Title: **Adolescent vs. Adult Onset of a First Episode Psychosis: Impact on Remission and Functional Outcome**

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Abstract

Objective: Adolescent-onset psychosis has traditionally been characterized as a more severe form of psychosis with a poorer prognosis. However, recent evidence shows that long-term functional outcomes might be better in adolescent-onset patients. Since symptom remission significantly predicts quality of life and social functioning in the long term, the goal of this study is to determine the influence of age of onset of psychosis on symptom remission in a sample of first-episode psychosis patients.

Method: Hierarchical regression analyses with age at onset of psychosis (adolescence vs. adulthood) as the main predictor, and duration of untreated psychosis (DUP), baseline symptoms, baseline functioning, substance abuse diagnosis, medication adherence and gender as covariates, were used to predict the following positive and negative symptom remission outcomes: maximum continuous months in remission and early remission, plus social and occupational functioning at two years.

Results: After controlling for other variables, onset of psychosis in adulthood and DUP predicted early positive symptom remission. Further, although early symptom remission predicted functional outcome, this was not attributable to a mediational effect of age of onset on functioning via early remission. Age of onset did not predict any of the negative symptom remission variables or functional outcome.

Conclusion: Patients with onset of psychosis during adulthood are more likely to achieve early positive symptom remission than those with adolescent onset. The comparable functional outcome levels achieved by adolescents and adults suggest that the dedicated intervention offered at early intervention services may mitigate the negative effects of an early onset of psychosis.

Keywords: First-episode-psychosis, adolescents, age at onset, symptom remission, functional outcome.

Abbreviations: CORS: Circumstances of Onset and Relapse Schedule; DUP: Duration of Untreated Psychosis; LOCF: Last Observation Carried Forward; OR: Odds Ratio; PAS: Premorbid Adjustment Scale; PEPP: Prevention and Early Intervention Program for Psychosis Montreal; RSWG: Remission in Schizophrenia Working Group; SANS: Scale for the Assessment of Negative Symptoms; SAPS: Scale for the Assessment of Positive Symptoms; SCID-IV: Structured Clinical Interview for DSM-IV Axis I Disorders; SOFAS: Social and Occupational Functioning Assessment Scale; Std β: Standardized Beta Coefficient; VIF: Variance Inflation Factor

1. Introduction

An important clinical characteristic associated with the course of psychotic disorders is the age at onset of psychosis. Earlier ages of onset of psychosis are associated with more psychopathology (Langeveld et al., 2012), greater cognitive impairment (Rajji et al., 2009), more early conduct problems (Vinokur et al., 2014), premorbid personality changes (Skokou et al., 2012), and structural brain changes (Burke et al., 2008). Furthermore, adolescent-onset patients often exhibit unfavorable risk factors such as longer duration of untreated psychosis (DUP) (Ballageer et al., 2005), poorer premorbid adjustment (Larsen et al., 2004), and higher rates of substance abuse (Pencer et al., 2005). Thus, adolescent-onset patients are expected to have worse clinical and functional outcomes than those with adult onset.

Symptom remission predicts better social and occupational functioning (Cassidy et al., 2010a), higher levels of life satisfaction (Bodén et al., 2009) and paid or voluntary employment (Üçok et al., 2011), better quality of life (Emsley et al., 2007), and better long-term functional and vocational recovery (Alvarez-Jimenez et al., 2012). Thus, symptom remission might be one of the first steps towards achieving psychosocial and occupational recovery and a better quality of life.

Findings from studies examining the influence of age at onset of psychosis (as a continuous variable) on symptom remission have been equivocal (Addington and Addington, 2008; Chang et al., 2012; Crumlish et al., 2009; Langeveld et al., 2012; Verma et al., 2012). One study assessing age of onset as a categorical variable found no differences in early positive symptom remission in adolescent-onset patients compared to adult-onset patients (Schimmelmann et al., 2007). Another study reported a better long-term quality of life in adolescent-onset patients, (Amminger et al., 2011), although the relation of age at onset to symptom remission was not examined. To our knowledge, no study has assessed the influence of having an adolescent versus an adult onset of psychosis (as a grouping variable) on symptom remission, using a widely accepted definition, or studied related aspects such as length or remission of negative

symptoms. Separating adolescents and adults may also be important since these groups have different roles, living situations, and legal statuses. Grouping them together may occlude important inherent differences. Examining the influence of adolescent vs. adult age at onset of psychosis on different aspects of remission (which may in turn influence functional outcomes) could provide important information for understanding the course and prognosis of psychosis.

This study's main goal is to examine the differential influences of adolescent vs. adult age of onset of psychosis on various aspects of symptom remission. We hypothesized that patients with adolescent-onset psychosis would have poorer remission outcomes when compared to their adult-onset counterparts after controlling for other established predictors of remission.

2. Materials and Methods

2.1 Participants and Setting

Participants were recruited from the Prevention and Early Intervention Program for Psychosis (PEPP), the only specialized early intervention service for patients experiencing a first episode of psychosis in a predominantly urban catchment-area of 400,000 inhabitants in Montreal, Canada. PEPP's admission criteria include a DSM-IV diagnosis of non-affective or affective psychosis not due to an organic brain disorder (e.g. epilepsy); age between 14 and 35 years; IQ of 70 or more; and no more than one month of prior treatment with antipsychotics. Patients are offered low-dose antipsychotic medication, assertive case-management and psychosocial interventions for two years (Iyer et al., 2015). This study was approved by the appropriate ethics board. All participants granted informed consent.

2.2 Remission Definitions

Remission was defined using the most accepted Remission in Schizophrenia Working Group (RSWG) criteria, which are based on symptom severity and duration (Andreasen et al., 2005). This definition has demonstrated prognostic validity for functional outcome(Jordan et al., 2014) and quality of life (Brissos et al., 2011). Using RSWG severity criteria for every month of follow-up, patients were considered in positive symptom remission if they scored ≤ 2 on all Scale for the Assessment of Positive Symptoms (SAPS) (Andreasen, 1984) global subscales (i.e., hallucinations, delusions, bizarre behavior and formal thought disorder). Patients were considered in negative symptom remission if they scored ≤ 2 on all Scale for the Assessment of Negative Symptoms (SANS) (Andreasen, 1983)global items except 'attention' (i.e., affective flattening, alogia, avolition-apathy, anhedonia-asociality). Symptom evaluations were conducted nine times during the two-year treatment period (at entry and months 1, 2, 3, 6, 9, 12, 18, and 24). For the months without an evaluation, information on positive remission was coded from clinical notes. If clinical notes were insufficient, the last observation carried forward (LOCF) technique was used. For negative symptom remission, only the LOCF technique was applied due to the lower accuracy when scoring negative symptoms from clinical notes. Data were considered valid for analysis if baseline and last month (month 24) evaluations were conducted, and there was no gap in evaluations of six or more consecutive months (thus hindering the application of LOCF). No significant differences in the percentage of patients with early remission or the number of total or continuous months in remission (positive or negative) were found between cases with complete observations and those for which LOCF was needed.

Two aspects of remission were considered. The first consisted of the maximum number of continuous months in symptom remission. The second reflected the achievement of early symptom remission, defined as occurring within the first three months. The number of continuous months in symptom remission is arguably a more ecologically valid metric of remission than a categorical metric of whether or not persons were in remission for a specified duration. Early remission has shown stronger predictive value for lower positive symptoms, better global functioning, and better employment stability after five

years (Norman et al., 2014). Both variables were independently established for remission of positive and negative symptoms, as positive and negative symptoms represent different psychopathological dimensions (Kumar and Khess, 2012), have different neuroanatomical substrates (Nenadic et al., 2010), and prognostic implications (Milev et al., 2005; Rosen and Garety, 2005).

2.3 Predictors of Remission

Age at onset was defined as the age at which the severity and duration of psychotic symptoms met threshold criteria for psychosis using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-IV) (First et al., 2002). It was determined using the Circumstances of Onset and Relapse Schedule (CORS) (Norman et al., 2004), a semi-structured interview administered to patients by a trained evaluator with collateral information from families and medical records. Onset between 14 and 17 years of age was considered 'adolescent-onset' psychosis and onset occurring at or after 18 was considered 'adult-onset'.

The following ancillary factors that predict symptom remission were included in the analyses: DUP, premorbid adjustment, severity of psychopathology and functional levels upon entry, substance use/abuse diagnosis, medication adherence, and gender (Reviewed in Lambert (Lambert et al., 2010)). DUP was defined as the time (in weeks) from onset of psychosis to the beginning of antipsychotic medication either taken continuously for 30 days or until symptom remission, whichever came earlier. Premorbid functioning was assessed with the Premorbid Adjustment Scale (PAS) (Cannon-Spoor et al., 1982), using a composite score of social and academic dimensions during childhood and early adolescence. Late adolescence and adulthood information was omitted due to the temporal overlap with the period of onset of psychosis. Baseline psychotic symptoms were determined using the SAPS and the SANS. Baseline functioning was determined with the Social and Occupational Functioning Assessment Scale (SOFAS) (Goldman et al., 1992). Modal medication adherence was defined using a validated method (Cassidy et al., 2010b) and dichotomously coded as either good (75-100% compliance) or not (0-74% compliance),

Monthly assessments were conducted using several sources, including patients, families and clinical notes. Diagnoses (including baseline substance abuse or dependence) were established using the SCID-IV, administered by a trained interviewer and corroborated by two psychiatrist-researchers.

2.4 Statistical Analyses

Preliminary analyses comprised: 1) comparing participants and non-participants in terms of diagnosis, predictors of remission and demographic characteristics, 2) assessing the normality and multicollinearity of predictor variables, and 3) univariate analyses between predictors and outcome variables examining unadjusted effects. Main analyses were conducted using hierarchical regression models to assess the effect of the category of age at onset (adolescent vs. adult) on the remission outcome variables of interest, while controlling for other known covariates. Categorical outcomes (i.e., achieving early remission of positive or negative symptoms) were analyzed using logistic regression, while continuous outcomes (i.e., maximum number of continuous months in remission of positive or negative symptoms) were estimated using linear regression. The above-mentioned covariates were entered into the first block followed by age of onset in the second block. The same hierarchical model was used to establish the influence of age at onset category on functioning (SOFAS) at 24 months. In addition, since symptom remission has been associated with functional outcome, we sought to determine if symptom remission might mediate the effect of age of onset on functional outcomes, following Baron and Kenny's rules (Baron and Kenny, 1986) for mediational analyses.

3. Results

3.1 Demographic and Clinical Characteristics

Patients who entered PEPP between 2003 and 2012 were considered for inclusion (N = 399). As described earlier, cases were excluded if their data were not valid for analysis. For the positive symptom remission analysis, 153 cases were excluded, yielding 246 valid cases, including 30 in which the LOCF procedure was applied. For the remission of negative symptoms analysis, 184 cases did not have valid data, leaving 215 valid cases, including 82 in which LOCF was used. Table 1 shows the demographic and clinical characteristics of participants and non-participants. The only significant difference is a slightly higher baseline SOFAS score among participants (5 on a 100-point scale).

3.2 Preliminary Analyses

Of the covariates, only DUP was positively skewed and treated with a logarithmic transformation. Pairwise correlations between predictors were calculated. For every pair of predictors with a significant correlation, a variance inflation factor (VIF) was calculated. None of the VIFs suggested multicollinearity. Results of univariate regression analyses are outlined in Table 2. Unadjusted data indicate that adult-onset patients had significantly higher odds of achieving early positive remission (OR = 2.93; 95% C.I. 1.48–5.82; $p < 0.01$; $x^2 = 9.5$, $p < 0.01$). However, age at onset had no influence on other positive or negative remission variables. Longer DUP and higher baseline levels of positive and negative symptoms significantly reduced the odds of achieving early positive and early negative symptom remission. Poorer premorbid adjustment was negatively associated with both early remission of negative symptoms and continuous months in negative symptom remission. There was a significant negative relationship between baseline levels of positive and negative symptoms and the number of continuous months in negative remission. Higher baseline levels of negative symptoms significantly decreased the odds of attaining both positive and negative early symptom remission and predicted a reduction in the number of continuous months in negative remission. Baseline functioning (SOFAS) had a significant positive relationship with the number of continuous months in positive and negative remission and increased the odds of achieving early negative symptom remission. Medication adherence significantly predicted an increase in

continuous months in positive remission. Presence of a substance abuse/dependence diagnosis and gender had no significant effects on any remission variable.

3.3 Main Analyses

Positive Symptom Remission: The multivariate models for remission of positive symptoms are displayed in Table 3. Including the covariates in the first block revealed that only the effect of log-DUP on early positive remission was significant (OR = 0.73, 95% C.I. = 0.58-0.92; $p < 0.01$). Including the age at onset in the second block did not affect the influence of log-DUP on early positive symptom remission (OR = 0.74, 95% C.I. = 0.58-0.93; $p < 0.05$), while medication adherence became significant for continuous months in remission (Std $\beta = 0.17$, $t = 2.04$, $p = < 0.05$). When compared to the univariate model, the effect of age at onset on early remission became stronger (OR = 3.32; 95% C.I. = 1.3–8.47; $p = 0.012$), confirming that adult-onset patients have higher odds of early remission, independent of other predictor variables. Both models including the age at onset variable were significant (Continuous months: $F= 1.97$, $R^2 = 0.11$, $p<0.05$; Early remission: $x^2 = 24.4$, Cox-Snell $R^2 = 0.15$; $p<0.01$).

Negative Symptom Remission: Table 3 also summarizes the results from the multivariate models for the negative symptom remission variables. When including all predictors except age of onset in the first block, DUP was a significant predictor of early negative remission (OR = 0.78, 95% C.I. = 0.61-1.00; $p = 0.05$). The significant influence of baseline negative symptom levels on both negative remission outcomes also persisted (Continuous months: Std $\beta = –0.19$, $t = –1.99$, $p=< 0.05$; Early remission: OR = 0.80, 95% C.I. = 0.70-0.90; $p<0.001$), while the effect of baseline positive symptom levels did not. The effect that the baseline level of functioning had on the negative remission variables in the univariate analysis did not persist after controlling for other variables. As in the univariate model, age at onset had no influence on any negative remission outcome variable. Both models including the age at onset category variable were

significant (Continuous months: $F = 2.56$, $R^2 = 0.15$, $p = 0.01$; Early remission: $x^2 = 38.2$, Cox-Snell $R^2 = 0.24$; $p < 0.01$).

Functional Outcome: The hierarchical model assessing functional outcome at two years is summarized in Table 4A. After controlling for other covariates, age at onset did not predict functional (social and occupational) outcome scores at two years (only the magnitude of baseline negative symptom levels did). Conversely, both early positive and negative symptom remission predicted functional outcome at two years (see Table 4B). One of the conditions for determining mediation is establishing a path between the independent and the dependent variables[44]. Thus, a mediational model could not be formulated in this case because age at onset did not significantly predict functional outcome at two years.

4. Discussion

This study sought to assess the influence of age at onset of psychosis (before or after 18 years) on various aspects of symptom remission. Given the considerable differences found between adolescent-onset and adult-onset psychosis across multiple clinical and biological domains, we approached age at onset of psychosis as a categorical rather than a continuous factor. We hypothesized that individuals who develop psychotic symptoms during adolescence would have poorer symptom remission and functional outcomes. After adjusting for other predictors, we found that adolescent-onset patients had significantly decreased odds of achieving early positive symptom remission. Furthermore, the adult-onset group had marginally more months in continuous positive remission. Contrastingly, there were no differences in negative symptom remission between the two groups. To our knowledge, this is the first study assessing the predictive value of the age of onset of psychosis on both positive and negative symptom remission outcomes, using the widely accepted RSWG definition.

Adolescent-onset patients had lower odds of achieving early positive symptom remission, which in turn predicted better functional outcomes at two years. Adolescent-onset patients were therefore expected

to have poorer functional outcomes. This was not the case, suggesting that this discrepancy might be explained by other factors like a positive effect of therapeutic measures implemented over the two-year early intervention period. However, since other authors have found that early remission of positive symptoms –regardless of age– also predicts better long-term (at five years) functional outcomes (Norman et al., 2014), adolescent-onset patients might be at a higher risk of not attaining therapeutic and functional goals upon returning to standard services after two years. This underscores the need for services that can provide sustained support to these patients. Consistent with previous reports (Simonsen et al., 2010), DUP inversely predicted the odds of attaining early positive remission. However, it had no influence on the stability of positive symptom remission, which was only influenced by medication adherence. The latter was expected since antipsychotic pharmacotherapy primarily controls positive symptoms. Negative symptom levels upon admission emerged as the most consistent predictor of negative symptom remission (both variables), reflecting the tendency of negative symptoms to endure (Malla et al., 1993). Interestingly, after controlling for other variables, female patients did not differ from their male counterparts. This finding goes against the prevailing notion that women have better prognoses across all aspects of the psychotic syndrome (Thorup et al., 2014).

Previous studies assessing the effect of age as a continuous variable on remission using the RSWG criteria showed mixed results. Chang et al. (Chang et al., 2012) found that an increase in age at onset reduced the odds of remission, albeit only controlling for DUP, gender, and early remission. In contrast, after controlling for multiple predictors and demographic characteristics, Verma et al. (Verma et al., 2012) did not find an effect of age at onset on symptom remission, but did for functional remission and recovery. Taken together, the current findings support our approach to age at onset (comparing adolescents versus adults) and suggest that considering age as a category also clarifies the influence of other predictors of remission.

The selective way in which the predictors of positive symptom remission clustered with respect to the prediction of the different outcome variables, suggests that the capacity to rapidly achieve remission (i.e., early remission), and the likelihood of remaining in positive remission (i.e., continuous remission), are two separate aspects of this process. The reasons for this difference are unclear and beyond the scope of the present work, but it can be speculated that since early positive symptom remission depends on age at onset and DUP, this characteristic would depend on factors more closely associated with development, and thus are relatively unmalleable, while the stability of positive remission would be a malleable factor influenced by adherence to pharmacological treatment, among other predictors.

A potential limitation of the current study is the statistically significant difference in the baseline social and occupational scores between included and excluded participants, indicating that our study sample had somewhat higher levels of higher functioning than would be expected in an incidence sample . However, participants scored only 5 points more on average that the subjects excluded from the analysis. The SOFAS scale goes from 1 to 100, and is divided in 10 levels of function, suggesting that such difference might not be clinically relevant since a 5 point change does not necessarily imply a major functional change.

In summary, our results show that patients who develop a psychotic disorder before the age of 18 have decreased odds for achievement of early positive symptom remission, whereas the stability of positive symptom remission depends primarily on adherence to antipsychotic medication therapy irrespective of age of onset. Negative symptom remission is highly dependent on the levels of baseline negative symptoms and global functioning, but not on the age at onset category. As such, a close monitoring of early positive symptom remission would be particularly meaningful for patients who have onset of a psychotic disorder as adolescents, whereas the proactive promotion of medication adherence to achieve remission stability would be critical for all patients regardless of their age. The functional

prognostic disadvantage expected in adolescent-onset patients given their lower odds of early positive symptom remission might be mitigated by the integral care offered in an early intervention setting.

Table 1. Comparison of Demographic Variables between Participants and Non-participants, Positive and Negative Remission Analyses (Two-year follow-up)

	Positive Remission Analysis			Negative Remission Analysis		
Variables	**Participants**	**Non-participants**	**Sig[1].**	**Participants**	**Non-participants**	**sig[1].**
Total N	155	91		142	73	
Age at Entry –mean (SD)	22.89 (±4.32)	23.4 (±4.62)	0.38	22.7 (±4.21)	23.34 (±4.62)	0.30
Age at Onset –mean (SD)	22.21 (±4.27)	22.55 (±4.47)	0.55	21.95 (±4.25)	22.37 (±4.49)	0.50
Age Onset Group						
Adolescent –N (%)	28 (18.06%)	13 (14.29%)	0.44	31 (21.83%)	10 (13.70%)	0.15
DUP[2] (weeks) –mean (SD)	49.84 (±95.8)	59.39 (±134.0)	0.53	50.51 (±97.5)	59.86 (±134.7)	0.56
Median (weeks)	15.00	15.79		14.86	16.36	
Range	0.1–574.0	0.0–1049.4		0.29–574.0	0.14–1011.6	
Premorbid Adjustment –mean (SD)	0.21 (±0.14)	0.2 (±0.12)	0.63	0.22 (±0.14)	0.22 (±0.11)	0.96
SAPS global Baseline –mean (SD)	11.28 (±3.08)	12.1 (±3.78)	0.07	11.49 (±2.97)	12.29 (±3.73)	0.09
SANS global Baseline –mean (SD)	11.92 (±4.11)	11.92 (±4.38)	0.99	12.09 (±4.18)	12.42 (±4.59)	0.60
SOFAS global Baseline –mean (SD)	43.23 (±12.69)	38.34 (±14.37)	**0.02**	42.38 (±12.49)	37.43 (±14.19)	**0.03**
Gender						
Male –N (%)	110 (70.97%)	63 (69.23%)	0.77	102 (71.83%)	54 (73.97%)	0.74
Diagnosis non vs. affective psychosis						
Non-affective Psychosis –N (%)	108 (69.68%)	68 (74.73%)	0.40	98 (69.01%)	53 (72.60%)	0.59
Substance Abuse/Depend. Diagnosis						
Yes –N (%)	89 (57.42%)	46 (58.97%)	0.82	83 (58.45%)	34 (53.97%)	0.55
Medication Adherence						
Adherent –N (%)	134 (86.45%)	82 (91.11%)	0.28	128 (90.14%)	68 (95.77%)	0.15
Education (Completed High School)						
High-School or higher –N (%)	102 (66.23%)	50 (60.24%)	0.36	91 (64.54%)	41 (61.19%)	0.64
Relationship						
In relationship –N (%)	10 (6.49%)	8 (8.89%)	0.49	10 (7.09%)	8 (10.96%)	0.33

†: p <.1; * p<.05; ** p<.01; ***: p<.001. DUP: Duration of Untreated Psychosis; SANS: Scale for the Assessment of Negative Symptoms; SAPS: Scale for the Assessment of Positive Symptoms; SOFAS: Social and Occupational Functioning Assessment Scale; 1: Significance was tested with t-tests for continuous variables (e.g., age at entry) and chi-square tests for categorical variables (e.g., Gender). 2: Non-transformed DUP variable. Note: Significant findings are displayed in bold font.

Table 2. Positive and Negative Symptom Remission: Univariate Coefficients

	Positive Symptom Remission				Negative Symptom Remission			
	Continuous Months		Early Remission		Continuous Months		Early Remission	
	β	S.E.	OR	S.E.	β	S.E.	OR	S.E.
DUP (log-transformed)	-0.09	0.29	**0.73*****	0.09	-0.11	0.30	**0.76****	0.09
Premorbid Adjustment	-0.12	4.36	0.18	1.20	**-0.21****	4.20	**0.47***	1.26
SAPS baseline	-0.06	0.15	**0.90***	0.04	**-0.14***	0.16	**0.90***	0.05
SANS baseline	**-0.12**†	0.12	**0.93***	0.03	**-0.28*****	0.12	**0.82*****	0.04
SOFAS baseline	**0.14***	0.04	1.01	0.01	**0.18***	0.04	**1.03****	0.01
Substance diagnosis	-0.05	1.05	**0.59**†	0.29	-0.04	1.06	0.81	0.30
Medication Adherence	**0.13***	1.55	1.10	0.42	-0.09	1.90	0.43	0.51
Gender (Female)	0.07	1.10	1.41	0.31	0.08	1.16	0.68	0.33
Age at Onset (Adult)	0.08	1.35	**2.93****	0.35	0.09	1.32	1.59	0.39

†: p <.1; * p<.05; ** p<.01; ***: p<.001. DUP: Duration of Untreated Psychosis; SANS: Scale for the Assessment of Negative Symptoms; SAPS: Scale for the Assessment of Positive Symptoms; SOFAS: Social and Occupational Functioning Assessment Scale. Please note that higher scores in the premorbid adjustment scale indicate lower adjustment. Note: Significant findings are displayed in bold font.

Table 3. Positive and Negative Symptom Remission: Multivariate Model

	Positive Symptom Remission				Negative Symptom Remission			
	Continuous Months		Early Remission		Continuous Months		Early Remission	
Block 1	**β**	**S.E.**	**OR**	**S.E.**	**β**	**S.E.**	**OR**	**S.E.**
DUP (log-transformed)	-0.05	0.38	**0.73****	0.12	-0.05	0.38	**0.78***	0.13
Premorbid Adjustment	-0.05	4.95	0.26	1.41	**-0.16**†	**4.69**	0.33	1.64
SAPS baseline	-0.06	0.21	0.94	0.06	-0.05	0.22	1.03	0.07
SANS baseline	-0.14	0.18	0.96	0.05	**-0.21***	**0.17**	**0.80****	0.06
SOFAS baseline	0.07	0.05	1.00	0.02	0.03	0.05	1.01	0.02
Substance diagnosis	0.00	1.30	0.70	0.40	0.01	1.30	0.56	0.44
Medication Adherence	**0.15**†	1.91	0.62	0.57	-0.11	2.11	**0.17****	0.69
Gender (Female)	0.09	1.43	1.46	0.44	0.06	1.41	0.60	0.48
	ΔR^2	**sig.**	**Cox-Snell**	**sig.**	**ΔR^2**	**sig.**	**Cox-Snell**	**sig.**
Block statistics	0.09	0.08	0.11	0.02	0.14	0.01	0.24	0.00
Block 2	**β**	**S.E.**	**OR**	**S.E.**	**β**	**S.E.**	**OR**	**S.E.**
DUP (log-transformed)	-0.04	0.38	**0.74***	0.12	-0.04	0.38	**0.78***	0.13
Premorbid Adjustment	-0.05	4.93	0.31	1.44	**-0.15**†	**4.69**	0.33	1.64
SAPS baseline	-0.08	0.21	0.91	0.07	-0.07	0.22	1.03	0.08
SANS baseline	-0.12	0.18	0.98	0.06	**-0.19***	**0.17**	**0.80****	0.07
SOFAS baseline	0.08	0.05	1.00	0.02	0.04	0.05	1.01	0.02
Substance diagnosis	0.00	1.30	0.72	0.41	0.01	1.30	0.56	0.44
Medication Adherence	**0.17***	1.91	0.72	0.59	-0.11	2.11	**0.17****	0.69
Gender (Female)	0.11	1.42	1.62	0.46	0.07	1.41	0.60	0.48
Age at Onset (Adult)	**0.14**†	1.66	**3.32***	0.48	0.10	1.54	1.03	0.55
	ΔR^2	**sig.**	**Cox-Snell**	**sig.**	**ΔR^2**	**sig.**	**Cox-Snell**	**sig.**
Block statistics	0.02	0.09	0.15	0.01	0.01	0.22	0.24	0.95

†: p <.1; * p<.05; ** p<.01; ***: p<.001. DUP: Duration of Untreated Psychosis; SANS: Scale for the Assessment of Negative Symptoms; SAPS: Scale for the Assessment of Positive Symptoms; SOFAS: Social and Occupational Functioning Assessment Scale. Please note that higher scores in the premorbid adjustment scale indicate lower adjustment. Note: Significant findings are displayed in bold font.

Table 4. Prediction of Social and Occupational Functioning at two Years by Multivariate Model and Early Remission

	SOFAS_24mth	
A. Multivariate Model (Only Block 2)	**β**	**S.E.**
DUP (log-transformed)	-0.06	1.01
Premorbid Adjustment	-0.04	12.95
SAPS baseline	0.12	0.65
SANS baseline	**-0.25***	0.49
SOFAS baseline	0.13	0.18
Substance diagnosis	-0.15	3.61
Medication Adherence	0.08	5.79
Gender (Female)	0.07	3.81
Age at Onset (Adult)	0.01	4.35
	ΔR^2	**sig.**
Block statistics	0.00	0.93
B. Early Remission Variables	**β**	**S.E.**
Early Positive Remission	0.23**	3.20
Early Negative Remission	0.36***	3.30

†: p <.1; * p<.05; ** p<.01; ***: p<.001. DUP: Duration of Untreated Psychosis; SANS: Scale for the Assessment of Negative Symptoms; SAPS: Scale for the Assessment of Positive Symptoms; SOFAS: Social and Occupational Functioning Assessment Scale. Please note that higher scores in the premorbid adjustment scale indicate lower adjustment. Note: Significant findings are displayed in bold font.

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