HIV Prevention in Community Supervision for Adults with Substance Use and Mental Disorders: Effects on Knowledge, Attitude & Behavior

Nahama Broner, Ph.D. • Michelle Lang, Ph.D. • Maiko Yomogida, B.A.

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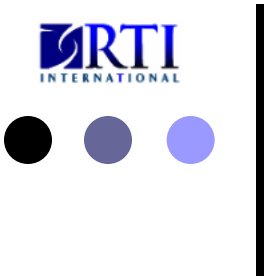
Outline

- Background
- Methods
- Findings: Effects on knowledge, attitude & behavior
- Future Directions



Background

Diversion Definition

- Diversion is an intervention that either avoids jail/prison or reduces **length of confinement** and provides **access** to treatment, which will facilitate a reduction in substance use, mental health symptoms, criminal justice involvement and increase life satisfaction and **cost savings** overtime.
- Diversion can be mandated or non-mandated:
  - **Mandated Diversion**: criminal justice consequences for program failure *(e.g., Alternative to Incarceration [ATI], community supervision, is mandated and often focuses on saving future prison rather than jail time)*
  - **Non-mandated Diversion**: end of criminal justice involvement at diversion

Integrating HIV prevention and intervention into diversion case management

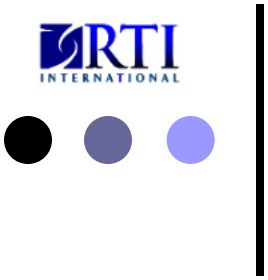
Diversion ↑ service access and ↑ retention *(depending on degree of program coercion & individual level of insight/motivation),* ↓ criminal justice involvement, ↓ substance use & may stabilize some mental health symptoms

- Criminal justice involvement, mental illness & substance use each contribute to risk for HIV contraction & transmission and overlapping populations
- Disparity in services access, quality & retention is a shared issue of concern for substance abuse, mental health & HIV/health, particularly for minority populations
  - As focus of intervention expands, scope & receipt of services expands *(e.g., adaptation of SA diversion programs to MH diversion)*
  - Would this also occur for HIV services access?
  - Hypothesized that added focus of HIV to SA diversion or MH/Co-occurring disorder diversion would result in ↑ access to HIV prevention and intervention services and earlier in diversion process

Broner et al., 2003., 2004, 2005; Cowell et al., 2005; Steadman et al., 1999; Teplin, 1984

Integrating HIV Prevention Into Community Supervision/ATI: Aims

- Determine the effectiveness of the Brooklyn TASC HIV/AIDS intervention at ↑ knowledge *(e.g., transmission risk)*, ↑ attitudes *(e.g., expectations to use safe methods, to negotiate with partner)*, & ↓ risk behavior *(e.g., unprotected sex, injection drug use)* related to HIV/AIDS among offenders with addictive or co-occurring mental disorders diverted from jail & being supervised in the community
- Identify & assess the impact of factors *(e.g., race, gender, type of substance use, MH vs. SA, HIV status)* that moderate the effectiveness of Brooklyn TASC HIV/AIDS intervention; and
- Identify demographic, behavioral, social, environmental, programmatic & systems-level correlates of SA & HIV/AIDS risk behavior(s) & knowledge among substance abusing & MI/DD offenders being supervised in community — *analyses underway*



Methods

NYC TASC: Conditions

TASC is a best practices national forensic case mgmt model for SA, developed in the '70's; it is in every state.

Comparison (Queens and the Bronx)

- Substance Abuse: Two changes in original SA model 1) deferred prosecution to deferred sentencing, and 2) added warrant squad through prosecutors office – DTAP model
- Mental Health: 2 models, 1) adapted DTAP (TADD Model) & TASC by adding MH screening, wider referral base, 2) developed a MH court

Intervention (Brooklyn)

- **HIV: adapted TASC MH & SA tracks to additional focus on HIV prevention among HIV positive & negative (intervention program) –** screening, pre-/post- testing counseling & testing through linkage, condoms, brochures/posters displayed, case mgmt monitoring of attitudes & risk behaviors, prevention/ intervention services received — *focus of current research*

Anglin et al., 1999; Broner et al., 2002, 2003, 2004, 2005; Dynia & Sung, 2000; Lang & Belenko, 2001; Young & Belenko, 2002; Zarkin et al., 2005

Participants, Design and Procedure

- **Participants**: 1145 adults plead to diversion in lieu of a prison sentence & accepted to TASC into either its MH or SA tracks in NYC (Queens, Brooklyn, Bronx)
  - 21% attrition for 6 months; 31% for 12 months *(biased toward program completers and not in prison)*
- **Design**: Quasi-experimental longitudinal census design of consecutive acceptances from Nov '04 thru Mar '07 in 1 intervention & 2 comparison sites *(each with MH & SA ATI tracks)*
- **Procedure:**
  - Baseline protocol administered by program & field interviewers in court pens & in community; 6- & 12-month protocols completed thru ACASI or if incarcerated thru PAPI by research interviewers
  - Admin data (criminal justice, substance use, services received, retention/program status, judicial monitoring & outcome) collected monthly from diversion to community tx for 24 months

Controlling Confounds

- **Group Differences at Baseline:**
  - 990 used in propensity score analyses (155 excluded for no follow-ups)
  - Propensity scores developed on 29 key variables (potential confounds) that differentiated groups at baseline or had relevance for matching
  - 192 matched pairs (N=384) developed with Mahalanobis Metric
  - Overall 84% reduction in bias on 29 covariates achieved after matching
  - 101 pairs (N=202) both completed 6- & 12-mo protocol *(findings herein)*
  - N=990 in propensity score quintile subclassification (5 quintiles based on propensity score, comprised of 198 in ea quintile) – *analyses underway*
- **Covariates:**
  - **Days at risk in the community** (tailored to 6 mos prior 6 & 12 mo interviews, minus days hosp for medical, inpatient psych, days incarcerated – this equalized risk period to coincide with follow-up self-report for "past 6 months.")
  - **Days in treatment** (placement to 6 mo & 12 mo interviews or grad/termination if occurred prior to interviews; minus days absconded & days incarcerated – since the effect of treatment has potential to remain with the individual beyond a defined period, we did not tailor tx days to discrete 6 mo periods)

Analyses

- **Outcome Variables:** Services *(# of types of HIV Services past 6 mos),* psychiatric *(GAF, CSI),* criminal justice *(# arrests, # jail days past 6 mos),* AOD Use *(# days in past 6 mos used alcohol, crack/ cocaine, heroin, any illegal drugs),* AOD attitude *(harm),* risk behaviors *(HRBS drug & sex risk past 6 mos),* HIV attitude *(SRSA & SRSE, Sympathy, Stigma),* knowledge *(SAAQ),* quality of life & social *(QOLI objective & subjective, DSS)*
- **Main/Interaction Effects:** Time *(BL, 6M, 12M),* Group *(Intervention vs Comparison),* Gender, Race *(Black vs. Hispanic)* & Diagnosis *(MI-DD vs. SA-only)*
- **Analyses:**
  - Logistic regression *(e.g., which subgroups are likely to experience improvement or decline over time and in what areas?)*
  - General linear model repeated measures *(e.g., what is the nature of the trends of improvement or decline over time?)*

Findings

Effects on knowledge, attitude & behavior

Demographic Characteristics

For these analyses, we included only Black & Hispanic which comprised 90% of the matched pairs (N=180)

Variable	Intervention (N=90)	Comparison (N=90)
Gender	81% Male 19% Female	78% Male 22% Female
Race	59% Black 41% Hispanic	48% Black 52% Hispanic
Diagnosis	40% MI-DD 60% SA-only	51% MI-DD 49% SA-only
% HIV+/AIDS	19%	17%
Mean Age (SD)	36 (10)	37 (10)

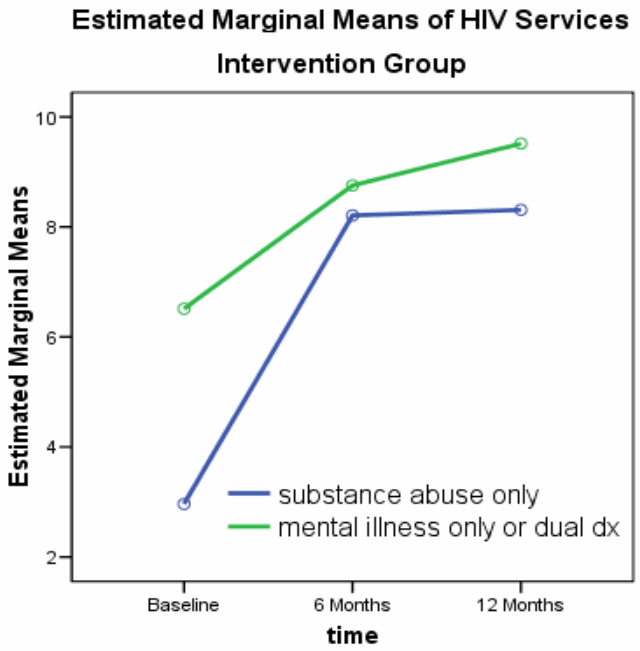
Likelihood of Improvement

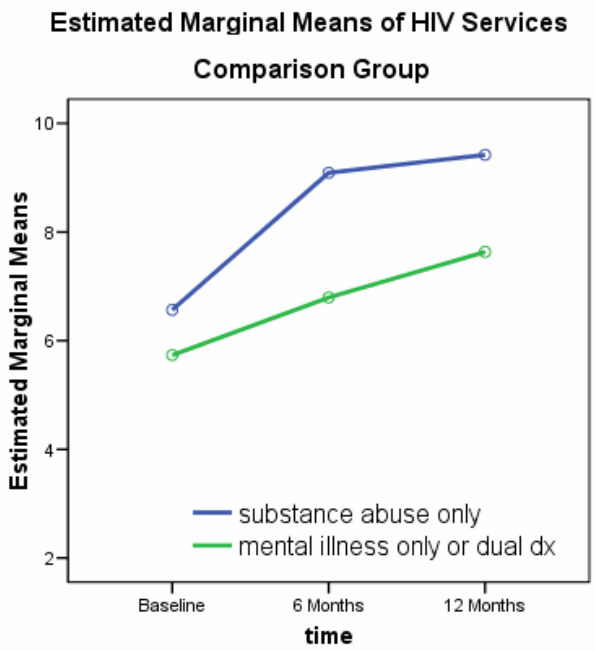
Variable	Increased Over Time	Decreased Over Time
# **types** of HIV services	Intervention Group** Intervention/Women*** Intervention/Hispanic**	Comparison Group** Intervention/Men*** Intervention/Black***
AIDS Knowledge	Intervention/MI-DD* SA only ** Women***	Intervention/SA only* Comparison/MI-DD* Comparison/SA only* MI-DD** Men***
AIDS Sympathy	MI-DD**	SA only**
GAF	Women**	Men**
CSI	Intervention/Men***	Intervention/Women***
# of arrests past 6 mos	Intervention/MI-DD**	Intervention/SA***
Drug use & HRBS drugs	--	*(Nearly all decreased, no variability for analyses)*
HRBS sex	Blacks***	Intervention/MI-DD** Hispanics***

*p<.001; **p<.01; ***p<.05 (blue cells indicate desired direction for improvement over time).

Trends: HIV Services

- Nearly *all* ↑ in number of different **types** of HIV services received over time, or leveled off at 6-months

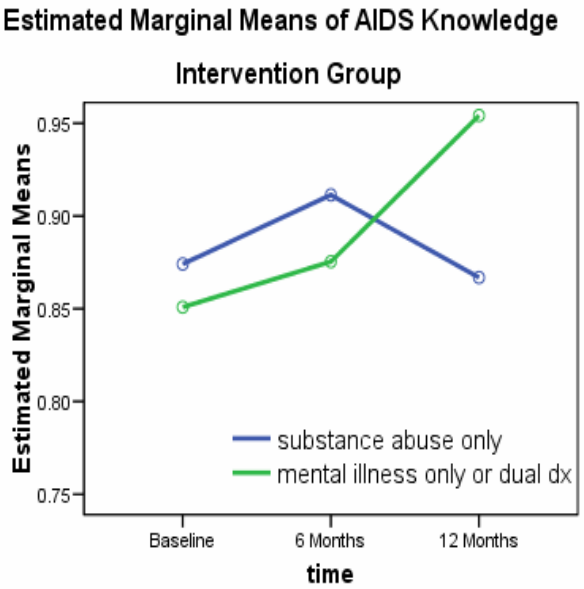


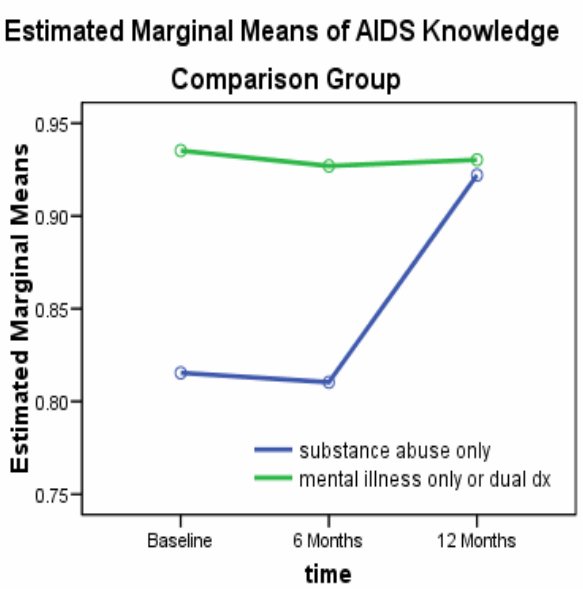


- Significant between Ss interaction effect for Group X Diagnosis ($F(1,146)=9.86$, $p<.01$)
- MI-DD individuals in Intervention group fared better than SA-only individuals in Intervention group for number of different types of HIV services received, while the reverse was true for in the Comparison group

Trends: AIDS Knowledge

- Knowledge was fairly high at baseline for all individuals
- Still knowledge ↑ for many over time

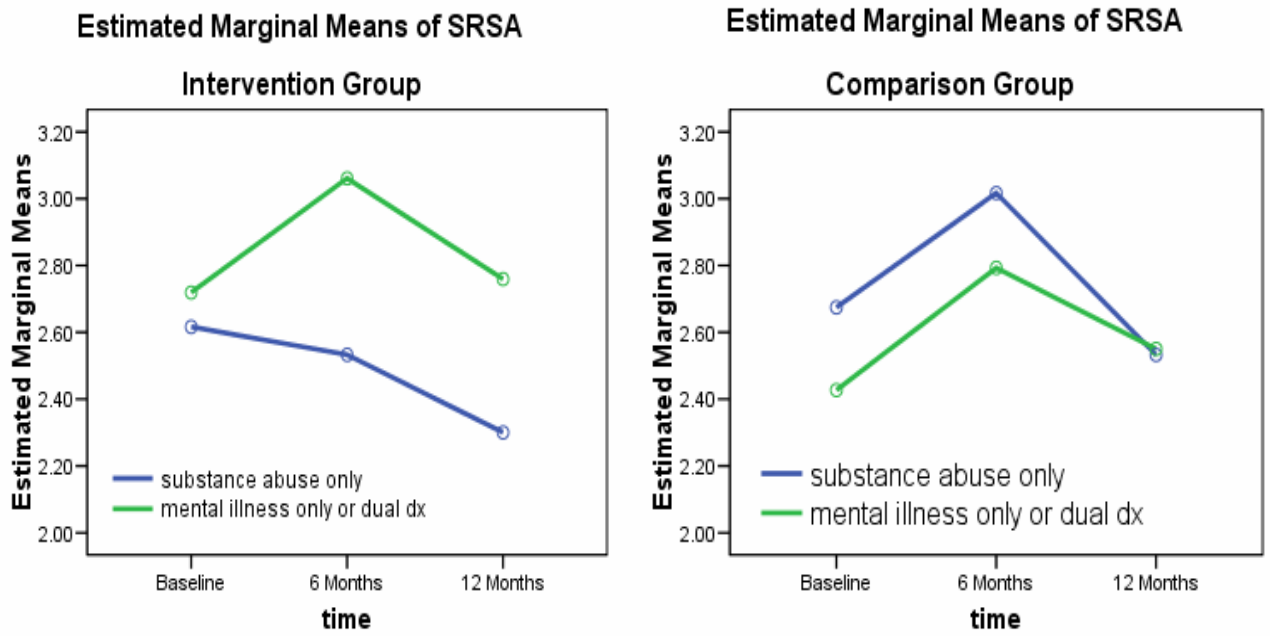




- Significant effect for Time overall ($F(2,142)=4.67$, $p<.01$, quadratic trend), and a Time X Group X Diagnosis interaction effect ($F(2,142)=4.91$, $p<.01$, linear trend)
- For Intervention group, MI-DD ↑, while SA-only stayed about the same over time
- For Comparison group, MI-DD had high knowledge & remained there over time, while SA-only took time to improve knowledge

Trends: Attitudes

- No significant effect on SRSA over time; most remained in the middle range for attitudes on condom use



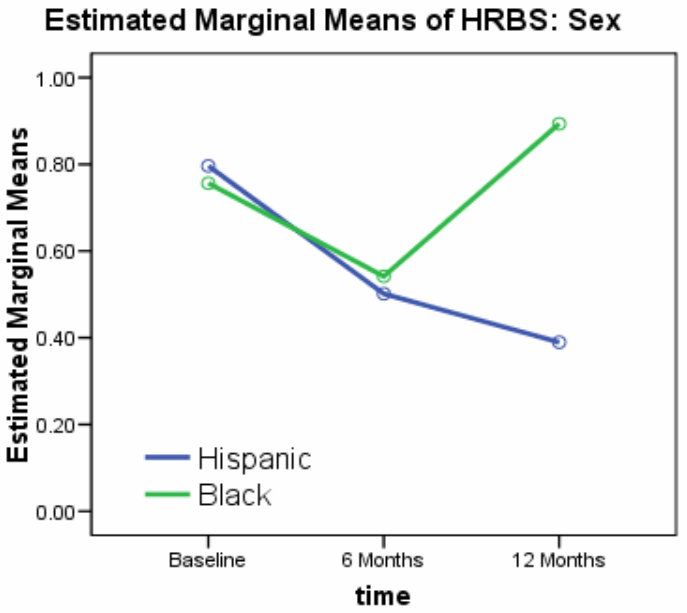
- Significant between Ss effect for Group X Diagnosis ($F(1,123)=4.25$, $p<.05$) that showed the MI-DD had higher scores than SA-only within the Intervention group, while this pattern was reversed in the Comparison group
- Also, no significant fluctuation on SRSE over time; most remained in the middle range on expectation to resist unsafe sex

Trends: More on Attitudes

- Significant time fluctuations for some on sympathy for people with AIDS
  - For men, Blacks & MI-DD, AIDS sympathy remained fairly consistent (on high end) whether in Intervention or Comparison group
  - Intervention women, Hispanics & SA-only had V-shaped quadratic trend (↓ then ↑ to near baseline) with high sympathy by 12 mos
  - Comparison women, Hispanics & SA-only had opposite: Λ-shaped quadratic trend (↑ then ↓ to near baseline) with low sympathy by 12 mos
- No significant findings for HIV stigma; remained low for most over time
- Significant Time X Race interaction for perceptions of harm
  - Hispanics consistent over time at moderately accurate perception
  - Blacks ↑ from flawed perception, surpassed Hispanics to more accurate
- Significant Time X Diagnosis interaction for harm attitudes
  - SA-only show ↑ in attitudes towards harm that started in moderate range and approached conservative (more realistic) on what is harmful
  - MI-DD much more liberal attitudes of harm at the start with a sharp ↑ surpassing SA-only to a much more conservative harm attitude by 12 mos

Trends: Behavior

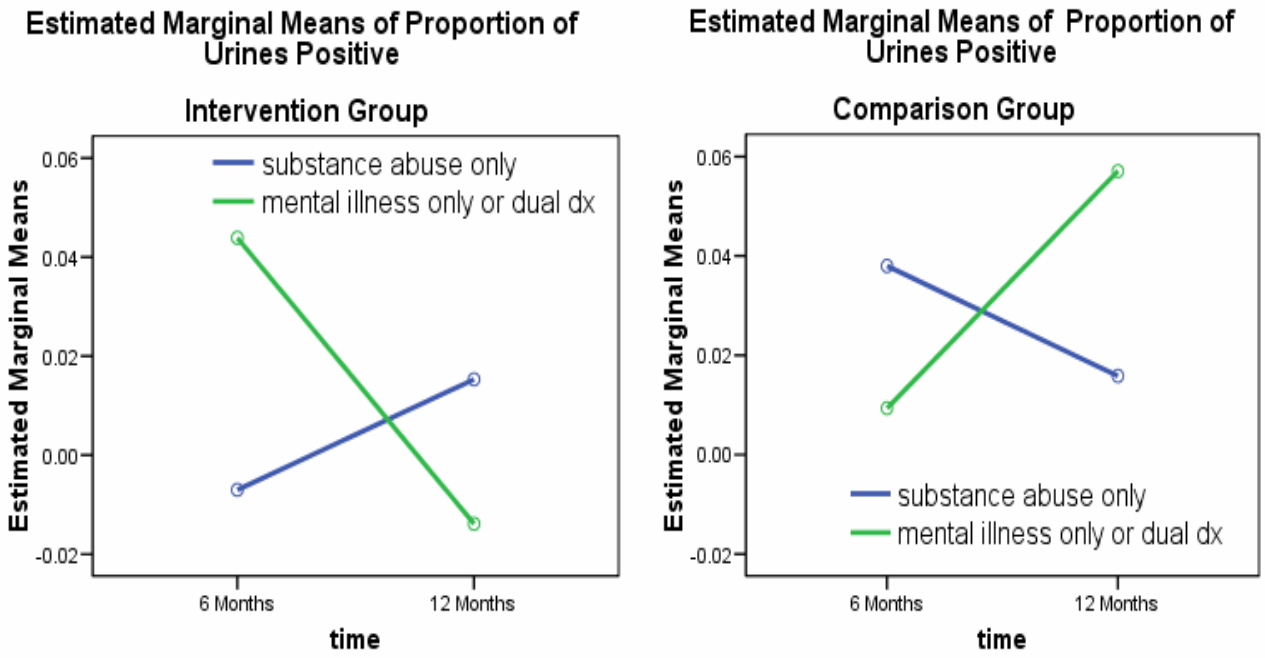
- HRBS sex risk behavior was low for the majority (mean <1 on 0-5 pt scale); and most ↓ sex risk behavior in first 6 mos
- Significant Time X Race interaction effect (F(2,146)=4.57, p<.01)
- Hispanics had a ↓ trajectory over time, while Blacks ↑ sex risk behavior in second 6 mo period



- HRBS drug risk was very low for the majority (mean <0.25 on 0-5 pt scale across all time periods); but significant ↓ over time for all (F(2,48)=8.35, p<.001)
- Over time, all ↓ number of days used alcohol, crack/cocaine, heroin, and/or any illegal drugs, most were significant ↓ within the first 6 mos

Trends: Urine Toxicology

- Means for proportion of urines that were positive remained low (<10%) at 6 mos & 12 mos



- Time X Group X Diagnosis interaction ($F(1,142)=7.12$, $p<.01$)
- MI-DD individuals in Intervention ↓ in positive urines over time, while SA-only in Intervention group ↑
- Reversed in Comparison group: MI-DD ↑, SA-only ↓

Trends: Criminal Justice

- For arrests, significant Time effect & Time X Gender interaction
  - For most, ↓ in number of arrests over time
  - For women, ↓ to zero by the 12th month
  - For men, ↓ to near zero by 6th month, then slight ↑
- Several significant interaction effects for days in jail*
  - Overall, majority ↓ in number of days spent in jail (mean scores from 40-100 at baseline to <10 days by month 12)
  - In Intervention, Blacks had a higher number of jail days than Hispanics at the start, and Blacks ↓ to near zero by month 12, while Hispanics ↓ to about 10 jail days by month 6 with no further decline
  - In Comparison, Blacks & Hispanics ↓ in a similar fashion to near zero by month 12
  - SA-only in Intervention group started with the highest number of jail days at baseline (about 100) and ↓ to near zero by month 12

* removed covariate for days in community for this variable since it is comprised largely of days in jail

Trends: Psych & Social

- GAF significant Time X Diagnosis interaction & between Ss effect for Diagnosis
  - MI-DD ↓ GAF than SA-only across all time points *(as expected by diagnosis)*
  - SA-only same all time points (approx 80); MI-DD ↑ over time (approx 60 to 75)
- CSI significant Time X Gender interaction & between Ss effect for Diagnosis
  - MI-DD ↑ CSI than SA-only across all time points *(as expected by diagnosis)*
  - All ↓ in psych symptoms over time; women ↓ more than men
- Social support significant Time X Group, Time X Gender & Time X Group X Race interactions
  - Majority remained in mid- to upper level over time on social support
  - Comparisons ↑ more over time than Intervention
  - Women ↑ more over time than men
  - In Intervention, Hispanics fluctuated but returned to baseline level by mo 12, while Blacks ↑
  - In Comparison, Blacks fluctuated but returned to baseline level by mo 12, while Hispanics ↑

Trends: Quality of Life

- For QOL Objective measure significant Time X Group X Race interaction & between Ss interaction for Group X Diagnosis
  - All remained within mid-range over time
  - Blacks did equally well in both Intervention & Comparison with some ↑
  - Hispanics did best in Comparison (upper mid-range), while Hispanics in Intervention stayed the same over time at mid-range
  - MI-DD in Intervention ↑ QOL than counterparts in Comparison
  - SA-only in Comparison ↑ QOL than counterparts in Intervention
- For QOL Subjective measure significant only for a Time X Gender interaction
  - Both genders remained mid-range with ↑ over time; women ↑ more
- For income, significant between Ss interaction Group X Diagnosis
  - Intervention: MI-DD ↑ substantially over time; SA-only remained same
  - Comparison: both MI-DD & SA-only ↑ slowly from near zero to $250-$500 range, with MI-DD ↑ income than SA-only by month 12

Just the beginning

- *Summary:* Intervention was effective at ↑ access (to 6 mos & maintained) particularly for women, Hispanics & MI-DD, ↑ knowledge for MI-DD, ↓ arrests for SA-only, ↓ sex risk behaviors for MI-DD, & ↓ drug use for MI-DD (by toxicology reports), ↑ income levels for MI-DD
- Early findings indicate the Intervention may be particularly suited for MI-DD
- On some level and to some degree over time, nearly all ↑ service access, ↑ attitudes on harm to a more realistic level, ↓ drug use, ↓ psychiatric symptoms, and ↑ income
- More detailed analyses are *underway* to determine for whom is which type of intervention sufficient and for which outcomes?

Future Directions

Future Directions

- Effects by MI-DD vs SA-only disorders only *(in progress)*
- Profile analyses by propensity score quintile subclassification *(in progress)*
- Methods of data collection (ACASI vs PAPI) *(in progress)*
- Relationship of multiple childhood trauma & type to health & other outcomes, as contributor to mental disorder vs addictive disorder only *(in progress)*
- Role of alcohol as a disinhibitor – differentially by co-occurring vs addictive disorders; systems messaging regarding its risk & relationship to drug messaging
- Effects of "generic" vs specialized practices for HIV prevention within ATI context
- Mapping services patterns/trajectories and associated cost-effectiveness
- And more