Clinical Intake of Child and Adolescent Consumers in a Rural Community Mental Health Center: Does Wait-time Predict Attendance?

**Marne L. Sherman · David D. Barnum ·
Adam Buhman-Wiggs · Erik Nyberg**

Abstract This study examines the clinic variable of wait-time as a predictor of intake attendance in a rural community mental health center (CMHC) serving child and adolescent consumers. Data from 1,317 contacts seeking services for a child or adolescent (ages 2–17) were examined. In logistic regression analysis, wait-time between initial consumer contact and intake appointment was identified as a significant predictor of appointment attendance, even after accounting for consumer variables. The impact of wait-time on the likelihood of intake appointment attendance was not moderated by the urgency of consumer need. Findings elucidate the odds of intake attendance versus non-attendance associated with each day of wait-time and clarify the impact of this clinic variable on pre-intake attrition above and beyond more often studied consumer variables. These results provide information that can assist rural CMHCs in assessing the costs and benefits of steps to reduce wait-time or its impact.

Keywords Pre-intake attrition · Community mental health center · Rural · Intake delay · Child and adolescent consumers · Wait-time

M. L. Sherman (✉)
Department of Psychology, University of Missouri-Kansas City, 4825 Troost Avenue, Kansas City, MO 64110, USA
e-mail: shermanma@umkc.edu

D. D. Barnum · E. Nyberg
The Guidance Center, Leavenworth, KS, USA

A. Buhman-Wiggs
Benedictine College, Atchison, KS, USA

Introduction

Recent estimates, as outlined in the Surgeon General's first report on mental health (Shaffer et al. 1996, as cited in US Department of Health and Human Services [DHHS] 1999), have indicated that more than 20% of this nation's youth between the ages of 9 and 17 meet criteria for a diagnosable mental disorder involving some level of functional impairment, with over 10% having significant impairment and as many as 5% having extreme functional impairment. Data from the National Health Interview Survey, collected in 1998 and 1999 have suggested that 7 million children and adolescents between the ages of 5 and 17 may be suffering from some form of mental health problem according to parents' responses on a mental health indicator (Simpson et al. 2004). Research focusing on preschool aged children also has found high prevalence rates of diagnosable mental disorders (Lavigne et al. 1996), with rates comparable to those found in older children (McDonnell and Glod 2003).

Despite a clear need within the child and adolescent population for mental health services, reports have indicated that a large proportion of those with a mental health condition do not receive services (Burns et al. 1995; Leaf et al. 1996; Pottick et al. 2004; Simpson et al. 2004). Untreated mental illness in children and adolescents may lead to the development of more severe, treatment-resistant mental illness later in life, and has been associated with school failure, teenage childbearing, unstable employment, early marriage, marital instability, and violence (National Institute of Mental Health [NIMH] 2005), all of which exact personal, societal, and economic costs. In addition to prevention efforts, early treatment of mental illness in children and adolescents could reasonably reduce these costs. However, in order for treatment of any kind to be effective, it first must be initiated and then maintained.

Consequently, it is imperative that we understand what factors enhance or inhibit attendance at mental health appointments and intake appointments, in particular.

The Mental Retardation Facilities and Community Mental Health Centers Construction Act, passed by the United States congress in 1963, defined the community mental health center (CMHC) as the "safety net" for mental health care in the United States. On an annual basis, CMHCs provide mental health services to nearly 6 million consumers nationally (US DHHS 2007), with a significant portion of those consumers being children and families. While striving to serve children, youth, and families in need of mental health care, CMHCs must work with limited resources and commonly function without excess capacity. Sadly, funding rather than need too often dictates staffing and, therefore, the CMHC's ability to respond to the community it serves. This situation is often exacerbated in CMHCs serving rural areas, where attracting and retaining mental health care providers may be more challenging, particularly when drawing from a limited pool of providers with specialized training in child and family services (Duffy et al. 2004). In many cases, the rural CMHC is the only source of mental health care in the immediate area. Consequently, it is imperative that rural CMHCs efficiently utilize the limited resources they have in order to provide the most benefit to their consumers and communities at large.

A significant drain on CMHC resources results from missed appointments. For example, a CMHC with five full-time clinicians and a 20% missed appointment rate for the center will have employed the equivalent of one full-time clinician whose time has been unused due to missed appointments. Missed appointments also artificially limit the availability of resources to consumers who may be placed on long waiting lists when appointment slots are filled but not utilized. Traditionally, the highest rate of missed appointments occurs at the time of intake or first clinical appointment, with reported estimates of 20–57% (Benway et al. 2003).

Identifying predictors of missed intake appointments may allow CMHCs to target those variables amenable to intervention in order to decrease no-show rates and improve utilization of clinical resources. However, prior efforts to identify predictors of initial appointment non-attendance in mental health clinics serving children and families have focused more on consumer variables than on clinic variables and have resulted in equivocal findings (see Benway et al. 2003 for a review).

One clinic variable that has received attention in the literature is intake delay or wait-time. However, in the few studies focusing on child and family mental health settings, the true impact of wait-time is difficult to isolate. Kourany et al. (1990) detected a relationship of wait-time with appointment attendance, but this finding is reported within the context of an intervention study designed to test various methods of prompting appointment attendance. Other studies suggesting an impact of wait-time on appointment attendance have examined this within child and family mental health clinics where waiting lists had been implemented (Foreman and Hanna 2000; Stern and Brown 1994). It is possible that the experience of an indefinite delay prior to being offered an appointment may impact attendance motivation differently than when an appointment is set with a finite delay and a foreseeable date of occurrence. Interestingly, in the study by Foreman and Hanna, attendance was poorer among those who had been on the waiting list for more than 30 weeks or less than 4 weeks. Yet other studies have found no relationship of wait-time with appointment attendance (Beer 1991; Orme and Boswell 1991).

Overall, the findings relating to wait-time as a predictor of pre-intake attrition in potential child and adolescent mental health consumers are limited and mixed. If wait-time is a significant deterrent to service utilization, an indication of the magnitude of this effect would be useful in assisting CMHCs and policy makers in designing cost-efficient interventions to offset the impact. Importantly, though wait-time is assumed within the clinical lore to be a barrier to service utilization and has been suggested to be so in some bivariate analyses, the full magnitude of impact after controlling for other consumer factors has not been adequately examined. As others have suggested when addressing the issue of pre-intake and early appointment attrition in mental health populations, a multi-dimensional explanatory model is likely to be necessary (Freund et al. 1991; Sparks et al. 2003). Additionally, wait-time may interact with certain consumer variables in its impact on attrition. For instance, within the broader mental health literature, some data suggest that pre-intake wait-time may have different effects on attendance based on the urgency of the consumer need (Archer 1984; May 1991).

While a clear model of factors contributing to pre-intake attrition in the mental health care of children and adolescents has not yet been empirically identified, there is agreement within the literature that pre-intake attrition is a significant challenge to the efficient delivery of outpatient mental health services. The impacts of missed appointments include delay for services due to artificially full clinic schedules, increased inter-session intervals due to limited rescheduling availability, inefficient use of resources (Issakidis and Andrews 2004; Pekarik 1985), poor staff morale (Benway et al. 2003), and increased cost for services (Joshi et al. 1986). In rural locations where service availability may already be limited, these impacts strain already austere systems working to provide mental health care services to the community (McFarland et al. 1997). Early intervention in mental illness is associated with more positive outcomes (NIMH 2005). Therefore, delays in treatment due to
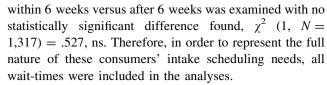
inefficiently deployed resources associated with missed appointments may complicate the treatment course for children and adolescents presenting with mental health conditions. Given the impacts of missed appointments on the system and the potential impact on quality of care, it is essential to identify the key contributing factors to missed appointments in order to effectively target interventions.

The purpose of this study was to examine the role of wait-time in child and adolescent intake attendance in a rural CMHC. We hypothesized that time between initial call for services and scheduled intake appointment would be a significant predictor of failure to attend the intake session, even after controlling for consumer variables. We expected that increased wait-time would result in increased odds of an unattended appointment. Additionally, based on suggestions in the literature (Archer 1984; May 1991) and clinical intuition, we explored the possible interaction effect between the consumer variable of urgency of need and the clinic variable of wait-time on the prediction of intake attendance.

Method

Procedure

The data for this study were gathered from archival information collected routinely during initial telephone contacts made to a rural Midwestern CMHC for the purpose of scheduling an intake appointment. The data were amassed over the course of 28 months by trained and experienced staff members who conducted the routine telephone interviews using standard forms and protocols for the collection of basic consumer information necessary for preliminary case evaluation and assignment. Each potential consumer was scheduled for a clinical intake assessment (initial face-to-face clinical interview) with the next available clinician based on payor source match and scheduling availability. Within the CMHC in which these data were collected, consumers are offered the next available appointment with the goal of scheduling intake appointments within 1–2 weeks from initial phone contact. Due to limited resources, the delay may be as great as 6 weeks at times. However, at no time during the period of this study was a delay of more than 6 weeks necessary based on appointment availability. Even so, some intakes were delayed beyond 6 weeks, representing situations where the parent/guardian arranged an intake time far in advance by choice. Prolonged delays may be related to the fact that the scheduling needs for child and adolescent consumers routinely involve the needs of one or more adults who will accompany the minor. The frequency of missed appointments for the youths scheduled for intake

within 6 weeks versus after 6 weeks was examined with no statistically significant difference found, χ^2 (1, $N = 1,317$) = .527, ns. Therefore, in order to represent the full nature of these consumers' intake scheduling needs, all wait-times were included in the analyses.

Data were de-identified at the CMHC prior to analysis. This study was approved by the institutional review boards of the CMHC at which the data were collected and the academic institution of the first author. The authors acknowledge no conflicts of interest and certify their responsibility for the content of this manuscript.

Sample

The resulting sample consisted of 1,317 potential community mental health service consumers, under the age of 18 (ages 2–17 years old, $M = 11.17$, SD = 4.10), for whom intake appointments were scheduled. The majority of these minors was male (57.9%). The racial/ethnic composition of the sample was predominantly (72.0%) Caucasian, 17.8% African-American, and 3.5% Hispanic. An additional 6.7% of the sample was composed of those identifying as another minority such as Asian-American, Native American, or Native Hawaiian. Additional characteristics of the sample pertaining to referral source, payor source, and urgency of consumer need are described in Table 1.

Definition of Variables

The following variables were collected from the database of telephone interviews and included in the study analysis.

Consumer Variables

Consistent with previous explorations in the literature, the basic demographic variables of consumer age, gender, and

Table 1 Consumer variables in study sample

Consumer characteristic	Percent of sample
Referral source	
Mandated	15.3
Self/Family	13.0
Other	71.7
Payor source	
Self-pay	12.1
Private insurance	23.5
Medicaid	55.4
Other public funding	8.9
Urgency of consumer need	
Routine	97.2
Urgent/Emergent	2.8

minority status, as well as consumer variables of referral source (i.e., legally mandated referral, self/family referral, or other referral sources) and primary payor source (i.e., self-pay, private insurance, Medicaid, or other public funding), were collected for inclusion in our analysis. The preliminary assessment completed during the initial telephone contact also provided an indication of the urgency of the consumer need for services. Based on the input of the consumer or parent/guardian and the type of service needed, cases were coded as routine or urgent/emergent (e.g., hospital discharge or diversion from hospitalization, crisis contact).

Wait-time

The data collected included date of the call for services and date of the intake appointment scheduled. Wait-time was calculated as the number of days delay between call and appointment.

Intake Attendance

Attendance versus non-attendance of the intake appointment served as the categorical dependent variable in our analysis.

Results

Over the course of the 28 months of this study, 80.2% of the potential CMHC child and adolescent consumers attended their scheduled intake appointments, resulting in an overall pre-intake attrition rate of 19.8%. The average wait-time for intake appointments that were kept was 14.47 days (SD = 12.51), while appointments that were not kept had an average wait-time of 16.48 days (SD = 13.25).

Binary logistic regression was used to determine significant predictors of intake appointment attendance. Client variables of age, gender, minority status, referral source, payor source, and case urgency were entered in the first step of the equation. As a block, these variables produced a significant model, χ^2 (9, N = 1,317) = 29.38, P = .001, for the prediction of appointment attendance. Pre-intake wait-time was entered at the second step of the equation in order to assess its independent contribution toward predicting appointment attendance over and above the consumer variables. The addition of the wait-time variable was significant, χ^2 (1, N = 1,317) = 6.55, P < .05, in contributing to the overall model, χ^2 (10, N = 1,317) = 35.93, P < .001. The Hosmer–Lemeshow statistic is a test of model goodness-of-fit based on the chi-square distribution, with a non-significant finding indicating good fit or correspondence of the model to the data (Hosmer and

Lemeshow 2000). This test indicated good model fit, χ^2_{HL} (8, N = 1,317) = 3.82, ns. Lastly, a term representing the interaction of wait-time and case urgency was entered at the third step of the equation to explore the potential of case urgency moderating the relationship of wait-time with intake appointment attendance. The addition of the interaction term, however, did not contribute significantly to the model, χ^2 (1, N = 1,317) = .01, ns, indicating no differential predictive effect of wait-time as a function of case urgency. The main effect of wait-time remained a significant predictor in the final model, Wald χ^2 (1, N = 1,317) = 6.39, P < .05.

The contribution of individual variables toward the prediction of intake appointment attendance is presented in Table 2. Within the block of consumer variables examined, parameter estimates indicate minority status and referral source to be significant predictors of intake attendance. For youths of minority race/ethnicity, the odds of being seen at the scheduled appointment was only two-thirds (67%) that of non-minority youths. Deviation contrasts were used to examine the odds ratios of the referral source categories, indicating that minors who were mandated to services by a legal authority were roughly 24% less likely to appear at the scheduled intake appointment compared to the average of the self/family and other referral source groups. After controlling for all consumer variables included in the logistic regression model, wait-time between initial phone contact with the CMHC and the actual clinical intake appointment remains significantly related to attending versus not attending that appointment. Longer wait-times are associated with a lower likelihood of attending the

Table 2 Individual variable contributions predicting intake attendance by child and adolescent consumers

Variable in model	B	SE	Exp(B)	95% CI for Exp(B)
Age	.000	.018	1.000	.966–1.036
Sex	−.002	.144	.998	.753–1.325
Minority status	−.407	.151	.666	.495–.895
Referral source				
Mandated	−.276	.135	.759	.583–.989
Self	.202	.153	1.223	.906–1.653
Other	.074	.106	1.077	.875–1.325
Payor source				
Self	−.211	.171	.810	.579–1.133
Insurance	.239	.152	1.270	.943–1.710
Medicaid	−.219	.118	.803	.637–1.013
Other public funding	.191	.210	1.211	.803–1.827
Urgency	−.822	.495	.439	.167–1.158
Wait-time	−.014	.005	.986	.976–.997
Wait-time × urgency	.002	.017	1.002	.969–1.036
Constant	1.817	.279	6.154	

intake appointment, with the odds of attending decreasing 1.4% for each additional day of wait-time.

Discussion

In this sample of 1,317 children and adolescents for whom services at a rural CMHC were sought, wait-time for intake, minority status, and referral source were significantly associated with intake attendance, such that longer wait-times, being of minority status, and a mandated treatment referral predicted a greater likelihood of non-attendance at intake appointments. Further, after accounting for the effects of minority status, referral source, and other consumer variables, each day that passed after the initial phone contact with the CMHC increased the odds of non-attendance rather than attendance at the scheduled intake appointment by 1.4%.

Our main finding, that wait-time contributes to the likelihood that potential child and adolescent mental health consumers will miss the intake appointment rather than be seen, is interesting since it indicates a vicious cycle of limited resources and underutilization of services. Unattended appointments artificially increase wait-times and these increased wait-times increase the odds that consumers will be deterred from following through in connecting with needed services. The decision to seek treatment for a minor typically involves a parent or legal guardian contacting the CMHC and taking the steps to follow through with the intake process. The action of making the initial phone call suggests some level of readiness to engage services for the minor. However, the longer the wait from that initial contact to the intake appointment, the greater the potential for that motivation to dissipate.

While previous findings have been inconsistent regarding the impact of race/ethnicity on initial appointment attendance in mental health settings, our data are consistent with studies that have found higher rates of non-attendance among those of minority status (Armbruster and Schwab-Stone 1994; Cuffe et al. 1995; Haskett et al. 1991; Hoberman 1992). One potential reason for this finding might be the association of poverty with underutilization of mental health services, a relationship noted as particularly significant for minority children and families (US DHHS 1999). This connection is considered an outcome of the competing demands on limited resources for families of lower financial means. Treatment costs and associated costs of attending an appointment (e.g., transportation, time off work) become complications that overcome motivation to attend (Minty and Anderson 2004). Socio-economic status was not a variable available for the present study and we are faced with the possibility that minority status may simply be serving as a proxy for lower socio-economic

status, explaining the significant association with appointment attendance. Payor source could be expected to share some variance with socio-economic status. The odds of missing versus keeping the intake appointment approached significance for those having Medicaid coverage in contrast to non-Medicaid forms of payment. Though Medicaid coverage may be more common among minority consumers, we are left with the fact that minority status was a significant contributor to intake attendance even in the presence of payor source within the predictive model. Therefore, minority status seems to be contributing some unique variance that is not fully accounted for by payor source. The influence of minority status on intake attendance may relate to consumer perceptions of the CMHC's cultural/ethnic sensitivity. Due to the difficulty in attracting a diverse clinic staff to the rural Midwest (Merwin et al. 1995), the CMHC in which these data were collected is composed of predominantly Caucasian clinical and non-clinical (administrative and paraprofessional) staff members. Of the 100 individuals employed at the CMHC during this study, 92% were Caucasian ($n = 15$ clinical and 77 non-clinical), 3% African-American ($n = 1$ clinical and 2 non-clinical), 3% Hispanic ($n = 2$ clinical and 1 non-clinical), and 2% East Indian ($n = 2$ clinical). None of the staff members conducting initial phone interviews during the period of data collection were of minority status. It is possible that initial contact or the promise of future contact with a CMHC representative of more similar cultural background may lead to greater motivation to follow-through with services. Additional studies designed to examine the interaction of consumer race/ethnicity with clinic staff racial/ethnic composition may shed more light on this potential influence.

The finding that legally mandated referrals were less likely to be seen at the scheduled intake appointment may be related to complex factors. Mandated treatment indicates an external motivator for seeking services. In the case of children and adolescents mandated to treatment, the parents/legal guardians are directed to engage a service that they have not already initiated for the minors until problems have reached the attention of some element of the legal system. This may suggest lower motivation on the part of the adult for the service in question. An additional possible contributor to the effect of mandated referrals may be the reduced likelihood that a third-party payor will pay for treatment services that are court-ordered.

The fact that case urgency did not interact with wait-time was contrary to expectations. Previous studies have sometimes produced data which confound wait-time and case urgency, as cases judged to be urgent are triaged into immediate intakes or moved up on waiting lists (Dierker et al. 2001; Stern and Brown 1994). This was minimized in the current sample as all consumers were offered the next

available appointment. The fact that the proportion of urgent/emergent cases in this sample was quite low may have contributed to the inability to detect an interaction should one exist, and this finding should be interpreted with caution. Further investigation of this potential interaction is warranted.

Our study is limited to the data collected at initial phone contact and does not provide follow-up data confirming the reasons for non-attendance. It is possible that those consumers scheduled with greater delays chose to seek treatment elsewhere. So it is not possible to conclude that the children and adolescents in need went without services. However, in rural areas such as the one in this study, the availability of other services is limited, making it less likely that a more timely appointment was available elsewhere. Additionally, characteristics of the parent or caregiver seeking services for the youth were not assessed and the role of such variables in pre-intake attrition cannot be addressed by this study. While these data cannot speak to the reasons that may be given by consumers for non-attendance, they do demonstrate that wait-time plays a significant role in the likelihood that an intake appointment will go unattended, thereby inflating the wait-time for other consumers.

This study makes several contributions to the existing literature on factors impacting pre-intake attrition in consumers of mental health services. Few studies have examined the role of wait-time in accounting for pre-intake attrition in child and adolescent consumers and this study has the strength of a sizable sample. This study also provides a much needed focus on rural CMHCs where limited resources play a crucial part in service availability. Most importantly, the approach used in analyzing these data offers a clearer indication of the magnitude of the effect of wait-time as a clinic variable. After accounting for more commonly studied consumer variables, this study elucidates the pace by which each additional day of wait-time between clinic contact and intake increases the odds of unattended versus attended intake appointments. This provides rural CMHCs with information that can be used to better assess the costs and benefits of measures that may be taken to shorten wait-time or offset its impact, for the purpose of improving services to children, adolescents, and their families.

References

Archer, J. (1984). Waiting list dropouts in a university counseling center. *Professional Psychology, Research and Practice, 15*, 388–395. doi:10.1037/0735-7028.15.3.388.

Armbruster, P., & Schwab-Stone, M. E. (1994). Sociodemographic characteristics of dropouts from a child guidance clinic. *Hospital and Community Psychiatry, 45*, 804–808.

Beer, R. (1991). A preschool child psychiatric service: Referral patterns and service uptake. *Child: Care, Health and Development, 17*, 337–355. doi:10.1111/j.1365-2214.1991.tb00704.x.

Benway, C. B., Hamrin, V., & McMahon, T. J. (2003). Initial appointment nonattendance in child and family mental health clinics. *The American Journal of Orthopsychiatry, 73*, 419–428. doi:10.1037/0002-9432.73.4.419.

Burns, B. J., Costello, E. J., Angold, A., Tweed, D., Stangl, D., Farmer, E. M., et al. (1995). Children's mental health service use across service sectors. *Health Affairs (Project Hope), 14*(3), 147–159. doi:10.1377/hlthaff.14.3.147.

Cuffe, S. P., Waller, J. L., Cuccaro, M. L., Pumariega, A. J., & Garrison, C. Z. (1995). Race and gender differences in the treatment of psychiatric disorders in young adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*, 1536–1543. doi:10.1097/00004583-199511000-00021.

Dierker, L., Nargiso, J., Wiseman, R., & Hoff, D. (2001). Factors predicting attrition within a community initiated system of care. *Journal of Child and Family Studies, 10*, 367–383.

Duffy, F. F., West, J. C., Wilk, J., Narrow, W. E., Hales, D., Thompson, J., et al. (2004). Mental health practitioners and trainees. In R. W. Manderscheid & M. J. Henderson (Eds.), *Mental health, United States, 2002* (pp. 327–368). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Foreman, D. M., & Hanna, M. (2000). How long can a waiting list be? The impact of waiting time on intention to attend child and adolescent psychiatric clinics. *Psychiatric Bulletin, 24*, 211–213. doi:10.1192/pb.24.6.211.

Freund, R. D., Russell, T. T., & Schweitzer, S. (1991). Influence of length of delay between intake session and initial counseling session on client perceptions of counselors and counseling outcomes. *Journal of Counseling Psychology, 38*, 3–8. doi:10.1037/0022-0167.38.1.3.

Haskett, M. P., Nowlan, N. P., Hutcheson, J. S., & Whitworth, J. M. (1991). Factor associated with successful entry into therapy in child sexual abuse cases. *Child Abuse and Neglect, 15*, 467–476. doi:10.1016/0145-2134(91)90030-H.

Hoberman, H. M. (1992). Ethnic minority status and adolescent mental health services utilization. *Journal of Mental Health Administration, 19*, 246–267. doi:10.1007/BF02518990.

Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.). New York: Wiley.

Issakidis, C., & Andrews, G. (2004). Pretreatment attrition and dropout in an outpatient clinic for anxiety disorders. *Acta Psychiatrica Scandinavica, 109*, 426–433. doi:10.1111/j.1600-0047.2004.00264.x.

Joshi, P. K., Maisami, M., & Coyle, J. T. (1986). Prospective study of intake procedures in a child psychiatry clinic. *The Journal of Clinical Psychiatry, 47*, 111–113.

Kourany, R. F. C., Garber, J., & Tornusciolo, G. (1990). Improving first appointment attendance rates in child psychiatry outpatient clinics. *Journal of the American Academy of Child and Adolescent Psychiatry, 29*, 657–660. doi:10.1097/00004583-199007000-00022.

Lavigne, J. V., Gibbons, R. D., Christoffel, K. K., Arend, R., Rosenbaum, D., Binns, H., et al. (1996). Prevalence rates and correlates of psychiatric disorders among preschool children. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*, 204–214. doi:10.1097/00004583-199602000-00014.

Leaf, P. J., Alegria, M., Cohen, P., Goodman, S. H., Horwitz, S. M., Hoven, C. W., et al. (1996). Mental health service use in the

community and schools: Results from the four-community MECA Study. Methods for the epidemiology of child and adolescent mental disorders study. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*, 889–897. doi: 10.1097/00004583-199607000-00014.

May, R. J. (1991). Effects of waiting for clinical services on attrition, problem resolution, satisfaction, attitudes toward psychotherapy, and treatment outcome: A review of the literature. *Professional Psychology Research and Practice, 22*, 209–214. doi:10.1037/0735-7028.22.3.209.

McFarland, B. H., Bigelow, D. A., Smith, J., & Mofidi, A. (1997). Community mental health program efficiency. *Administration and Policy in Mental Health, 24*, 459–474. doi:10.1007/BF02042825.

McDonnell, M. A., & Glod, C. (2003). Prevalence of psychopathology in preschool-age children. *Journal of Child and Adolescent Psychiatric Nursing, 16*, 141–152. doi:10.1111/j.1744-6171.2003.00141.x.

Merwin, E. I., Goldsmith, H. F., & Manderscheid, R. W. (1995). Human resource issues in rural mental health services. *Community Mental Health Journal, 31*, 525–537. doi:10.1007/BF02189437.

Minty, B., & Anderson, C. (2004). Non-attendance at initial outpatient appointments at a hospital-based child psychiatric clinic. *Clinical Child Psychology and Psychiatry, 9*, 403–418. doi:10.1177/1359104504043923.

National Institute of Mental Health. (2005, June 6). Mental illness exacts heavy toll, beginning in youth. From http://www.nimh.nih.gov/science-news/2005/mental-illness-exacts-heavy-toll-beginning-in-youth.shtml. Retrieved 2 February 2008.

Orme, D. R., & Boswell, D. (1991). The pre-intake drop-out at a community mental health center. *Community Mental Health Journal, 27*, 375–379. doi:10.1007/BF00752387.

Pekarik, G. (1985). Coping with dropouts. *Professional Psychology Research and Practice, 16*, 114–123. doi:10.1037/0735-7028.16.1.114.

Pottick, K. J., Warner, L. A., Isaacs, M., Henderson, M. J., Milazzo-Sayre, L., & Manderscheid, R. W. (2004). Children and adolescents admitted to specialty mental health care programs in the United States, 1986 and 1997. In R. W. Manderscheid & M. J. Henderson (Eds.), *Mental health, United States, 2002* (pp. 314–326). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Simpson, G. A., Gulnur, S., Henderson, M. J., & Manderscheid, R. W. (2004). Estimates of attention, cognitive, emotional problems, and health service use by US school-age children. In R. W. Manderscheid & M. J. Henderson (Eds.), *Mental health, United States, 2002* (pp. 105–119). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Sparks, W. A., Daniels, J. A., & Johnson, E. (2003). Relationship of referral source, race, and wait time on preintake attrition. *Professional Psychology Research and Practice, 34*, 514–518. doi:10.1037/0735-7028.34.5.514.

Stern, G., & Brown, R. (1994). The effects of a waiting list on attendance at initial appointments in a child and family clinic. *Child: Care Health and Development, 20*, 219–230. doi:10.1111/j.1365-2214.1994.tb00385.x.

US Department of Health and Human Services. (1999). Mental health: A report of the surgeon general. Rockville, MD: US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health.

US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration's National Mental Health Information Center, Center for Mental Health Services. (2007, August 19). United States fiscal year 2006 utilization rates/number of consumers served [Table]. 2006 CMHS Uniform Reporting System Output Tables. From http://mentalhealth.samhsa.gov/cmhs/MentalHealthStatistics/URS2006.asp. Retrieved 12 October 2007.