**Supplementary Material**

Kazdin et al.

*Patterns, predictors, and patient-reported reasons for antidepressant discontinuation in the WHO World Mental Health Surveys*

Supplementary Table S1. **WMH sample characteristics by World Bank income categoriesa**

Supplementary Table S2. **Survey questions assessing reasons for ADM discontinuation** Supplementary Table S3. **Clinical correlates of reasons for discontinuation by patient**

Supplementary Table S4. **Univariable predictors of discontinuation by patient (n=98,685 person-weeks)**

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| **Supplementary Table S1. WMH sample characteristics by World Bank income categoriesa** | | | | | | | | | |
|  | | | | | | | | | |
| **Country by income category** | **Surveyb** | **Sample characteristicsc** | **Field dates** | **Age range** | **Part I** | **Part II** | **Response rated** | **n1e** | **n2f** |
| **I. Low and middle income countries** | | |  |  |  |  |  |  |  |
| Colombia | NSMH | All urban areas of the country (approximately 73% of the total national population). | 2003 | 18-65 | 4,426 | 2,381 | 87.7 | 55 | 62 |
| Colombia – Medellin | MMHHS | Medellin metropolitan area | 2011-12 | 19-65 | 3,261 | 1,673 | 97.2 | 90 | 106 |
| Mexico | M-NCS | All urban areas of the country (approximately 75% of the total national population). | 2001-2 | 18-65 | 5,782 | 2,362 | 76.6 | 30 | 34 |
| Peru | EMSMP | Five urban areas of the country (approximately 38% of the total national population). | 2004-5 | 18-65 | 3,930 | 1,801 | 90.2 | 13 | 13 |
| Romania | RMHS | Nationally representative. | 2005-6 | 18-96 | 2,357 | 2,357 | 70.9 | 31 | 35 |
| **TOTAL** |  |  |  |  | (19756) | (10574) | 83.6 | (219) | (250) |
| **II. High-income countries** | | |  |  |  |  |  |  |  |
| Argentina | AMHES | Eight largest urban areas of the country (approximately 50% of the total national population) | 2015 | 18-98 | 3,927 | 2,116 | 77.3 | 42 | 46 |
| Belgium | ESEMeD | Nationally representative. The sample was selected from a national register of Belgium residents. | 2001-2 | 18-95 | 2,419 | 1,043 | 50.6 | 114 | 137 |
| France | ESEMeD | Nationally representative. The sample was selected from a national list of households with listed telephone numbers. | 2001-2 | 18-97 | 2,894 | 1,436 | 45.9 | 138 | 148 |
| Germany | ESEMeD | Nationally representative. | 2002-3 | 19-95 | 3,555 | 1,323 | 57.8 | 80 | 94 |
| Italy | ESEMeD | Nationally representative. The sample was selected from municipality resident registries. | 2001-2 | 18-100 | 4,712 | 1,779 | 71.3 | 79 | 92 |
| Netherlands | ESEMeD | Nationally representative. The sample was selected from municipal postal registries. | 2002-3 | 18-95 | 2,372 | 1,094 | 56.4 | 83 | 92 |
| Portugal | NMHS | Nationally representative. | 2008-9 | 18-81 | 3,849 | 2,060 | 57.3 | 224 | 252 |
| Spain | ESEMeD | Nationally representative. | 2001-2 | 18-98 | 5,473 | 2,121 | 78.6 | 197 | 227 |
| Spain-Murcia | PEGASUS- Murcia | Murcia region. Regionally representative. | 2010-12 | 18-96 | 2,621 | 1,459 | 67.4 | 113 | 119 |
| United States | NCS-R | Nationally representative. | 2001-3 | 18-99 | 9,282 | 5,692 | 70.9 | 601 | 682 |
| **TOTAL** |  |  |  |  | (41,104) | (20,123) | 64.4 | (1,671) | (1,889) |
| **III. TOTAL** |  |  |  |  | (60,860) | (30,697) | 69.6 | (1,890) | (2,139) |
|  | | | | | | | | | |

aThe World Bank (2012) Data. Accessed May 12, 2012 at: http://data.worldbank.org/country. Some of the WMH countries have moved into new income categories since the surveys were conducted. The income groupings above reflect the status of each country at the time of data collection. The current income category of each country is available at the preceding URL.

bNSMH (The Colombian National Study of Mental Health); MMHHS (Medellín Mental Health Household Study); M-NCS (The Mexico National Comorbidity Survey); EMSMP (La Encuesta Mundial de Salud Mental en el Peru); RMHS (Romania Mental Health Survey); AMHES (Argentina Mental Health Epidemiologic Survey); ESEMeD (The European Study Of The Epidemiology Of Mental Disorders);); NMHS (Portugal National Mental Health Survey); PEGASUS-Murcia (Psychiatric Enquiry to General Population in Southeast Spain-Murcia); NCS-R (The US National Comorbidity Survey Replication).

cMost WMH surveys are based on stratified multistage clustered area probability household samples in which samples of areas equivalent to counties or municipalities in the US were selected in the first stage followed by one or more subsequent stages of geographic sampling (e.g. towns within counties, blocks within towns, households within blocks) to arrive at a sample of households, in each of which a listing of household members was created and one or two people were selected from this listing to be interviewed. No substitution was allowed when the originally sampled household resident could not be interviewed. These household samples were selected from Census area data in all countries other than France (where telephone directories were used to select households) and the Netherlands (where postal registries were used to select households). Several WMH surveys (Belgium, Germany, Italy, Spain-Murcia) used municipal, country resident or universal health-care registries to select respondents without listing households. 9 of the 15 surveys are based on nationally representative household samples.

dThe response rate is calculated as the ratio of the number of households in which an interview was completed to the number of households originally sampled, excluding from the denominator households known not to be eligible either because of being vacant at the time of initial contact or because the residents were unable to speak the designated languages of the survey. The weighted average response rate is 69.6%.

eNumber of respondents who took ADMs, excluding those with bipolar disorder, who took the medications without a prescription, and who had missing values on questions about duration, continued use, or reasons for discontinuation.

fNumber of person-ADMs, where respondents who took more than one ADM were counted as multiple records.

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| **Supplementary Table S2. Survey questions assessing reasons for ADM discontinuation** | |
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| **Reasons for discontinuation** | **Survey questionsa** |
| Lack of continued need | You felt so much better that you no longer needed it |
|  | You thought the problem would get better without more medication |
| Treatment ineffectiveness | The medication was not helping |
|  | The medication caused side-effects that made you stop |
| Predisposingfactors | You were afraid that you would get dependent on the medication |
|  | You wanted to solve the problem without medication |
|  | You were too embarrassed to continue taking the medication |
| Enabling factors | Someone in your personal life pressured you to stop |
|  | You couldn’t afford to pay for the medication |
| Other reasons | Any other reason for stopping |
|  |  |

Abbreviations: ADM, antidepressant medication.

aRespondents were asked to indicate “Which of these are reasons why you stopped taking (MED)” for each medication that was discontinued.

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| **Supplementary Table S3. Clinical correlates of reasons for discontinuation by patient** | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
|  | **Need** | |  | **Ineffective** | |  | **Predisposing** | |  | **Enabling** | |  | **Other** | |
|  | **%** | **(SE)** |  | **%** | **(SE)** |  | **%** | **(SE)** |  | **%** | **(SE)** |  | **%** | **(SE)** |
| ADM class |  | |  |  |  |  |  |  |  |  |  |  |  |  |
| SSRI | 48.4 | (3.3) |  | 19.9 | (2.0) |  | 22.8 | (2.2) |  | 7.0 | (1.2) |  | 10.9 | (2.3) |
| Newer ADMs | 32.2 | (6.0) |  | 21.6 | (4.6) |  | 30.4 | (7.7) |  | 3.8 | (3.6) |  | 15.9 | (3.6) |
| TCA | 49.6 | (4.8) |  | 10.5 | (2.8) |  | 10.7 | (3.1) |  | 1.6 | (0.4) |  | 30.6 | (5.7) |
| Other older ADMs | 70.8 | (10.7) |  | 21.7 | (8.7) |  | 5.7 | (2.6) |  | 1.9 | (0.5) |  | 0.0 | (0.0) |
| c23 | 9.0\* | |  | 6.6 | |  | 16.1\* | |  | 28.1\* | |  | 2171.3\* | |
| Diagnosis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12-month threshold | 40.8 | (3.2) |  | 24.3 | (2.1) |  | 22.5 | (2.4) |  | 7.8 | (1.3) |  | 14.3 | (1.9) |
| LT threshold | 45.2 | (7.0) |  | 18.7 | (2.8) |  | 25.7 | (6.6) |  | 1.6 | (0.5) |  | 14.6 | (5.0) |
| 12-month subthreshold | 65.8 | (5.4) |  | 7.8 | (2.4) |  | 16.2 | (3.5) |  | 3.7 | (2.3) |  | 8.5 | (4.1) |
| Other | 38.8 | (7.2) |  | 22.8 | (2.7) |  | 0.0 | (0.0) |  | 0.0 | (0.0) |  | 38.4 | (4.5) |
| c23 | 13.6\* | |  | 12.2\* | |  | 5618.2\* | |  | 2848.4\* | |  | 30.7\* | |
| Patient-reported reasons for ADM use | | |  |  |  |  |  |  |  |  |  |  |  |  |
| Depression | 47.4 | (4.2) |  | 21.5 | (2.1) |  | 17.9 | (3.6) |  | 5.2 | (1.7) |  | 15.5 | (3.9) |
| Anxiety | 56.8 | (7.3) |  | 20.6 | (3.9) |  | 14.3 | (3.9) |  | 3.2 | (2.4) |  | 7.4 | (1.6) |
| Poor sleep | 57.0 | (4.1) |  | 11.9 | (1.7) |  | 4.9 | (0.4) |  | 0.0 | (0.0) |  | 26.2 | (3.2) |
| Other physical | 31.8 | (5.3) |  | 13.1 | (6.5) |  | 33.8 | (5.2) |  | 6.8 | (2.1) |  | 19.3 | (1.5) |
| Any other single reasona | 25.0 | (10.3) |  | 28.6 | (5.5) |  | 15.7 | (6.0) |  | 2.1 | (2.1) |  | 30.6 | (10.0) |
| Multiple reasonsb | 52.0 | (5.6) |  | 13.1 | (3.2) |  | 28.8 | (4.7) |  | 7.8 | (2.0) |  | 9.2 | (2.9) |
| c25 | 18.5\* | |  | 22.4\* | |  | 156.1\* | |  | 3971.4\* | |  | 38.2\* | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Abbreviations: SSRI, selective serotonin reuptake inhibitors; Newer ADMs, those marketed after fluoxetine, 1986; TCAs, tricyclic ADMs; Other older ADMs, (e.g. monoamine oxidase inhibitors, St. John’s Wort, trazodone, and unspecified).

\*Significant at the .05 level, two-sided design-based test.

aIncluding

little or no sexual functioning, sexual problems, not getting along with others, poor work performance, alcohol or drug problems, poor concentration, poor memory, and other as single reasons.

bTwo or more reasons, multiple reasons from the "Any other single reason category" (i.e. both alc/drug and cognition) also counts as multiple.

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| **Supplementary Table S4. Univariable predictors of discontinuation by patient (n=98,685 person-weeks)** | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | |
|  | **Distributiona** | |  |  |  |  |  |  |  |  |  |  |  |
|  | **Est** | **(SE)** |  | **RR** | **(95% CI)** |  | **c2** |  | **df** |  | **Interaction between**  **time of continuation**  **and row variable c2** |  | **df** |
| County income level (Compared to HIC) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| LMIC | 11.6 | (1.2) |  | 1.9\* | (1.3-2.9) |  | 10.7\* |  | 1 |  | 10.8\* |  | 2 |
| Socio-economic status |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Employed | 45.2 | (1.6) |  | 2.0\* | 1.5-2.7) |  | 20.4\* |  | 1 |  | 4.6 |  | 2 |
| Education |  |  |  |  |  |  |  |  |  |  |  |  |  |
| High/low-average educationb | 70.7 | (1.6) |  | 2.1\* | (1.3-3.4) |  | 9.4\* |  | 1 |  | 0.7 |  | 2 |
| High/high-average income | 49.5 | (1.7) |  | 1.4\* | (1.1-2.0) |  | 5.7\* |  | 1 |  | 2.9 |  | 2 |
| Other socio-demographics |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age (Mean in decades) | 5.0 | (0.0) |  | 0.7\* | (0.7-0.8) |  | 51.3\* |  | 1 |  | 1.6 |  | 2 |
| Male sex (Compared to female) | 27.4 | (1.5) |  | 0.9 | (0.6-1.4) |  | 0.1 |  | 1 |  | 3.5 |  | 2 |
| Marital status |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Currently married | 62.7 | (1.6) |  | 1.0 | - |  | 0.1 |  | 2 |  | 3.0 |  | 4 |
| Never married | 15.3 | (1.3) |  | 1.1 | (0.7-1.6) |  |  |  |  |  |  |  |  |
| Previously married | 22.0 | (1.2) |  | 1.0 | (0.7-1.5) |  |  |  |  |  |  |  |  |
| Disorder characteristics |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Severe/Moderate (Compared to mild/none)c | 35.6 | (1.3) |  | 1.5\* | (1.1-1.9) |  | 6.8\* |  | 1 |  | 1.1 |  | 2 |
| Diagnosis |  |  |  |  |  |  | 3.9 |  | 3 |  | 7.9 |  | 6 |
| 12-month threshold | 42.5 | (1.4) |  | 2.0 | (0.9-4.4) |  |  |  |  |  |  |  |  |
| LT threshold | 20.8 | (1.2) |  | 1.8 | (0.8-3.9) |  |  |  |  |  |  |  |  |
| 12-month subthreshold | 27.3 | (1.5) |  | 1.8 | (0.8-4.1) |  |  |  |  |  |  |  |  |
| Other | 9.5 | (1.3) |  | 1.0 | - |  |  |  |  |  |  |  |  |
| Treatment type/history |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Prior psychotropic used | 84.3 | (1.1) |  | 0.5\* | (0.4-0.7) |  | 16.0\* |  | 1 |  | 0.6 |  | 2 |
| Prior psychotherapyd | 48.6 | (1.5) |  | 0.9 | (0.6-1.1) |  | 1.2 |  | 1 |  | 3.6 |  | 2 |
| Rx by MH professional | 33.2 | (1.4) |  | 0.7\* | (0.5-1.0) |  | 4.6\* |  | 1 |  | 3.0 |  | 2 |
| ADM type |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SSRI | 58.9 | (1.4) |  | 1.0 | - |  | 2.5 |  | 3 |  | 7.4 |  | 6 |
| Newer ADMs | 19.5 | (1.1) |  | 0.9 | (0.6-1.3) |  |  |  |  |  |  |  |  |
| TCA | 12.3 | (0.8) |  | 1.3 | (0.9-2.0) |  |  |  |  |  |  |  |  |
| Other older ADMs | 9.3 | (1.2) |  | 0.9 | (0.5-1.9) |  |  |  |  |  |  |  |  |
| Reason for ADM use |  |  |  |  |  |  | 7.5 |  | 5 |  | 17.7 |  | 10 |
| Depression | 34.4 | (1.2) |  | 1.0 | - |  |  |  |  |  |  |  |  |
| Anxiety | 23.2 | (1.2) |  | 0.8 | (0.5-1.3) |  |  |  |  |  |  |  |  |
| Poor sleep | 4.2 | (0.6) |  | 1.3 | (0.6-2.5) |  |  |  |  |  |  |  |  |
| Other physical | 10.5 | (1.3) |  | 0.6 | (0.3-1.1) |  |  |  |  |  |  |  |  |
| Any other single reason | 8.4 | (0.8) |  | 0.5\* | (0.2-0.9) |  |  |  |  |  |  |  |  |
| Multiple reasons | 19.3 | (1.1) |  | 1.0 | (0.7-1.4) |  |  |  |  |  |  |  |  |
| Insurance |  |  |  |  |  |  | 3.1 |  | 3 |  | 8.4 |  | 6 |
| Private insurance y/n | 22.9 | (1.4) |  | 1.2 | (0.8-1.8) |  |  |  |  |  |  |  |  |
| Occupation providing access to insurance y/n | 67.0 | (1.6) |  | 1.0 | (0.6-1.5) |  |  |  |  |  |  |  |  |
| Publicly funded insurance y/n | 27.8 | (1.4) |  | 0.8 | (0.4-1.5) |  |  |  |  |  |  |  |  |
|  | | | | | | | | | | | | | |

Abbreviations: RR, relative risk; 95% CI, 95% confidence interval of RR.

\*Significant at the .05 level, two-sided design-based test.

aMean for age and percent for all other predictors.

bHigh, high-average, and low-average education were Coded 1; low education was Coded 0.

cSevere/moderate (Coded 1) versus mild/none (Coded 0).

dIn the past two years.