07
Male < 45	624	424 (68%)	378	288 (76%)	.005	0.09
Male ≥ 45	741	531 (72%)	524	429 (82%)	<.001	0.12

FIGURE 5. Care Partner/Family Member Pre- and Post- Activity Responses

Patient Groups	Pre-Assessment N	Pre-Assessment Correct Response n (%)	Post-Assessment N	Post-Assessment Correct Response n (%)	P Value	Effect Size Cramer's V
Female < 45	179	119 (65%)	82	103 (77%)	.019	0.14
Female ≥ 45	483	383 (78%)	283	330 (84%)	.019	0.08
Male < 45	116	87 (76%)	55	71 (78%)	.702	0.03
Male ≥ 45	187	145 (77%)	121	137 (89%)	.012	0.14

CONCLUSION

Online patient and care partner/family member education improved actionable knowledge on MDD symptoms, side effects, and treatments, thus empowering, engaging, and equipping patients and their care partners/family members with information needed for self-care. Additionally, we uncovered differences, measured by performance on knowledge questions, between patients and care partners/family members aged ≥ 45 years compared with patients and care partners/family members aged <45 years of age, as well as greater educational needs among female care partners/family members of all ages.

The average drop-off rate in this study was approximately 34% for each different subgroup of participants examined. Studies that have examined the enrollment and retention of participants in web-

based interventions on health-related topics show a drop off from consent to completion of about 10% instantaneously, with an additional 2% dropping out per every 100 survey items; some web-based studies have demonstrated greater than 30% immediate drop off.⁷

While we are not able to determine if this education will translate to improved clinical outcomes for this population of learners, literature has shown that patient education in MDD has been linked to improved clinical outcomes.³ This research has implications for future design of education on mood disorders, suggesting that patients younger than age 45, regardless of gender, and female care partners/family members of all ages may benefit from educational approaches targeted to their unique educational needs.

Acknowledgements

The educational activity and outcomes measurement were funded through an independent educational grant from Takeda Pharmaceutical U.S.A., Inc. and Lundbeck.

For more information,
contact Jovana Lubarda, PhD,
Associate Director, Educational
Strategy, Medscape, LLC,
jlubarda@medscape.net.

FIGURE 1. WebMD Patient Education Activities

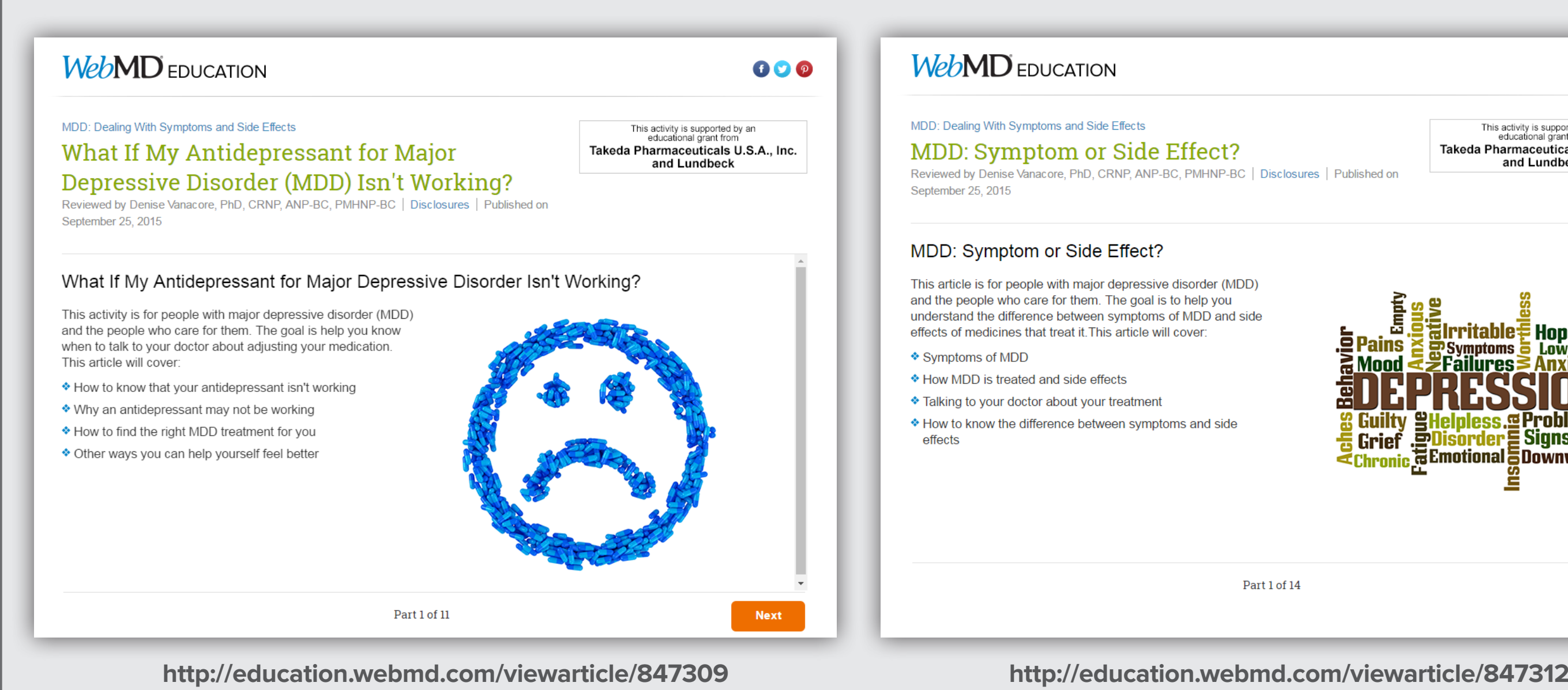


FIGURE 2. Demographic Questions

Help us to better understand your interest in this activity		
Are you:	Why are you interested in this? (Select the one that best applies to you)	What is your race/ethnicity?
Male	I have this condition	American Indian or Alaska Native
Female	I am a caregiver for someone with this condition	Asian
How old are you?	I am a family member of someone with this condition	Black or African-American
Under 25	I am simply interested in learning more about this condition	Native Hawaiian or other Pacific Islander
25–34		White, non-Hispanic
35–44		Hispanic or Latino
45–54		I prefer not to answer
Over 54		

FIGURE 3. Pre-/Post-Activity Assessment Questions

WebMD EDUCATION

MDD: Dealing With Symptoms and Side Effects

What if My Antidepressant Isn't Working?

Depressive Disorder (MDD) Is a Major Disorder

Reviewed by: Donna M. Sacco, MD, PhD, ANP, APRN, BC, PHNP, BC | [Disclaimer](#) | Published on September 20, 2015

This activity is approved for 1.00 CE hour(s).

Takdev Pharmaceuticals U.S.A., Inc. and Lunitrac

WebMD EDUCATION

MDD: Dealing With Symptoms and Side Effects

MDD: Symptom or Side Effect?

Reviewed by: Donna M. Sacco, MD, PhD, ANP, APRN, BC, PHNP, BC | [Disclaimer](#) | Published on September 20, 2015

This activity is supported by an educational grant from:

Takdev Pharmaceuticals U.S.A., Inc. and Lunitrac

Test Your Knowledge

Before you start, please answer this question. At the end of the program, you'll choose again and then see the correct response.

Your symptoms aren't better after taking an antidepressant for 2 months. The next step would be for your doctor to:

- ☐ Increase your dose
- ☐ Switch to another antidepressant
- ☐ Add another antidepressant or another medicine if what you are already taking
- ☐ All of the above are possible

Submit

Test Your Knowledge

Before you start, please answer this question. At the end of the program, you'll choose again and then see the correct response.

You start on an antidepressant for your MDD. After 2 weeks, you can't sleep at night. What would you do next?

- ☐ Start taking an over-the-counter sleeping aid at night
- ☐ Start taking the antidepressant with food in the mornings
- ☐ Keep taking the antidepressant and call your doctor
- ☐ Stop taking the antidepressant until you are feeling again

Submit

References

1. Ferrari AJ, Charlson FJ, Norman RE, et al. Burden of depressive disorders by country, sex, age, and year: findings from the Global Burden of Disease study 2010. *PLoS Med*. 2013;9(10):e1001547.
2. Gaynes BN, Landis S, Esposito N. The Participant Journey to Remission in MDD: A Collaborative Approach. Medscape. June 26, 2014. www.medscape.org/viewarticle/827166. Accessed February 22, 2015.
3. National Quality Measures Clearinghouse (NQMC). Measure summary: Major depressive disorder (MDD); percentage of patients aged 18 years and older with a diagnosis of MDD who received patient education at least once during the measurement period, regarding the minimum specified criteria. In: National Quality Measures Clearinghouse (NQMC) [Web site]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2013 Jan 01. [cited 2017 Jan 06]. Available: <https://www.qualitymeasures.ahrq.gov>.
4. Vanacore D. What if My Antidepressant for Major Depressive Disorder Isn't Working? WebMD Education. September 29, 2015. http://education.webmd.com/viewarticle/847309?content=0_0. Accessed January 18, 2017.
5. Vanacore D. MDD: Symptom or Side Effect? WebMD Education. September 29, 2015. http://education.webmd.com/viewarticle/847312?content=0_0. Accessed January 18, 2017.
6. *Internal Adobe Omniture metrics*, 2016.
7. Villanti AC, Jacobs MA, Zawistowski G, Brookover J, Stanton CA, Graham AL. Impact of baseline assessment modality on enrollment and retention in a Facebook smoking cessation study. *J Med Internet Res*. 2015;17(7):e79.

