The Baltimore Buprenorphine Initiative: A Comparison of Buprenorphine, Methadone and Intensive Out-Patient Therapy in an Urban-Based Community

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Acknowledgements

- Baltimore City Health Department (BCHD)
- Baltimore Substance Abuse Systems (BSAS)
- Baltimore Health Care Access (BHCA)

Introduction

- An estimated 3.7 million people have used heroin at some time in their lives with 120,000 reporting use within the last month.
- Baltimore, MD, USA has one of the highest numbers of heroin addicts and heroin-related crimes as compared to other US cities.
- At least 10% of the city's residents are dependent on illicit drugs or alcohol.

Heroin: An Opiate Drug

- Heroin is an opiate drug that is synthesized from morphine, a naturally occurring substance extracted from the seed pod of the Asian opium poppy plant.
- Heroin enters the brain, where it is converted to morphine and binds to receptors.
- These receptors are involved in the perception of pain and reward.

The Baltimore Buprenorphine Initiative

- Collaborative effort of the:
  - Baltimore City Health Department (BCHD)
  - Baltimore Substance Abuse Systems (BSAS)
  - Baltimore Health Care Access (BHCA)
- Aims to increase access to treatment for opioid addiction using buprenorphine.
- Promotes individualized, patient-centered therapy in conjunction with behavioral treatment with the goal to recovery from opioid addiction.

Purpose of the Study

- The purpose of the secondary data analysis was to:
  - Describe the BBI sample in comparison to two other treatment groups;
  - Explore differences of the BBI sample based on length of stay; and
  - Predict characteristics that may influence an individual to remain in the BBI program so that effective strategies may be developed in order to address the heroin addiction issue in Baltimore.

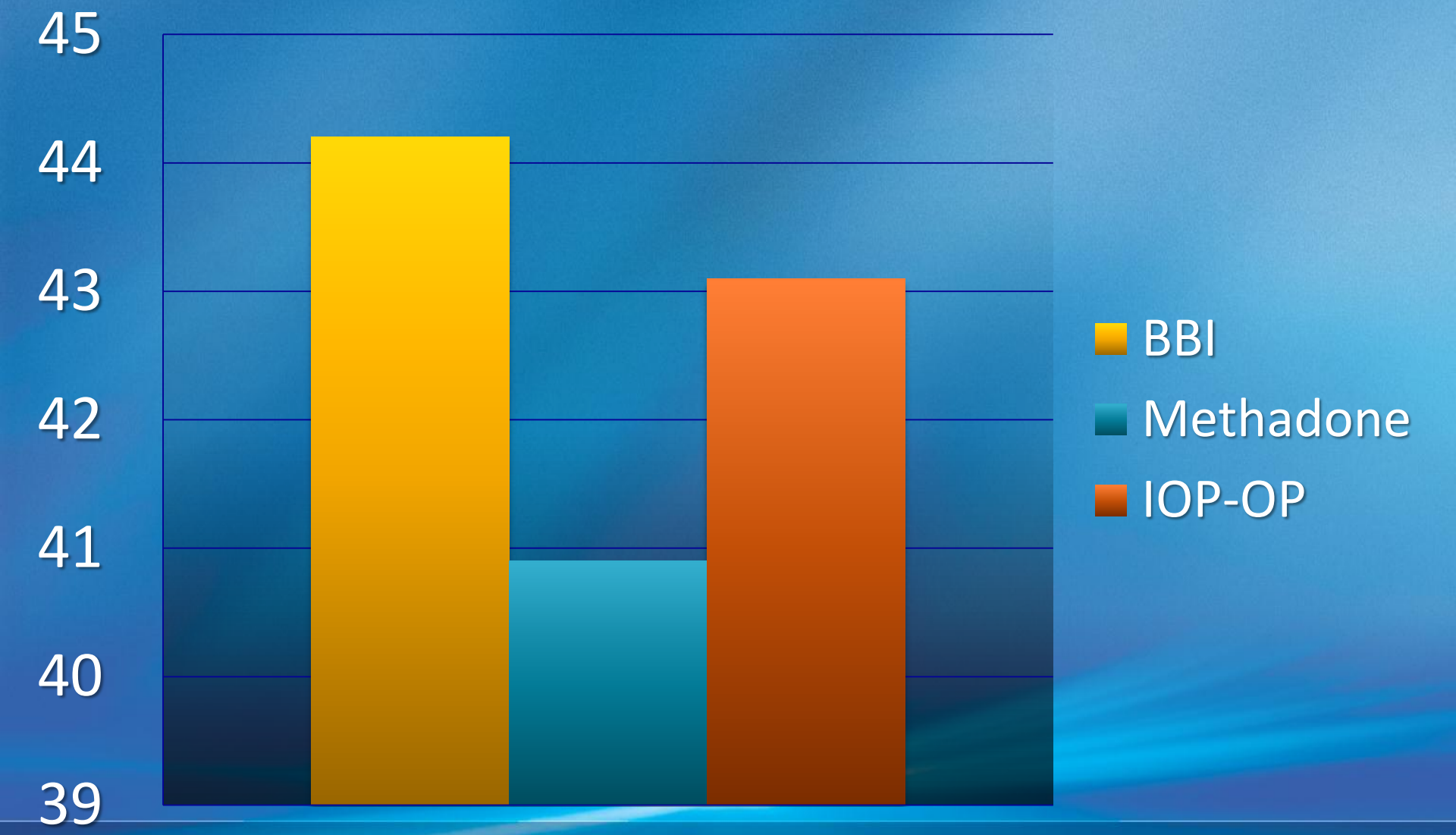
Subjects and Setting

- The BBI population consisted of 1,039 subjects treated with buprenorphine between January 2008 and June 2009.
- Outcomes were evaluated against two comparison groups:
  - 8,692 patients receiving methadone treatment only; and
  - 6,664 patients receiving intensive outpatient or standard outpatient treatment (IOP-OP).
- Data were collected from the State of Maryland Automated Record Tracking database maintained by Maryland's Alcohol and Drug Abuse Administration.

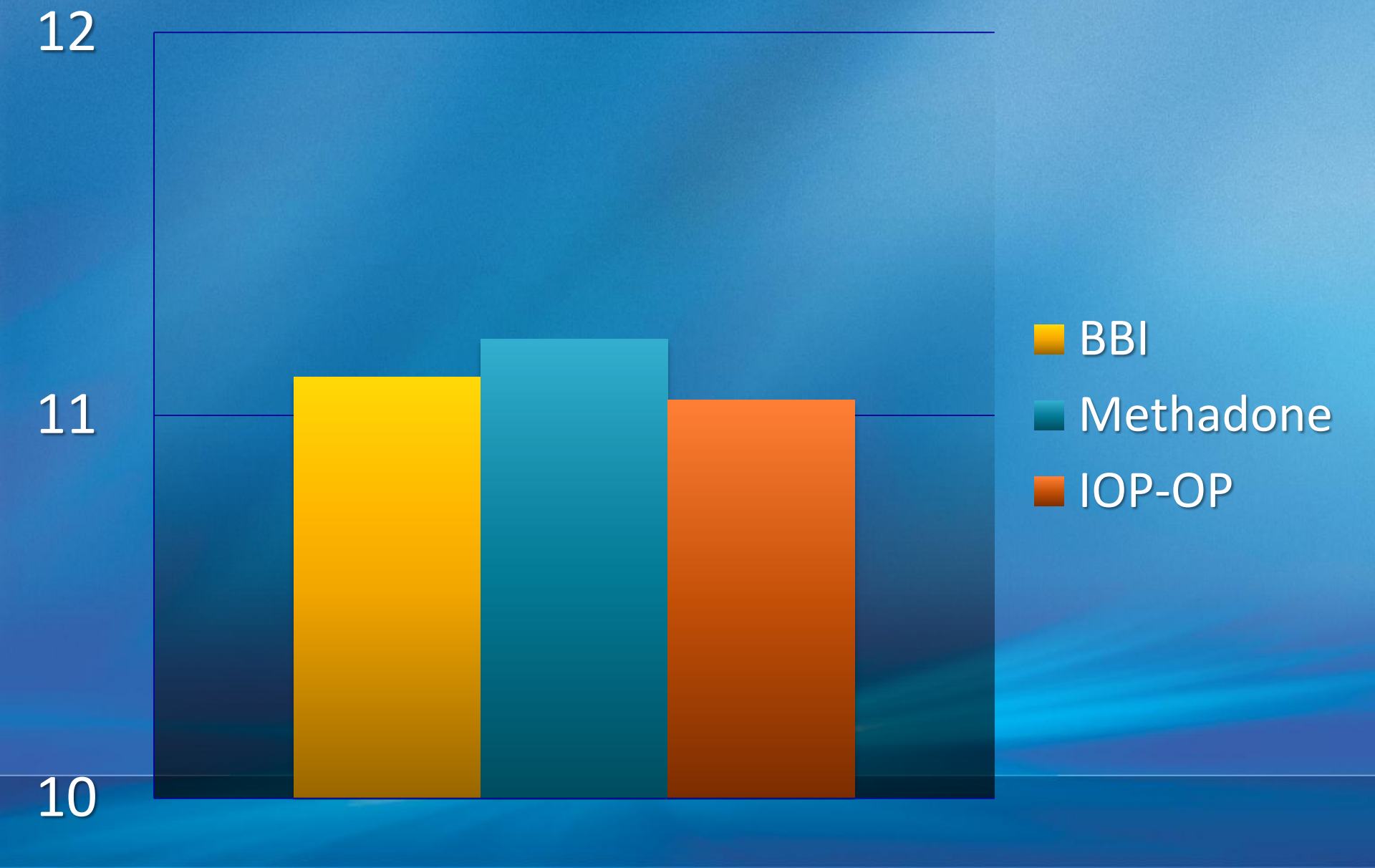
Data Analysis

- Three analytical methods were utilized to assess each of the three treatment groups:
  - Descriptive statistics were used to define the demographics of each population;
  - Analysis of Variance (ANOVA) was used to compare patients grouped by treatment modality;
  - Multiple regression was used to measure the simultaneous impact of a set of variables on an individual's length of stay.

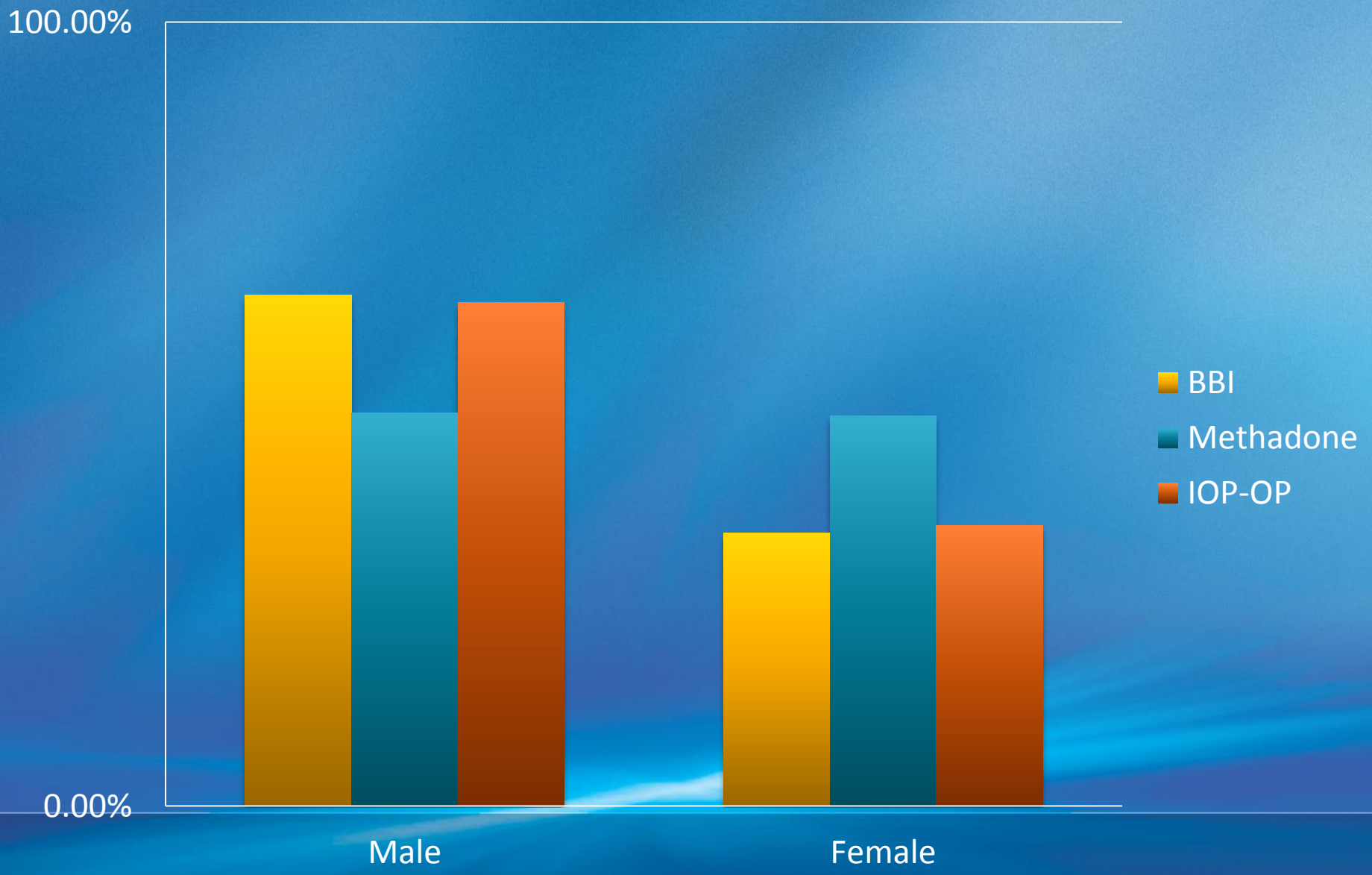
Age (in years)



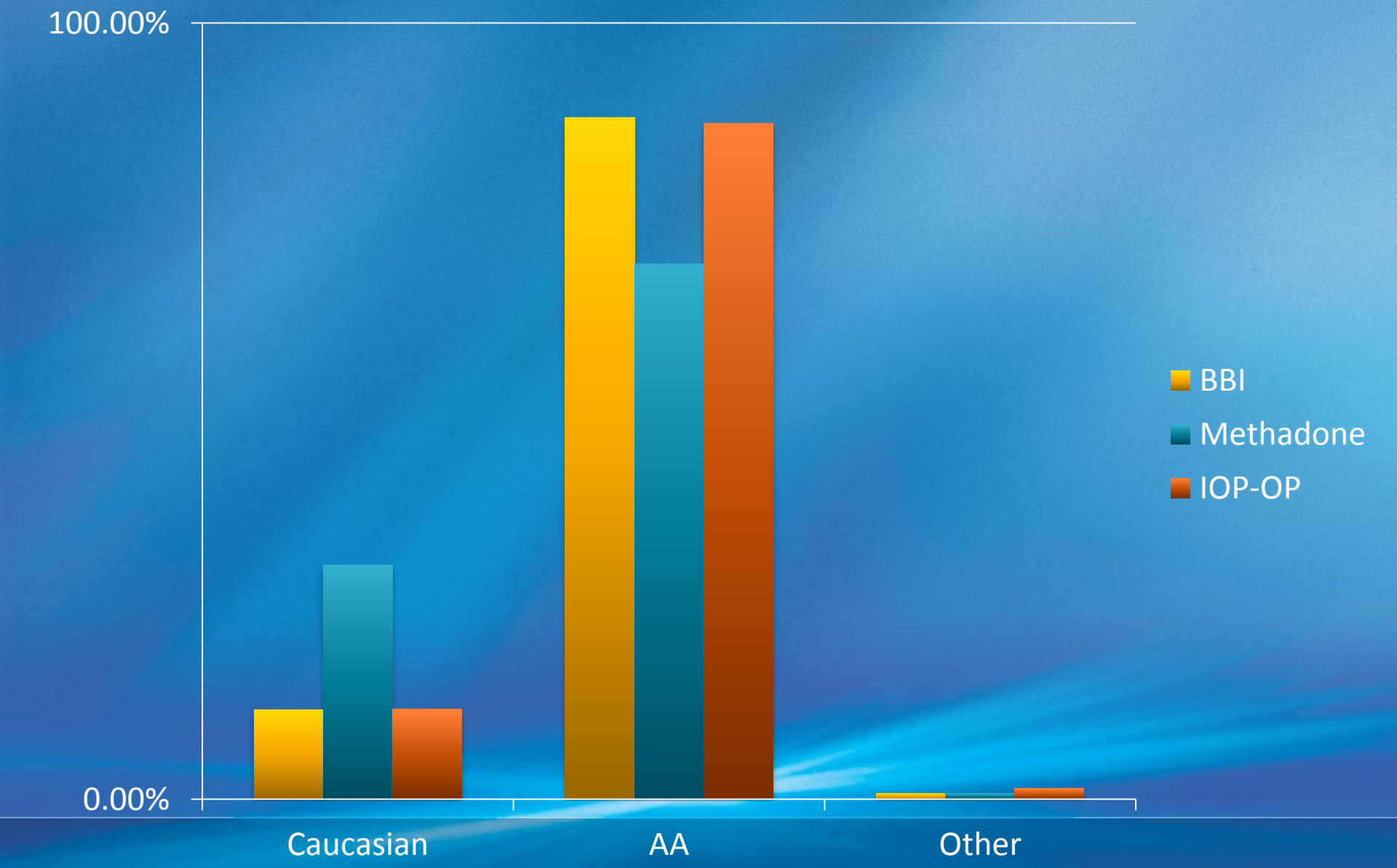
Education (in years)



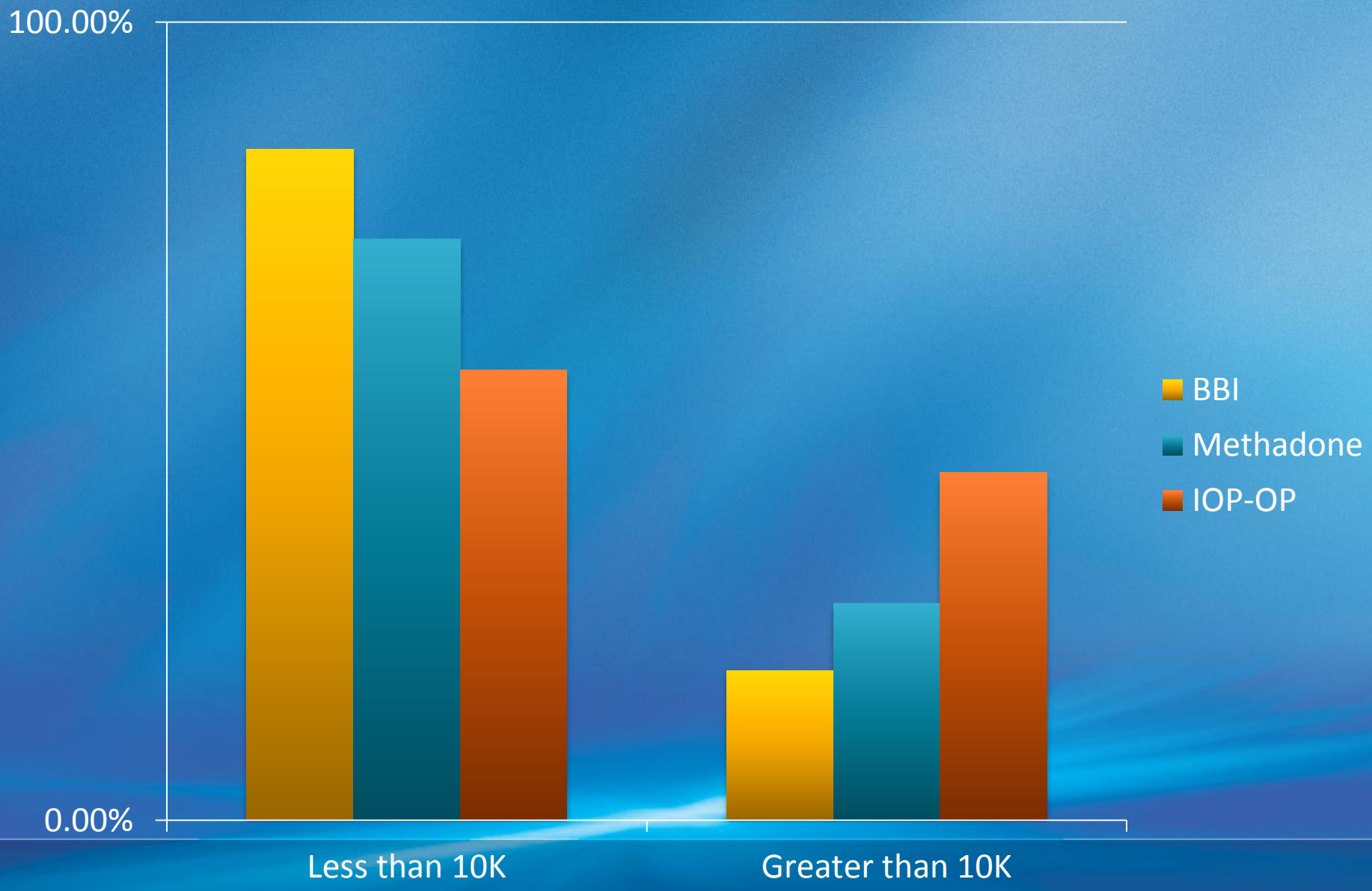
Gender



Race

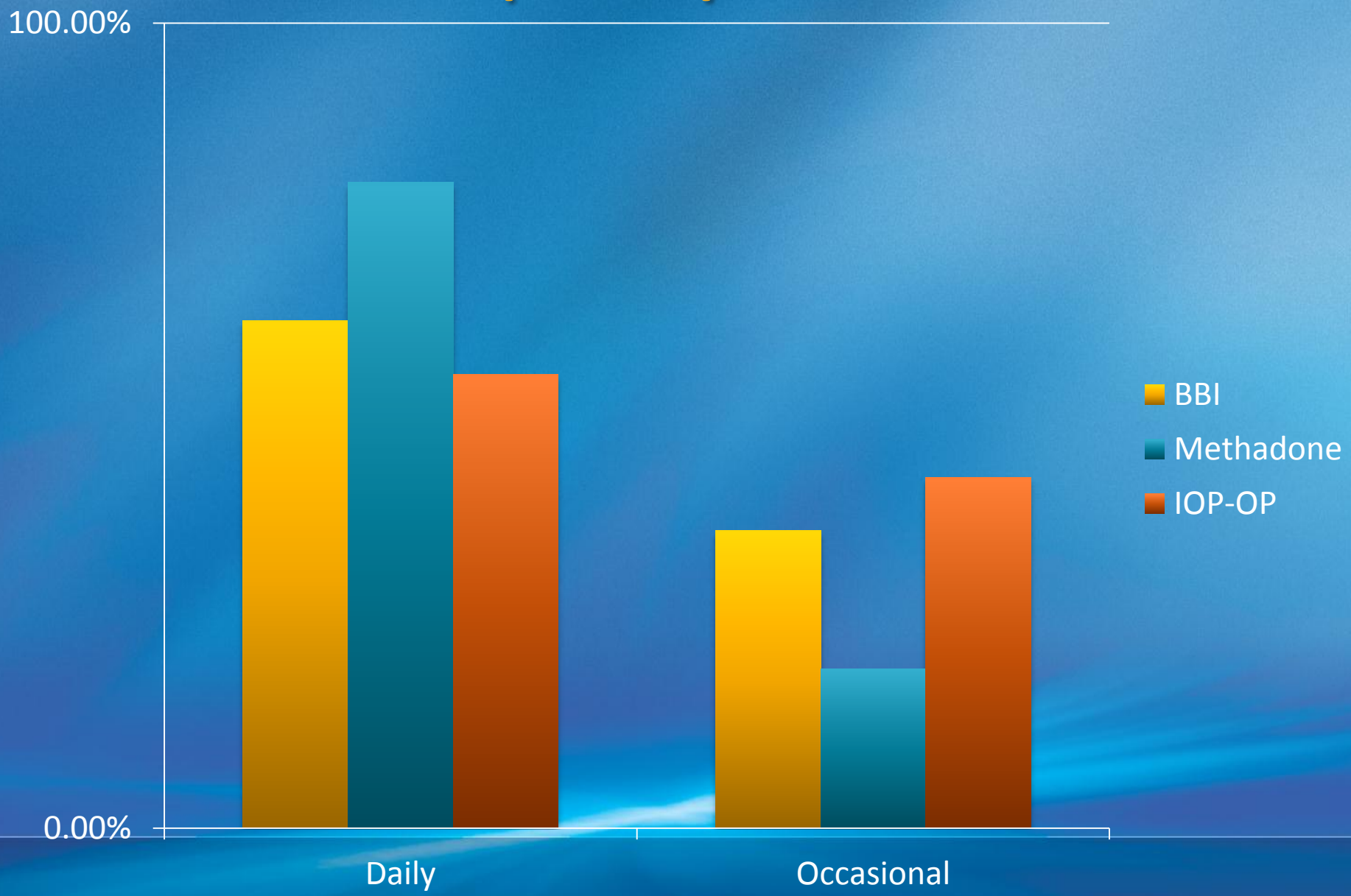


Income Levels

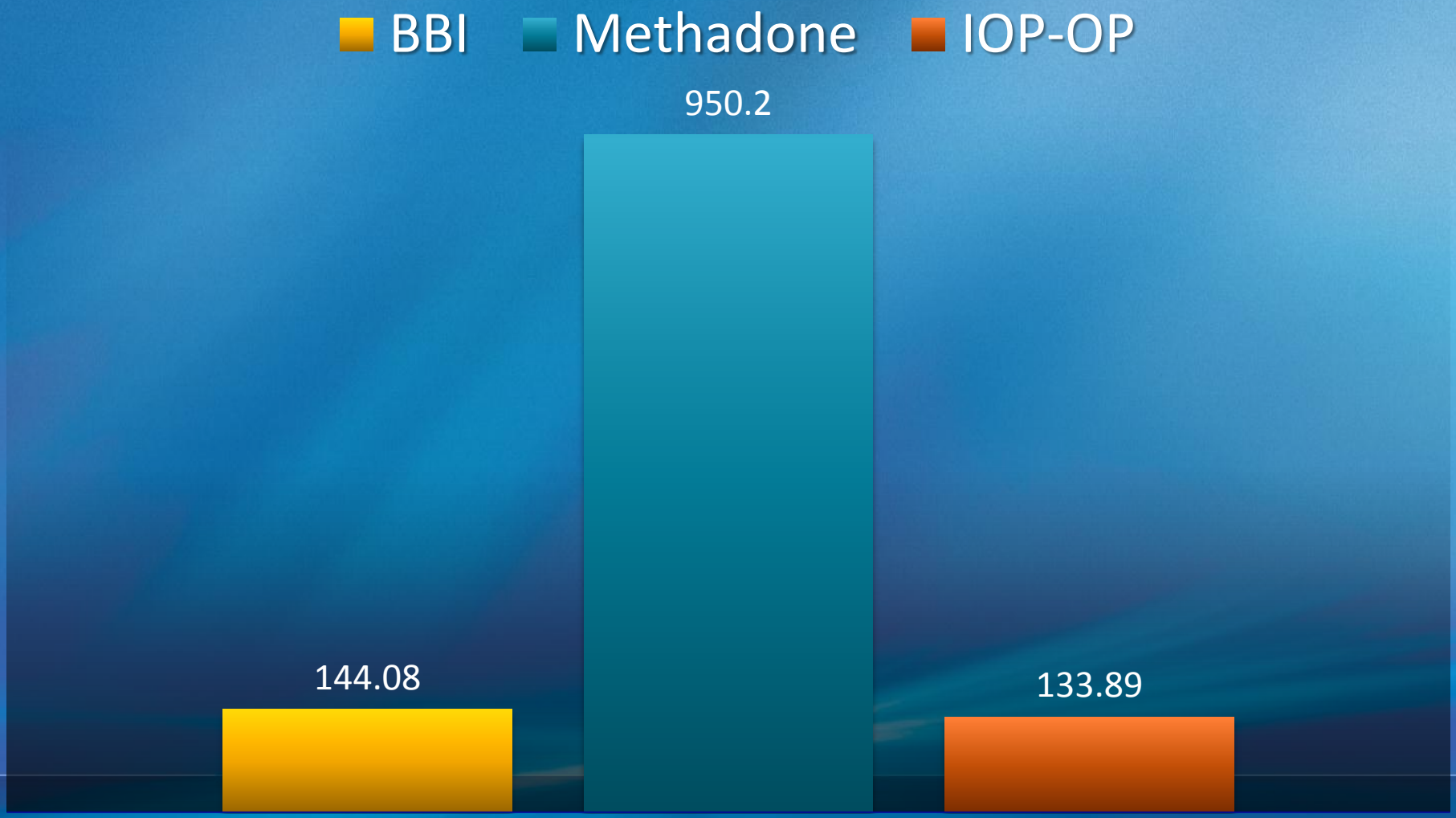


Employment

Frequency of Use



Length of Stay By Treatment Modality



Regression Analysis

- Using length of stay as the desired outcome and controlling for age, gender, race, income and employment, the following independent variables were used to predict LOS among the groups:
  - Lapse of time to admission
  - ASI scores
  - Number of addictions
  - Frequency of addictions
  - Group Membership

Regression Analysis

	β	t=	p=
Gender	0.036	2.58	0.010
Years of education	0.023	2.15	0.031
Employment	0.044	3.46	0.001
Lapse of time	0.092	8.34	0.000
ASI-Medical	0.031	2.39	0.017
ASI-Legal	-0.039	-2.71	0.007
ASI-Pysch	-0.036	-2.21	0.027
# of Addiction	0.359	26.82	0.000
Methadone to Bupe	0.318	15.33	0.000
IOP to Bupe	-0.344	-13.74	0.00

Discussion

- For those patients in the BBI program, LOS decreased by 449.3 days as compared to those patients in the traditional methadone program.
- However, subjects in IOP treatment group had a decreased LOS by 429 days as compared to those patients in the BBI program.
- The use of buprenorphine may be a more effective method by which the city of Baltimore can address its current heroin addiction problem as compared to methadone, however some of the strategies currently used in the IOP program may be valuable as part of the BBI treatment program.

Limitations

- Data are specific to a particular population and are not necessarily generalizable to other cities/states.
- Majority of the variables were categorical and as such, were recoded into binary variables or interval/ratio variable levels so that a multivariate analysis and model fit could be completed.
- The outcome variable LOS was a proxy for treatment success.
- Due to the unequal group sizes, the harmonic mean of group was not used, thus the results should be interpreted with caution.

Future Research

- The results of this study suggests a longitudinal, prospective study of subjects in both groups, such that direct comparisons can be made.
- To minimize age as a confounder, subsequent studies could recruit subjects matched on age.
- In any case, this preliminary analysis can be of assistance in evaluating treatment outcomes and provides direction for future research.