Task development, living conditions and time to drop-out in patients of 18-29 years of age, under treatment for substance abuse disorders in Chile, 2010-2019
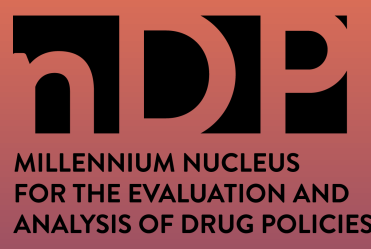
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Background

Emerging adults (aged 18-29) are considered youngsters in Chile, with more risk factors and poorer treatment outcomes. For these patients, whether living With their family of origin exclusively, Alone, or With their couple and/or children, can be a proxy of what Erikson and Valliant called task development, where Identity phase implies living independently of family of origin, Intimacy means being capable of maintaining a relationship with a partner, and Generativity, raising children. Substance use treatment (SUT) outcomes may be associated with living conditions at admission. To our knowledge, there are no similar studies in Chile.

Objectives

To estimate the association between living conditions at admission to first SUT (Alone, with family of origin/parents and with couple & children) and the time to dropout from admission, of emerging adulthood patients (aged 18-29), admitted to public substance use treatments between 2010-2019 in Chile.

Methods

This research relies on a population-based record-linkage retrospective cohort of adults in publicly funded Chilean SUTs programs nationally between 2010-2019 (n= 23,979). Patients were weighted by the inverse probability of living conditions at admission (IPW) and, based on several predictors, calculated weight-adjusted restricted mean survival times (RMST) of avoiding dropouts (administrative discharges or without clinical advice) after three years of baseline admission [1]. RMSTs can be useful for non-proportional hazards [2]. We also did a log-rank test with IPWs as sampling weights. The following covariates were used to estimate IPWs:

- Sex (sexo_2)= Indicated by patients at admission. Can adopt the following values: "woman" or "man".

- Educational Attainment (escolaridad_rec)= Categories were "Completed primary school or lower", "Completed high school or lower", and "More than high school".

- Starting substance (sus_ini_mod_mvv)= Recorded by the therapeutic team and indicated by patients as the drug use onset substance. We grouped them to get the main substances: Cocaine Paste Base, Cocaine (snort) hydrochloride, Marijuana, Alcohol, Others (less than 5%).

- Consumption frequency of primary or main substance (freq_cons_sus_prin)= Categories considered: "Less than 1 day per week", "1 day per week", "2-3 days per week", "4-6 days per week", and "Daily". Among the categories of the Frequency of Drug Consumption, we grouped Less than 1 day a week (3.16%) with Did not use in the last 30 days (1.80%)

- Psychiatric comorbidity ICD-10 (with amount of different diagnosis) (cnt_mod_cie_10_or)= According to the ICD-10 (International Classification of Diseases 10 th Edition) classification. The system allowed for submitting up to three psychiatric conditions. We counted the amount of diagnoses patients had.

- Admission age (edad_al_ing)= Patient age when admitted to treatment.

- Substance Use Severity (dg_trs_cons_sus_or)= Secondary substance use disorder according to the ICD-10 classification. Available values were "Drug dependence" or "Hazardous consumption".

- Primary substance (sus_principal_mod)= The therapeutic team records the substance identified by patients as causing problems at admission or the main substance of concern. We grouped them to get the main substances: Cocaine Paste Base, Cocaine (snort) hydrochloride, Marijuana, Alcohol, Others (less than 5%).

Codes are available at bit.ly/3Ir6jsT. This research was approved by the Human Research Ethics Committee of the Universidad Mayor.

Preliminary Results

Of the 109,756 records of treatments (patients= 85,048) SENDA records of admissions, we selected cases of emerging adults (patients= 23,979).

Table 1: Glimpse of the survival analysis, Years to drop-out in the First Treatment by Living Conditions

rn2	tstop	event	rate	lower	upper
Alone	2182.98	926	0.42	0.40	0.45
Family of origin	27734.74	10209	0.37	0.36	0.38
With couple/children	11721.96	5076	0.43	0.42	0.45

We tested inverse probability weights that account for a multinomial response using Propensity score weighting using a multinomial Logistic, not stabilized, stabilized at 1% (smoothing 1% of outliers), 5% and 10%. We also tested models using Bayesian additive regression trees (BART), multinomial regression, and Generalized Boosted Regression Modeling with multinomial response on the average effect on the treated or ATE, weights with multiple treatments and weights to simultaneously compare three treatment groups.
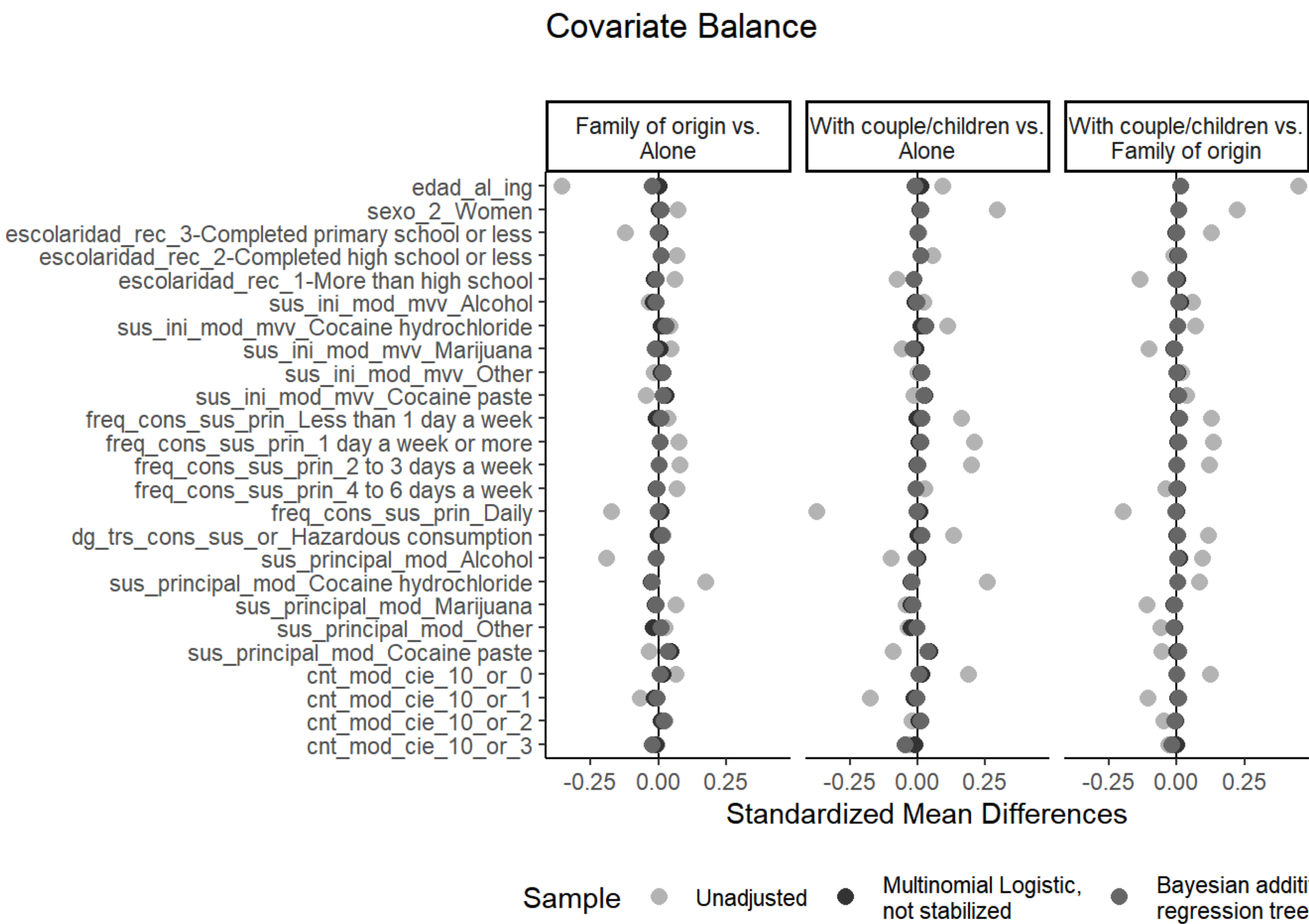

Figure 1: Love plot

The best model was the not stabilized multinomial Logistic model. Despite the groups With couple/children and Alone suffered the second greater lost in terms of effective sample sizes (ESS) (from 7189 to 5970 and from 1335 to 1091, respectively). Also BART model show the second lowest standardized mean differences between groups. If BART model were selected, the group With couple/children and Alone suffered the greater lost in terms of effective sample sizes (from 7189 to 5757 and from 1335 to 1086, respectively). We estimated survival measures using both weights but here we show the results of the not stabilized multinomial Logistic model.
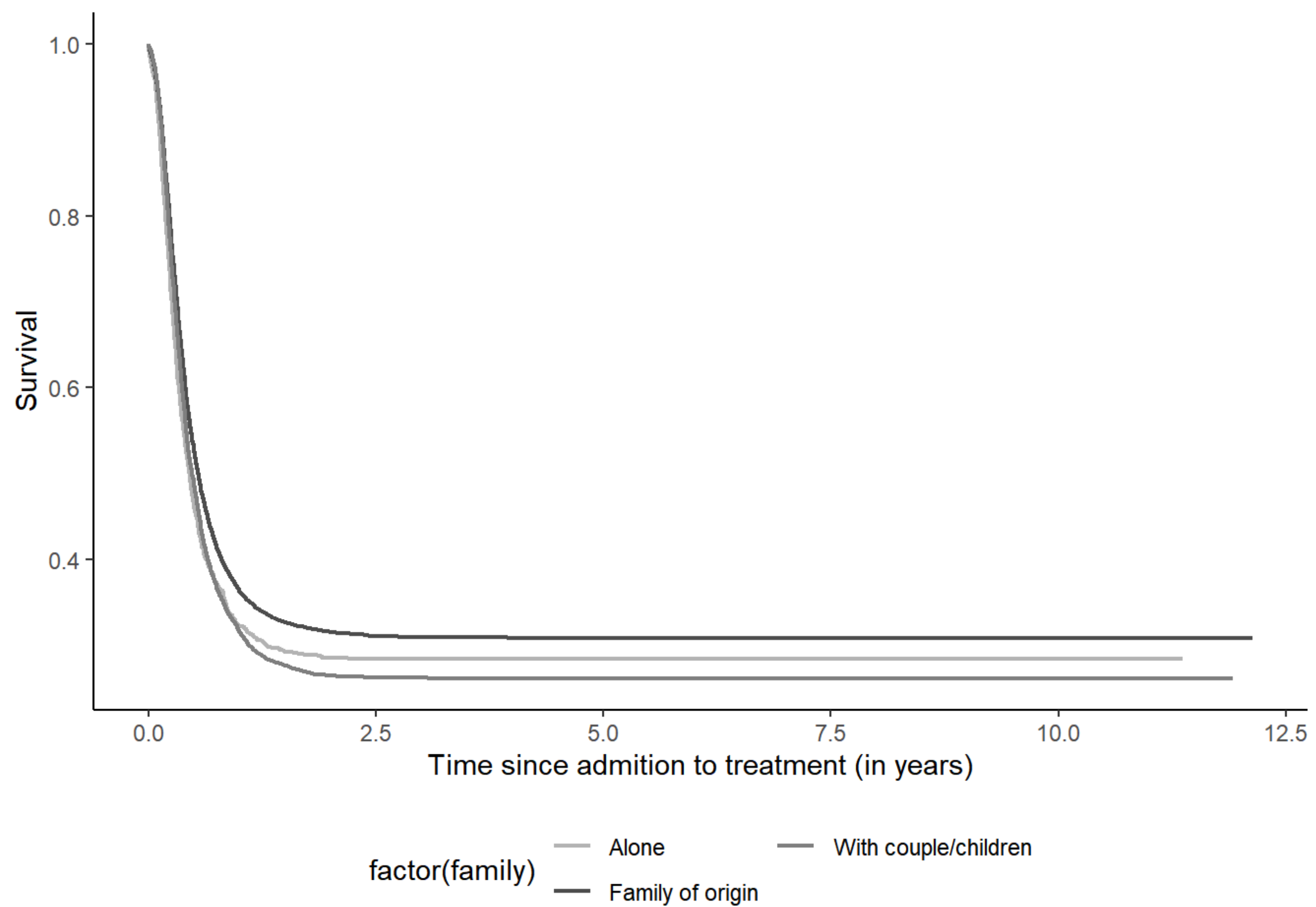
Adjusted Survival

Figure 2: Kaplan meier (survey weighted, multinomial logistic weights)

Patients living With couple/children had lower probabilities of avoiding dropouts (Q1= 0.29; Mdn= 0.26) than patients living alone (Q1= 0.32; Mdn= 0.31) and With their family of origin (Q1= 0.5; Mdn= 0.3) combined (Log-rank Chi Square 41.45 , p= 0).

Adjusted RMSTs

Table 2: Restricted Mean Survival Time (in years)

Time	Cat1	RMST	Cat2	RMST	diff	ratio
Six months	Family of origin	0.39	Alone	0.36	0.03 (0.02, 0.04)	1.07 (1.04, 1.1)
Six months	With couple/children	0.38	Alone	0.36	0.01 (0, 0.03)	1.04 (1.01, 1.07)
Six months	With couple/children	0.38	Family of origin	0.39	-0.01 (-0.01, -0.01)	0.97 (0.96, 0.98)
One year	Family of origin	0.60	Alone	0.55	0.05 (0.03, 0.07)	1.09 (1.05, 1.14)
One year	With couple/children	0.57	Alone	0.55	0.02 (-0.01, 0.04)	1.03 (0.99, 1.07)
One year	With couple/children	0.57	Family of origin	0.60	-0.03 (-0.04, -0.02)	0.94 (0.93, 0.96)
Three years	Family of origin	1.24	Alone	1.13	0.11 (0.03, 0.19)	1.1 (1.02, 1.17)
Three years	With couple/children	1.11	Alone	1.13	-0.02 (-0.1, 0.06)	0.98 (0.91, 1.05)
Three years	With couple/children	1.11	Family of origin	1.24	-0.13 (-0.17, -0.1)	0.89 (0.86, 0.92)

- Who lives with his/her couple and children had lower mean time without experiencing dropout vs. Family of origin since 6 months, meaning that experience it more quickly. Differences between Groups With couple/children vs. Alone (less time avoiding dropout for Family of origin). However this difference was only observed at 6 months.

- Those that were with couple/children had less average time avoiding readmission, followed by those Alone.

References

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