

## SPECIAL ARTICLES

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# 25 years of child and adult psychiatric epidemiology studies in Puerto Rico

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**A review of the psychiatric epidemiology studies of the adult and child population of Puerto Rico carried out in the last 25 years is presented and discussed. Puerto Rico has experienced a plethora of psychiatric epidemiology studies since the decade of the 80's, with 4 adult and 4 child population based studies. The overall results of these studies showed that island Puerto Ricans are not at greater risk for psychiatric disorders as compared to other US or international populations in**

**spite of the fact that the island is besieged by many of the socio-demographic factors associated with high risk populations. If anything, it appears that important protective factors associated with good family relationships and the importance of the family in Hispanic families may be buffering island families from the development of addictive and antisocial disorders.**

*Key words: Child, Adult, Psychiatric epidemiology, Puerto Rico.*

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**T**hrough a review of the psychiatric epidemiology studies of the adult and child population of Puerto Rico, we will argue that if appropriate culturally adapted methods are used, contrary to what was previously believed Puerto Ricans living in the island do not have higher rates of most psychiatric disorders as compared to other ethnic groups living in the United States. We first start reviewing the adult psychiatric epidemiology studies and continue with the child epidemiology studies. We divide the adult studies by generation because of the differences between the studies on the ascertainment of psychiatric disorders. The child studies consistently used the same instrumentation (the Child Diagnostic Interview Schedule (DIS) for measuring disorders, and the DISC was modified to comply with modifications made to the psychiatric DSM nosology over time. Overall, Puerto Rico has experienced a plethora of psychiatric epidemiology studies since the decade of the 80's, with 4 adult and 4 child population based studies carried out in 25 years. The most recent of these studies was just finished in 2004 and analysis of this study is ongoing.

### Adult Psychiatric Epidemiology Studies

#### *First Generation Studies*

The first generation of adult psychiatric epidemiology studies carried out in the decades of the 60's and 70's in the island (1) and mainland (2-5) were consistent in reporting that Puerto Ricans had higher levels of psychiatric symptoms than other North Americans. The conclusions from these data suggested that Puerto Ricans suffered from unusually high rates of mental illness. Such interpretations were questioned by several investigators, some of whom claimed the measures used in these studies measured mostly distress and had not been linked explicitly to diagnostic systems and that the reliability and cultural relevance of the instruments used had not been assessed expressly for the Puerto Rican population (6). Other investigators argued that the high levels psychiatric symptoms reported by Puerto Ricans could be due to the cultural response styles related to social desirability and or to culturally meaningful expression of distress such as "nerve attacks" that shaped the responses to research interviews in this population (7). This debate remained until the second generation of studies clarified many of these standing issues.

#### *Second Generation Studies: The 1984 and 1987 Adult Psychiatric Epidemiology Studies*

The second generation of adult psychiatric epidemiology studies carried out among island Puerto Ricans emerged in the late 80's and emulated the methods of the Epidemiologic Catchment Area (ECA) studies (8). These studies emerged as a result of the development of a descriptive psychiatric nosology as exemplified by the

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Diagnostic Statistical Manual third revision (DSM III (9) that permitted the operationalization and standardization of psychiatric disorders for research purposes. A newly structured interview for assessing psychiatric disorders in adults, the Diagnostic Interview Schedule (DIS) was developed (10). This psychiatric interview was designed to be administered by non-clinicians, and permitted through the use of computer-scored algorithms based on DSM-III criteria, that the prevalence of psychiatric disorders could be estimated in large population based studies. The DIS was translated and adapted for use among the Puerto Rican population using multi stage methods for achieving cross cultural equivalence (11). The test-retest reliability and concordance with clinical diagnosis of the DIS (12) was established and showed similar results to those obtained for the English version of the instruments.

The availability of the DIS and the possibility of comparing data from Puerto Rico with that obtained in the ECA program at various US sites inspired the first major island-wide adult epidemiologic survey of mental disorders in Puerto Rico. During 1984, the Spanish DIS were administered to a probability sample (N=1,554) of the island's adult population 17-64 year old. One year later torrential rains produced widespread flooding and deadly mudslides on a large portion of those previously interviewed, enabling the assessment of the impact of the event both prospectively and retrospectively.

The results of this first adult survey showed that with the exception of somatization disorder and cognitive impairment, which were higher in Puerto Rico, prevalence rates in the study were similar to those obtained in the US ECA studies (28.1% an DIS lifetime disorder; 16.0% last six months) (12). Cognitive impairment was found to be considerably more prevalent in the island as compared to the five ECA communities. Further analyses of these differences revealed that cognitive impairment as measured by the Mini Mental Status Examination was biased for subjects with an eighth grade education or less (13) and the published cut-off points for determining severe cognitive impairment in the island were not appropriate. A cut-off of 16 instead of 12 was recommended for use with the Puerto Rican population, which produced lower rates of the condition.

Somatization disorder and somatic symptoms were also found to be more prevalent in the island as compared to other US communities. Since even in more developed countries, people of lower socioeconomic backgrounds who had a psychiatric disorder were more likely than those of more advantaged backgrounds to present somatic symptoms, the tendency to "somatize" rather than "psychologize" had been viewed as being largely the result

of socioeconomic factors. This association with sociodemographic factors was confirmed in the Puerto Rico study (14-15). However, the higher mean number of somatic symptoms in Puerto Rico as compared to other US ethnic groups could not be solely explained by differences in age, sex, level of education, and number of people in the household. This difference remained significant after statistically taking into account sample differences in age, sex and education (14). Previous explorations of these findings revealed that this tendency to somatize of Puerto Ricans was not related to what has been commonly stated as a tendency to express depressive symptoms through somatic symptoms (16). Using symptom data from the 1984 adult probability sample of residents in Puerto Rico, five clusters of items associated with diagnoses of affective disorders, schizophrenia phobic disorder, somatization and alcoholism were formed (16). The factor structure of these scales was replicated in two probability samples of the Los Angeles (LA) ECA study, one composed of Mexican Americans and one of Anglo-Americans. Four of the scales were replicated in both LA samples, however, the scale of somatization was not formed in either of the LA samples, only in the Puerto Rico sample. The depressive and somatization scales formed through the factor analyses were separate and did not contain overlapping items, suggesting that both depressive and somatization symptoms are separate and distinct constructs.

The possibility existed that Puerto Ricans might report more psychological symptoms while not suffering any higher rates of most disorders. Because of this, detailed analyses were made comparing prevalence rates and symptom levels between the Puerto Rico site, and the Los Angeles ECA site. Statistical adjustments were made for several demographic variables, including education level, age, gender and number of adults in the household (17). We found that Puerto Ricans had more somatization disorder, but less affective and alcohol disorders as compared with US-born Mexican Americans or non-Hispanic whites. We also found no evidence that more psychopathology would be found among Puerto Ricans when symptom counts were considered. The only exception was somatization symptoms which were more prevalent among Puerto Ricans as compared with the other ethnic groups and psychotic symptoms which were less prevalent.

While reviewing the somatization factor, we identified a cluster of symptoms that described an "*ataque de nervios*," a popular category of distress characterized by trembling, heart palpitations, and a sense of heat in the chest rising into the head, faintness and seizure-like episodes. We created a scale to measure this popular category of

distress, using 12 of the relevant symptom items from the somatization section of the DIS (18) and found approximately 23% of the adult population of Puerto Rico fitted the “ataques de nervios” category described in the scale. As a result of these analyses, in the 1987 survey a question was added to the DIS to directly ascertain the presence and severity of “ataque de nervios.” The results showed that 16% of the population had experienced an “ataque” in their lifetime, while 12% reported that the “ataque” was severe enough to either consult a physician or other professional, take medications or impaired daily functioning (19). Common symptoms used in describing the “ataque de nervios” were shouting uncontrollably, becoming nervous, trembling, breaking things, becoming hysterical, fainting or passing out, aggressiveness and desperation. We found that people who reported an “ataque” were more likely to be women and to meet criteria for a depressive or anxiety disorders (63% of those with ataques).

A year later after the 1984 island wide survey of mental disorders in the adult population of Puerto Rico, torrential rains throughout the island caused extensive and disastrous mudslides that left 180 people dead and disrupted the lives of thousands of others. Aimed to document the psychological sequelae of the disaster, 912 (20) adults were interviewed with the Spanish version of the DIS (21). A total of 375 persons interviewed both in 1984 and 1987 made up the prospective study’s panel sample.

The results of the retrospective data showed that depression, generalized anxiety and post-traumatic stress disorders (PTSD) were more common among those exposed as compared to the non-exposed (20). In addition, the exposed group reported poorer health, feelings of being overwhelmed by problems as well as greater use of health services. Both somatic and depressive symptoms were found to be true outcomes of the disaster (22). This psychiatric morbidity could not be explained by mediating variables or known risk factors such as sex, age, education and previous symptoms.

Results of this 1987 survey showed similar rates of antisocial personality, and generalized anxiety between Puerto Rico and the ECA. However, considerably lower lifetime prevalence rates of illicit drug use (8.2%) and drug abuse and dependence syndromes (1.2%) were found in Puerto Rico than corresponding estimates from the ECA surveys 30.4% and 8.0% respectively (24). The lower rates of drug use/abuse in Puerto Rico were consistent with findings obtained from other Hispanic populations both in the United States and South America (25-26). More recent data confirm the earlier studies and has shown that Latinos whose birthplace was outside the US have lower rates of

substance abuse and dependence than do Latinos born in the US (27-29).

The Third Generation Adult Studies: The 1991 Epidemiologic Study of Substance Abuse/Dependence, and the Prospective Study of Mental Health Utilization

The third generation of studies carried out in the decade of the 90’s used a newly developed international psychiatric interview, the Composite Diagnostic International Interview Schedule (CIDI) to generate DSM IV diagnoses (31). The translation of the CIDI into Spanish (32) as well as the testing of its psychometric properties (33-34) permitted an island wide study of substance abuse/dependence among the late adolescent and adult population of Puerto Rico. The results of comparative analyses carried out with the young cohort of the study, 18 to 25 years of age confirmed the 1987 results. Although the lifetime prevalence of drug abuse/dependence was double that obtained in the 1987 older adult survey (4.1%), this rate was significantly lower as compared to the rate obtained among a comparable sample of young US adults (6.2%) (35). The prevalence of drug use was 7.4% in PR and 14.7% in the US. The rates of alcohol use and alcohol abuse/dependence were also higher in the US than the PR young adult population. Among lifetime alcohol users, young adults in PR were much less likely to develop dependence than in the US, and to have dependence without a diagnosis suggesting that alcohol related consequences may be more severe for US than PR drinkers.

Another third generation study which utilized the CIDI was the prospective study of mental health utilization patterns of the poor population of PR (36). This study described the impact of managed care on the probability of outpatient use and the extent of use of mental health services by the population of PR. The study was able to use a quasi-experimental design because baseline information on service use utilization on two prior waves of data collection was available (37) prior to a health reform that changed the island’s public health system into a carved out managed care system. The first study had found that only 32% of the population in need of mental health services received the service in the past year (37). Of these, 21.8% received the mental health service in the physical health sector, and 17.9% in the specialty mental health sector. This first wave was followed by two subsequent waves after the introduction of the managed care system in some but not all municipalities of the island. Their results showed that the introduction of managed care in the island increased the access of mental health services, particularly the access to the specialty sector to the non poor, but did not change the access to the poor (36). In the non-reform areas the utilization decreased for all three waves for the non-poor and remained the same for the poor. In other

analyses of the same data, Alegria et al (38) found that the change to the managed care system did not reallocate the mental health services towards increasing access to those in need. The conclusion from these two analyses was that change from a public sector care to a private managed care did not achieve a better allocation of resources using as a criterion the allocation according to need, and did not improve access to care for the poor population of Puerto Rico in need of mental health services.

## **Child Psychiatric Epidemiology Studies**

### *Introduction*

No prior data on the epidemiology of mental disorders was available for the island, and the data available from the United States did not include in sufficient numbers Latino children to disaggregate by sub-ethnic Latino group so that little was known about the epidemiology of child psychopathology. International studies, had been carried out in Canada, New Zealand, England and Germany that used either the international classification of disease or the DSM III (Reviewed by (41-43). Yet at that time, and to this date, the epidemiologic study of childhood disorder was hampered by a number of methodologic problems that made the ascertainment of a case difficult and controversial. First, there was (and still is) lack of consensus as to the most valid definition of disorder, and uncertainty as to the point on a continuum at which to consider a behavior as pathologic (See (44) for a detailed discussion). Second, research using more than one informant (i.e., child, parent, and teacher) had (and still does) consistently shown that agreement among informants is generally poor (45-46). The issue of how to combine this information to provide reliable and valid instrumentation continues to be controversial. (47)(48). In this context, the four child psychiatric epidemiology studies carried out in the island were done.

### *The First Island Wide Study (1985)*

This study was carried out on a probability sample of the population aged 4 through 17 years in Puerto Rico. The survey used the Child Behavior Checklist (CBCL) (49) as a screening instrument for determining emotional and behavioral problems, and those above the published cut off in the CBCL were evaluated in a second stage by board certified indigenous child psychiatrists who used the parent and child versions of the Diagnostic Interview Schedule for Children (DISC) to structure the interview. Prevalence rates of psychiatric disorders were based on the clinical judgment of these clinicians that were based on the DSM III and the administration of an impairment scaled called the Child Global Assessment Scale (C-GAS) (50). The reliability of these clinicians in administering the

interview and the C-GAS was evaluated (51). Prior to entering the field the CBCL was translated, adapted and tested for its psychometric properties in the child population of Puerto Rico. The same translation and adaptation process used for the adult instruments of the DIS and CIDI was used for this instrument and the results showed similar psychometric properties as obtained in the English version (52-53). The sample for the survey was based on the cluster probability sample of the adult survey (12). Thus, by using a sample that contained the psychiatric evaluation of one adult, subsequent analyses were made to study the association of parental and child psychopathology (54-55).

The results of this island wide survey showed that 49.5% of the population met DSM III criteria if impairment in functioning was not considered (52). However, further analyses of this data showed that many of these children who met criteria for a diagnosis were functioning within the normal range and were not considered in need of services by the clinicians, teachers or parents (56, 50). Prevalence rates fell to 17% when moderate to severe impairment as ascertained by the C-GAS in addition to a DSM diagnosis, was required for the definition of a case. The results of this study, (and later on the replication of these results in the next study carried out in the island) demonstrated the over-inclusiveness of the DSM for classifying children and the need to revise the nosology (57).

Other important findings from this study were that the correlates of disorder were similar in PR to other international studies (58), and that a very small proportion of the children considered to being in need of mental health services were receiving them (23%) (59). Although the rates of specific disorders were similar to those obtained in other international studies, the rates of conduct disorder (1.5%) were significantly lower than other studies (5 to 7%) (See (60) for review).

### *The Second Child Epidemiology Study: The Multi Site MECA Study*

In the decade of the 90's a cross sectional probabilistic population based study of psychiatric disorders in children was carried out in the San Juan Metropolitan Area of Puerto Rico and in three other cities of the United States. This study, called the Methods for the Epidemiology of Child and Adolescents (MECA) study had as a main goal the development of methods and instrumentation for child epidemiologic studies (61). The study permitted the translation and adaptation of important epidemiologic measures such as the most recent modified Diagnostic Interview Schedule for Children (DISC), service utilization and risk factors measures (SURF) and the comparison of

the psychometric properties of these measures in both their English and Spanish versions (62-63). The results of the psychometric testing of these instruments showed that the Spanish DISC based on DSM III-R was comparable in terms of its test retest reliability and concordance with clinical diagnosis to the English version (64, 62), and that similar results in the Spanish and English version of the SURF were also obtained (65-67).

The results comparing the rates of psychiatric disorders between the island and the US sites confirmed the results of the first island wide survey (56) since the rates of DSM III-R psychiatric disorder in all sites were very high (around 49%) and impairment in functioning needed to be added to the definition of a case in order to identify definite cases (62). As a result of these findings, the DSM IV incorporated into most children psychiatric disorders an additional criterion which required that the child be substantially impaired in functioning either at school, family or with peers.

The results of the MECA also showed that although the overall prevalence rate of disorders was similar across the four sites, the rates of conduct disorder and antisocial behaviors were significantly lower in San Juan (68). Because the study was cross-sectional causality could not be established, but the findings suggested that in PR close family attachments seem to be protective against antisocial behaviors and disruptive behavior disorders in children.

### *The Third Child Psychiatric Epidemiology and Mental Health Service Utilization Study*

This study was unique in that two representative samples of children 4 to 17 years of age from the island were drawn, one population based (N=1897), and another of all children receiving mental health services in the public sector (N=751). Before entering the field, the Spanish version of the DISC based on DSM IV which required impairment in functioning for most disorders, was tested for use among the Puerto Rican population (69). The primary caretakers and children 10 and above were interviewed with the DISC IV and other risk factor measures in the two waves of data collection.

The results of this study showed that 16.4% of the population met criteria for a DSM IV disorder and 6.9% were severely emotionally disturbed (SED) as evidenced by meeting criteria for any disorder and for substantial impairment in functioning (C-GAS <69) (70). Once more, the rates of last year conduct disorder were found to be very low in the population (1.4%) as well as those of substance abuse/dependence (1.7%) as compared to another DSM IV epidemiologic survey conducted in the Smokey Mountains of South Carolina (71). Although this

Carolina study did not use the same instrument to assess psychiatric disorder, and the age range of their study was not the same, when special analyses were performed to equate the population age ranges, the results showed overall rates of disorder to be very similar to those found in the PR study (17.7% in S Carolina and 17.3% in PR) (70). When comparative analyses were done between the rates of adolescent depression in PR and those in other parts of the world, the rates of major depressive disorder in PR (5.8%) did not differ from other studies carried out in other cultures that used the DSM IV nomenclature (72).

“Ataques de nervios” were measured for the first time in children and adolescents in this study. The results showed that as found with the adult population, ataques de nervios were fairly common among Puerto Rican children and adolescents from the community (9%), and among children receiving mental health services (26%), and these children were more likely to meet criteria for psychiatric disorders and impairment as compared to children without ataques (73).

Analyses of mental health utilization patterns showed that about a quarter (25.7%) of the children who met criteria for DSM IV used any type of mental health service, not different from our first survey 20 years before (59). About half (49.6%) of the severely emotionally disturbed children used any type of service, and about 35.3% of SED children used the specialty sector. In addition, it was found that global impairment in functioning, parental concern and school difficulties were the most important factors in predicting the parents would bring their children to any type of mental health service use, whereas meeting criteria for a disruptive behavior disorder predicted use of the specialty mental health sector (74). Similarly, persistence of treatment over a two year period was associated with parental concern and school difficulties but not diagnosis or impairment in functioning in the community sample, although in the clinic sample diagnosis and impairment predicted persistence of treatment (75). The findings of the study also showed a gender disparity in mental health service utilization since SED boys were more likely to be brought to services than SED girls (76).

Similar to the results of other surveys, the results of the study showed ADHD (8.0%) and ODD (5.5%) to be the most prevalent disorders and many of the expected correlates for most psychiatric disorders were also found (70, 77-78). However, unlike most other studies of mental disorders among children (79-81) and the previous study (56), no association was found between rates of disorder and poverty, including relative or absolute poverty. When perception of poverty was substituted for actual income, disruptive behavior disorders (attention deficit disorder (ADHD) and oppositional defiant disorder (ODD) were

more frequently found among those who reported that they lived poorly. These findings suggest that absolute or relative poverty may not be the most appropriate indicator to use in populations where most persons are of low income.

Other important results of this study showed that only 7% of children meeting criteria for ADHD were using stimulant medication in the community sample (82). When comparing the use of stimulants in children who met criteria for ADHD and ADHD not otherwise specified (NOS) between Puerto Rican children in treatment and similar children in San Diego, the rates of stimulant use were also very low in both sites (for ADHD children 32.9% in PR and 38.8% in San Diego and for ADHD NOS, 20.2% in PR and 17.8% in San Diego) (83).

#### *The Fourth Child Psychiatric Epidemiology Study*

The fourth and last child psychiatric epidemiology study carried out in PR was motivated by the consistent finding in prior epidemiological studies that Puerto Rican children, as compared to other ethnic groups or children from other international sites, had lower rates of conduct disorder (CD) and other behavior disruptive disorders (DBD) as well as antisocial behavior problems (ASB) (50, 56, 68). Since prior data had also shown that Hispanic children living in the US also had higher rates of these antisocial behaviors, it was hypothesized that important contextual and cultural factors would be related to the lower rates of these conditions among island children.

The methods of this study have been described in detail elsewhere (84). Basically the study included two probability community samples of children 5 to 13 years of age (N=2,491) from the San Juan metropolitan area and the Bronx in New York. The primary caretakers and children 10 and above were interviewed with the DISC IV and other risk factor measures in three waves of data collection.

The initial cross sectional results showed no significant age or site differences among males in the rates of disruptive behavior disorders (DBD) among males, but rates among females increased with age in the South Bronx and decreased with age in PR (85). In both sites, multiple regression analyses showed that lack of parental warmth and approval, poor peer relationships, parental substance abuse and parental report of aggressive behavior during the toddler years were the most significant correlates of DBD.

Because we wanted to examine the precursors of DBD with longitudinal analyses we developed scales of antisocial behaviors (ASB) that distinguished levels of ASB by severity (86). A six point severity index of ASB was developed making use of symptoms of CD and ODD reported in the DISC and antisocial behavior reported by

parents responding to the Elliot Delinquency Scales (87). Analyses of the longitudinal trajectories of DBD and ASB over the year period of the summer of 2000 and the fall of 2004 showed no difference at baseline for the overall levels of ASB and DBD in both samples (except for the females in the Bronx that showed an increase with age) (88). However, with time ASB and DBD rates remained relatively the same in the Bronx for both boys and girls and in both the younger and older age groups, yet in San Juan the rates decreased for both age groups and gender. There was also clear evidence in both sites that boys had higher rates of ASB and DBD. The decreased risk over time of ASB and DBD in PR and not in the Bronx was interpreted as possibly due to contextual and risk factor differences among the sites.

In another paper the risk factors associated with these longitudinal trajectories were analyzed in an attempt to investigate the factors that could be related to the decrease in ASB over time observed in PR but not in the Bronx (Shrout et al, under review). In these analyses children were classified into one of five trajectory ASB patterns: stably well behaved, persistently antisocial, onset of antisocial behavior, remission from antisocial behavior and mixed/variable course. The risk factor measures were grouped in four conceptual dimensions: negative Family Influences, Ineffective Structuring Variables, Child Risks, and Environmental Risks. The Persistently Bad Course Group, was similar in the South Bronx (16.4%) and San Juan (15.5%) as well as the remission group (South Bronx 21.1% and in San Juan 21.6%). Economically disadvantaged children in the Bronx were twice as likely to experience onset of ASB relative to comparable youth on the island (OR=2.05; 95% CI (1.5, 2.8)). This was the only statistically significant site difference in the comparison of trajectory patterns.

In addition, the youth in the Bronx were exposed to higher levels of a number of known risks for ASB, including negative family influences, ineffective structuring and environmental risks, and child risks.

In other longitudinal analyses of this study the relationship between acculturation levels and acculturative stress of parent and child with ASB and internalizing symptoms (symptoms of depression and anxiety) was examined (Duarte, Bird et al, under review). The results indicated that youth acculturation level was not significantly associated with ASB or internalizing symptoms, whereas parent acculturation was significantly associated with the youth's ASB across the three waves but not with internalizing symptoms. Parental acculturative stress was associated in both sites and the three waves with both child outcomes. The results of these analyses suggested that it is not necessarily the level of

involvement with another culture what might be associated with psychopathology in youth, but the extent to which this involvement is experienced as distressing and that this may vary over time and developmental stage in the youth.

## Conclusions

The main conclusion we can draw from all these studies, is that island Puerto Ricans are not at greater risk for psychiatric disorders as compared to other US or international populations in spite of the fact that the island is besieged by many of the socio-demographic factors associated with high risk populations. If anything, it appears that important protective factors associated with good family relationships and the importance of the family in Hispanic families may be buffering island families from the development of addictive and antisocial disorders.

In spite of the fact that different teams of investigators were involved in all of the studies quoted, the studies had a number of commonalities that responded to the particular time in which these studies were carried out. All the studies relied on the participant's self report through the use of questionnaires or psychiatric interviews for the assessment of psychiatric symptoms or disorders and its associated risk and protective factors, as well as the utilization of services. None of the studies made use of biological measures to examine genetic vulnerability of the population towards any of disorders studied. A team of these Puerto Rican investigators (Canino and colleagues) together with investigators from Virginia Commonwealth University (Silberg and Eaves) have developed in Puerto Rico an Infant Neonatal Twin Registry (PRINTS) to follow population based epidemiologic cohorts of twins that were evaluated five years ago (See Silberg et al. (89) in order to examine the gene-environment interactions that may be implicated in the development of psychiatric disorders of twins. We expect that the future of psychiatric epidemiology will examine the extent to which genetic vulnerability interacts with crucial environmental and cultural factors in explaining the development of psychiatric disorders in children and adults.

## Resumen

Se presenta y discute una revisión de los estudios epidemiológicos de la población adulta y de niños y adolescentes de Puerto Rico llevados a cabo en los últimos 25 años. Puerto Rico ha experimentado una plétora de estudios de epidemiología psiquiátrica desde la década de los 80's con cuatro estudios poblacionales de la

población adulta y cuatro de la población de niños y adolescentes. En general, los resultados de estos estudios revelaron que los puertorriqueños no están en mayor riesgo de enfermedades mentales comparados con otras poblaciones de Estados Unidos o poblaciones internacionales a pesar de que la isla sufre de muchos factores demográficos asociados con poblaciones en alto riesgo. Por el contrario, tal parece ser que existen factores protectores importantes asociados a buenas relaciones familiares y a la importancia de la familia que pueden estar protegiendo a las familias de la isla del desarrollo de trastornos mentales y adictivos.

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