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Early Dropout from Psychotherapy for Depression with Group- and Network-model Therapists

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Abstract

Administrative data were used to examine early dropout among 16,451 health plan members calling to request psychotherapy for depression. Compared to members referred to group-model therapists, those referred to network-model therapists were more likely to drop out before the initial visit (OR 2.33, 95% CI 2.17 – 2.50) but less likely to drop out after the first visit (OR 0.45, 95% CI 0.43 – 0.48). These differences were unaffected by adjustment for neighborhood income and educational attainment, antidepressant use, or generosity of insurance coverage. Efforts to increase the effectiveness of psychotherapy may require different strategies in group- and network-model practice.

Keywords

Psychotherapy; depression; dropout; adherence

Use of psychotherapy for treatment of depression presents a clear mismatch between evidence and practice. Consistent evidence supports the efficacy of psychotherapy for depression (de Mello, de Jesus Mari, Bacaltchuk, Verdelli, & Neugebauer, 2005; Dobson, 1989; Gloaguen, Cottraux, Cucherat, & Blackburn, 1998; Wampold, Minami, Baskin, & Callen Tierney, 2002), and treatment guidelines universally endorse psychotherapy as co-equal with medication for outpatients with moderate depression (American Psychiatric Association, 2000; Depression Guideline Panel, 1993; Parikh, et al., 2009). Surveys suggest that the majority of people with depression prefer psychotherapy for initial treatment (Chilvers, et al., 2001; Dwight-Johnson, Unutzer, Sherbourne, Tang, & Wells, 2001; van Schaik, et al., 2004). Data regarding actual patterns of care, however, suggest a small and shrinking role for psychotherapy in the treatment of depression. Only half of depression treatment episodes in the US include any psychotherapy (Horvitz-Lennon, Normand, Frank, & Goldman, 2003). Only one of seven US adults with a depressive disorder reported attending four or more counseling visits in the prior year (Young, Klap, Sherbourne, & Wells, 2001). While the overall rate of depression treatment in the US has doubled since the 1980s (Kessler, et al., 2005; Wang, et al., 2005), use of psychotherapy has actually decreased (Olfson, et al., 2002; M. Olfson & Marcus, 2010). Given this mismatch, it seems essential to understand the factors influencing initiation and continuation of psychotherapy among people with depression.

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Surprisingly few data are available regarding dropout from psychotherapy in community practice. Most research has been conducted in atypical treatment settings such as clinical trials (McFarland & Klein, 2005), academic medical centers (Centorrino, et al., 2001), or student clinics (Renk, Dinger, & Bjugstad, 2000). Those data indicate that one quarter to one half of patients starting treatment drop out during the first few sessions. In a more representative sample of depression treatment episodes identified from US insurance claims, only half of adults receiving any psychotherapy continued treatment for four or more visits (Horvitz-Lennon, et al., 2003). Because that study included people receiving ongoing treatment, it may have under-estimated early dropout among people starting psychotherapy. Early dropout from mental health treatment has typically been associated with younger age, lower income or educational attainment, lower social support, and substance use disorders (Centorrino, et al., 2001; Foulks, Persons, & Merkel, 1986; McFarland & Klein, 2005; Pekarik, 1992; Renk, et al., 2000; Sparr, Moffitt, & Ward, 1993).

Even fewer data are available regarding failure to attend an initial therapy visit. Zivin and colleagues reported that 15% of members calling to request services from a university-based managed mental health care organization did not attend an initial visit within 90 days (Zivin, et al., 2009). Our previous research in a small sample of health plan members found that almost 25% of adults calling to request psychotherapy for depression did not attend an initial visit (Simon & Ludman, 2010).

Our previous research (Simon & Ludman, 2010) also suggested large differences in patterns of dropout between psychotherapy provided by salaried, clinic-based (group model) therapists and that provided by independent contracted (network model) therapists. Risk of dropout prior to the first visit was significantly higher for network model therapists while risk of dropout between the first and second visits was significantly higher for group model therapists. In that small sample, referral to a group- or network-model therapist was a stronger predictor of dropout than were any demographic or clinical characteristics of patients. Here use a much larger sample to compare dropout from treatment with group-model and network-model providers and to account for additional potential confounding factors (co-occurring conditions, treatment history, insurance coverage) not examined in our earlier report.

METHODS

Group Health Cooperative is a not-for-profit health system serving approximately 600,000 members in Washington and Idaho. Members are enrolled through private employers (53% of members), public employers (22% of members), individually purchased plans (5% of members), a capitated Medicare plan (12% of members), and publicly funded plans for low-income residents including Medicaid and a state-subsidized “gap” program for low-income residents (8% of members). Group Health members are similar to the area population in income, educational attainment, and racial/ethnic composition.

Group Health members may directly request specialty mental health care without referral or other authorization. During the study period (1/1/2003 through 12/31/2008), all members requesting mental health services called a centralized screening program. Physicians’ referrals for mental health services were routed to this screening program, and screening specialists initiated outgoing calls. All screening specialists were masters-prepared and licensed mental health providers. Each screening contact included a structured assessment of the member’s primary problem, current or recent mental health treatment, perceived urgency, screening for substance use disorders, and risk of harm to self or others. In most cases, callers requested a specific service (individual psychotherapy, medication evaluation, chemical dependency treatment, etc.). In the remaining cases, the screening specialist

described available services and clarified the caller's needs and preferences. The average length of a screening contact was approximately 10 minutes. During the study period, the screening unit completed approximately 20,000 assessments per year. In 2008, the most common presenting problems were depression (34%), adjustment/interpersonal problems (19%), anxiety (14%), and attention deficit disorder (7%).

During the study period, Group Health provided specialty mental health care using both salaried internal or group-model providers and a network of contracted external fee-for-service providers. Seven group model mental health clinics served members in or near the cities of Bellevue, Bremerton, Olympia, Seattle, Spokane, and Tacoma, with a combined staff including approximately 15 psychiatrists, 10 doctoral-level psychologists and 60 masters-level psychotherapists. For internal providers, guidelines and training emphasized cognitive-behavioral therapy for treatment of depression. The network of contracted fee-for-service health providers included over 300 providers (psychiatrists, doctoral-level psychologists, and masters-prepared psychotherapists) throughout Washington and northern Idaho. Visits to network providers were reimbursed on a fee-for-service basis at contracted rates.

At the end of each screening call, the screening specialist offered either a referral to a contracted network provider or an appointment with a group-model provider. All callers living outside the service areas of group-model clinics (primarily more suburban and rural members) were offered referrals to network providers. Callers living within the service areas of group-model clinics were generally offered appointments with group-model providers, but may have been offered referrals to network providers if no appropriate group-model appointments were available within 2 weeks. Callers directed to group-model providers were offered a specific appointment during the screening call. Callers referred to network providers were given contact information for 3 or more contracted network providers in the caller's area and advised to call back once an initial appointment was scheduled (to allow a formal authorization for payment).

During the study period, some insurance plans still included annual coverage limits on number of psychotherapy visits, but none had limits lower than 10 visits per year. Co-payments for outpatient psychotherapy varied by source of insurance coverage and were similar to national averages: \$10 or less for approximately 40% of members, \$15 or \$20 for approximately 50% of members, and greater than \$20 for approximately 10% of members. There were no requirements for re-authorization of coverage for treatment with group-model providers. Requirements for re-authorization of coverage for treatment with network-model providers varied by insurance plan, but none required re-authorization prior to the sixth visit in a treatment episode.

Computerized records from the triage center were used to identify all screening assessments between 1/1/2003 and 12/31/2008 satisfying the following criteria:

- Caller requested an initial psychotherapy visit
- Primary problem or complaint was depression
- Identified patient was aged 13 or older
- There were no other requests to begin psychotherapy in the previous 365 days

Each call meeting these criteria was considered a new treatment episode, and an individual member could contribute multiple treatment episodes during the study period.

Triage records were linked to health system claims records to identify all initial evaluation and individual psychotherapy outpatient visits (CPT codes 90801 to 90815) during the 180

days following the screening call. Claims and insurance coverage records were also used to calculate the following possible predictors of initiating or continuing treatment:

- Member age and sex
- Source of referral (self-referred, referred by medical physician, etc).
- Recorded diagnosis of anxiety or substance use disorder in the prior year
- Receipt of any psychotherapy in the prior year
- Filled prescription for any antidepressant medication in the prior year
- Insurance copayment for each outpatient psychotherapy visit
- Annual insurance deductible

Residential address was used to calculate median household income and median educational attainment for the census block of residence.

Outpatient diagnoses for the prior 12 months were used to calculate ACG classifications (Starfield, Weiner, Mumford, & Steinwachs, 1991), a measure of expected use of overall health services that is reproducible across health care systems and is less highly skewed than observed health care costs.

The final study sample was limited to those who were enrolled in Group Health for at least 12 months before and 2 months after the screening call and who had data available for each of the predictors/covariates listed above. Requiring up to six months of enrollment following the screening call did not meaningfully alter any of the results described below (details available on request).

For these analyses, dropout from treatment was defined as an interval of 45 days or more without a psychotherapy visit (i.e. a gap of 45 days following the screening call with no psychotherapy visit OR a gap of 45 days between subsequent visits). Sensitivity analyses varying this interval from 30 to 90 days did not meaningfully alter any of the results described below (details available on request).

We analyzed the probability of dropout using hierarchical logistic regression models to account for clustering of treatment episodes within patients and visits within treatment episodes. Each patient could contribute up to five observations per episode to this model. All contributed at least one observation (did or did not attend the initial visit). Those attending the initial visit contributed at least one additional observation (did or did not attend second visit), those attending the second visit contributed at least one additional observation (did or did not attend third visit), and so on. These models allowed us to estimate the relative odds of making a visit among those referred to group- versus network-model providers while accounting for possible confounding factors. The outcome in these models was a binary indicator of whether or not a visit was made within 45 days of the triage call (for the first visit) or the prior visit. We fit both unadjusted models which included only group- versus network- provider as a covariate and adjusted models with predictors group- or network-provider, age, sex, referral source, diagnosis of anxiety or substance abuse in the prior year, use of antidepressant medications in the prior year, insurance copayment, insurance deductible, an indicator of whether or not the deductible had been met in the current year, median neighborhood income, median neighborhood educational attainment, and expected medical care use. The model for dropout prior to an initial visit was estimated for all eligible patients making a call to the triage center. The model for dropout following the first visit was estimated for patients attending a first visit.

We modeled the association between predictors and the probability of dropout conditional on having made the previous visit, $p_{ij} = P(Y_{ij} = 1 | Y_{i,j-1} = 1)$, using a hierarchical model of the form

$$\log \left\{ p_{ij} / (1 - p_{ij}) \right\} = X_{ij} \beta_j + \alpha_i,$$

where X_{ij} is a vector of time-varying covariates, and α_i is a subject-level random effect. Estimation was carried out via generalized linear mixed models, a likelihood based estimation method.

The effect of covariates on the probability of dropout, β_j , was allowed to vary across visits. We investigated both a fully flexible model in which no constraints were placed on β_j as well as a constrained model in which $\beta_j = j \times \beta_1$ for $j = 2$ to 5. However, these more flexible models did not affect results relative to a model in which we assumed a common effect of covariates on the probability of dropout at the second through fifth visits. We therefore report results from this more parsimonious model.

The Group Health Human Subjects Review Committee (IRB) reviewed all study procedures and granted a waiver of consent to use de-identified records data for this research.

RESULTS

The procedures described above identified a potential sample of 23,667 episodes of care among 21,930 individuals during the study period. In this sample 20,825 episodes met the enrollment restriction described above and 17,691 of those had complete data available for all covariates/predictors. Approximately 13% of callers requested medication evaluation or management services as well as psychotherapy during the screening call. In this final sample, 15,305 individuals contributed a single episode of care, 1,056 contributed two, and 90 contributed three or more. As described above, the sample size available for analyses decreased according to the number of potential visits. All 17,691 were eligible to make a first visit; 13,556 attended a first visit and were therefore eligible to attend a second; 8127 attended a second visit and were therefore eligible to attend a third, 5139 attended a third visit and were therefore eligible to attend a fourth, and so on. Table 1 describes characteristics of callers referred to group-model or network-model providers. Given the large sample size, nearly all of the observed differences exceeded what might be expected by chance. Some of the differences, however, were more practically important. Those referred to network providers were much more likely to live outside of metropolitan areas, more likely to live in neighborhoods with lower income or educational attainment, more likely to be covered by insurance plans with higher copayments or deductibles, and less likely to have used antidepressant medications recently.

Among all callers, the mean number of psychotherapy visits attended over the following six months was 1.78 (s.d. 1.50) among those referred to group-model providers compared to 1.98 (s.d. 1.93) among those referred to network providers. Among those attending the first visit, median time between the triage call and first visit was 8 days for both group- and network-model providers.

As shown in Figure 1, patterns of dropout differed dramatically between those referred to group-model providers and those referred to network-model providers. The proportion not attending an initial visit (i.e. no visit within 45 days of screening call) was 17.6% for those referred to group-model providers compared to 32.9% for network providers. In contrast, the proportion attending an initial visit who dropped out prior to the second visit was 44.2% for

those referred to group-model providers compared to 27.2% for network-model providers. From the second visit onward, overall probability of continuing treatment was higher with network-model providers.

Table 2 displays results of the logistic model described above. Consistent with the pattern in Figure 1, the relative odds of not attending an initial visit were significantly higher among patients served by network providers while odds of dropout after the first visit were significantly higher for group-model patients. Comparing the third and fourth rows indicates that adjustment for potential confounders (all characteristics shown in Table 1) had no meaningful impact on these estimates.

DISCUSSION

In this sample of health plan members requesting psychotherapy for treatment of depression, approximately one quarter did not attend an initial therapy visit within 45 days and another quarter dropped out before the second visit. Fewer than 25% continued treatment through the fifth therapy session. The highest probability of dropout in network-model care occurred prior to the first visit, while dropout with group-model therapists was most common after the first visit. These data complement our earlier report on a sample of approximately 240 health plan members seeking psychotherapy. That study found a similar pattern of dropout and found no evidence that differences in dropout between group-model and network-model therapists were explained by differences in depression severity. In this larger sample, we are able to more precisely estimate differences in probability of dropout between group-model and network-model therapists and examine several additional patient and health system factors that might explain such a difference.

Interpretation of these results should consider the limitations of research using computerized health plan records. In this study, the most important questions concern the generalizability of these findings, the lack of baseline clinical information to assess need for treatment, and the lack of follow-up clinical information to assess outcomes of early dropout.

We cannot determine whether the patterns of dropout in this sample are representative of those in other health systems or other regions of the United States. As discussed above, comparable data from other health systems are sparse. Available data, however, suggest generally similar dropout rates: approximately one quarter of people requesting services do not initiate treatment (Zivin, et al., 2009) and over half of those initiating treatment discontinue by the fourth visit (Horvitz-Lennon, et al., 2003). The Group Health membership is generally representative of people covered by managed mental health systems, including people enrolled through Medicare, Medicaid, and state-subsidized programs. The telephone screening process described above is similar to those in most managed care systems.

In this sample, the only data available regarding need for treatment are the subjective ratings of urgency made during the triage call. Consequently, we cannot compare severity of depression or other clinical measures for patients referred to group or network providers. Our previous research (Simon & Ludman, 2010) in a smaller sample of patients, however, found no significant differences between these groups in severity of depression at screening, perceived need for treatment, or expected benefit from treatment. Our earlier study did, however, find that approximately one fifth of those calling to request psychotherapy for depression were experiencing minimal or mild symptoms. Rural residents, who were more often referred to network providers, may differ from urban residents in other clinical characteristics we are not able to measure.

In some cases failing to attend a first visit may be clinically appropriate. In our previous study (Simon & Ludman, 2010), failure to attend an initial visit was associated with less severe depression at time of screening. Nevertheless, approximately one third of patients with severe symptoms of depression in our earlier study dropped out prior to the second therapy visit.

Most important, no outcome data are available with which to examine how dropout was related to early improvement in depression. In psychotherapy research samples, a significant number of patients experience sustained improvement in depression after one or two treatment sessions (Beckham, 1989; Lutz, Stulz, & Kock, 2009; Stiles, et al., 2003). That finding is, of course, limited to patients who continue treatment. No data are available regarding outcomes of patients dropping out of psychotherapy in community practice, but it is likely that some of the early dropout in this sample reflects successful outcome. Nevertheless, we doubt that the rate of spontaneous improvement before the second visit exceeds 50% (the cumulative dropout rate before the second visit that we observe in this sample). It is likely that early dropout from psychotherapy for depression reflects the same combination of outcomes seen in earlier research regarding antidepressant pharmacotherapy (Katon, et al., 2000; Simon, et al., 1995). Those discontinuing antidepressants in the first weeks of treatment include both successes (early improvement) and failures (withdrawal from treatment and persistence of depression).

Differences between group- and network-model practices in dropout prior to the initial visit suggest that practical barriers have a significant effect on likelihood of starting treatment. As discussed above, our previous research did not identify any differences between group- and network-model practice in patients' severity of depressive symptoms or perceived need for treatment. Any differences in therapists' skill or practice style would not be expected to influence dropout prior to an initial visit. Instead, the higher dropout rate prior to the initial visits probably reflects the additional steps necessary to initiate care with a network therapist. Patients referred to group-model providers were informed of a specific appointment time and location during the screening call. In contrast, those referred to network providers were provided referral information and expected to contact therapists to schedule initial visits. Triage staff had no information regarding availability of appointments with external providers, and procedures for scheduling appointments were not standardized.

Several factors might explain higher dropout from group-model treatment following the initial visit. The practice styles of network-model therapists may result in stronger therapeutic alliance or greater perceived benefit from treatment. Alternatively, higher dropout rates in group-model care may reflect the practical consequences of different organizational structures. Members referred to group-model providers may have more difficulty scheduling a second visit at a convenient time. Salaried and fee-for-service therapists may face different financial incentives to schedule follow-up visits and retain patients in treatment. As suggested by Figure 1, some of the difference in dropout between the first and second visits may simply reflect a "catch-up" or selection effect. Those with lower motivation for treatment face higher barriers to an initial visit with network model providers, so they drop out prior to the first visit. And the same less motivated subgroup referred to group model providers might drop out after the first visit.

Our data do indicate that allocation of psychotherapy resources differs dramatically between group- and network-model therapists. Among all callers requesting treatment, the mean number of visits per episode of care was only modestly higher among those referred to network providers. But the distribution of visits was quite different between these two systems of care. Those making a single visit accounted for only 15% of all patients seen and

3% of all visits in network-model practice. In contrast, single-visit treatment accounted for 33% of patients seen and 8% of all visits in group-model care.

Efforts to reduce dropout in network-model practice might first address the substantial proportion of people requesting therapy who do not initiate treatment. One type of intervention might focus on prediction: improved assessment during initial screening to evaluate need for treatment and identify those at greatest risk of not attending an initial. An alternative strategy would focus on prevention: facilitating patients' communication with network providers and reducing practical barriers to scheduling an initial appointment. A third approach would focus on remediation: systematic outreach to those who fail to complete an initial visit following a screening call.

In contrast, efforts to understand and reduce dropout in group-model practice might first focus on the high dropout following the initial visit. Additional research could examine how early drop-out is related to patients' clinical improvement and to specific provider characteristics (training, practice style, alliance-building skill, etc). Depending on the findings of such exploratory research, intervention or quality improvement research could include either provider-focused interventions (such as training, feedback, financial incentives) or patient-focused interventions (such as motivational enhancement programs prior to treatment or telephone outreach to those not scheduling a second visit).

Early dropout from psychotherapy has traditionally been understood in clinical terms, as an indicator of patients' resistance to treatment or low readiness to change. Our findings (here and in our earlier study) draw attention to the organization of the mental health care system as an important influence on dropout. Differences in probability of dropout between group-model and network-model therapists were larger than any differences related to patients' demographic characteristics, clinical characteristics, or expectations regarding treatment. Successful efforts to reduce dropout from antidepressant pharmacotherapy have involved re-organizing health systems to emphasize outreach and measurement-based care (Gilbody, Bower, Fletcher, Richards, & Sutton, 2006; Gilbody, Whitty, Grimshaw, & Thomas, 2003). In the same way, reducing dropout from psychotherapy may require active monitoring of outcomes and systematic outreach to those discontinuing treatment prematurely. Given the large proportion of patients discontinuing treatment early, any outcomes monitoring program must consider all those starting treatment rather than focusing on only those who continue. Efforts to increase uptake of effective psychotherapy may also need to include treatments provided by telephone or through the Internet (Bee, et al., 2008; Mohr, Vella, Hart, Heckman, & Simon, 2008; Simon & Ludman, 2009). Given high dropout rates with traditional models of treatment in both group-model and network-model practice, a population-oriented approach to increasing the reach of psychotherapy is clearly needed.

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Figure.

Dropout from therapy among adult health plan members requesting initial psychotherapy appointment, comparing those referred to network-model therapists (n=6675) and those referred to group-model therapists (n=11,016).

Table 1

Comparison of baseline characteristics of patients referred to group-model therapists and those referred to network-model therapists (some individuals contribute multiple treatment episodes).

	Group Model n=11,016	Network Model n=6,675	Test Statistic
Female	67.1%	70.3%	$X^2=19.7$, df=1, $p<.001$
Age			
<18	11.5%	12.1%	$X^2=18.5$, df=4, $p<.001$
18-24	11.2%	9.5%	
25-39	24.6%	24.1%	
40-64	44.2%	46.3%	
65+	8.5%	8.0%	
Reside outside metropolitan area	3.5%	20.6%	$X^2=1355$, df=1, $p<.001$
Reside in lower-income neighborhood	23.4%	26.6%	$X^2=23.0$, df=1, $p<.001$
Reside in lower-education neighborhood	12.9%	14.7%	$X^2=11.4$, df=1, $p<.001$
Referral Source			
Self	59.3%	60.8%	$X^2=13.7$, df=3, $p=.003$
Health Care Provider	30.2%	28.4%	
Family	8.5%	9.2%	
Other	2.1%	1.6%	
Clinician-rated urgency at triage call			
Routine	88.4%	94.0%	$X^2=241$, df=2, $p<.001$
At-Risk	7.4%	5.5%	
Urgent	4.2%	0.5%	
Recent Anxiety Diagnosis	11.4%	14.6%	$X^2=38.8$, df=1, $p<.001$
Recent Substance Use Diagnosis	13.3%	11.1%	$X^2=212$, df=1, $p<.001$
Recent Antidepressant Use	48.0%	33.0%	$X^2=484$, df=1, $p<.001$
Expected Medical Care Use			
Low	13.3%	13.1%	$X^2=2.21$, df=2, $p=.33$
Moderate	51.8%	53.3%	
High	17.7%	17.2%	
Insurance Deductible $\geq$ \$100	12.8%	16.6%	$X^2=49.2$, df=1, $p<.001$
Insurance Copayment $>$ \$20	5.5%	7.6%	$X^2=30.9$, df=1, $p<.001$

Table 2

Results of hierarchical logistic model comparing probability of dropout from psychotherapy in patients referred to network-model therapists compared to those referred to group-model therapists.

	Dropout Before Visit 1		Dropout Between visits 1 and 5	
	OR	95% CI	OR	95% CI
Unadjusted	2.33	2.17 – 2.50	0.45	0.43 – 0.48
Adjusted	2.56	2.38 – 2.78	0.45	0.43 – 0.48