

Citation: Pottick, K.J., Bilder, S., Alvarez, M.F., Vander Stoep, A., & Warner, L.A. (2006, February). Comparing pre-, post-, and transitional-aged clients in U.S. outpatient mental health services. Paper presented at the annual meeting, *A System of Care for Children's Mental Health, Expanding the Research Base*, Tampa, Florida. University of South Florida, Florida Mental Health Institute, Research and Training Center for Children's Mental Health. Available online: Rutgers University, Institute for Health, Health Care Policy and Aging Research Web site:

http://www.ihhpar.rutgers.edu/downloads/Comparing_Clients_in_Outpatient_Services.pdf

Comparing Pre-, Post-, and Transitional-aged Clients in U.S. Outpatient Mental Health Services

Abstract

We use nationally representative data from the 1997 Client/Patient Sample Survey to describe the demographic and clinical profiles of pre-transitional children (0-15 years old), transitional youth (16-25 years old), and post-transitional adults (26-35 years old) in outpatient mental health services in the U.S., and to identify correlates of psychotropic medication receipt. Results highlight the unique qualities of transitional youth as well as qualities that are shared with other age groups, confirming and extending our understanding of the complex developmental needs of transitional-aged youth in services. Implications for the design and delivery of services for transitional-aged youth will be discussed.

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Introduction

Youth with serious emotional disorders (SED) face uncertainty about service coverage as they transition to adulthood (Davis & Vander Stoep, 1997). Most of what is known about transition-aged youth with SED has focused on their young adult outcomes, unmet needs, and available services, and has been used as leverage to successfully advocate for attention to their plight within the mental health care system (Davis 2003; Davis & Sondheimer, 2005). Consistently, researchers have found that transition-aged youth in services fare poorly in comparison to same-aged peers in the community, limiting their chances for success in school, at home, and in adult occupational and social roles (Davis, Banks, Fisher & Grudzinkas, 2004; Davis & Vander Stoep, 1997; Vander Stoep, Beresford, Weiss, McKnight, Cauce & Cohen, 2000). Little research has been conducted to differentiate the demographic, clinical, and service history profiles of transition-aged youth from the profiles of youth and adults who bracket them in age, that is, pre-transitional children and post-transitional adults. Knowledge of whether or how the characteristics and service needs of these populations are unique or similar would enable us to design an effective continuum of services tailored to the developmental need of transition-aged youth. With a nationally representative mental health service utilization data set (1997 Client/Patient Sample Survey, CPSS), this study provides information about the demographic and clinical profiles (e.g., psychiatric diagnosis, global assessment of functioning, suicidality) of pre-transitional children (0-15 years old), transitional youth (16-25 years old), and post-transitional adults (26-35 years old) using outpatient mental health services in the U.S., and identifies factors related to the receipt of psychotropic medications in the three groups.

These are our research questions:

1. How many pre-transitional children, transitional youth, and post-transitional adults are in the U.S. specialty mental health system?
2. What are their sociodemographic and clinical profiles?
3. What clinical and non-clinical factors are related to psychotropic medication receipt within each age group?

Unfortunately, the scarcity of comparative information on the characteristics of pre-transitional children, transitional youth, and post-transitional adults provides us with little guidance for formal hypothesis-testing. But, there is sufficient literature on the correlates of medication receipt to suggest that sociodemographic characteristics such as age or race-ethnicity (Shireman, Olson, & Dewan, 2002) and payment source (Warner, Pottick, & Bilder, 2005) may play a role, beyond clinical factors such as diagnosis or illness severity. Rather than carrying out formal hypothesis-testing on a limited scientific base, we rely on our three questions to guide analysis and interpretation of findings.

To better inform policymakers, administrators, practitioners and families themselves on the current status of transition-aged youth in the mental health system, and to plan developmentally appropriate services, we will compare these three population groups that fall along a developmental continuum.

Method

Data Source

The 1997 CPSS was conducted by the National Institutes of Health's Center for Mental Health Services (CMHS) to collect statistical information on persons receiving specialty mental health care throughout the nation (Milazzo-Sayre et al., 2001). With an oversample of youths for the first time in history, the dataset can be used to generate reliable national estimates of the number of transition-aged youths in the U.S. mental health outpatient service system.

The CPSS used a two-stage sampling design. First, a random sample of 1,598 facilities was selected from the 1994 Inventory of Mental Health Organizations and General Hospital Mental Health Services, which contains the universe of inpatient, outpatient, and residential care programs in the U.S. Second, administrative staff at each facility collected data from case records for randomly selected clients. The study targeted two distinct populations: (1) all persons who were admitted to or discharged from inpatient, outpatient and residential treatment facilities during 1997 and (2) all persons under care in these facilities on May 1, 1997. Our study focuses on the under care sample, for which information on service

use was collected, and targets persons in outpatient care. CMHS provides weights to allow researchers to develop nationally representative estimates.

Variables and Measures

Developmental group was coded into a categorical variable with three levels organized on the basis of age: pre-transitional children (ages 0-15), transitional youth (ages 16-25), and post-transitional adults (ages 26-35). Transitional youth age range was defined as recommended by the CMHS (58 FR 29425). In regression analyses, age was used as a continuous variable.

Sociodemographic characteristics included gender, race-ethnicity (Non-Hispanic Blacks, Non-Hispanic Whites, Hispanics, Others), and payment source (e.g., Medicaid, private insurance, State funds, personal resources, charity care). Variables used to describe the clinical profile of youth included type of principal diagnosis (DSM or ICD-9), and presence of secondary or dual principal diagnosis (1=yes, 0=no), presenting problem of suicide (1=yes, 0=no), and scores on the ten-item Global Assessment of Functioning (GAF) (Axis V of the DSM-IV) scale. Principal diagnosis was collapsed into 11 mutually exclusive and exhaustive categories. Scores on the GAF scale ranged from 0 to 100, with a score of 50 or below signaling the most serious functional impairment, a score of 51 to 60 indicative of moderate impairment, and a score of 61 to 100 indicative of superior functioning.

Service variables included prior use of services (1=yes, 0=no), receipt of psychotherapy (1=yes, 0=no), referral source (family, social service program, juvenile/criminal justice program, outpatient provider, inpatient provider), and receipt of psychotropic medication (1=yes, 0=no).

Analytic Procedures

Univariate frequencies, bivariate cross-tabulations, and chi-square tests were used to compare the clinical and sociodemographic characteristics of the three age groups, and to examine the bivariate relationships between these variables and use of psychotropic medication. For the presentation, we also will examine the multivariate associations between the predictors and medication use in each age group. To account for the complexity of the survey design, and to produce proper estimates of standard errors, all analyses were conducted with SUDAAN using weighted data (Shah, Barnwell & Bieler, 1997).

Preliminary Results

Table 1 details the clinical, demographic and service characteristics of the three groups. Results show a different diagnostic profile for transitional youth compared to the other groups. The prevalence of five disorders among transitional youths fell between the prevalence of the other groups: psychotic, conduct, adjustment, attention deficit, and pervasive developmental disorders. Personality disorders and substance use disorders were highest among the transitional youth. Transitional youth were similar to adults only in mood disorder diagnoses, and they were similar to children in “other” diagnoses (medical conditions, deferred diagnoses or unknown). All the groups were similar in the prevalence of anxiety disorders, adjustment disorders and social conditions (V-codes). About one-third of each group had a co-occurring disorder and about one-third had GAF scores ≤ 50 , but like adults and unlike children, transitional youth were more likely to present with suicide attempts or threats. Service utilization was distributed differently among transitional youth relative to the other age groups. A significantly greater percentage of transitional youth was referred from the justice system, and a significantly smaller percentage had a payment source of Medicaid.

Table 2 displays the correlates of medication receipt for pre-transitional children, transitional youth, and post-transitional adults. Controlling on diagnosis, the proportion of transitional youth using medication differed from the other age groups for the following disorders: conduct, adjustment, alcohol and drug, attention deficit, personality pervasive developmental, and social (V-codes). In other ways, use of medications in the transitional youth was similar to that among pre-transitional children (mood and psychotic disorders), and adults (anxiety disorders).

Preliminary multivariate analyses exploring the association between all predictors and medication receipt suggest that non-clinical factors influence medication receipt, and that these factors differ for the three age groups. These findings will be further explored and verified; final results will be presented at the conference.

Discussion

This study describes the demographic and clinical profiles (e.g., psychiatric diagnosis, global assessment of functioning, suicidality) of pre-transitional children (0-15 years old), transitional youth (16-25 years old), and post-transitional adults (26-35 years old) in outpatient mental health services in the U.S., and identifies the correlates of psychotropic medication receipt. The finding that transitional youth are unique in some ways and share attributes with adults or children respectively means that services need to be tailored to their specific developmental needs. For example, it is important for service planners to know that although 60% of utilizers of children's outpatient mental health services are male and over 60% of adult utilizers are female, both genders are about equally represented among transition-aged youth..

State-level policies that age children out of the child mental health system prematurely, require youth to enter the adult service system, or lack shared planning between the child and adult systems (Davis & Sondheimer, 2005) may prolong mental health problems (Davis, 2003; Vander Stoep, Davis, & Collins) or may jeopardize the monitoring of, and adherence to, psychotropic medications.

Although the sample of clients in the CPSS is large, it underestimates the numbers of pre-transitional children, transitional youth, and post-transitional adults in outpatient care because the sampling frame does not include clients whose mental health care was provided exclusively by private practitioners or in primary care settings. Nevertheless, the scope of the study provides results that are useful for the planning of mental health service delivery to transitional youth. Implications for policymaking and program planning will be discussed.

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Table 1

Clinical and Sociodemographic Characteristics of Individuals in Outpatient Mental Health Settings in the United States, by Age Group.

	Pre-transitional Children (Ages 0-15) 332,684 (1,841) % Sample	Transitional Youth (Ages 16-25) 180,201 (620) % Sample	Post-transitional Adults (Ages 26-35) 235,929 (611) % Sample	Total 748,814 (3,072) % Sample
Principal psychiatric disorder**				
Mood	11.35	30.87	33.40	22.99
Psychotic	0.48	13.22	30.19	12.91
Conduct	18.75	6.39	0.00	9.87
Adjustment	18.75	10.86	7.71	13.37
Alcohol and drug	1.17	10.44	6.64	5.12
Anxiety	7.91	7.62	6.93	7.53
Attention deficit	27.21	4.71	0.88	13.50
Personality	1.00	6.81	3.57	3.21
Pervasive developmental	6.87	2.83	1.47	4.19
Social	2.90	2.89	2.79	2.86
Other ^a	3.62	3.36	6.41	4.44
Co-occurring psychiatric disorder^{ns}				
No	65.54	63.80	62.06	64.02
Yes	34.46	36.20	37.94	35.98
Global Assessment of Functioning (GAF) score^{b, ns}				
< = 50	31.54	34.28	36.80	33.86
51 - 60	37.13	31.56	31.80	34.11
> = 61	31.33	34.16	31.40	32.03
Presenting problem of suicide**				
No	90.59	83.12	84.21	86.78
Yes	9.41	16.88	15.79	13.22
Gender**				
Male	63.93	53.72	43.34	54.99
Female	36.07	46.28	56.66	45.01

Race and ethnicity**					
Non-Hispanic White	60.67	69.78	70.23	65.88	
Non-Hispanic Black	22.49	14.10	18.98	19.36	
Hispanic	13.99	13.91	8.21	12.15	
Other ^c	2.85	2.20	2.57	2.61	
Prior service use ^{d, **}					
No	49.62	32.64	28.36	38.83	
Yes	50.38	67.36	71.64	61.17	
Receives psychotherapy ^{e, **}					
No	16.48	23.79	30.70	22.72	
Yes	83.52	76.21	69.30	77.28	
Payment source**					
Medicaid	59.66	40.43	52.43	52.75	
Commercial health insurance, CHAMPUS	16.75	19.65	12.07	15.97	
State funds ^f	10.93	12.87	9.72	11.02	
Personal resources	7.85	16.73	13.72	11.83	
Charity care	4.82	10.32	12.06	8.42	
Referral source**					
Family/friend; self	41.14	36.22	41.40	40.04	
Social service program; community	17.21	11.84	11.57	14.14	
Criminal/Juvenile justice program	3.79	14.61	7.99	7.72	
Educational system	19.72	6.18	0.48	10.40	
Outpatient provider	12.63	12.51	18.38	14.41	
Inpatient program	5.51	18.64	20.18	13.29	

** $p < .01$.

^{ns} Not significant

Note. – Percentages are weighted. Data represent 748,814 individuals between the ages of 0 and 35 in U.S. outpatient mental health programs, with an unweighted N (in parentheses) of 3,072.

^a Includes a medical, deferred, or unknown diagnosis

^b The GAF score is adapted from Axis V from the DSM-IV (American Psychiatric Association 1994); lower scores indicate more serious impairment.

^c Includes Asian, Pacific Islander, Native American, and Alaskan Native.

^d Includes private practice, inpatient provider, outpatient provider, residential care, and other.

^e Includes one or more of the following: behavior therapy, family/couple therapy, group therapy, and individual therapy.

^f Includes public source, state department of mental health or social service funds.

Table 2

Correlates of Medication Receipt Among Individuals in Outpatient Mental Health Settings in the United States, by Age Group.

	Pre-transitional Children (Ages 0-15) 332,684 (1,841)	Transitional Youth (Ages 16-25) 180,201 (620)	Post-transitional Adults (Ages 26-35) 235,929 (611)	Total 748,814 (3,072)
	% Medicated	% Medicated	% Medicated	% Medicated
Principal psychiatric disorder:	(p < .01)	(p < .01)	(p < .01)	(p < .01)
Mood	42.27	43.52	53.82	47.96
Psychotic	51.44	52.04	68.39	64.08
Conduct	27.35	17.27	0.00	25.78
Adjustment	13.97	21.88	27.03	17.89
Alcohol and drug	2.29	8.82	26.72	15.47
Anxiety	29.18	60.45	60.25	45.80
Attention deficit	52.47	60.74	82.98	53.79
Personality	6.66	26.94	30.21	25.28
Pervasive developmental	18.87	10.58	64.72	22.58
Social	2.34	0.00	8.59	3.70
Other ^a	20.48	27.33	28.01	25.16
Co-occurring psychiatric disorder:	(p < .01)	(ns)	(ns)	(p < .01)
No	26.75	31.78	49.67	34.96
Yes	40.74	41.33	54.37	45.41
Global Assessment of Functioning (GAF) score ^b :	(p < .01)	(p < .05)	(p < .05)	(p < .01)
< = 50	38.72	40.40	60.30	46.52
51 - 60	33.43	41.23	52.38	40.73
> = 61	22.19	24.52	40.15	28.33
Presenting problem of suicide:	(ns)	(p < .05)	(ns)	(p < .05)
No	31.03	32.38	50.63	37.34
Yes	36.76	49.32	55.84	47.80
Gender:	(ns)	(ns)	(ns)	(ns)
Male	33.63	34.39	52.96	38.61
Female	27.92	36.22	50.30	38.85
Race and ethnicity:	(ns)	(ns)	(ns)	(ns)
Non-Hispanic White	32.70	34.36	49.16	38.65
Non-Hispanic Black	30.59	39.27	61.39	41.62
Hispanic	27.85	33.55	45.12	33.10
Other ^c	33.69	47.81	60.97	45.05

Prior service use ^d :	(p < .01)	(ns)	(p < .01)	(p < .01)
No	22.02	31.55	34.08	26.72
Yes	40.98	37.02	58.33	46.34
Receives psychotherapy ^e :	(ns)	(ns)	(ns)	(ns)
No	35.51	34.26	52.97	42.63
Yes	30.80	35.54	50.78	37.57
Payment source:	(ns)	(ns)	(ns)	(p < .05)
Medicaid	33.70	40.27	55.12	41.62
Commercial health insurance, CHAMPUS	23.34	31.57	43.73	30.64
State funds ^f	34.96	42.06	31.53	36.00
Personal resources	30.14	24.75	52.58	36.50
Charity care	28.50	31.00	58.04	42.55
Referral source:	(p < .05)	(p < .01)	(p < .05)	(p < .01)
Family/friend; self	28.92	37.46	51.00	37.97
Social service program; community	26.99	26.16	41.90	30.67
Criminal/Juvenile justice program	27.24	12.49	37.13	23.75
Educational system	33.23	47.53	0.00	34.80
Outpatient provider	35.20	36.19	64.61	47.23
Inpatient program	54.42	49.80	52.77	52.07

p-level in parentheses indicates the level of significance between the independent variable and the dependent variable, receipt of medication.

^{ns} Not significant

Note. – Percentages are weighted. Data represent 748,814 individuals between the ages of 0 and 35 in U.S. outpatient mental health programs, with an unweighted N (in parentheses) of 3,072.

^a Includes a medical, deferred, or unknown diagnosis

^b The GAF score is adapted from Axis V from the DSM-IV (American Psychiatric Association 1994); lower scores indicate more serious impairment.

^c Includes Asian, Pacific Islander, Native American, and Alaskan Native.

^d Includes private practice, inpatient provider, outpatient provider, residential care, and other.

^e Includes one or more of the following: behavior therapy, family/couple therapy, group therapy, and individual therapy.

^f Includes public source, state department of mental health or social service funds.

Comparing Pre-, Post-, and Transitional-aged Clients in U.S. Outpatient Mental Health Services

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Acknowledgements

The Annie E. Casey Foundation
Center for Mental Health Services
National Institute of Mental Health
Rutgers University

Background and Significance

- Lack national information on transition-aged youth
- Insufficient evidence-based for planning and policymaking

Research Aims

- To estimate the number and proportion of persons of pre-transition, transition, and post-transition age using mental health services in the U.S.
- To compare sociodemographic and clinical profiles of pre-transition, transition, and post-transition age persons
- To analyze factors associated with medication receipt among the three age groups

1997 Client/Patient Sample Survey (CPSS)

- **Nationally representative survey of 1,599 mental health programs across the United States**
- **Included medical records of persons of all ages**

Sampling frame

1994 Inventory of Mental Health Organizations (IMHO)

Proportions of service use

U. S. Census Bureau, July 1, 1997

Study Sample

Selection Decisions

Under care population

Outpatient settings

Age groups

Transitional: 16-25 years old

Pre-transitional: 6-15 years old

Post-transitional: 26-35 years old

Measures

Clinical characteristics

- Diagnosis
- Dual diagnosis
- Functioning (GAF)
- Suicidality

Dependent variable

- Psychotropic Medication

Non-clinical characteristics

- Age Group
- Gender
- Race-ethnicity
- Payment source
- Prior service use
- Psychotherapy
- Referral

Analytic Strategy

- Calculate proportions of service use across age groups
- Chi-square analyses to compare clinical and non-clinical differences across age groups
- Logistic regression models to examine correlates of medication receipt, with interactions
- Application of SUDAAN to adjust for standard errors

Number and Proportion of Young Persons Under Care in Outpatient Services in US by Age Group

<u>Age Groups</u>	<u>National Estimates</u>	<u>(%)</u>	<u>Cases per 100,000</u>
Pre-transition	305,171	(42.3)	790
Transition	180,201	(25.0)	495
Post-transition	235,929	(32.7)	580
Total Served	721,301	(100.0)	624

How do pre-, post, and transitional-aged persons differ in their clinical profiles?

All Different: Transitional Youth are Unique

Internalizing Diagnoses

Externalizing Diagnoses

All Similar: Transitional Youth are Like Others

Other Diagnoses

Dual diagnosis

Functioning (GAF)

Transitional More Like Pre-transitional

Suicidality

Transitional More Like Post-transitional

None

How do pre-, post, and transitional-aged persons differ in their sociodemographic characteristics?

All Different: Transitional Youth are Unique

None

All Similar: Transitional Youth are Like Others

Race-ethnicity

Private Insurance

State or County Funds

Transitional More Like Pre-transitional

None

Transitional More Like Post-transitional

Male Gender

Medicaid

Personal Pay (Private Resources)

Charity Care

How do pre-, post, and transitional-aged persons differ in their service characteristics?

All Different: Transitional Youth are Unique

Referral Source

- Education

All Similar: Transitional Youth are Like Others

Referral Source

- Family
- Social Services
- Outpatient Program

Receives Psychotherapy

Transitional More Like Pre-transitional

None

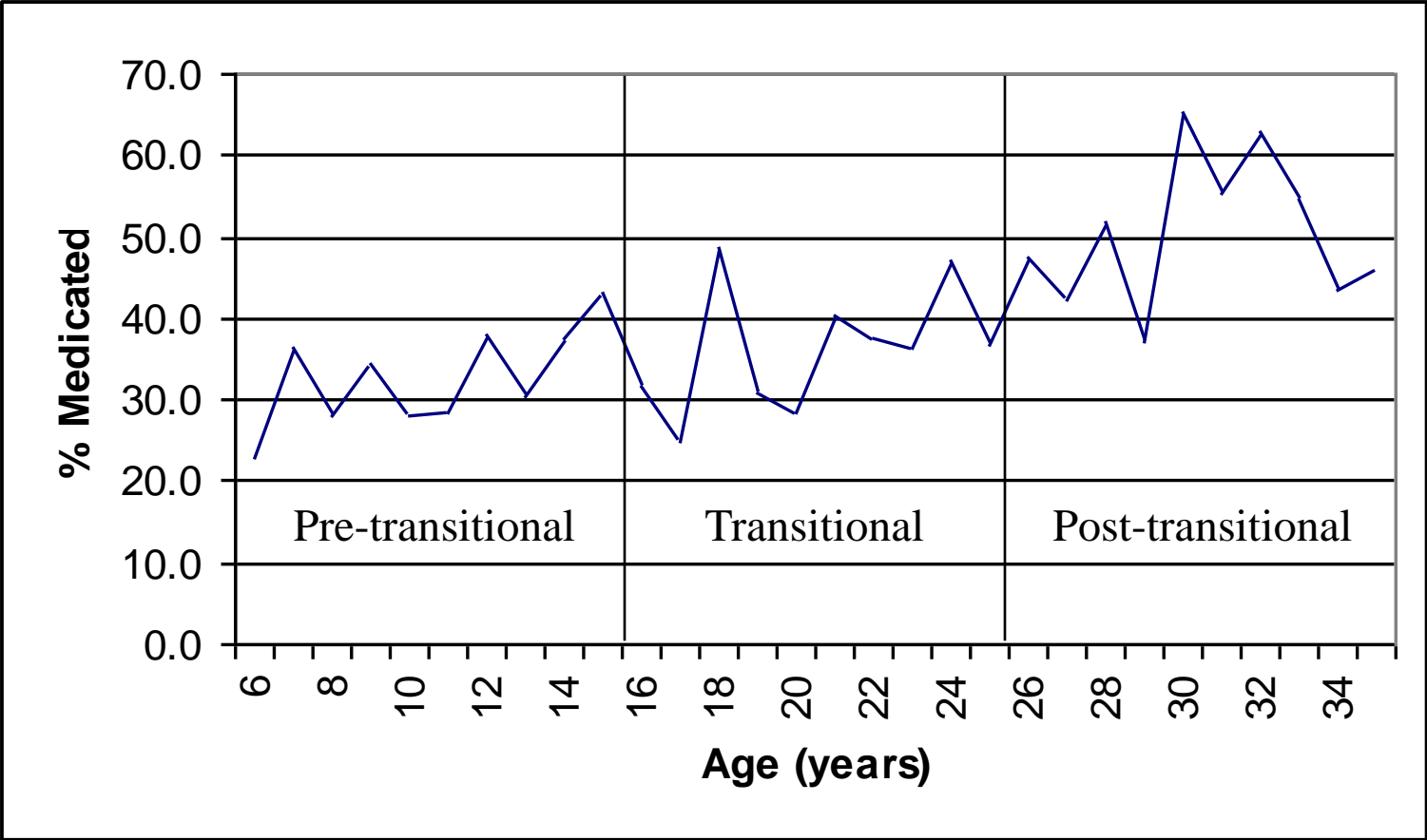
Transitional More Like Post-transitional

Referral Source

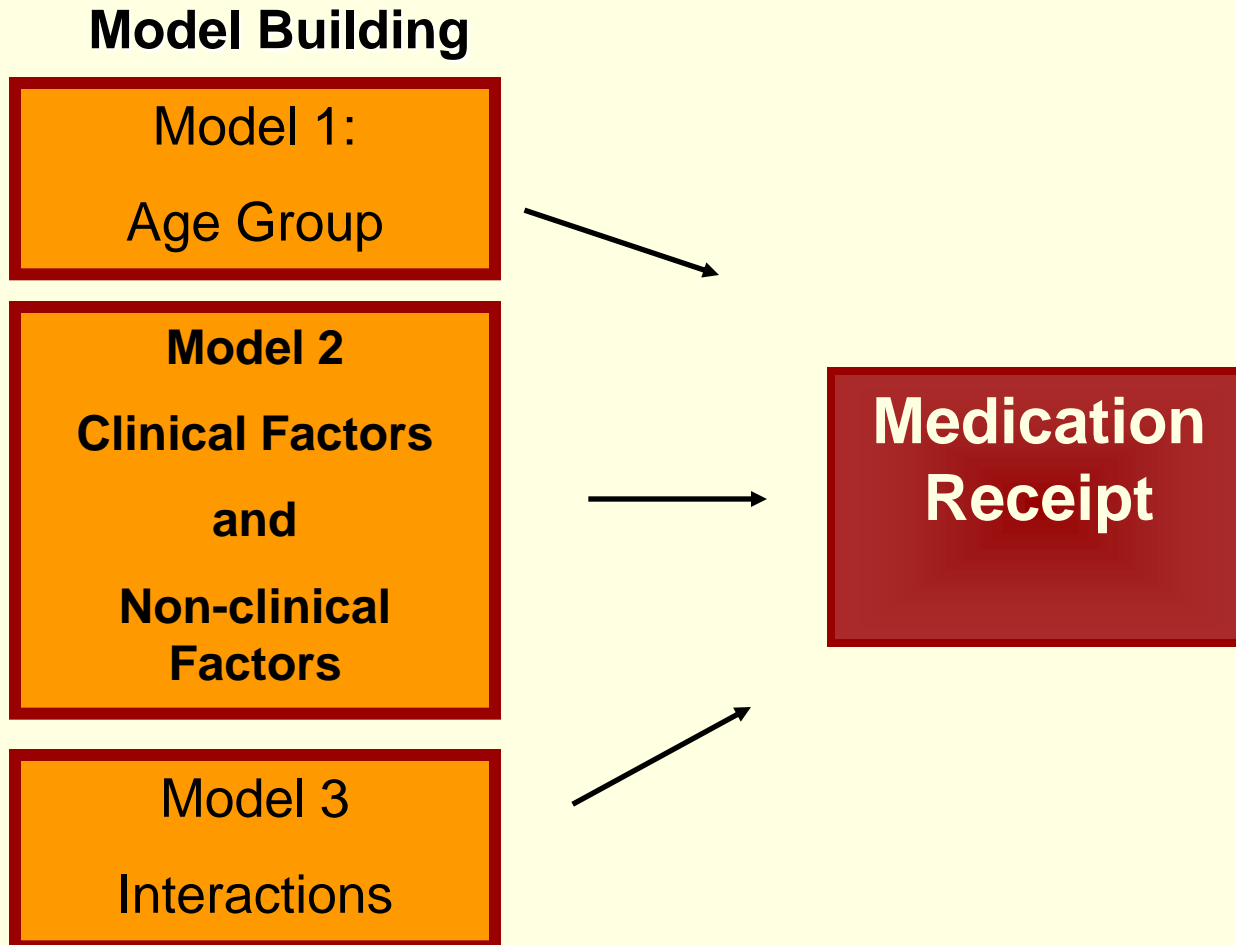
- Justice Program
- Inpatient Program

Prior service use

How do pre-, post, and transitional-aged clients differ in their receipt of medication?

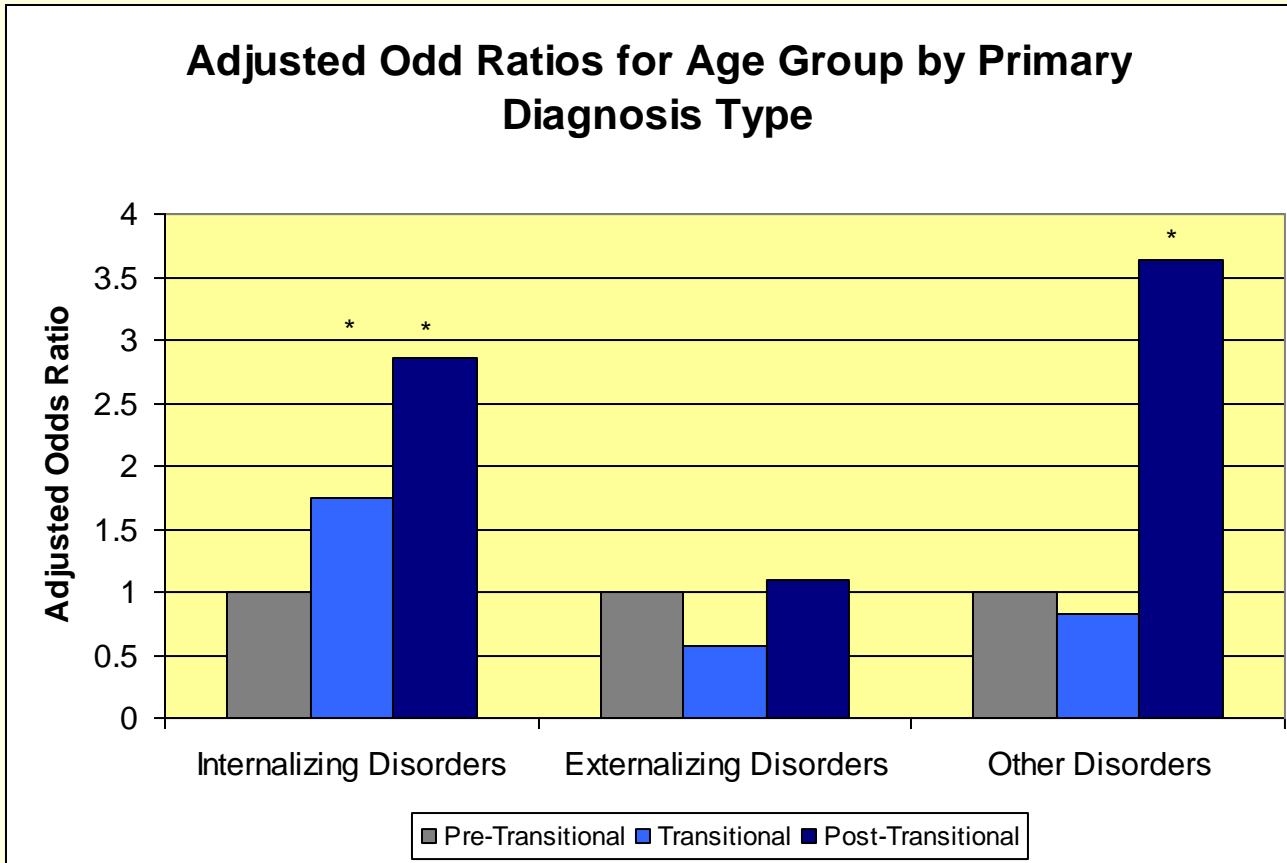


Analysis Strategy: Multivariate Relationships



Multivariate Results

- Factors associated with medication receipt:
 - Age group
 - Diagnostic type
 - Functioning (GAF)
 - Prior service use
 - Referral source
 - Age group X Diagnostic type



* Different from Pre-transitional group (reference category), $p < .05$. Reference categories in gray.

Conclusions

In the main

- Transition are like pre-transition clients in some ways (clinical), and like post-transition clients in others (sociodemographics and service use)
- Transition and pre-transition clients are equally likely to use medications
- But, controlling on other factors, transition clients are more likely to use medications than pre-transition clients when they have internalizing or other disorders.

Study's Strengths and Limitations

Strengths

- Samples from universe of U.S. mental health facilities
- Contains multiple clinical need indicators
- Large sample size creates statistical power enabling examination of interactions

Limitations

- Unknown reliability of medical record
- Changes may have occurred since 1997
- Underestimates numbers of clients in outpatient services

Practical Programmatic Recommendations

- Tailor services to specific developmental needs of transitional youth
- Promote state-level policies that encourage seamless delivery of services for transition-aged youth