A latent class analysis of positive psychosis symptoms based on the British Psychiatric Morbidity Survey

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Abstract

It has been argued that psychosis in the general population exists along a continuum of symptom severity, and that clinically defined psychosis merely represents the extreme end of the distribution. This study aimed to describe the distribution of positive psychosis symptoms in a large scale, population-based sample. Data from the British Psychiatric Morbidity Survey was used to examine homogeneous subtypes of participants based on their responses to the five probe items of the Psychosis Screening Questionnaire (PSQ). Latent class analysis (LCA) was used to identify the underlying class structure of psychosis. Multinomial logistic regression models were used to interpret the nature of the latent classes by estimating their associations with various risk factors. Four classes of psychosis were identified. Associations between the latent classes and the demographic risk factors, clinical variables and reports of traumatic experiences showed significantly higher risks for the psychosis class, the paranoid class, and the intermediate class compared to the normative class. Four classes that appeared to represent an underlying continuum could best explain psychosis symptom expression at the population level.

INTRODUCTION

Although dichotomously defined for clinical purposes, psychosis may express itself in the general population as a continuous phenotype. This dimensional approach assumes that psychotic experiences and symptoms are continuous with normal experiences and are not necessarily associated with disability (van Os, Hanssen, Bijl, & Ravelli, 2000).

A traditional bio-psychiatric approach to severe mental illness assumes a categorical outlook on psychotic illness, and psychosis from this perspective is defined as a discrete entity that can be identified by applying specific criteria as specified by current diagnostic systems such as the DSM-IV (American Psychiatric Association, 1994) and the ICD-10 (World Health Association, 1992). This approach is beneficial in an environment which relies on the diagnostic process and on medical decision-making (Rose, 1992), but it does not seem to provide a suitably comprehensive and accurate conceptualisation of the total phenotypic trait.
A continuum perspective, however, suggests that psychotic symptoms differ in quantitative ways from 'normal' experience, and that variation in the psychosis phenotype can be better represented by the concept of a continuum (Johns, & van Os, 2001).

It has been suggested that individuals presenting with sub-clinical psychotic phenomena may be indicative of cases with greater vulnerability for the development of clinical psychosis (Krabbendam, Myin-Germeys, & van Os, 2004; Kwapil, Miller, Zinser, Chapman, & Chapman, 1997; Yung, Phillips, McGorry, McFarlane, Harrigan, & Patton et al., 1998). Research identifying such cases of risk has increased and much of this research adheres to the premise that psychosis exists along a

continuum of symptom severity and that clinically defined psychosis merely represents the extreme end of the distribution (Mason, & Beavan-Pearson, 2005).

Support for a continuum hypothesis is provided by two main research findings. First, the prevalence of clinically defined psychosis in all its forms is of the order of 1% (Bebbington, & Nayani, 1995), yet analyses of large nationally representative samples consistently reveal that large percentages of the general population experience positive symptoms of psychosis comparable to clinically defined psychosis. In England and Wales, only 25% of individuals who reported hallucinatory experiences met the criteria for clinically defined psychosis (Johns, Cannon, Singleton, Murray, Farrell, & Brugha et al., 2004). In the Netherlands 17.5% of the population endorsed at least one of the 17 psychosis screening items, and in the United States over 25% of the population endorsed at least one of the survey questions exploring psychotic symptoms. The prevalence of clinically defined psychosis however in the Netherlands and the US was 2.1% and 0.2-0.7% respectively (Bijl, van Zessen, Ravelli, de Rijk, & Langendoen, 1998). Second, several risk factors have been implicated in the aetiology of clinical psychosis (Janssen, Hanssen, Bak, Bijl, De Graff, & Vollerbergh et al., 2003; Johns, Nazroo, Bebbington, & Kuipers, 2003) and it has been suggested that if non-clinical psychotic phenomena show similar patterns of correlation with these risk factors, then that which influences the expression of psychosis at a clinical level will show continuity within the general population (Krabbendam et al., 2004). If these non-clinical phenomena are quantitatively lower than those at the clinical level, then the probability of experiencing the associated risk factors should, if psychosis does express itself as a continuum, decline in proportion to the severity of the symptoms experienced. Demographic factors such as age, sex, ethnicity, IQ, socio-economic

status, and living status have each been reported as having an association with both psychosis at a pathological level and with the experience of non-clinical psychosis phenomena (Claridge, McCreery, Mason, Bentall, Boyle, & Slade et al., 1996; Peters, Joseph, & Garety, 1999; Crow, 1993; Roy, Maziade, Labbe, & Merette, 2001).

Various neurotic symptoms and disorders have also been shown to have a significant effect on psychosis symptom expression at both a clinical level and in attenuated, brief or limited psychotic experiences (Olfson, Lewis-Fernandez, Weissman, Feder, Gameroff, & Pilowsky et al., 2002; Yung, & McGorry, 1996). Van Os and associates have argued that neurotic symptoms are associated with all types of psychosis ratings (van Os et al., 2000). Yung and Mc Gorry (1996) report that neurosis is part of the initial prodrome in psychosis, and Weiser, Reichenberg, Rabinowitz, Kaplan, Mark, & Bodner et al. (2001) report that the presence of neurotic disorders increases the risk for the subsequent onset of psychotic symptoms.

The experience of psychological traumas such as sexual and physical abuse, neglect and maltreatment are highly prevalent within the psychiatric community but also have been discovered to influence the expression of psychotic experience at a non-clinical level (Read, Mosher, & Bentall, 2004; Read, Perry, Moskowitz, & Connolly, 2001). Much evidence suggests that the relationship between traumatic events and psychosis in general and schizophrenia in particular may be as strong, or stronger than the relationship between traumatic events and other less severe adult disorders (Read, Perry, Moskowitz, & Connolly et al., 2001).

In light of the evidence pertaining to high symptom prevalence amidst the general population, and considering the continuity identified from non-clinical to clinical psychosis with associated variables of risk, the current study firstly employed a latent class analysis to identify the underlying class structure of psychosis within a

large representative national sample. Multinomial logistic regression models were then used to interpret the nature of the latent classes by estimating their associations with various risk factors. It was predicted that if quantitatively different groups were found the associations with demographic risk factors, clinical variables, and traumatic experiences would vary as a function of psychosis severity.

METHOD

Sample

The data for the current study was based on the National Survey of Psychiatric Morbidity in Great Britain conducted in 2000. Using the small users postcode address file (PAF) the Office for National Statistics (ONS) stratified postcode sectors within each of the National Health Service regions based on socio-economic status. 36 delivery points were randomly selected from each postal sector yielding a sample of 15,804 delivery points. Using the Kish grid method (Kish, 1965) one adult aged between 16-74 years was systematically selected from each household. The mean age of the sample was 45.36 (SD=15.61). Interviews were successfully conducted with 8580 adults (3852 males and 4728 females). The mean age of the sample was 45.36 (SD=15.61). Interviews were successfully conducted with 8580 adults (3852 males and 4728 females). Details of the survey methods can be found in Singleton, Bumpstead, O'Brien, Lee, and Meltzer (2001).

Measures

In the initial interview of the survey, the Psychosis Screening Questionnaire (PSQ; Bebbington & Nayani, 1995) was used to assess psychotic symptoms within the past year. The PSQ has five probe questions (plus secondary questions) enquiring about

mania, thought insertion, paranoia, strange experiences and hallucinations. Respondents were asked all the items from the PSQ without the usual procedure of cutting off after a section was answered positively. For the purposes of the current line of research, analysis was based solely on the initial probe questions of the PSQ. The five dummy-coded (1 = present; 0 = absent) variables were used in the latent class analysis. The five probe questions were

Q1. Over the past year, have there been times when you felt very happy indeed without a break for days on end?

Q2. Over the past year, have you ever felt that your thoughts were directly interfered with or controlled by some outside force or person?

Q3. Over the past year, have there been times when you felt that people were against you?

Q4. Over the past year have there been times when you felt that something strange was going on?

Q5. Over the past year, have there been times when you heard or saw things that other people could not?

An 'unsure' response to any of the five symptom probes was recoded and treated as missing data.

Other variables included:

1. Ethnicity: Information detailing ethnic background was recoded into a dichotomous variable, which identified respondents as being of white ethnic origin or of non-white ethnic origin.
2. Intelligence: Verbal IQ was estimated from respondents' scores on the National Adult Reading Test (NART; Nelson, 1982).

3. Employment: Individuals were classified under four main categories, these were; working full-time, working part-time, unemployed, and economically inactive.
4. Drug dependence: Information detailing whether respondents had a dependence on any drug covered in the BPMS survey.
5. Household composition: In relation to living status, the BPMS had collected data, which identified respondents as being married, co-habiting, living with parents, living alone, etc. For the purpose of isolating variables of interest respondents were grouped into one of two categories, co-habiting, or living alone.
6. Problem drinking: Consistent with previous work, the diagnosis of an alcohol problem was based on a score greater than 8 on the Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993).
7. Common mental disorders: The Clinical Interview Schedule (CIS-R) was used to produce specific ICD-10 diagnoses of neurosis. In this study we selected diagnoses of (i) generalised anxiety disorder, (ii) mixed anxiety/depressive disorder, and (iii) depressive episode. The algorithms used are described in Singleton et al (2001). Following research which evidences comorbidity between obsessive compulsive disorder (OCD) and psychosis (Ganesan, Kumar, & Khanna, 2001), a diagnosis of OCD was also included in the analysis.
8. Adverse life events and victimisation: Responses from four questions from the List of Threatening Experiences (Brugha et al., 1985) were used. The items

related to (a) running away from home (b) bullying, (c) violence in the home, and (d) sexual abuse.

ANALYSES

Latent class analysis (LCA) is a statistical method used to identify homogenous groups, or classes, from categorical multivariate data and can be used to find distinct diagnostic categories given the presence/absence of several symptoms. LCA is used in a way analogous to factor analysis. Both procedures are utilised for their data reduction capabilities, also, latent classes like factors are unobserved constructs, inferred from observed data. Factor analysis however is concerned with the structure of variables (i.e., their correlations) whereas LCA is more concerned with the structure of cases (i.e., the latent taxonomic structure).

LCA analysis was employed to determine the number and nature of sub-types of psychosis based on the endorsement of each of the five psychosis items of the PSQ. The five dummy-coded (1 = present; 0 = absent) variables were declared as categorical using the CATEGORICAL option of the VARIABLE command in Mplus and used in the latent class analysis. Five latent class models were tested (a two-class latent class model through to a six-class latent class model) and the fit for each of these models was assessed. Selection of the optimal number of latent classes was based on several statistical fit indices. The statistical fit indices were: likelihood ratio chi-square ($LR\chi^2$), Akaike information criterion (AIC; Akaike, 1987), Bayesian information criterion (BIC; Schwartz, 1978), sample size adjusted BIC (SSABIC; Sclove, 1987), the Lo-Mendell-Rubin's adjusted likelihood ration test (LRT; Lo, Mendell, & Rubin, 2001), and entropy measures (Ramaswamy, DeSarbo, Reibstein, & Robinson, 1993). A non-significant likelihood ratio chi-square indicates acceptable

model fit. The information statistics AIC, BIC, and SSABIC are goodness-of-fit measures used to compare competing models; lower observed values indicate better fit. The Lo-Mendell-Rubin's LRT (2001) statistic was used to compare models with differing numbers of latent classes; a non-significant value ($p < 0.05$) suggests that the model with one fewer class should be accepted. Entropy (Ramaswamy et al., 1993) is a standardised measure of how accurately participants are classified based. Entropy values can range from 0 to 1 with higher values indicating better classification.

Multinomial logistic regression was used to assess the association between class membership (posterior probabilities from the model were used to assign individuals to a class) and six demographic variables (ethnicity, IQ, social class, drug dependency, alcohol abuse, and living status), five clinical diagnoses, and four childhood traumatic experiences. The subsequent odds ratios indicate the expected increase/decrease in the likelihood of scoring positively on a given variable compared to the reference, or control group. Due to the large number of variables, and the expected association between the trauma variables and the clinical variables, two separate analyses were conducted. The first analysis assessed the likelihood of scoring positively on any of the five clinical diagnoses while controlling for each of the demographic variables. The second analysis assessed the likelihood of scoring positively on any of the four trauma variables while controlling for the demographic variables.

All analyses included the first-stage sampling weight variable to account for non-equal probabilities of selection. The LCA analysis was conducted using Mplus 4 (Muthin & Muthin, 1998-2006).

RESULTS

Table 1 shows the endorsement rates for each of the five probe items of the PSQ for the entire sample after listwise deletion of missing data (N=8567)

Table 1 here

Table 1 shows that there is variability in endorsement rates for the five psychosis probe items. Over half of the sample (54.3%) endorsed item 1 on the PSQ, which screened for hypomania. The lowest endorsement levels (4.3%) were identified for the fifth item, which assessed hallucinations. Items assessing thought insertion and strange experiences (items 2, and 4) were endorsed by a relatively small percentage of the sample (9.4%, and 8.8% respectively) while the third PSQ item, which assessed paranoia, was met by a larger proportion of the sample (N=1810/21.1%).

Table 2 shows the fit indices from the five latent class analyses.

Table 2 here

The four-class solution is considered to be the best model; the likelihood ratio chi-square is non-significant, the AIC information statistic is markedly lower for the 4-class solution than for the 2-class and 3-class solution, and the Lo-Mendell-Rubin's LRT indicates that the 5-class solution is not significantly better than the 4-class solution (and so the 4-class solution should be preferred on the basis of parsimony). The entropy value (0.68) indicates acceptable classification of participants. This decision is not clear-cut as the BIC and SSABIC values are lower for a 3-class

solution, and entropy is slightly higher. However, the 3-class solution also generated an ordered set of classes with similar increasing levels of risk (demographic variables, traumas, and clinical variables) being associated with class membership. The latent class profile plot is shown in Figure 1.

Figure 1 here

Class 4 was the largest class (N=6506, 75.9%) and was characterised by almost zero probability of endorsing items 2, 3, 4, and 5. The probability of endorsing the first PSQ item, which assessed hypomania, was similar in profile to that of the other three observed classes. This class was considered to be the baseline, or normative, group. Class 1 was the smallest class (N=86, 1%) and was characterised by a relatively high probability of endorsing all of the five PSQ probe items. While the probabilities associated with items 2, 3, 4, and 5 were extremely high within this group, the probability of endorsing the hypomania item (1a) was lower than that of each of the three remaining classes. On the basis of this profile this class was considered the clinical group and was labelled the 'positive psychosis class'.

Classes 2 (N = 1369, 16%) and 3 (N = 606, 7.1%) represent two intermediate classes. Both of these classes share similar profiles in response to items 1, 2, 4, and 5. While probabilities of endorsing item 1 (hypomania) were reasonably high, the probability of endorsing item 2 (thought insertion) decreased dramatically. For item 3 on the PSQ (Paranoia) class 2 showed an extremely high probability of endorsing the item, while the item shows a high probability of being rejected by the third class. A similar profile was again evident between each of the second and third classes on items 4 and 5 (strange experiences and hallucinations). While both classes display

similar profiles in their probability of endorsing item 4, the probability of endorsing the fifth and final item drops in both classes and is met with a near identical probability of endorsement. Classes 2 and 3 were labelled the 'paranoid class' and 'intermediate class' respectively.

Associations between latent classes and demographic risk factors, clinical variables, and traumas.

Associations between the four latent classes and demographic risk factors, clinical variables, and traumas were estimated using three separate multinomial logistic regression models. A variable representing class membership was the dependent variable and demographic risk factors (Model 1), clinical variables (Model 2), and traumas (Model 3) were used as predictors. For Models 2 and 3, sex, age category, ethnicity, household composition, verbal IQ, and employment were controlled for by entering the variables as covariates. Table 3 reports the likelihood ratio tests for the demographic risk factors, clinical variables and traumas.

Table 3 here

Table 3 shows that for Model 1 there were significant associations between the latent classes and age, household composition, verbal IQ, and employment. All the clinical variables were significantly related to the latent classes for Model 2 and all the traumas were significantly related to the latent classes for Model 3.

Table 4 provides odds ratios associated with each demographic risk factor for each latent class compared to Class 4, the normative class.

Table 4 here

The odds ratios associated with the age category variable showed that the likelihood of being in the lower age categories (category 16-24 to 45-54) was significantly higher for the positive psychosis, paranoid and intermediate classes compared to the normative class. The highest odds ratio was for the psychosis group. The effects for the household composition variable showed that the likelihood of living alone was significantly higher for the positive psychosis, paranoid and intermediate classes compared to the normative class. The highest odds ratio was for the psychosis class. The odds ratios associated with verbal IQ showed that the likelihood of being in the lowest IQ category was significantly higher for the psychosis, and paranoid class compared to the normative class. The highest odds ratio was for the psychosis group. The odds ratios associated with employment showed that the likelihood of being economically inactive was significant for the psychosis class only compared to the normative class. The likelihood of being unemployed was significantly higher for the psychosis and the paranoid class compared to the normative class. The highest odds ratio was for the psychosis group.

Table 5 provides odds ratios associated with each clinical variable and trauma for each latent class compared to Class 4, the normative class.

Table 5 here

The odds ratios in Table 5 showed that the positive psychosis, paranoid and intermediate classes are all significantly more likely to be diagnosed with four of the six clinical variables (generalized anxiety disorder, drug dependence, mixed anxiety/depressive episode, and depressive episode) compared to the normative class, after controlling for sex, age category, ethnicity, household composition, verbal IQ, and employment. Only the positive psychosis and intermediate classes are significantly more likely to be diagnosed with alcohol dependence or OCD after covariates are controlled for. For each of the clinical variables the psychosis class has the largest odds ratio and the odds ratios decline from Class 1 through Class 3.

The odds ratios in Table 5 showed that the positive psychosis, paranoid, and intermediate classes are all significantly more likely to have experienced each of the traumas compared to the normative class. For each of the traumas the psychosis class had the largest odds ratio. The odds ratios declined from Class 1 through Class 3 for all the traumas.

A Poisson regression model, which treated the total number of traumas as a count variable, indicated a positive association between class membership and total number of traumas experiences, b=.069, p<.001. Also, the average number of traumas experienced differed across the four classes. The average number of traumas for the positive psychosis (mean=1.38), paranoid (mean=.70), intermediate (mean=.48), and normative (mean=.25) classes were significantly different, $F(3, 8557)=252.30$, $p < 0.001$, $\eta^2=.081$. Bonferroni adjusted post-hoc tests showed that all classes were significantly different from each other and a linear contrast was statistically significant, $F(1,8557)=276.50$, $p < 0.001$, $\eta^2=.081$.

DISCUSSION

A latent class analysis yielded a four-class solution. The classes were labelled as 'positive psychosis', 'paranoid', 'intermediate', and the 'normative' class. The percentage of participants (1%), and high probabilities of endorsing four of the five symptom items, suggested that this class is most indicative of a clinical/pathological class. The second (paranoid), third (intermediate), and baseline classes share almost identical latent class profiles, differing only in terms of the magnitude of the associated probabilities, which decrease from the paranoid class through to the baseline class. One distinguishable feature of these possible sub-clinical classes is the level of endorsement observed for the paranoia symptom probe. Respondents assigned to the paranoid class display an extremely high probability of endorsing the paranoia probe whereas the intermediate and baseline classes display a near identical low probability of reporting paranoid experience.

Recent work aimed at interventions in the initial prodromal states of psychosis identified suspiciousness and paranoid ideation within the criteria for identifying a late initial prodromal state (Bechdolf, Ruhrmann, Wagner, Kuhn, & Janssen et al., 2005). Longitudinal studies indicate that while the majority of individuals in sub-syndromal psychotic classes are not in need of care, they may nevertheless have an increased risk of developing a clinical disorder (Kwapil, Miller, Zinser, Chapman, & Chapman, 1997; Yung et al., 1998).

If psychosis was distributed as a continuum it would be expected that the psychosis group would have the highest odds ratios, compared to the paranoid and intermediate classes, and that the odds ratios would decrease from the psychosis class through to the intermediate classes. It is also important that the odds ratios for the

paranoid and intermediate classes are statistically significant to indicate that they differ meaningfully from the normative group. This pattern was evident for the majority of clinical variables, with the exception of alcohol dependency and obsessive compulsive disorder, these diagnoses yielded statistical significance at the psychosis and paranoid classes only. The decreasing odds ratios were evident for all the traumatic experiences.

To conclude, this study has shown that four classes that appear to represent an underlying continuum can best explain psychosis symptom expression at the population level. Evidence favouring a quantitative hypothesis may not only impact on the conceptualisation of the psychosis phenotype but more importantly, it may have a positive impact on both the detection of those individuals who are at increased risk of developing a psychotic disorder and aid in the design and implementation of more effective treatment.

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Table 1.

Frequency of endorsement of psychosis screening items.

Screening Item	Yes N (%)
1. Very happy without a break	4655 (54.3)
2. Felt controlled by some outside force	805 (9.4)
3. Felt people were against you	1810 (21.1)
4. Felt something strange was going on	758 (8.8)
5. Heard or saw things others could not	371 (4.3)

Table 2.

Fit indices for the latent class analysis of the PSQ psychosis screening items.

Model	Log	Free parameters	LRχ^2 (df) p	AIC	BIC	SSABIC	LRT p	Entropy
2 classes	-15633	11	63.156 (16) .000	31288	31366	31331	2002 .000	.75
3 classes	-15617	17	31.043 (10) .000	31268	31388	31334	31.53 .084	.72
4 classes	-15606	23	9.753 (4) .054	31259	31421	31348	20.95 .024	.68
5 classes	-15603	29	3.226 *	31264	31469	31377	6.409 .403	.62
6 classes	-15602	35	0.685 *	31274	31521	31410	2.50 .882	.76

LRχ^2 = likelihood ratio chisquare, AIC = Akaike information criterion, BIC = Bayesian information criterion, SSABIC = sample size adjusted BIC, LRT = Lo-Mendell-Rubin's adjusted likelihood ratio test
*No significance tests are available for the LRχ^2 as the degrees of freedom are zero or negative.

Table 3.

Likelihood ratio tests for multinomial logistic regression for demographic risk factors, clinical variables and traumas.

	Effect	-2 Log Likelihood	Chi-Square	df	Sig.
Model 1	Sex	2114.87	1.22	3	.75
	Age	2402.47	288.82	15	.00
	Ethnicity	2119.51	5.86	3	.12
	Household composition	2145.97	32.32	3	.00
	Verbal IQ	2139.17	25.51	6	.00
	Employment	2152.67	39.02	9	.00
Model 2	Generalized anxiety disorder [a]	4618.80	135.42	3	.00
	Drug dependence [a]	4514.90	31.53	3	.00
	Alcohol dependence [a]	4502.70	19.33	3	.00
	Mixed anxiety/depressive [a]	4757.19	273.82	3	.00
	Depressive episode [a]	4534.90	51.52	3	.00
	OCD [a]	4513.79	31.53	3	.00
Model 3	Violence in the home [a]	4223.32	61.32	3	.00
	Sexual abuse [a]	4202.51	40.51	3	.00
	Run away from home [a]	4204.71	42.70	3	.00
	Bullied [a]	4255.74	93.74	3	.00

[a] All associations are adjusted for sex, age category, ethnicity, household composition, verbal IQ, and employment.

Table 4.

Associations between psychosis classes and demographic risk factors.

	Associations (OR, 95% CI [a]) with: Class 1 Positive Psychosis	Class 2 Paranoid	Class 3 Intermediate
Sex (male)	1.03 (.64-1.66)	.99 (.89-1.13)	.90 (.75-1.09)
Age			
16-24	25.26 (7.10-89.79)	7.89 (5.65-10.99)	2.92 (1.94-4.40)
25-34	14.44 (4.08-51.16)	6.25 (4.57-8.56)	2.22 (1.53-3.22)
35-44	16.44 (4.69-57.68)	5.73 (4.19-7.84)	2.66 (1.86-3.82)
45-54	12.18 (3.42-43.30)	4.40 (3.20-6.04)	2.41 (1.68-3.47)
55-64	2.01 (.45-9.02)	2.89 (2.11-3.96)	1.77 (1.25-2.52)
65-74	*b*	*b*	*b*
Ethnicity (non-white)	1.99 (.92-4.28)	1.02 (.75-1.38)	1.48 (.10-1.21)
Household Composition (alone)	1.96 (1.19-3.20)	1.44 (1.25-1.66)	1.28 (1.05-1.56)
Verbal IQ			
70-89	2.38 (1.21-4.70)	1.37 (1.14-1.65)	.95 (.73-1.22)
90-109	1.77 (.95-3.29)	1.36 (1.17-1.58)	1.03 (.84-1.26)
110-129	*b*	*b*	*b*
Employment			
Eco Inactive	3.47 (2.04-5.92)	1.183 (1.00-1.39)	1.37 (1.09-1.74)
Unemployed	1.98 (.68-.43)	1.41 (1.02-1.95)	1.76 (1.12-2.75)
Work part-time	.95 (.43-2.09)	1.01 (.84-1.21)	1.05 (.81-1.37)
Work full-time	*b*	*b*	*b*
Intercept	-6.629	-3.239	-2.970

[a] Confidence intervals not including unity indicate statistical significance
[b] Comparison level

Table 5.

Associations between psychosis classes and clinical variables and traumas.

	Associations (OR, 95% CI [a]) with:		
	Class 1 Psychosis [b]	Class 2 Paranoid [b]	Class 3 Intermediate [b]
Generalized anxiety disorder	9.23 (4.96-17.16)	4.06 (3.16-5.20)	2.07 (1.41-3.02)
Drug dependence	4.72 (2.44-4.72)	1.93 (1.42-2.63)	1.88 (1.20-2.94)
Alcohol dependence	1.73 (1.04-2.89)	1.36 (1.18-1.58)	1.07 (.86-1.32)
Mixed anxiety/depressive	6.20 (3.38-11.38)	4.56 (3.80-5.48)	2.62 (2.01-3.42)
Depressive episode	5.18 (2.50-10.76)	3.10 (2.21-4.35)	2.36 (1.46-3.81)
OCD	7.90 (3.42-18.25)	3.14 (1.91-5.17)	1.78 (.83-3.81)
Intercept	-1.637	-.028	-1.366
Violence in the home	2.71 (1.54)	2.12 (1.73-2.60)	1.84 (1.38-2.45)
Sexual abuse	2.79 (1.43-5.42)	2.37 (1.80-3.13)	1.76 (1.81-2.62)
Run away from home	4.17 (2.36-7.37)	1.95 (1.53-2.49)	1.46 (1.01-2.12)
Bullied	3.41 (2.10-5.55)	1.97 (1.70-2.29)	1.45 (1.16-1.81)
Intercept	-2.534	-.383	-1.903

[a] Confidence intervals not including unity indicate statistical significance
[b] All associations are adjusted for sex, age category, ethnicity, household composition, verbal IQ, and employment.

Figure 1

Profile plot for the latent class analysis of the Psychosis Screening Questionnaire.