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Negative symptoms and impaired social functioning predict later psychosis in Latino youth at clinical high risk in the North American prodromal longitudinal studies consortium

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Abstract

Aim—Examining ethnically related variables in evaluating those at risk for psychosis is critical. This study investigated sociodemographic and clinical characteristics of Latino versus non-Latino clinical high-risk (CHR) subjects and healthy control (HC) subjects in the first North American Prodrome Longitudinal Study.

Methods—Fifty-six Latino CHR subjects were compared to 25 Latino HC and 423 non-Latino CHR subjects across clinical and demographic variables. Thirty-nine of the 56 CHR subjects completed at least one subsequent clinical evaluation over the 2.5-year period with 39% developing a psychotic illness. Characteristics of Latino CHR subjects who later converted to psychosis (‘converters’) were compared to those who did not (‘non-converters’).

Results—Latino CHR subjects were younger than non-Latino CHR subjects and had less education than Latino HC subjects and non-Latino CHR counterparts. Latino CHR converters had higher scores than Latino non-converters on the Structured Interview for Prodromal Syndromes total negative symptoms that were accounted for by decreased expression of emotion and personal

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hygiene/social attentiveness subsections. Latino CHR converters scored lower on the global functioning:social scale, indicating worse social functioning than Latino non-converters.

Conclusion—Based on this sample, Latino CHR subjects may seek treatment earlier and have less education than non-Latino CHR subjects. Deficits in social functioning and impaired personal hygiene/social attentiveness among Latino CHR subjects predicted later psychosis and may represent important areas for future study. Larger sample sizes are needed to more thoroughly investigate the observed ethnic differences and risk factors for psychosis in Latino youth.

Keywords

clinical high risk; Latino; prodrome; psychosis

INTRODUCTION

Recent advances in research in early detection of psychosis, including the work performed by the North American Prodrome Longitudinal Study (NAPLS) consortium, have led to the development of reliable criteria to identify individuals who are at increased risk of developing psychosis and thus potentially experiencing a prodromal period for psychosis.[1,2] Current evidence indicates that approximately 25.0% of these clinical high-risk (CHR) individuals will go on to develop a full-blown illness within 1 year and 35.0% in 2 years.[3,4] Because the risk is often based on the presence of clinical symptoms, these individuals have been described as being at CHR for developing psychosis.[5]

Much of what is known about CHR individuals is derived from studies utilizing primarily Caucasian samples.[1,3–5] To date, there are a few published studies that examine the effects of racial or ethnic background in this prodromal stage or even in first-episode psychosis.[6–8] Several of these studies[9,10] suggest that among Latino patients, certain types of symptoms maybe mislabelled as psychotic, such as those related to spirituality and supernatural beliefs. Additionally, acculturation has been found to be related to higher symptom endorsement, with greater acculturation correlating with greater psychotic symptomatology in Latinos living in the United States and Afro-Caribbeans living in the UK.[10–14] It is clear that factors affecting the mental health of ethnic minority groups in the United States deserve serious consideration and attention. Latinos have become the largest minority group in the United States and will represent 25% of the US population by 2050.[15] Clearly, a better understanding of mental health issues specific to this group is critical. This study aims to fill this deficit in the literature.

Specifically, the primary goal of this present investigation was to perform a sociodemographic and clinical characterization of Latino subjects within the larger sample of the North American Prodrome Longitudinal Study first phase (NAPLS I) Study comparing Latino CHR subjects to non-Latino CHR subjects and to healthy control (HC) subjects. Additionally, Latino subjects who later converted to psychosis were compared with those who did not convert within a 2.5-year period as a way to identify potential predictor variables of psychosis that are unique to the Latino community. Baseline measures were used to test for attrition bias in the Latino CHR sample. Finally, the rate of psychotic conversion in Latino subjects was compared to that of the non-Latino sample.

METHODS

Subjects

The NAPLS project is a consortium of eight research sites that investigate the prodromal phase of psychotic illness with the goal of improving the accuracy of prospective prediction of psychosis and understanding the mechanism by which psychosis develops.[2,3] The NAPLS I project integrated clinical, demographic and neuropsychological data from eight methodologically similar research studies performed at the following sites over the same period of time: Emory University, Harvard University, University of California Los Angeles, University of California San Diego, University of North Carolina Chapel Hill, University of Toronto, Yale University and Zucker Hillside Hospital in New York. NAPLS I created a standardized protocol for assessing and recording data related to potential risk factors associated with conversion to psychosis and utilized this methodology to generate a collaborative, aggregate, longitudinal dataset.[2,3]

All sites recruited CHR individuals and monitored them for an interval of up to 2½ years during the period 2000–2006. The eight sites adopted and employed similar assessment and evaluation methods allowing for standardization and reliability across sites.[2,3] All NAPLS sites demonstrated reliability in rating criteria (κs ranged from 0.80 to 1.00 across sites).[2,16–18] Based primarily on ratings from the Structured Interview for Prodromal Syndromes (SIPS),[18] CHR subjects would have to meet one of the three established criteria for a psychosis risk syndrome in order to participate: attenuated psychotic symptom state, brief intermittent psychotic symptom state (BIPS) or genetic risk with deterioration (GRD). Methods and details of the NAPLS I project have been reviewed in detail in previous papers.[2,3,16] Criteria for inclusion and exclusion as well as additional assessments used within the study have also been reviewed in detail in previous papers.[2,3]

A total of 504 subjects were included in NAPLS I: 370 CHR and 134 HC. Of the 504 subjects participating in NAPLS I, 81 self-described as Latino (56 CHR and 25 HC). A total of 291 CHR subjects (39 Latino CHR) completed one or more follow-up assessments during the 2.5-year period. Over the course of 2.5 years, follow-up assessments revealed that 15/39 (39%) Latino CHR subjects converted to psychosis as determined by ratings on the SIPS.[18]

Assessments

The SIPS[18] criteria were used at study entry to determine study inclusion and group assignment. Functioning was assessed with a modified version of the Global Assessment of Functioning, the Global Functioning-Social Scale and the Global Functioning-Role Scale.[19–21]

Additional baseline clinical measures included assessments of demographic information, family history of mental illness, schizotypal personality disorder diagnoses, comorbid Axis I Diagnosis – assessed with the SCID (Structured Clinical Interview for DSM-IV Axis I Disorders)[22] substance abuse diagnoses (also assessed with the SCID), parents' past and present use of substances, lifetime stressful events questionnaire and the Premorbid Adjustment Scale (PAS).[23]

Conversion to psychosis was determined using the presence of psychosis syndrome criteria from the SIPS. Subjects were considered to have converted to a psychotic level of intensity when they were rated with a score of 6 (the highest score possible) on one or more of the SOPS positive symptom scales and a frequency of symptoms ≥ 1 hour/day for ≥ 4 days/week during the past month or that these symptoms seriously impacted functioning (e.g. severely disorganized or dangerous to self or others).[16,18] Subjects who received a diagnosis of a psychotic disorder during the course of the study that was verified by a study rater either through consultation with a treating psychiatrist or through the SIPS and SCID were also classified as converters. While it is clearly preferable to have clinicians complete standardized assessment instruments such as the SIPS and SCID with subjects rather than obtain second-hand information from consultations, it appears that both methods ensure uniform and reliable appraisals of conversion.[16] However, subjects who were determined to be converters through collateral sources were considered to have a missing DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition) diagnosis.[16] Subjects were considered non-converters if conversion to psychosis was not present at 30 months.

There were no additional assessments or data collected on subjects who were lost to follow up during the course of the study.

Statistical analyses

All analyses were computed using SPSS. Demographic variables were summarized using descriptive statistics. Group differences between CHR and HC on nominal variables such as gender and substance use history were analysed using χ^2 tests, whereas ratio variables were analysed through the use of two-tailed *t*-tests for independent samples. Subjects who received a diagnosis of a psychotic disorder during the course of the study were classified as psychosis converters. Group differences between converters and non-converters, as well as gender differences, were assessed using independent group *t*-tests. Unless indicated, analyses were split by ethnic group, dividing the subject pool into Latino and non-Latino.

Similar to Cannon *et al.*[3], a Kaplan–Meier survival analysis was utilized to determine the shape of the survival function over the course of the 2.5-year follow-up period as well as the cumulative rate of conversion.

RESULTS

CHR subjects

As detailed in previous papers,[2,16,24] subjects were considered to be CHR if they qualified for one or more of three classifications: Attenuated Positive Symptom Prodromal Syndrome (APS), Genetic Risk and Functional Decline Prodromal Syndrome (GRD), and Brief Intermittent Psychosis Prodromal Syndrome (BIPS). Both non-Latino CHR and Latino CHR subjects overwhelmingly qualified solely based on APS criteria (293/314, 93.3% and 50/56, 89.3%, respectively). Six CHR subjects (1.7% of total sample) met only GRD eligibility and none were in the Latino CHR group. However, 7 of the 50 Latino CHR subjects meeting APS criteria also met criteria for GRD (14%), a comorbidity rate similar to the non-Latino

sample (30/293, 10.2%). Interestingly, nearly half of the BIPS subjects (6 of 14) were Latino (42.8%) versus the eight BIPS subjects noted in the non-Latino subjects (2.5%).

Attrition bias in Latino CHR subjects

Of the 56 Latino CHR subjects, 39 (69.6%) completed one or more follow-up assessments over the 2.5-year period and 17 (30.4%) were lost to attrition. These rates of attrition do not differ significantly from the non-Latino sample in which 62 of 314 (19.7) subjects were lost to attrition. Although Cannon *et al*.[3] had indicated a significantly higher percentage of male subjects lost to follow up for the overall CHR sample, within the Latino CHR sample, this difference was not evident. In fact, there were no significant differences between Latino CHR subjects lost to follow up and those returning for subsequent assessments on any baseline demographic or clinical variables.

Characteristics of Latino subjects versus non-Latino subjects

Mean scores and standard deviations for general characteristics of Latino CHR subjects, non-Latino CHR subjects and Latino HC are shown in Table 1 along with *t*-test results comparing the groups of subjects to Latino CHR. Results indicate that Latino subjects tend to be approximately 17 years of age when entering the study with no significant difference between Latino CHR and HC in terms of age. However, a significant difference existed between Latinos and non-Latino CHR in terms of baseline age with Latino subjects being over a year younger at the time they entered the study. A significant difference between Latino CHR and Latino HC subjects at baseline existed in terms of education level with HC having completed approximately 1.5 grades more than CHR despite a non-significant age difference between groups. Similarly, even with age included as a covariate in the analysis, Latino CHR subjects had significantly less education than their non-Latino CHR counterparts, with non-Latino CHR subjects having completed 1.3 years more than Latino CHR subjects (completed education adjusted for age covariate). Interestingly, there was no significant difference between Latino HC and non-Latino HC subjects in terms of educational level (M = 10.80, SD = 2.87 vs. 11.40, SD = 3.36).

There were no significant differences in use of antipsychotic, antidepressant or mood-stabilizing medications between Latino CHR and non-Latino CHR subjects at baseline or used over their lifetime. It is interesting to note that at baseline approximately 12% of all CHR subjects endorsed use of an antipsychotic, 31% an antidepressant, and 4% a mood stabilizer. Additional follow up of data is not available for medication use.

Similarly, there were no significant differences at baseline or over lifetime for participation in therapy between Latino CHR and non-Latino CHR subjects, with nearly half of all subjects engaging in psychotherapy at baseline (46%) and almost three-quarters participating in psychotherapy at some point in their lives (74%).

Latino CHR subjects did not significantly differ from non-Latino CHR subjects in terms of duration of APS symptoms. Latino CHR subjects had an average duration of APS symptoms of 231 days whereas non-Latino CHR subjects averaged 452 days of APS symptoms.

previous NAPLS I publications have noted differences among CHR subjects and HCs have been noted in terms of the premorbid assessment scale (PAS),[16,23] data revealed no significant differences between Latino CHR and non-Latino CHR subjects on any individual subscale or the total scale of the PAS.

Characteristics of Latino CHR versus HC

Not surprisingly, Latino HC subjects showed significantly better functioning at baseline than their CHR counterparts in global, social and role functioning, as well as premorbid functioning. Similarly, Latino HC subjects reported significantly less total stress, school stress and family stress than Latino CHR subjects.

Of the 56 CHR Latino subjects, 38 were male (67.9%) whereas 11 of the 25 HC Latino participants were male (44%), indicating that the CHR Latino group contained a significantly higher proportion of men than the HC Latino group (Table 2).

Conversion to psychosis

At the end of the 2.5-year follow-up period, 15 CHR and no HC Latino subjects had converted to psychosis with a mean ± SD time from baseline to conversion of 360.3 ± 286.1 days. It should be noted, however, that of the 39 Latino subjects who had completed one or more follow-up assessments over the course of the study, only 25 participated in the final 2.5-year assessment (Fig. 1). Of the 15 Latino converters, only one had met BIPS criteria for inclusion in the study, the rest had met exclusively APS criteria.

Particular DSM-IV diagnoses at conversion were not examined as sites did not uniformly implement the use of the SCID.[3]

Changes in the rate of conversion were assessed for the overall 2.5-year period at 6-month intervals using a one-sample *t*-test (Table 3). Results indicated that the rates of conversion differed significantly among the five follow-up assessment periods ($t = 5.73$, d.f. = 4, $P = 0.005$). Kaplan–Meier analyses revealed cumulative rates of conversion to psychosis ± SE for CHR Latino subjects of 12.8% ± 0.05 at 6 months, 20.5% ± .07 at 12 months, 30.8% ± 0.08 at 18 months, 35.9% ± 0.09 at 24 months and 38.5% ± 0.10 at 30 months. No HC subjects were converted during this period. There was no significant difference between the cumulative rates of conversion among Latino CHR subjects, non-Latino CHR subjects and total CHR subjects (F = 3.19, d.f. = 2, $P = 0.10$).

Baseline demographic and clinical variables were examined through univariate analyses in order to screen for potential predictors of conversion for this Latino sample (Table 4). Any subject who had completed at least one clinical evaluation subsequent to baseline was included in these analyses. Comparisons between Latino CHR non-converters and Latino converters ($n = 56$) revealed four variables with significant differences. Converters had significantly higher scores than non-converters on the SIPS total negative symptoms and decreased expression of emotion, a subsection of negative symptoms. Similarly, converters had higher scores than non-converters on the SIPS personal hygiene/social attentiveness scale. Higher scores on the SIPS scales indicate greater pathology. Converters also scored

significantly lower on the global functioning:social scale, indicating worse social functioning at baseline than non-converters.

DISCUSSION

The goals of the present investigation were: to (i) perform a sociodemographic and clinical characterization of Latino subjects versus non-Latino subjects within the larger sample of the NAPLS I Consortium; (ii) to compare Latino converters with Latino non-converters as a way to identify potential predictor variables of psychosis unique to the Latino community; and (iii) to examine the conversion patterns of Latino subjects as compared with the non-Latino NAPLS 1 sample.

Several areas of particular interest emerged from this investigation. First, Latino CHR subjects were roughly 1.5 years younger than their non-Latino CHR counterparts. The reason for this disparity in age is not readily apparent. However, it may be that non-Latino CHR subjects are utilizing health-care options prior to engaging in a research opportunity such as NAPLS whereas Latino CHR subjects may have less available access to health care and choose to enter a research program when symptoms first become present. There were no significant differences in terms of duration of prodromal symptoms or the PAS between these two groups, also indicating that it may be the environment in which Latino CHR subjects access assistance which differs from non-Latino CHR subjects rather than the actual need for assistance. Similarly, the parents of Latino CHR subjects were significantly younger than the parents of non-Latino CHR subjects. This follows national trends in which, as a group, Latinos are significantly younger at the time they give birth to their first child than non-Latinos.[15]

Despite differences in ages of subjects and their parents, there were no significant differences in socioeconomic background as measured by the level of parental education between any of the groups (Latino CHR, non-Latino CHR, Latino HC and non-Latino HC).

Surprisingly, Latino subjects in the HC group had completed an average of 1.5 grade levels in school more than those in the Latino CHR group, yet their ages and socioeconomic background were not significantly different, pointing to the tremendous impact on academic performance that simply being in the Latino CHR group has even without conversion to psychosis. To further back this point, subjects in the non-Latino CHR group had completed over one full-grade level of school more than those in the Latino CHR group even when corrected for age. Also reinforcing this, there was no significant difference between Latino HC and non-Latino HC subjects in terms of grade level. Thus, academic achievement seems to be impacted both by being CHR and by being Latino, further noting the unique needs of this group.

As expected, Latino HC subjects appear to function significantly better than their Latino CHR counterparts scoring significantly higher on global, social and role functioning, as well as on most areas of stress, total stress and total PAS. Previously, NAPLS I researchers had yielded similar results when comparing all HC subjects to all CHR subjects.[3] Although the

idea that stress impacts psychosis is not new,[25,26] the aetiology and effect of stress on the Latino CHR subject is not yet fully understood.

A number of studies show that acculturative stress significantly affects the physical and mental health of Latino immigrants, namely Latino youth.[27,28] Acculturative stress can be viewed as the stress that results from interactions between differing cultural groups.[29] Previous research on Latino youth indicates that acculturative stress may be experienced because of stressors such as prejudice, discrimination, difficulty of speaking English, and pressure to maintain the values and language of their culture of origin,[28] and is not limited to immigrant Latino youth extending to first- or second-generation immigrants.[30] Additionally, some studies on emotional reactivity have shown that individuals with schizophrenia are more susceptible to the effects of stress than those without this illness,[26,31,32] enhancing the impact of the stressful events and creating more emotional disturbance for those with schizophrenia. In the current study, the noted differences between Latino CHR and Latino HC subjects on total stress, family stress and school stress may be indicative of the moderating role that emotional reactivity plays between stressful events and psychosis.[25,26] Also lending to this theory is the fact that there were no significant differences found between Latino and non-Latino CHR subjects on these stressful event variables, indicating that the impact of stress is likely mediated by the emotional reactivity linked with CHR status.

The rate of conversion to psychosis in the Latino CHR sample is nearly identical to that reported in the larger NAPLS I sample.[3] Comparisons between Latino converters and Latino non-converters at baseline revealed several interesting findings. Latino converters had significantly higher scores on the SIPS components' decreased expression of emotion, hygiene and total negative symptoms than their non-converting counterparts. Although the sample size was too small in this study to adequately assess predictive functions of these variables, Piskulic *et al*.[33] examined the role of negative symptoms in the NAPLS I sample and concluded that they may be indicative of those who later convert to psychosis, and are moderately predictive of later conversion.

Additionally, in the Latino CHR sample, converters were found to have significantly higher impairment in personal hygiene/social attentiveness at baseline than non-converters as measured by the SIPS. This impairment was not present in the non-Latino sample. Again, although power limitations prevented this study from examining the predictive nature of this finding, it is interesting that this finding could suggest an observable difference at baseline between converters and non-converters. This is to say that by identifying those individuals who appear unkempt, unwashed, poorly groomed and/or inattentive to social cues regarding their appearance, it might be possible to better predict who will later convert to psychosis among the Latino CHR samples.

Similarly, at baseline Latino CHR subjects who were converted had significantly lower scores on the global functioning:social scale than those who did not convert. It should be noted that the Cannon *et al*.'s[3] study on which this sample was drawn identified social functioning as one of the five factors uniquely associated with prediction of conversion to psychosis. Several other studies have also previously identified social functioning as

predictive of future psychosis;[34–36] however, none have examined the role of social functioning specifically within the Latino CHR population.

In comparing Latino and non-Latino-converted subjects, there were no significant differences in impairment in personal hygiene/social attentiveness or in social functioning, indicating the interactive qualities of both CHR and ethnicity.

In conclusion, this study set forth to examine the characteristics of Latino subjects, both CHR and converted, in an attempt to better understand the intricate dynamics between ethnicity and characteristics linked to risk for psychosis. Utilizing data from the NAPLS I project, it was possible to draw a small sample of Latino subjects to meet this goal. One of the clear limitations of this study is its sample size. Only 81 Latino subjects participated in NAPLS I; of those, only 56 were CHR.

Despite the limited sample size, some interesting findings did emerge and would benefit from future exploration with larger samples. Examining age, academic achievement, emotional expression, negative symptoms, impaired personal hygiene, and deficits in social functioning and their complicated relationship with ethnicity is crucial to forwarding research in this area.

Although larger sample sizes are needed to more thoroughly investigate this area, it is clear that Latino CHR subjects are significantly different from a general CHR group and, thus, have a discrete set of assessment and treatment needs.

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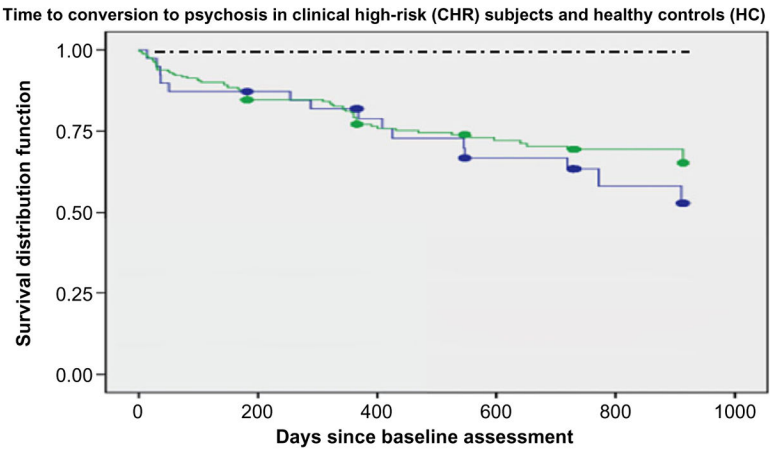

FIGURE 1.

Conversion of Latino subjects. ( ) Latino CHR subjects (*n* = 39) M ± SD days baseline to conversion of 360.3 ± 296.0 days. ( ) Non-Latino CHR subjects (*n* = 252) M ± SD days baseline to conversion of 243.8 ± 222.8 days. ( ) HC subjects (*n* = 134) M ± SD days baseline to conversion of 275.5 ± 243.7 days.

TABLE 1

Latino CHR subjects versus non-Latino CHR subjects and Latino HC subjects at baseline

Baseline measures	Latino CHR (*N* = 56)		vs. non-Latino CHR (*N* = 314)				vs. Latino HC (*N* = 25)			
	M (SD)	*n*	M (SD)	*n*	*t*	*P*-value	M (SD)	*n*	*t*	*P*-value
Age	17.03 (3.66)	56	18.46 (4.83)	313	−2.10	0.037	17.56 (3.39)	25	−0.61	0.54
Mother's age at S's birth	25.65 (5.15)	26	29.85 (5.98)	126	−3.33	0.001	25.17 (6.67)	18	0.27	0.79
Father's age at S's birth	28.62 (4.42)	21	32.56 (6.66)	116	−2.61	0.010	29.00 (2.21)	5	−0.19	0.85
Highest grade completed by S	9.24 (2.62)	55	10.54 (3.06)	308	−2.97	0.003	10.80 (2.87)	25	−2.40	<0.02
GAF	44.00 (10.90)	54	46.71 (12.32)	302	−1.52	0.131	88.75 (2.50)	4	−8.13	<0.00
Social functioning scale	6.02 (1.66)	56	6.21 (1.47)	312	−0.87	0.382	8.50 (0.91)	12	−5.01	<0.00
Role functioning scale	5.73 (1.78)	56	6.13 (1.66)	313	−1.62	0.11	8.83 (0.84)	12	−5.86	<0.00
Total stress	5.70 (2.90)	44	3.99 (2.81)	310	0.78	0.436	2.09 (1.54)	23	5.58	<0.00
School stress	1.57 (1.09)	37	0.77 (0.90)	310	1.69	0.092	0.50 (0.67)	22	4.13	<0.00
Work stress	0.29 (0.77)	38	0.26 (0.68)	310	−0.83	0.409	0.17 (0.41)	6	0.38	0.71
Family stress	3.07 (1.84)	42	2.13 (1.66)	310	0.51	0.613	1.00 (0.95)	23	5.03	<0.00
Social stress	0.35 (0.49)	17	0.09 (0.33)	310	0.28	0.782	0.59 (0.71)	17	−1.12	0.27
Assault/abuse stress	0.43 (0.60)	21	0.13 (0.39)	310	0.319	0.75	0.50 (0.71)	2	−0.16	0.87
Total PAS	0.34 (0.17)	49	0.31 (0.16)	269	0.93	0.352	0.17 (0.10)	17	3.79	<0.00
Total SIPS	37.55 (12.75)	51	38.55 (14.31)	302	−0.47	0.640	0.70 (0.422)	10	9.24	<0.00
Positive symptoms	12.09 (4.03)	56	11.87 (4.08)	313	0.38	0.706	0.20 (0.422)	10	9.27	<0.00
Negative symptoms	11.61 (7.02)	51	12.12 (6.86)	304	−0.49	0.624	0.40 (0.966)	10	5.07	<0.00
Disorganization symptoms	6.36 (3.41)	53	6.49 (3.88)	306	−0.24	0.812	0.00 (0.000)	10	5.89	<0.00
General symptoms	7.64 (3.77)	53	8.05 (4.46)	307	−0.63	0.527	0.10 (0.316)	10	6.23	<0.00

CHR, clinical high risk; GAF, Global Assessment of Functioning; HC, healthy control; PAS, Premorbid Adjustment Scale; SIPS, Structured Interview for Prodromal Syndromes.

TABLE 2

Characteristics of Latino subjects at baseline

Characteristics	CHR *n* (%)	HC *n* (%)	χ^2	d.f.	*P*-value
Gender – male	38/56 (67.9)	11/25 (44)	4.12	1	0.042
Previously used substances	21/51 (37.5)	5/25 (20)	3.34	1	0.068
Family history of psychosis	20/56 (35.7)	1/23 (4)	13.69	1	0.000
Obstetrical complications	15/31 (48.4)	14/19 (73.7)	3.10	1	0.079

CHR, clinical high risk; HC, healthy control.

TABLE 3

Conversion and cumulative prevalence rates

	Latino CHR subjects (*N* = 39)		Non-Latino CHR subjects (*N* = 252)		All CHR subjects (*N* = 291)	
	Total converters	**Cumulative prevalence rates (%)**	**Total converters**	**Cumulative prevalence rates (%)**	**Total converters**	**Cumulative prevalence rates (%)**
6 months	5	12.8	37	14.7	42	12.7
12 months	8	20.5	53	26.6	61	21.7
18 months	12	30.8	60	31.3	72	26.8
24 months	14	35.9	65	34.4	79	32.6
30 months	15	38.5	67	36.2	82	35.3

CHR, clinical high risk.

TABLE 4

Comparison of baseline demographic and clinical variables of converters versus non-converters in Latino CHR subjects

Latino at-risk subjects	Non-converted (*N* = 24)		Converted (*N* = 15)		χ^2 or *t*	*P*
Age (SD)	16.55	(3.68)	18.30	(3.79)	−1.43	NS
Education (SD)	9.04	(2.44)	9.93	(2.79)	−1.05	NS
Gender (male:female)	16:10		8:5		0.00	NS
Substance abuse history (%)	42		25		0.96	NS
SIPS positive symptoms total (SD)	12.00	(0.79)	12.87	(1.12)	−0.65	NS
Unusual thought content	3.25		3.33		−0.17	NS
Suspiciousness	2.88		2.60		0.57	NS
Grandiose ideas	0.79		1.40		−1.07	NS
Perceptual abnormalities	2.96		3.47		−0.77	NS
Disorganized communication	2.13		2.07		0.13	NS
SIPS negative symptoms total (SD)	10.42	(1.11)	15.00	(1.90)	−2.24	0.031
Social anhedonia or withdrawal	2.38		3.50		−1.71	NS
Avolition	1.83		2.86		−1.62	NS
Decreased expression of emotion	0.79		2.08		−2.83	0.008
Decreased experience of self	1.38		1.50		−0.21	NS
Decreased ideational richness	1.00		2.00		−1.92	NS
Deterioration in role functioning	3.04		3.21		−0.26	NS
SIPS disorganized symptoms total (SD)	6.79	(3.32)	7.07	(3.67)	−0.24	NS
Odd behaviour or appearance	1.54		1.36		0.39	NS
Bizarre thinking	1.88		1.64		0.46	NS
Trouble with focus and attention	2.63		2.50		0.25	NS
Personal hygiene/social attentiveness	0.75		1.57		−2.12	0.041
SIPS general symptoms total (SD)	7.58	(3.56)	8.71	(3.34)	−0.97	NS
Sleep disturbance	1.83		1.64		0.33	NS
Dysphoric mood	3.00		3.71		−1.47	NS
Motor disturbances	0.96		0.86		0.23	NS
Impaired tolerance to normal stress	1.79		2.50		−1.19	NS
GAF (SD)	46.83	(12.00)	43.07	(10.59)	0.97	NS

Latino at-risk subjects	Non-converted (*N* = 24)		Converted (*N* = 15)		χ^2 or *t*	*P*
Global functioning:social scale (SD)	6.29	(1.49)	5.07	(1.39)	2.57	0.015
Global functioning:role scale (SD)	6.17	(1.66)	5.73	(2.09)	0.72	NS
Stressful items endorsed total (SD)	5.75	(2.81)	6.50	(3.32)	−0.68	NS
Work stressful items endorsed	0.18		0.39		−1.27	NS
School stressful items endorsed	1.63		1.27		0.82	NS
Family stressful items endorsed	3.10		1.50		−1.16	NS
Assault/abuse stressful items endorsed	0.30		0.20		0.387	NS
Social stressful items endorsed	0.20		0.50		−0.85	NS

CHR, clinical high risk; GAF, Global Assessment of Functioning; NS, not significant; SIPS, Structured Interview for Prodromal Symptoms.