Table 1
Characteristics of women admitted to women-only and mixed-gender treatment programs, Chile 2010–2019.

	Women-only (*N* = 8200)	Mixed-gender (N = 13,178)	Statistic	*p* value
Age in years at admission to treatment. N (%)			X^{2a} (3) = 185.38	<0.001
18–29	3364 (41.0)	4522 (34.3)		
30–39	2754 (33.6)	4277 (32.5)		
40–49	1382 (16.9)	2651 (20.1)		
50+	700 (8.5)	1728 (13.1)		
Educational attainment. N (%)			X^{2a} (2) = 7.55	0.023
Completed primary school or less	2655 (32.4)	4360 (33.1)		
Completed high school or less	4281 (52.2)	6645 (50.4)		
More than high school	1264 (15.4)	2173 (16.5)		
Primary substance at admission. N (%)			X^{2a} (4) = 722.05	<0.001
Alcohol	1903 (23.2)	4843 (36.8)		
Cocaine hydrochloride	1435 (17.5)	2526 (19.2)		
Cocaine base paste	4116 (50.2)	4304 (32.7)		
Marijuana	474 (5.8)	943 (7.2)		
Other	272 (3.3)	562 (4.3)		
Consumption frequency of primary substance. N (%)			X^{2a} (4) = 814.09	<0.001
Less than 1 day per week	218 (2.7)	842 (6.4)		
1 day per week	295 (3.6)	1045 (7.9)		
2 to 3 days per week	1680 (20.5)	3891 (29.5)		
4 to 6 days per week	1175 (14.3)	2052 (15.6)		
Daily	4832 (58.9)	5348 (40.6)		
Biopsychosocial status. N (%)			X^{2a} (2) = 1703.06	<0.001
Mild	163 (2.0)	1329 (10.1)		
Moderate	3334 (40.7)	7823 (59.4)		
Severe	4703 (57.4)	4026 (30.6)		
Tenure status of households. N (%)			X^{2a} (4) = 258.47	<0.001
Illegal settlement	146 (1.8)	180 (1.4)		
Owner/transferred dwellings/pays dividends	2498 (30.5)	4936 (37.5)		
Renting	1355 (16.5)	2725 (20.7)		
Stays temporarily with a relative	3978 (48.5)	4994 (37.9)		
Others	223 (2.7)	343 (2.6)		
Co-occurring SUD. N (%)			X^{2a} (2) = 432.20	<0.001
No additional SUD	1727 (21.1)	4397 (33.4)		
One additional SUD	3215 (39.2)	4898 (37.2)		
More than one additional SUD	3258 (39.7)	3883 (29.5)		
Has children = Yes. N (%)	7287 (88.9)	11,522 (87.4)	X^{2a} (1) = 9.67	<0.001
Treatment outcome. N (%)			X^2 (5) = 249.34	<0.001
Administrative discharge	744 (9.1)	994 (7.5)		
Early drop-out	1522 (18.6)	1638 (12.4)		
Late drop-out	2313 (28.2)	4784 (36.3)		
Ongoing treatment	573 (7.0)	1026 (7.8)		
Referral to another treatment	1042 (12.7)	1628 (12.4)		
Treatment completion	2006 (24.5)	3108 (23.6)		
Days in treatment. Mean (SD)	221.48 (190.78)	247.57 (198.18)	t^b = 9.58	<0.001
Treatment modality = Residential. N (%)	3323 (40.5)	603 (4.6)	X^{2a} (1) = 4354.71	<0.001

Note: Days in treatment with missing dates of discharge were calculated based on the difference between admission date and 2019-11-13.
[a] Chi-square test for independence.
[b] *t*-Statistic difference of means.

treatment admission during any time point between January 1, 2010, and November 13, 2019; 16.4% ($n = 3516$) remained in the same states up until the end of the follow-up period, mostly those admitted in 2018–2019, since they had a shorter follow-up period and thus a lower chance of completing their treatment; 56.1% had a discharge without completion; 24% completed treatment; and 3.5% transitioned directly from admission to readmission. The latter corresponds to women referred to treatments outside SENDA's network who were then readmitted to treatment.

3.1.1. Cumulative hazards

We computed the adjusted hazards of transitioning from one state to another based on a set of the most frequent categories of each covariate, also known as patient-specific transitions (Putter et al., 2007). As Fig. 2, panel A shows, women in women-only programs have higher adjusted hazards of treatment completion compared to women in mixed-gender programs. Women-only programs showed slightly lower rates from admission to discharge without completion. For the transitions admission-readmission, discharge without completion-readmission, and treatment completion-readmission, differences between women-only and mixed-gender were negligible, with slightly greater rates for women-only programs.

By incorporating these patient-specific cumulative hazards as input, we estimated the probability of transitioning from one state to another, and the predicted average time spent for the three follow-up periods considered (3 months, 1 year, and 3 years).

3.1.2. Transition probabilities

Table 2 shows that the probability of experiencing readmission was significantly greater for those patients with treatment completion at every time point for both types of programs. The estimated state transition probabilities for the sets of covariates do not differ much between program types. However, we noticed that women-only programs were more likely to transition from admission to treatment completion than to discharge without completion. This difference is statistically significant only at 3 years (34%; 95% CI: 28–40% vs. 23%; 95% CI: 20–26%). In contrast, mixed-gender programs had a slightly greater transition probability from admission to discharge without completion. Still, these differences were not statistically significant at any time point that the study measured. The readmission probability was higher among women who previously experienced treatment completion than those who experienced a discharge without completion (40% vs 21% among women in women-only programs; 38% vs. 19% among women in mixed-gender programs, respectively); no differences existed in the probability of readmission between women-only and mixed-gender programs.

3.1.3. Expected length of stay

The study found no significant differences between women-only and mixed-gender programs in the length they stayed in each state (e.g., average time between treatment discharge and readmission) at any time point reported (3 months, 1 year, and 3 years). However, for women-only programs, after one year of observation, those who were discharged without completion were expected to remain in that state on average for 0.92 (95% CI: 0.90–0.95) years vs. 0.82 (95% CI: 0.75–0.88) for those who experienced treatment completion. For women in mixed-gender programs, those who were discharged without completion remain in that state on average for 0.93 (95% CI: 0.91–0.95) years vs. 0.83 (95% CI: 0.75–0.89) for those who had treatment completion. The relative difference between those discharged without completion and those with a treatment completion is the same at 3 years (see the Supplemental material).

4. Discussion

Our study examined treatment outcomes for women in women-only versus mixed-gender SUD treatment programs using data of 21,378