A Discrete Choice Experiment to Assess Patient-Informed Preferences for Major Depressive Disorder Treatment by Depression Severity

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Patient communities and stakeholders who contributed their expertise, without which this work would not be possible.
• Major Depressive Disorder (MDD) affects 10% of US adults [1]
  • 3-fold increase in depression symptoms during the COVID-19 pandemic [2]
  • 2/3 of adults with MDD have a severe impairment that affects their daily activities [3]

• MDD treatment is available for symptom reduction and improved quality of life
  • First-line treatment includes antidepressant medication and psychotherapy
    • 70% of adults with MDD have used an antidepressant at some point [4]
  • Brain stimulation techniques (e.g., electroconvulsive therapy) are used if non-responsive to medication or psychotherapy [5]
Available MDD treatment options vary in their benefits and risks, potentially affecting individual preference [7,8]

• As many as 50% of individuals are non-adherent to depression treatment [8]

Patients’ preferences for treatment can be quantified using discrete choice experiments (DCEs)

• DCE: stated preference method designed to elicit individual preferences [9]

Prior research using DCEs show that the treatment attributes that patients prefer are treatment type (medication and counseling), location (telephone), cost (lower per consultation)
• Limited information is available that quantifies patient preferences for treatment and outcomes that reflect an individual’s journey living with MDD

• Our team’s formative research identified key patient-informed value elements for inclusion in an instrument to measure preferences for MDD treatment \(^{[8, 10]}\)

• Research objectives

  (1) To quantify preferences for patient-informed attributes of MDD treatment overall (e.g., full sample) and by depression severity subgroups

  (2) To compare the relative importance of treatment attributes, overall and by depression severity
STUDY DESIGN & PARTICIPANTS

• Design
  • Cross-sectional survey
  • Data collection: June 2021 – March 2022

• Sample
  • 300 community-dwelling adults aged 18 and older living with MDD
  • Response rate = 45%

• Recruitment
  • Across the US via ResearchMatch.org
    • Call for participation specifically targeted diversity groups

INCLUSION CRITERIA
1. Age 18 years or older
2. Diagnosed with MDD
3. Speak & read English

EXCLUSION CRITERIA
1. Diagnosed with bipolar, psychotic, or cognitive disorder
2. Diagnosed with post-partum depression
3. Currently residing in an institutional setting
**STUDY INSTRUMENTS**

- **Screener** – web-based, research team telephone administered
  - Inclusion/exclusion criteria
  - MDD treatment
  - Sheehan Disability Scale

- **Survey** - web-based, self-administered
  - Discrete Choice Experiment (DCE)
  - Depression severity – PHQ9
  - Demographic

- **DCE**
  - 6 attributes each with 3 levels
    - treatment modality
    - time to effect
    - days of hopefulness
    - improvement in productivity
    - relationship with others
    - out-of-pocket costs

  - Orthogonal array design with 100% D-efficiency
  - 6 choice tasks
<table>
<thead>
<tr>
<th>Attribute Domain</th>
<th>Attribute &amp; Attribute Levels</th>
</tr>
</thead>
</table>
| **Mode of Treatment**  | Your treatment will include  
1. Medicine  
2. Medicine & Psychotherapy  
3. Medicine, psychotherapy, & other services                                                                 |
| **Time to Treatment**  | Helpfulness                                                                                                                                                 |
| 1. 4 weeks             |                                                                                                                                                               |
| 2. 6 weeks             |                                                                                                                                                               |
| 3. 9 weeks             |                                                                                                                                                               |
| **MDD Relief**         | Hopeful                                                                                                                                                      |
| 1. 2 days/week         |                                                                                                                                                               |
| 2. 4 days/week         |                                                                                                                                                               |
| 3. 6 days/week         |                                                                                                                                                               |
| **Quality of Work**    | Productivity increases                                                                                                                                       |
| 1. 40%                 |                                                                                                                                                               |
| 2. 60%                 |                                                                                                                                                               |
| 3. 90%                 |                                                                                                                                                               |
| **Interaction with Others** | Relations with people important to you  
1. are strained  
2. stay the same  
3. are better                                                                             |
| **Affordability**      | Monthly out-of-pocket costs  
1. $30/month  
2. $90/month  
3. $270/month                                                                                   |

If you could only choose 1 option for treating depression, which do you most prefer?

**OPTION A**
- Treatment is Medicine & Psychotherapy  
- Feel some effects in 9 weeks  
- Hopeful 6 days/week  
- Productivity increases 40%  
- Better relations with people important to you  
- $270 monthly out-of-pocket costs

**OPTION B**
- Treatment is Medicine, Psychotherapy, & Other Services  
- Feel some effects in 4 weeks  
- Hopeful 2 days/week  
- Productivity increases 90%  
- Strained relations with people important to you  
- $30 monthly out-of-pocket costs

**OPTION C**
- Treatment is Medicine  
- Feel some effects in 6 weeks  
- Hopeful 4 days/week  
- Productivity increases 60%  
- Relations with people important to you stay the same  
- $90 monthly out-of-pocket costs
• Depression severity subgroups based on the PHQ-9 total scale score
  • None-Mild: 0-9 score (n = 82)
  • Moderate: 10-14 score (n = 84)
  • Severe (includes moderate/severe): 15-27 score (n = 134)
• Four conditional logit models generated preference weights for each attribute level, overall and severity subgroups
• Relative attribute importance was estimated for each of the 6 attributes, overall and severity subgroups
### Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Overall (n=300)</th>
<th>None-mild (n=82; 27%)</th>
<th>Moderate (n=84, 28%)</th>
<th>Severe (n=134; 45%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
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<tr>
<td><strong>Age Group</strong></td>
<td></td>
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<tr>
<td>18-29</td>
<td>96 (32)</td>
<td>25 (31)</td>
<td>28 (33)</td>
<td>43 (32)</td>
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<tr>
<td>30-49</td>
<td>122 (41)</td>
<td>32 (39)</td>
<td>31 (37)</td>
<td>59 (44)</td>
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<tr>
<td>50-84</td>
<td>82 (27)</td>
<td>25 (30)</td>
<td>25 (30)</td>
<td>32 (24)</td>
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<tr>
<td><strong>Race</strong></td>
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<tr>
<td>Non-Hispanic White</td>
<td>174 (58)</td>
<td>54 (67)</td>
<td>47 (56)</td>
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<tr>
<td>Non-Hispanic Black</td>
<td>39 (13)</td>
<td>11 (13)</td>
<td>12 (14)</td>
<td>16 (12)</td>
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<td>Hispanic</td>
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<td>6 (7)</td>
<td>13 (16)</td>
<td>20 (15)</td>
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<tr>
<td>Non-Hispanic Other</td>
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<td>11 (13)</td>
<td>12 (14)</td>
<td>25 (18)</td>
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<tr>
<td><strong>Gender</strong></td>
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<tr>
<td>Female</td>
<td>203 (68)</td>
<td>55 (67)</td>
<td>52 (62)</td>
<td>96 (72)</td>
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<tr>
<td>Male</td>
<td>77 (26)</td>
<td>25 (31)</td>
<td>24 (29)</td>
<td>28 (21)</td>
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<tr>
<td>Transgender/non-binary</td>
<td>20 (6)</td>
<td>2 (2)</td>
<td>8 (9)</td>
<td>10 (7)</td>
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<td><strong>Marital status</strong></td>
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<tr>
<td>Married/domestic partnership</td>
<td>99 (33)</td>
<td>35 (43)</td>
<td>27 (32)</td>
<td>37 (28)</td>
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<td>Divorced/widowed</td>
<td>46 (15)</td>
<td>10 (12)</td>
<td>11 (13)</td>
<td>25 (12)</td>
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<tr>
<td>Single</td>
<td>148 (49)</td>
<td>35 (43)</td>
<td>44 (52)</td>
<td>69 (52)</td>
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<tr>
<td><strong>Education</strong></td>
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<tr>
<td>College or graduate degree</td>
<td>219 (73)</td>
<td>72 (88)</td>
<td>66 (79)</td>
<td>81 (61)</td>
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<td><strong>Employment</strong></td>
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<tr>
<td>Employed</td>
<td>163 (54)</td>
<td>47 (57)</td>
<td>49 (58)</td>
<td>67 (50)</td>
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<tr>
<td><strong>Health Insurance</strong></td>
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<tr>
<td>Private</td>
<td>161 (55)</td>
<td>45 (55)</td>
<td>50 (60)</td>
<td>66 (49)</td>
</tr>
</tbody>
</table>
Depression Measures: Overall and by Severity

Overall (full sample) \( n = 300 \). Depression severity categories based on the PHQ-9 total scale score: None-Mild = 0-9 (\( n = 82 \)), Moderate = 10-14 (\( n = 84 \)), and Severe (includes Moderate/Severe; \( n = 134 \)) = 15 or more. > 2 Day unproductive = days in a week unproductive because depression symptoms, Any mental health disorder (Anxiety, ADHD, PTSD, OCD, SUD, Alcohol, Other), Any other health conditions (Arthritis, Heart disease, High cholesterol, Hypothyroid, Autoimmune disease, Diabetes, Cancer, Kidney, Epilepsy/Seizures)
Preferences for Attributes of MDD Treatment

Overall (full sample) n = 300. Depression severity categories based on the PHQ-9 total scale score: None-Mild = 0-9 (n = 82), Moderate = 10-14 (n = 84), and Severe (which includes Moderate/Severe; n = 134) = 15 or more.
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Relative Attribute Importance

Overall (full sample) n = 300. Depression severity categories based on the PHQ-9 total scale score: None-Mild = 0-9 (n = 82), Moderate = 10-14 (n = 84), and Severe (includes Moderate/Severe; n = 134) = 15 or more.
• MDD patients showed preferences for patient-informed attributes of treatment and outcomes, but these vary by severity

  • Relations with others was nearly as important as out-of-pocket costs, except for patients with severe depression

• Attributes typically used in economic evaluation (e.g., productivity and treatment effect) did not emerge as the most preferred

• Social and life impact outcomes (e.g., relationships with others) are preferred over time to treatment effect or productivity

  • To reflect patient value more thoroughly, these attributes should be considered in value assessments as well
REFERENCES


Contact information

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