

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**Peer Recognition of Prodromal Signs of
Psychosis:
A Signal Detection Analysis**

*A thesis presented in partial fulfilment of the requirements for the
degree in Master of Arts in Psychology at Massey University,
Palmerston North, New Zealand.*

Robyn Joye Boyd

2005

ABSTRACT

Using signal detection analysis, this study investigated young peoples' sensitivity to prodromal signs or psychotic symptoms compared to more everyday signs of distress in their friends. In a questionnaire format, 117 high school students (aged 13 to 16 years) were asked to report the level of concern they would have if one of their friends exhibited certain characteristics. Half of the latter were neutral, everyday phenomena (no signal), and the remainder were either DSM-IV symptoms of psychosis or empirically-derived prodromal signs of early onset psychosis (signal). Each possible sign was modified (made more serious) by descriptors used in psychological models to define pathology behaviorally: rare in youth, high in frequency, recent change, and lack of obvious (rational) environmental cause. High frequency was the modifier leading to the greatest degree of concern. Accurate and sensitive detection, based on d' values, was adequate for psychotic symptoms, especially by females rather than by males, although depressed mood (a prodromal sign in this context) was most readily detected as a worrisome feature. The study has implications for analyzing how youth judge indices of distress in their friends and for their general ability to recognize that certain characteristics are more troublesome than others. Telling a responsible adult of their concerns was the most frequently suggested response, followed by attempting to help and talking to the peer about their concerns. If rapid detection of early onset psychosis is to be a goal of preventative mental health services, youth who are sensitive to classic symptoms of psychosis may still need educating in recognizing the difference between behavioral characteristics that are part of everyday distress and those that are indicative of more serious adjustment difficulties that might be emerging.

ACKNOWLEDGEMENTS

I would like to warmly thank the students who contributed to the research: thank you for your time, effort, ideas and thoughts. It was a pleasure to meet with many of you and without your participation this thesis would not have been possible. To your parents and caregivers, thank you for consenting to your child taking part in the research and to the school principals and Boards of Trustees, thank you for allowing me to come into your school and ask for volunteers to participate.

Associate Professor John Podd, the kind man who knows all about signal detection theory, thank you for your guidance and sharing of knowledge; your patience while I was learning was greatly appreciated. I would also like to thank Malcolm Loudon who developed a computer package to assist with my signal detection data analysis - you generously provided your time and assistance.

I am delighted to acknowledge the support and friendliness of my supervisor, Professor Ian Evans. Ian, you have inspired my research with your knowledge and ideas and have fully supported me on my research journey. As Head of School you are an extremely busy person, yet I always felt that you spent focused and uninterrupted time with me in supervision and your passion for research and assisting student learning is clearly evident. You are a true expert in the field of clinical psychology and a role model for clinical psychology students.

I would like to acknowledge the support of my husband and daughter who enabled me to achieve this goal with their continual encouragement and love.

TABLE OF CONTENTS

Abstract	ii
Acknowledgements	iii
Table of Contents	iv
List of Figures	v
Introduction	1
Early Intervention	1
Early detection of psychosis – prodromal signs	2
Peers	4
Signal Detection Theory	7
Method	10
Participants.....	10
Procedure	10
Materials	11
Results	15
Descriptive Statistics	15
Signal Detection Analysis	19
Open Questions	24
Discussion	27
References	32
Appendix.....	39

LIST OF FIGURES

Figure 1. Mean concern ratings for modified and neutral statements	15
Figure 2. Mean concern ratings for psychotic and prodromal modified statements and statements of their neutral form	16
Figure 3. Mean concern ratings for the five modified psychotic symptom statements and their neutral form	17
Figure 4. Mean concern ratings for the five modified prodromal sign statements and their neutral form	18
Figure 5. Mean concern ratings for type of modifier that generated the statement as a symptom	19
Figure 6. Distribution of d' for participants	20
Figure 7. Distribution of c measure of bias for participants	20
Figure 8. Distribution of d' for prodromal signs	22
Figure 9. Distribution of d' for psychotic symptoms	22
Figure 10. Distribution of d' for change	23
Figure 11. Distribution of d' for high frequency	23
Figure 12. Distribution of d' for lack of obvious cause	24
Figure 13. Distribution of d' for rare in youth	24
Figure 14. The most important qualities in a friend	25
Figure 15. Reported action if concern expressed	25

INTRODUCTION

Psychosis, a distressing psychological disorder that usually develops first in young people can be effectively treated if it is detected at a very early stage. Detection is often difficult as adults may see the early signs as normal or exaggerated adolescent behaviour - perhaps an urgent sense that something is not quite right. Clinical psychologists and mental health services interested in secondary prevention and the early diagnosis of psychological disorder in youth are very dependent on peers identifying their friends' behaviors as being indices of problems more serious than everyday distress.

Early Intervention

Early intervention enables those whose lives are affected by first episode psychosis to experience an optimum recovery and have an increased quality of life. This is achieved by providing effective best practice treatment at the earliest possible stage, with the aim of reducing the duration of untreated psychosis. The powerful words from the perspective of a carer best describe the need for early intervention:

“What person who has watched someone they love pass through the Gehenna of acute psychotic illness and prolonged, repetitive treatments in a psychiatric unit, what person does not long for the capacity to eliminate that suffering? What family member who has experienced the devastation, the chaos of an acute episode of schizophrenia, could not conscientiously endorse and encourage research into prevention of the illness?” (Peterson, 2000, p. 201).

The effectiveness of early intervention is well supported in the literature (Edwards & McGorry, 2002; Edwards, McGorry, & Pennell, 2000; Larsen, Johannessen, Guldberg, Opjordsmoen, Vaglum, & McGlashan, n.d.; Lines, 2000; Malla, Norman, Manchanda, McLean, Cortese, & Scholten, 2002 & Spencer et al.,

2001). An excellent example of the promotion of early intervention is TIPS (Early Treatment and Identification of Psychosis), which is an ongoing multi-centre project in Scandinavia with the specific aim of reducing the duration of untreated psychosis. To assist in achieving this goal, extensive information campaigns are provided which are directed toward the public, health professionals and schools about the early signs of psychosis. This has resulted in increased appropriate referrals to psychiatric health services from families, teachers and social workers and has achieved a major reduction in the duration of untreated psychosis (Johannessen & McGlashen, 2000).

Australia and New Zealand are reported as being two of the leading countries in this field (Edwards et al., 2000), with New Zealand having Guidelines for Early Intervention for Psychosis Services (Mental Health Commission, 1999). Nationally, we have many Early Intervention Services. Regions where services are not currently available include the Manawatu, and needs assessment (Boyd, 2004) suggest that there is a strong demand from the community for a local early intervention service.

Early Detection of Psychosis – Prodromal Signs

To enable early intervention to occur, we must be able to detect the early or prodromal signs of psychosis. Before early treatment programmes can even be addressed there needs to be a level of confidence in detecting the signs, and then knowing how to seek help. These signs must be accurately detected to avoid the risk of false positives. As Larsen et al. (2001, p.323) state “we identified no studies that prove that intervention in the prodromal phase is possible without a high risk for treating false positives.” While there are issues around the prodromal signs of psychosis being variable and non-specific, a vast amount of recent research supports the clear identification of prodromal signs and prediction of psychosis (Edwards & McGorry,

2002; McGorry, Yung, & Phillips, 2002; Phillips et al., 2002; Yung et al., 1998a,b, & Yung et al., 2003).

Research has been conducted around asking those whose lives are affected by first episode psychosis to retrospectively identify how they perceived their prodromal phase. Two core dimensions of experience were highlighted in such a study by Moller (2000) as being “disturbance of perception of self” and “extreme preoccupation by and withdrawal to overvalued ideas”. Four potential dimensions of prodromal behaviour were also identified as being: quit school, university or job, or major truancy, observable shift of interests, social passivity, withdrawal or isolation, and change in global appearance or behaviour. Yung and McGorry (1996) found people to self-report a wide variability of phenomena and sequence patterns, with symptoms being a mixture of attenuated psychotic symptoms, neurotic and mood-related symptoms and behavioural changes.

In contrast to the retrospective studies, a New Zealand longitudinal study (Poulton, Caspi, Moffitt, Cannon, Murray, & Harrington, 2000) investigated whether self-reported delusional beliefs and hallucinatory experiences at age 11 years predicted schizophrenic outcomes 15 years later. A strong linear relationship was found between self-reported psychotic symptoms in childhood and adult schizophreniform disorder. Strong symptom children were 16 times more likely to have a schizophreniform disorder diagnosis by age 26 years than were the controls.

Research has also been conducted regarding other people being able to recognise the prodromal signs of psychosis in others. Reports by family and friends about their family member or friend with first-episode psychosis were used in one study to derive a checklist of behaviours describing the evolution of various phases of illness. Good reliability was achieved with age at the first appearance of psychotic symptoms and at

initiation of treatment seeking, but it was found that judging the beginning of the prodrome was more difficult (Beiser, Erickson, Fleming, & Iacono, 1993).

General practitioners are primary care health professionals who may be in an extremely helpful position to detect the earliest signs and symptoms of psychosis. Yet, following a literature review and using experiences and data obtained during the Buckingham Integrated Mental Health Care Project, Falloon (2000) found that general practitioners often have difficulty recognising the earliest signs of a psychotic episode.

Youth spend a large proportion of their time in the school environment; therefore, can teachers recognise the early signs of psychosis? Olin et al. (1998) examined teacher ratings as a tool for identifying those at risk of developing psychosis. The average age of students involved in the study was 15 years of age. The high-risk group (n = 207) were children with mothers who had schizophrenia, and there was also a low risk or control group (n = 104). In 1962, an extensive teachers' report where teachers rated the behaviours of both groups was obtained. The first intensive diagnostic interview was conducted between 1972 and 1974 and the second intensive diagnostic interview was conducted between 1986 and 1989. It was found that the teachers were able to anticipate which of the students would develop serious psychiatric disorders and their ratings also differentiated within the group of people who subsequently developed schizophrenia. Within the low-risk individuals, teachers were able to predict which students would develop psychotic disorders in the following 25 years. They were found to be more accurate in predicting severity of negative symptoms than severity of positive symptoms.

Peers

Peer groups and friendships play a large role in the lives of youth. Crockett (1988) explored self-reports of childhood peer relationships and home life with adults

who had never been treated and adults who had received psychiatric treatment.

Analysis showed that worst memories of childhood peer relationships were associated with worst prognosis (schizoaffective and schizophrenia disorders), but not with worst memories of parents. Subjects, who were paranoid, recalled membership in cliques, teams or gangs, but few close childhood friends.

Further evidence that peers play a large role in the life of youth is the supporting evidence of the effectiveness of peer-run support groups for youth who are affected by first episode psychosis. Peer-support is described by Edwards and McGorry (2002) as a therapeutic approach to patients with schizophrenia and was one of the results of the Early Psychosis Projects. Peer-based support as part of an in- and out-patient treatment programme is described as effective in preventing patients from dropping out of the treatment (Linszen & Lenior, 1999). Francey (1999) mention a female who established a peer-run support group that she believes has been important in her learning to cope with her illness.

If peer relationships are so important in youth, this raises the question – can youth identify when a friend is experiencing an emotionally disturbing time? Hoffman, et al. (1977) found this to be the case. Subjects were fourth and sixth graders who had five vignettes read aloud to them. One vignette described a normal boy and four vignettes described emotionally disturbed boys. Interviews were coded to a 5-point scale of degree of perceived emotional disturbance and it was found that subjects differentiated among the boys in the vignettes in a manner congruent with clinician judges' ratings.

If youth are able to identify when a friend is experiencing an emotionally disturbing time, they also need to know what to do about it to enable the friend to receive appropriate assessment and treatment. Trying to help the friend and

encouraging the friend to tell a responsible adult would be an effective response for a young person.

One of the difficulties encountered when examining young people's detection of psychotic symptoms is that if the symptoms are described in typical psychiatric terminology, their pathological nature is emphasised. If a young person is already exhibiting a frank symptom of psychosis (such as would be found in the DSM-IV criteria), then detection might take place earlier than if the young person waits to be seen at a mental health clinic, but detection cannot be said to have really preceded the onset of the psychotic syndrome.

An alternative perspective on this issue can be found in behavioural and social learning theories of mental illness. Such theories tend to stress not the content of symptoms, but the fact that there is continuity between normal and typical behaviour and behaviour that is judged inappropriate by society. Thus behavioural theories tend not to make such clear distinctions between "normal" and "psychotic" behaviour as would be typical of a psychiatric model. In behaviour theory, it is usually assumed that certain dimensions of a behaviour make it pathological. For example, a behaviour that occurs only occasionally might be part of typical behaviour, but if the behaviour occurs repeatedly and excessively, it becomes a problem. Another aspect of pathological behaviour is that the behaviour being judged is not related to an obvious cause. For example, if someone was feeling low in mood because he or she heard that a friend had been diagnosed with cancer, we would not consider that a sign of abnormality as opposed to someone whose depressed mood seemed unrelated to current circumstances. Another feature of abnormality is that the content of the behaviour is very rare in that particular age group – sucking your thumb when you are five years old would not be judged as inappropriate compared to sucking your thumb when you are fifteen years

old. Another behaviour characteristic that might indicate that a behaviour is problematic is that it has suddenly changed. If a young person stops playing a sport it is not considered unusual if he or she had announced intent to do so and gradually dropped out of that activity; but it is of great concern if a young person who loves a particular activity suddenly gives it up. Although there are other dimensions whereby a behaviour of a given content can be judged to be abnormal, these four seem to represent widely recognised characteristics that relate to abnormality.

Signal Detection Theory

Signal detection theory (SDT) measures performance and is about decisions or choices that people make. Originally, auditory signal detection tasks involved an observer identifying the presence or absence of a weak pure tone embedded in a burst of white noise and visual signal detection tasks involved an observer detecting the presence or absence of a weak flash of light against a background whose level of illumination fluctuates randomly. The methodology developed out of SDT, allows us to measure sensitivity, how well the observer is able to make correct judgements and avoid incorrect ones, and bias, the extent to which the observer favours one hypothesis over another independent of the evidence given (McNicol, 1972). Within the field of psychology, these tasks have been extended and include studies of facial recognition (Metzger, 2002; Podd, 1990). In the field of clinical psychology, SDT has been used again with recognition memory, although this time as a function of neuroticism, introversion, extraversion and arousal (Hershkowitz & Texas, 1971). It has also been used with a task to assess the performance of people who have a diagnosed psychological disorder (Axelrod, 2002; Bentall & Slade, 1985), and to analyse the diagnostic accuracy of clinical assessments (Dunn, 2000; McFall & Treat, 1999). SDT has been used as a statistical method which takes into account the prevalence,

sensitivity and specificity of autistic disorder which had been solely diagnosed by descriptive criteria (Siegel, 1990). To date, I have found no studies using signal detection tasks to detect the presence or absence of clinical symptomology in other people. Such a highly accurate methodology seems to be an extremely appropriate methodology to use for such a study.

In a one-interval, or a yes-no SDT experiment, a hit is when the stimulus is present and was identified, a miss is when the stimulus was present and was not identified, a false alarm is when the stimulus was not present and was identified, and a correct rejection is when the stimulus is not present and was not identified. These outcomes can be represented in a stimulus-response matrix:

Stimulus	Response	
	“yes”	“no”
Present	Hit	Miss
Not Present	False Alarm	Correct Rejection

(MacMillan & Creelman, 1991). An analysis of the hit and false alarm rates enables one to derive a statistic, d' that is independent of response bias. SDT analysis is important for providing evidence of bias free discrimination. By removing the effects of decision bias, the d' measure gives a clear indication of the degree of discrimination possible, free from the potentially confounding effects of response bias. The benefit and point of using SDT analysis is to obtain a bias free estimate of delectability.

The purpose of my study was to determine if a sample of college students from the lower North Island, are able to recognise the early signs of psychosis in fellow students and to investigate the sensitivity of youth to prodromal signs or psychotic symptoms compared to more everyday distress in friends. I hypothesise that youth are able to detect the early signs of psychosis in their friends and they are able to

distinguish these signs from everyday behaviour. A further purpose was to investigate, using SDT, if, when thinking of one's friends a particular sign of distress stands out against a background of a lot of other things the person might be doing or saying (detecting a signal against a background of noise). A goal of the current study was to investigate whether the four dimensions; lack of obvious cause, rare in youth, high in frequency and change in behaviour, could be used to modify a particular, otherwise neutral activity. If so, whether these modifications would be equally detectable by young people, or whether one of these characteristics stand out as being particularly salient.

METHOD

Participants

The sample consisted of 117 students whose ages ranged from 13 to 16 years old. "Incidence of schizophrenia begins to rise during the 15 to 18 year age range" (Pelosi & Birchwood, 2003, p.197). Therefore, I asked for volunteers in the younger age range of 13 to 15 years of age to investigate if they were sensitive to certain behaviours of their peers. The average age was 13.9 years old ($SD = .78$ years). Forty two participants (35.9%) were 13 years old, 45 participants (38.5%) were 14 years old, and 30 participants (25.6%) were 15 years old or older. As only six participants were 16 years old, 15 and 16 years old participants were included in the 15+ age bracket. Forty two participants (35.9%) were female and 75 participants (64.1%) were male. Thirty participants (25.6%) identified as New Zealand Maori, 78 participants (66.7%) identified as New Zealand European and nine participants (7.7%) identified as belonging to other cultural groups.

Procedure

Ethics approval for this research was obtained from the Massey University Human Ethics Committee. Participants were recruited from secondary schools within the lower North Island specifically, Manawatu, Wanganui, Wairarapa and Southern Hawkes Bay districts. In total, thirteen schools were approached, either in person or in writing, to participate. Permission was obtained from the principal and/or Board of Trustees.

An information sheet and consent forms (see Appendix) were sent to parents/care givers of students aged 13 to 15 years of age via the school. It was decided by the school who the information packs were sent to. Some schools allowed for

recruitment of participants from all students in the desired age range and others a sample of students from one class or year.

Once parental consent was obtained, these students were invited to complete the questionnaire either at their school or home. Instructions for completing the questionnaire were provided on the questionnaire itself and the attached information sheet. No time limit was given. Completed questionnaires were returned either by post or in person. A draw was made for a music voucher, for those who chose to enter, once all completed questionnaires were returned.

Materials

The questionnaire "Is Everything Alright?" was specifically designed for this research (see Appendix). Questionnaires for males were printed on yellow paper and the questionnaire for females on green paper. The two questionnaires differ only in the gender-specific phrases. The participants were requested not to put their name on the questionnaire.

Background information was initially sought regarding gender, age and ethnicity of the participant. Two open-ended questions were included in the questionnaire. The question, "what do you think are the most important qualities in a friend?" was asked initially in the questionnaire to assist the participant in promoting thought about friends and friendships. The second question, "if you indicated concern, what would you do about it?" completed the questionnaire. The purpose of this question was to see what coping strategies participants currently use (or say they would use) if they were concerned about a friend. A coding system was developed to show the participants' open-ended responses to this second question, to be scored according to how effective and appropriate their responses were. This coding system was as follows: 1= nothing, 2= socialise with the person, 3= talk to friend, 4= try to help, 5= tell a responsible adult,

6= encourage friend to tell a responsible adult, 7= try to help friend and tell a responsible adult, and 8= try to help friend and encourage friend to tell a responsible adult.

The main content of the questionnaire are the statements of concern. Eighty statements were randomly listed and participants were asked to rate them on a Likert Scale from 1 (not a concern at all) to 6 (a serious concern). The scale had no mid-point therefore, points 1, 2 and 3 indicated three levels of no concern and points 4, 5 and 6 indicated three levels of concern. Participants were asked to think of a friend, the same age and gender, and identify how concerned they would be if the friend behaved as the statement suggests. I developed the statements in consultation with clinical psychologists, mental health workers, parents and youth.

Of the eighty statements, forty were neutral or were expected to be of no concern. They are statements of every day youth behaviour. The remaining forty statements were modified statements and were divided into two types: half (twenty statements) were statements that represent psychotic symptoms and the remaining twenty statements represented prodromal signs of psychosis. An example of a psychotic statement is "if I had a friend who is always listening and responding to a voice that no one else can hear, to me this would be.....". The equivalent neutral statement is "if I had a friend who is sensitive to experience, to me this would be.....". An example of a prodromal statement is "if I had a friend who never laughs or smiles, to me this would be.....". The equivalent neutral statement is, "if I had a friend who has a low mood when things don't go right, to me this would be.....". Psychotic symptoms were represented by five criteria from DSM-IV (American Psychiatric Association, 1994): visual hallucinations, auditory hallucinations, disorganised behaviour, disorganised speech, and delusions. Prodromal signs were represented by

the five most reported signs as found by Edwards and McGorry (2002): reduced concentration, reduced drive and motivation, depressed mood, sleep disturbance, and anxiety. For each of the signs (five psychotic and five prodromal) there were four modifiers which then characterised the statement as a symptom (a total of 40 statements). The four modifiers are: lack of obvious cause (for example, “if I had a friend who out of the blue will tell stories that I can not make sense of, to me this would be.....”), rare in youth (for example, “if I had a friend who is anxious about things the rest of us are not anxious about, to me this would be.....”), high in frequency (for example, “if I had a friend who can not concentrate on anything, to me this would be.....”), and change in behaviour (for example, “if I had a friend who used to spend time with other females but now will not as she believes all females have special powers which could harm her, to me this would be.....”).

The statements of concern were structured in this way to enable the data collected to be analysed, not only using descriptive statistics (SPSS computer package), but to establish a bias free estimate of ability to detect symptoms using SDT analysis. The design of this study allowed for a one-interval design or a yes-no experiment. “Yes” is when concern is expressed by the participant, responses 4, 5 or 6 on the Likert scale, and “no” is when concern is not expressed by the participant, responses 1, 2, or 3 on the Likert scale. A hit is when the statement was a symptom and the participant identified concern, a miss is when the statement was a symptom and the participant did not identify concern. Similarly, a false alarm is when the statement was not a symptom and the participant identified concern, and a correct rejection is when the statement was not a symptom and the participant did not express concern. The SDT measure detection used was d' , defined as: $d' = z(\text{hit rate}) - z(\text{false alarm rate})$. The measure of response

bias was c , defined as $-0.5 (z(\text{hit rate}) + z(\text{false alarm rate}))$, (MacMillan & Creelman, 1991).

RESULTS

Descriptive Statistics

Mean ratings for modified (symptomology) statements and neutral statements were calculated and are depicted in Figure 1. It can be seen that the concern ratings for modified statements ($M = 4.27$, $SD = .66$) was greater than for the neutral statements ($M = 3.21$, $SD = .66$), a difference which was statistically significant, $t(116) = -20.56$, $p < .0001$.

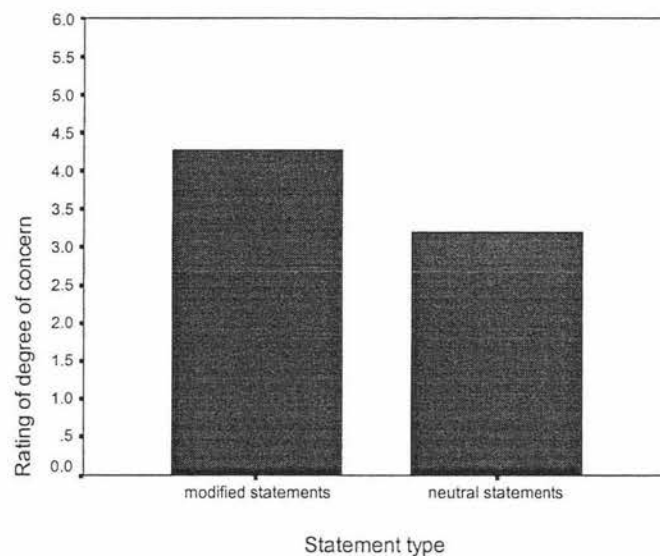


Figure 1. Mean concern ratings for modified and neutral statements.

Within the modified group, mean ratings for psychotic statements and prodromal statements were calculated, along with mean ratings for the neutral forms of both these types of symptom and they are depicted in Figure 2. It can be seen that ratings for psychotic statements ($M = 4.46$, $SD = .72$) was greater than for the prodromal statements ($M = 4.09$, $SD = .72$), a difference which was statistically significant, $t(116) = -7.22$, $p < .0001$. The neutral form of psychotic statements ($M = 3.17$, $SD = .70$) was slightly lower than the neutral form of prodromal statements ($M = 3.24$, $SD = .72$). This difference was not statistically significant.

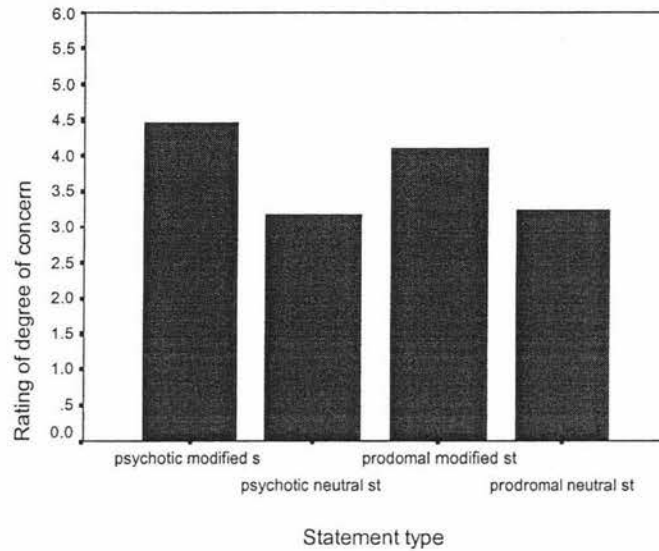


Figure 2. Mean concern ratings for psychotic and prodromal modified statements and statements of their neutral form.

Within the psychotic group of modified statements, visual hallucinations are the psychotic symptom reported to be of the most concern ($M = 5.01$, $SD = .89$), followed by delusions ($M = 4.86$, $SD = 1.16$), auditory hallucinations ($M = 4.81$, $SD = 1.03$), disorganised speech ($M = 3.84$, $SD = .81$) and disorganised behaviour ($M = 3.75$, $SD = .83$). As can be seen in Figure 3, the neutral versions of each psychotic symptom were all rated in approximately the same fashion.

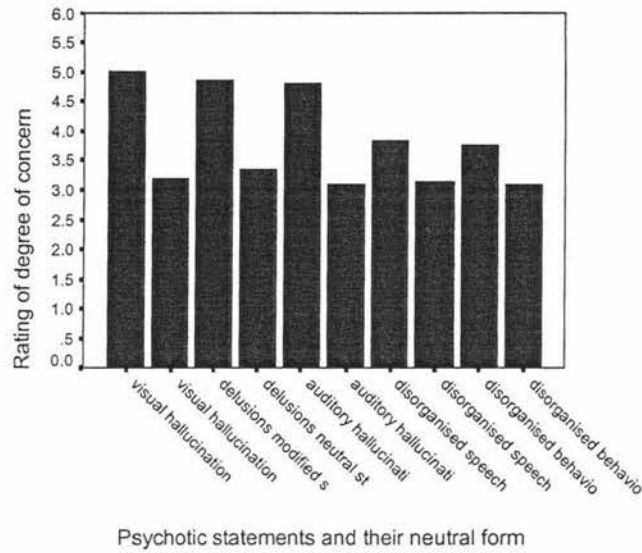


Figure 3. Mean concern ratings for the five modified psychotic symptom statements and their neutral form (modified psychotic symptom followed by the neutral form).

Within the prodromal group of modified statements, depressed mood was rated as most concerning of the five prodromal signs ($M = 4.79$, $SD = .97$), followed by reduced concentration ($M = 4.13$, $SD = .89$), reduced drive and motivation ($M = 3.94$, $SD = .91$), anxiety ($M = 3.86$, $SD = .82$) and sleep disturbance ($M = 3.7$, $SD = 1.03$). These are depicted in Figure 4. The neutral forms of the prodromal symptoms were rated as being of greater concern than the neutral forms of psychotic symptoms, and also showed greater variability with the neutral stem for depression being rated as more concerning than the neutral stem for sleep disturbance.

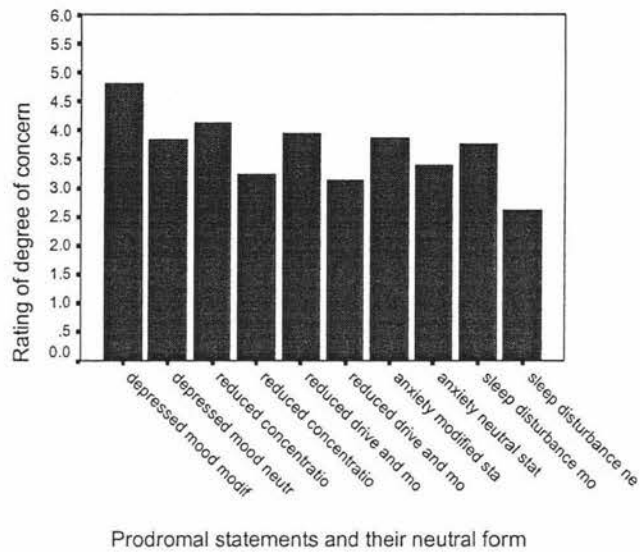


Figure 4. Mean concern ratings for the five modified prodromal sign statements and their neutral form (modified prodromal symptom followed by the neutral form).

For each of the 10 symptoms, prodromal and psychotic, the participants rated the neutral statements as less concerning than the symptom statement, with each difference being statistically significant using paired sample *t* tests.

With regard to the type of modifier that generated the statement as a symptom, those that were high in frequency were reported as most concerning ($M = 4.33$, $SD = .72$), followed by change ($M = 4.29$, $SD = .74$), lack of obvious cause ($M = 4.25$, $SD = .70$) and rare in youth ($M = 4.21$, $SD = .74$), as depicted in Figure 5. An analysis of variance using Wilks' Lambda (which can vary from 0 to 1, with 0 meaning group means differ, and 1 meaning all group means are the same), revealed a statistically significant difference between these means, Wilks' Lambda = .93, $F(3, 114) = 2.75$, $p < .05$ multivariate eta squared = .07. Significant differences are found specifically with lack of obvious cause and high in frequency modifiers $t(116) = -2.03$, $p < .05$, and between rare in youth and high in frequency modifiers $t(116) = -2.37$, $p < .02$.

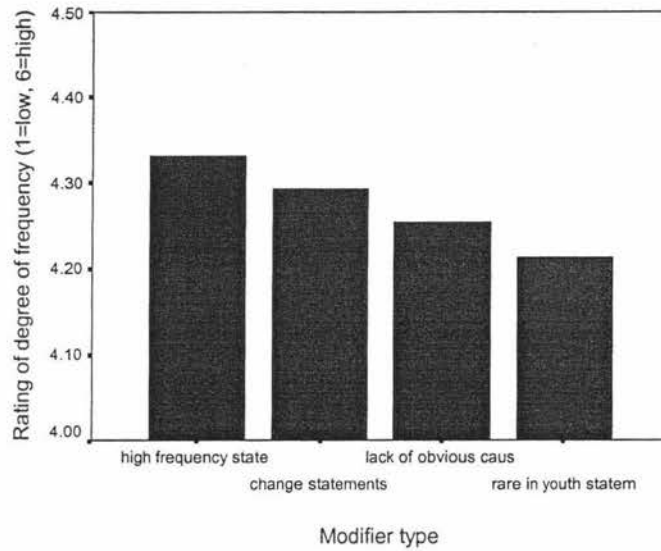


Figure 5. Mean concern ratings for type of modifier that generated the statement as a symptom.

Signal Detection Analysis

In SDT, d' is a measure of discrimination. It tells us how well the 40 prodromal and psychotic (modified) statements could be discriminated from the 40 neutral statements. A d' of 0 means no discrimination. The larger d' , the better the discrimination. A negative d' indicates that the false alarm rate is greater than the hit rate. The distribution of d' for 115 participants is depicted in Figure 6 ($M = 0.97$, $SD = 0.57$). Two participants were eliminated from the signal detection analysis as their results implied that they did not complete the questionnaire according to instructions.

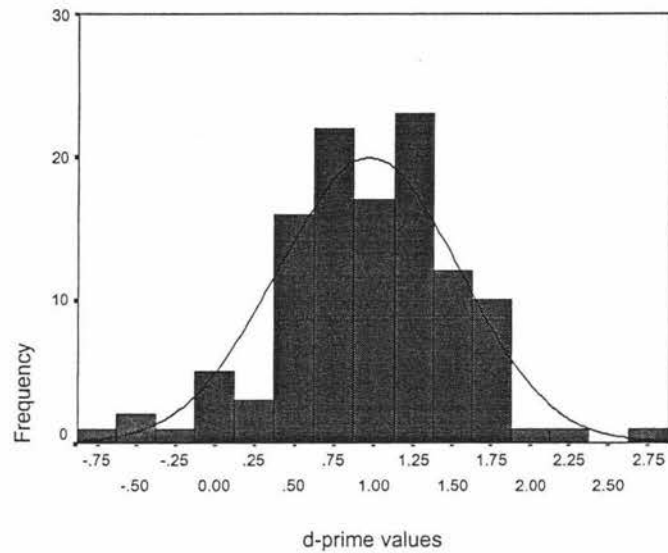


Figure 6. Distribution of d' for participants.

In SDT, c is a measure of bias. When c equals 0, false alarm and miss rates are equal. Negative values of c indicate a lax decision criterion; participants are biased to responding “yes”. Positive values indicate a strict decision criterion; participants are biased to responding “no”. The distribution of c for 115 participants is depicted in Figure 7 ($M = -.23$, $SD = .51$), the average bias was very small, being close to 0.

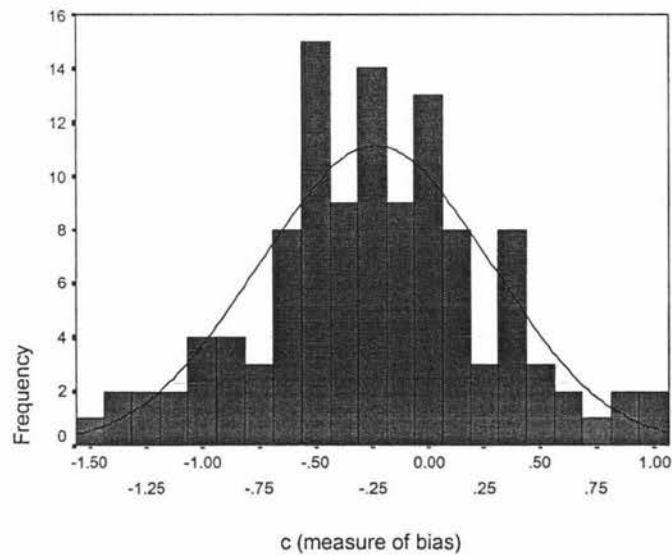


Figure 7. Distribution of c measure of bias for participants.

The relationship between d' and c was investigated using the Pearson product-moment correlation coefficient. There was an extremely small negative correlation between the variables which was not significant. This suggests that the d' measure of detectability was relatively independent of response bias, as SDT would predict.

Differences between the variables of age, gender and ethnicity of participants with mean d' were investigated using independent-samples t tests. A statistically significant difference between gender and d' was found, $t(113) = -2.03, p < .05$. Females have a greater d' ($M = 1.11, SD = .65, n = 41$) compared to males ($M = .89, SD = .52, n = 74$) indicating that within this sample, females are able to discriminate better than males. No significant differences were found between age (13, 14 & 15+ years) and d' or between ethnicity (New Zealand Maori, New Zealand European & other) and d' .

The measure of discrimination, d' , was calculated for prodromal signs (20 statements) with the 40 neutral statements and for psychotic symptoms (20 statements) with the 40 neutral statements. The distribution of d' for prodromal signs is shown in Figure 8 ($M = .89, SD = .66, n = 113$), 4 participants were deleted as they scored a d' of infinity. The distribution of d' for psychotic symptoms is depicted in Figure 9 ($M = 1.04, SD = .62, n = 109$), 8 participants being deleted as they scored a d' of infinity. The difference between the mean d' value for prodromal signs and the mean d' value for psychotic symptoms was significant, $t(106) = -3.09, p < .003$, indicating that participants were able to discriminate psychotic symptoms more effectively than prodromal signs.

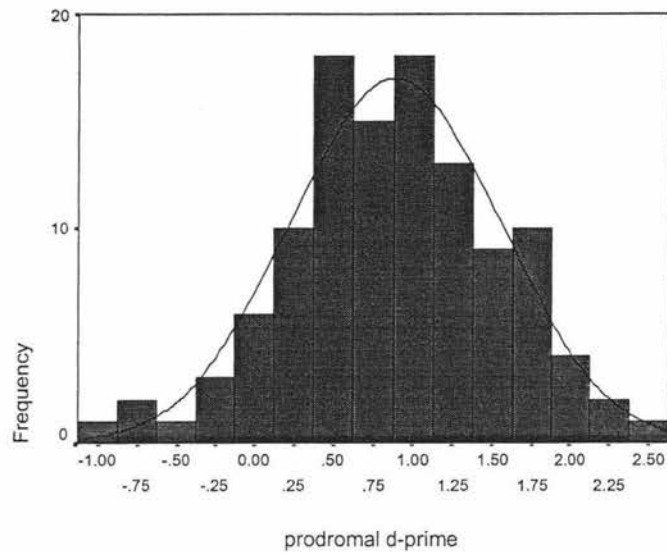


Figure 8. Distribution of d' for prodromal signs.

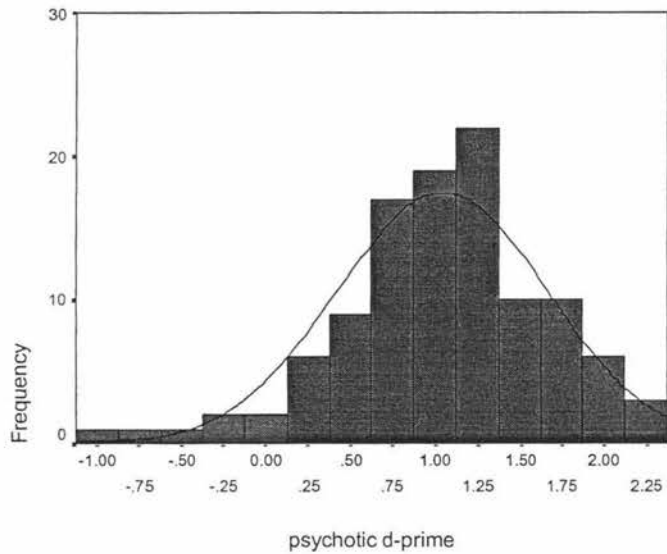


Figure 9. Distribution of d' for psychotic symptoms.

With regard to the four modifier types which generated the statement as a symptom (10 statements each), d' was also calculated for these, with the 40 neutral statements. The distribution of d' is shown in Figures 10, 11, 12 and 13 with change having the highest mean value of .92 ($SD = .62$, $n = 95$), followed by high in frequency ($M = .88$, $SD = .56$, $n = 96$), lack of obvious cause ($M = .85$, $SD = .65$, $n = 98$) and rare in youth ($M = .80$, $SD = .65$, $n = 102$). Analysis of variance shows no significant difference between the modifier types.

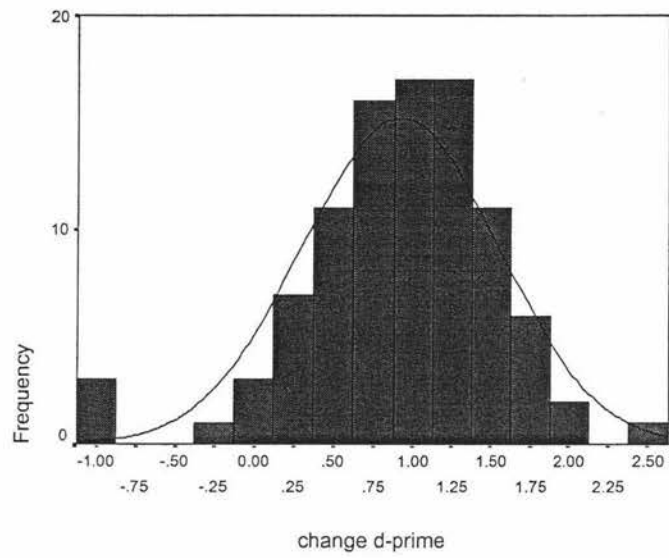


Figure 10. Distribution of d' for change.

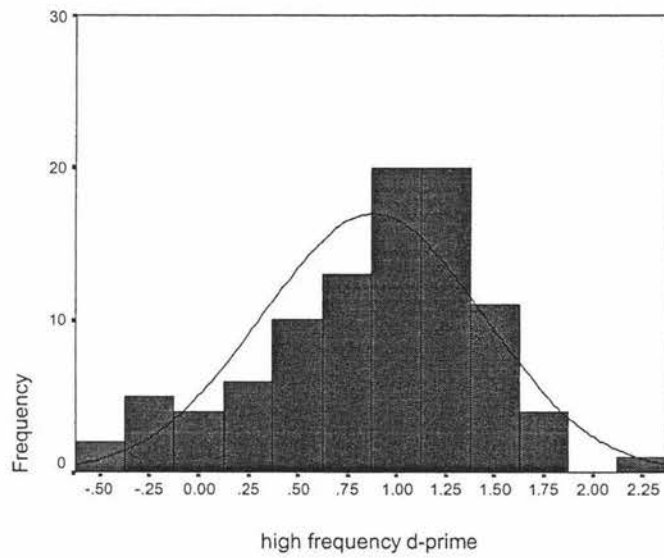


Figure 11. Distribution of d' for high frequency.

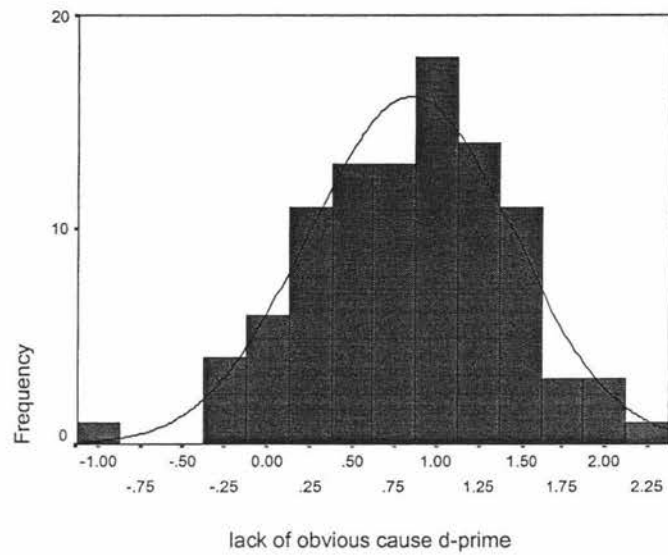


Figure 12. Distribution of d' for lack of obvious cause.

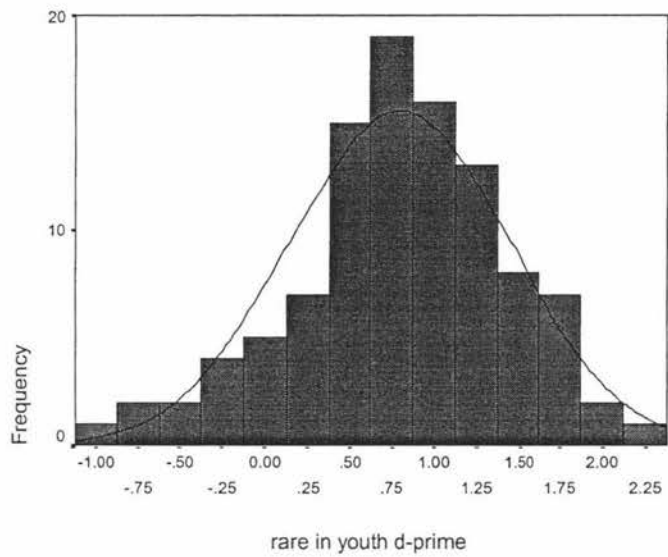


Figure 13. Distribution of d' for rare in youth.

Open Ended Questions

The most important quality in a friend was reported to be trust (13.66%), followed by honesty (12.02%), fun and humour (10.38%), and loyalty (9.84%), as illustrated in Figure 14.

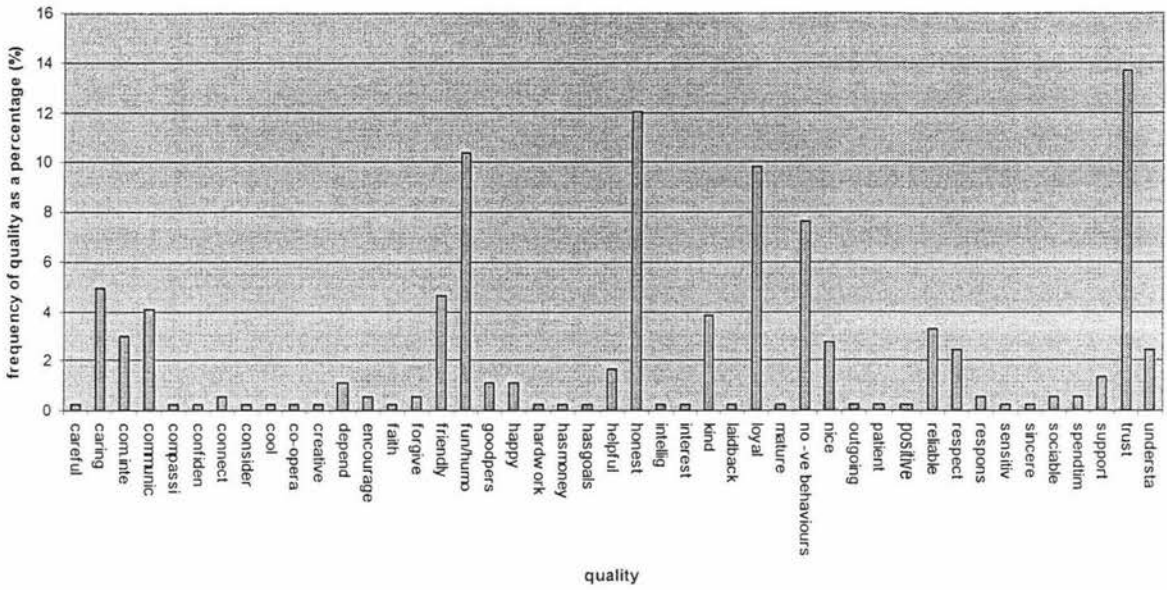


Figure 14. The most important qualities in a friend.

Most participants reported they would tell an adult if they were concerned about a friend’s behaviour (29.03%), followed by trying to help the friend themselves (20.65%), talking to the friend (18.71%) and seeking professional help (12.9%), as depicted in Figure 15.

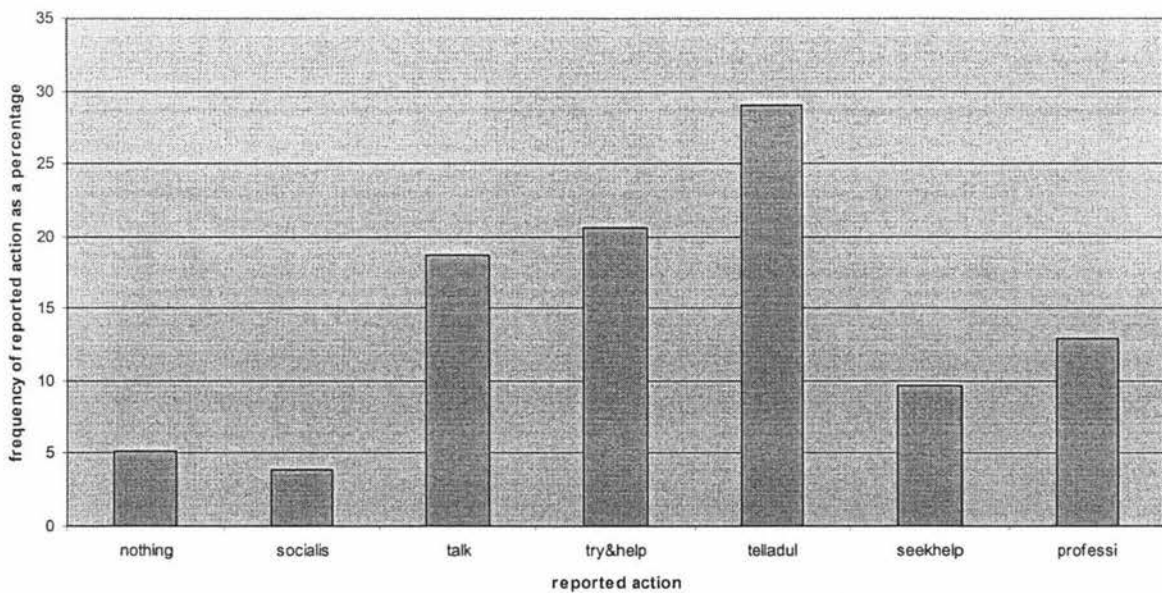


Figure 15. Reported action if concern expressed.

The relationship between the overall d' and the reported action if concern was expressed, using the 8-point scale, was investigated using a Pearson product-moment correlation coefficient. There was a small positive correlation between the variables ($r = .29, n = 115, p < .01$), which was statistically significant. This suggests that some of those participants who were able to discriminate well between statements would also pursue appropriate action if they were concerned about their friend.

DISCUSSION

The results support the hypothesis that youth are able to detect the early signs of psychosis in their friends and they are able to distinguish these signs from everyday behaviour. The participants expressed more concern for modified statements compared to neutral statements and more concern for modified psychotic statements compared to modified prodromal statements. Using the criterion free detectability measure of SDT, these results were further supported. The mean d' value of nearly 1, with a normal distribution, demonstrates that most students were able to discriminate between modified and neutral statements. The mean c measure of bias of just under 0, with a normal distribution, suggests that discrimination occurred with minimum bias.

The fact that no significant differences were found between neutral statements (psychotic or prodromal) is ideal, as, for SDT analysis to be effective, all neutral statements should represent the same neutral stimulus. While there were no significant differences found, there were some actual differences suggesting that the wording of the statements was not always perfectly equally neutral. In fact, the mean rating for the neutral items was slightly above 3 on a 6-point scale, which indicates that participants saw these as at least a small concern.

The finding that the psychotic symptoms of hallucinations and delusions were expressed as more concerning than the symptoms of disorganisation, is not surprising as these symptoms are often interpreted as more bizarre.

The further finding that depressed mood was the prodromal sign which was the most concerning, is again not surprising as depression is one of the most common psychological disorders and youth are educated in schools and in the community about it especially after such tragic occurrences as a youth suicide. In comparison to Edwards and McGorry (2002), who listed the most commonly reported prodromal signs,

depressed mood was not the prodromal sign that was found to be reported the most; they found it to be the sign that was reported third in descending order of prodromal signs most commonly reported by those whose lives were affected by first episode psychosis. The other prodromal signs were reported in the same order as the results of this study, except for sleep disturbance and anxiety. The most commonly reported prodromal signs, differs from the purpose of this study. Yet, if it is more common to experience some specific prodromal signs than others, this could influence the level of concern one may express about another person experiencing the sign. A more common prodromal sign could be easier to detect, therefore result in an increased level of concern that something is not quite right with the other person and hopefully appropriate action and support follows.

Statements high in frequency, one of the modifiers that generated the statement as a symptom, were reported as most concerning. This may be because if a person is continually exposed to a friend's abnormal behaviour, rather than a one off or infrequent behaviour, they can identify it more readily and as a result express more concern about that person. Yet, when d' was calculated for each modifier, no differences were found between the four modifiers, with each having a d' value of nearly 1. This supports the behavioural assumption that certain dimensions of a behaviour make it pathological, because participants were able to discriminate between modified and neutral statements. This finding does however suggest that modifier type made no difference, therefore the impact of different possible dimensions of behaviour was not evident.

The results support the idea that females are more sensitive to recognise emotional cues than are males, with females being able to discriminate between neutral and modified statements more accurately than males. No differences in discrimination ability were found between ages, or between cultural groups. This is an interesting

result as it could be anticipated that the older youth in the sample would be better at discriminating between symptomology and everyday behaviours of their peers. With regard to different cultural groups, no predictions were made as to who may have a better ability to discriminate although it would have been interesting to find a difference.

Trust and honesty were reported to be the two most important qualities in a friend. This relates well with friends who are experiencing emotional distress as it could imply that if things are not quite right then by telling a friend and being able to trust that friend to help and support you, is a positive thing.

Tell an adult and try to help the friend are the actions most commonly reported that the youth would take if they expressed concern about a friend. These are sensible choices. I found that there are some very sensitive and sensible young people in the sample, those who were able to discriminate the best between modified and neutral statements also suggested the most sensible action to take if they had a serious concern.

Overall, such positive findings have implications for early intervention services, the primary health sector, teachers, families and mental health services. Education, information and support for peers can be targeted and services need to respond accordingly and take seriously an adolescent who has concerns about a friend. Following this, assessment and effective treatment needs to be available and easy to access. As suggested by Falloon, Coverdale, Merry, and Kydd (1998), detecting an illness is of value only if effective treatment is readily available. This may include the further development of some of the established programmes in schools. Historically, and currently in many areas, pathway to care for people whose lives are affected by first episode psychosis are less than ideal with barriers and delays (Lincoln & McGorry, 1999); this needs to improve.

If rapid detection of early onset psychosis is to be a goal of preventative mental health services, youth who are sensitive to classic symptoms of psychosis may still need educating in recognizing the difference between behavioral characteristics that are part of everyday distress and those that are indicative of more serious adjustment difficulties that might be emerging. An ethical issue, which is mentioned in nearly all the prediction of psychosis literature and is often strongly debated, is that of false positives. People may receive unnecessary intervention, which raises issues around the person having to work towards understanding an acceptance of the diagnosis when it is not necessary and perhaps issues of stigma and discrimination from others. On the other side, there must have been a level of distress sufficient to drive the person to seek help in the first place, and if this level of distress can be lowered, is it not humane to do so? Such ethical issues reinforce the need to be able correctly detect the prodromal signs of psychosis.

The present study has implications for analyzing how adolescents judge indices of distress in their friends and for their general ability to recognize that certain characteristics are more troublesome than others. A recommendation is for further studies to be conducted around the influence the four modifiers have on discrimination, perhaps a larger scale study using an increased number of statements. A further recommendation is to explore in more detail, with a large diverse sample, the relationship between signal detection variables and gender, age and ethnicity. Religious beliefs could also be explored as a further variable, which may be related to the ability of participant to discriminate. It could be hypothesized that people with Christian beliefs can discriminate better between symptomology and everyday behaviours.

The main limitation of the study was the insufficient number of statements to enable further signal detection analysis. This limitation was balanced initially against

the number of statements included in the questionnaire. With a longer questionnaire, participants may have not been as keen to volunteer, resulting in a decreased number of participants. A further limitation is the wording used in the questionnaire. I consulted extensively about the jargon used and the type of wording in an attempt for the statements to truly represent modified or neutral statements in this context, yet I was asked questions by participants about some of the meanings. Students who completed the questionnaire at home were unable to verbally ask questions if they did not understand and this may have influenced their response. There were only a limited number of spoiled responses suggesting that participants generally had an understanding of the task. While attempts were made to derive accurate and representative statements, it can be seen as a limitation that there is no measure of reliability here.

In conclusion, this research is a starting point for further research in the area, using SDT. I found that youth were able to detect the early signs of psychosis in their friends compared to everyday youth behaviour. A contribution of this study is the use of SDT, the value of this methodology is demonstrated in a way which has not been conducted previously. This study assists towards the aim of early detection and possibly prevention of psychosis.

REFERENCES

- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders*, 4th ed. Washington DC: Author.
- Axelrod, M.I. (2002). Signal detection, perceptual sensitivity, and response bias: Assessing attention deficit hyperactivity disorder and children with anxiety using a continuous performance test. *Dissertation Abstracts International: Section B: The Sciences & Engineering*, 63 (5-B), 2572.
- Beiser, M., Erickson, D., Fleming, J.A. & Iacono, W.G. (1993). Establishing the onset of psychotic illness. *American Journal of Psychiatry*, 150, 1349-1354.
- Bentall, R. & Slace, P.D. (1985). Reality testing and auditory hallucinations: A signal detection analysis. *British Journal of Clinical Psychology*, 24, 159-169.
- Boyd, R.J. (2004). *A needs assessment in the Manawatu community for early intervention for those whose lives are affected by first episode psychosis*. Unpublished research report, available from Supporting Families Manawatu, Palmerston North, New Zealand.
- Crockett, M.S. (1988). Self-report of childhood peer relationships of psychiatric and nonpsychiatric subjects. *Issues in Mental Health Nursing*, 9, 45-71.

- Dunn, P.B. (2000). The application of signal detection theory to the assessment of ADHD. (diagnostic accuracy). *Dissertation Abstracts International: Section B: The Sciences & Engineering*, 60, 3560.
- Edwards, J., & McGorry, P.D. (2002). *Implementing early intervention in psychosis: A guide to establishing early psychosis services*. London, UK: Martin Dunitz.
- Edwards, J., McGorry, P.D. & Pennell, K. (2000). Models of early intervention in psychosis: An analysis of service approaches. In M. Birchwood, D. Fowler, & C. Jackson (Eds.), *Early intervention in psychosis: A guide to concepts, evidence and interventions* (pp. 281 – 314). Chichester: Wiley.
- Falloon, I.R.H. (2000). General practice recruitment for people at risk of schizophrenia: The Buckingham experience. *Australian and New Zealand Journal of Psychiatry*, 34, 131-136.
- Falloon, I.R.H., Coverdale, J.H., Merry, S., & Kydd, R.R. (1998). Early intervention for schizophrenic disorders: Implementing optimal treatment strategies in routine clinical services. *British Journal of Psychiatry*, 172, 33-38.
- Francey, S.M. (1999). The role of day programmes in recovery in early psychosis. In P.D. McGorry & H.J. Jackson (Eds.), *The recognition and management of early psychosis: A preventative approach*. Cambridge: Cambridge University Press.

- Hershkowitz, M.L., & Texas, U. (1971). Recognition memory of hostile and friendly stimuli as a function of neuroticism, introversion – extraversion and arousal: A signal detection approach. *Disseration Abstracts International*, 31 (7-B), 4338-4339.
- Hoffman, E., Marsden, G., & Kalter, N. (1977). Children's understanding of their emotionally disturbed peers: A replication. *Journal of Clinical Psychology*, 33, 949-953.
- Johannessen, J.O., & McGlashan, T. (2000). Early intervention in psychosis: The TIPS project, a multi-centre study in Scandanavia. In B. Martindale & A. Bateman (Eds.), *Psychosis: Psychological approaches and their effectiveness*. London: Gaskell/Royal College of Psychiatrists.
- Larsen, T.K., Friis, S., Haahr, U., Joa, I., Johannessen, J.O., Melle, I., Opjordsmoen, S., Simonsen, E., & Vaglum, P. (2001). Early detection and intervention in first-episode schizophrenia: A critical review. *Acta Psychiatrica Scandinavia*, 103, 323-324.
- Larsen, T.K., Johannessen, J.O., Guldberg, C., Opjordsmoen, S., Vaglum, P., & McGlashan, T.H. (n.d.). *Early intervention programs in first-episode psychosis and reduction of duration of untreated psychosis (DUP)*. Retrieved May 29, 2003, from http://www.tips-info.com/eng/artikler_early.html

- Lincoln, C., & McGorry, P.D. (1999). Pathways to care in early psychosis: Clinical and consumer perspectives. In P.D. McGorry & H.J. Jackson (Eds.), *The recognition and management of early psychosis: A preventative approach*. Cambridge: Cambridge University Press.
- Lines, E. (2000, February). *An introduction to early psychosis intervention: Some relevant findings and emerging practices*. Retrieved July 7, 2002, from <http://www.cmha.ca/english/intrvent/about.htm>
- Linszen, D.H., & Lenior, M.E. (1999). Early psychosis and substance abuse. In P.D. McGorry & H.J. Jackson (Eds.), *The recognition and management of early psychosis: A preventative approach*. Cambridge: Cambridge University Press.
- MacMillan, N.A., & Creelman, C.D. (1991). *Detection theory: A user's guide*. Cambridge: Cambridge University Press.
- Malla, A.K., Norman, R.M.G., Manchanda, R., McLean, T.S., Cortese, L., & Scholten, D.J. (2002). Status of patients with first-episode psychosis after one year of phase-specific community-oriented treatment. *Psychiatric Services*, 53, 458-463.
- McFall, R.M., & Treat, T.A. (1999). Quantifying the information value of clinical assessments with signal detection theory. *Annual Review of Psychology*, 50, 215-241.

- McGorry, P.D., Yung, A.R., & Phillips, L.J. (2002). "Closing in". What features predict the onset of first-episode psychosis within an ultra-high-risk group? In R.B. Zipursky & S.C. Schulz (Eds.), *The early stages of schizophrenia*. Washington DC: American Psychiatric Publishing.
- McNicol, D. (1972). *A primer of signal detection theory*. London: George Allen & Unwin.
- Mental Health Commission (1999). *Early intervention in psychosis: Guidance note*. Wellington, New Zealand: Author.
- Metzger, M.M. (2002). Stimulus load and age effects in face recognition: A comparison of children and adults. *North American Journal of Psychology*, 4, 51-63.
- Moller, P. (2000). The initial prodrome in schizophrenia: Searching for naturalistic core dimensions of experience and behaviour. *Schizophrenia Bulletin*, 26, 217-232.
- Olin, S.S., Mednick, S.A., Cannon, T., Jacobsen, B., Parnas, J., Schulsinger, F., & Schulsinger, H. (1998). School teacher ratings of psychiatric outcome 25 years later. *British Journal of Psychiatry*, 172, 7-13.
- Pelosi, A., & Birchwood, M. (2003). Is early intervention for psychosis a waste of valuable resources? *British Journal of Psychiatry*, 182, 196-198.

- Peterson, D.R. (2000). The ethics of research into schizophrenia prevention: A carer's perspective. *Australian and New Zealand Journal of Psychiatry*, 34, 201-203.
- Phillips, L.J., Leicester, S.B., O'Dwyer, L.E., Francey, S.M., Koutsogiannis, J., Abdel-Baki, A., Kelly, D., Jones, S., Vay, C., Yung, A.R., & McGorry, P.D. (2002). The PACE Clinic: Identification and management of young people at "ultra" high risk of psychosis. *Journal of Psychiatric Practice*, 8, 255-269.
- Podd, J. (1990). The effects of memory load and delay on facial recognition. *Applied Cognitive Psychology*, 4, 47-59.
- Poulton, R., Caspi, A., Moffitt, T.E., Cannon, M., Murray, R., & Harrington, H. (2000). Children's self-reported psychotic symptoms and adult schizophreniform disorder: A 15-year longitudinal study. *Archives of General Psychiatry*, 57, 1053-1058.
- Siegel, B., Vukicevic, J., & Spitzer, R.L. (1990). Using signal detection methodology to revise DSM-III-R: Re-analysis of the DSM-III-R national field trials for autistic disorder. *Journal of Psychiatric Research*, 24, 293-311.
- Spencer, E., Birchwood, M., & McGovern, D. (2001). Management of first-episode psychosis. *Advances in Psychiatric Treatment*, 7, 133-142.

- Yung, A.R., & McGorry, P.D. (1996). The initial prodrome in psychosis: Descriptive and qualitative aspects. *Australian and New Zealand Journal of Psychiatry*, 30, 587-599.
- Yung, A.R., Phillips, L.J., McGorry, P.D., Hallgren, M.A., McFarland, C.A., Jackson, H.J., Francey, S., & Patton, G.C. (1998a). Can we predict the onset of first-episode psychosis in a high-risk group? *International Clinical Psychopharmacology*, 13, 23-30.
- Yung, A.R., Phillips, L.J., McGorry, P.D., McFarlane, C.A., Francey, S., Harrigan, S., Patton, G.C., & Jackson, H.J. (1998b). Prediction of psychosis: A step towards indicated prevention of schizophrenia. *British Journal of Psychiatry*, 172, 14-20.
- Yung, A.R., Phillips, L.J., Yuen, H.P., Francey, S.M., McFarlane, C.A., Hallgren, M., & McGorry, P.D. (2003). Psychosis prediction: 12-month follow up of a high-risk ("prodromal") group. *Schizophrenia Research*, 60, 21-32.

APPENDIX

Is Everything Alright?

Questionnaires, Information Sheets and Consent Forms



IS EVERYTHING ALRIGHT?

INFORMATION SHEET

As part of my Master of Arts Degree in psychology, I am inviting you to take part in research which looks at how concerning you may find a friend's behaviour. Friends and fellow students often behave and think in different ways. The purpose of asking you to participate in this research is to identify when you think the behaviour and thoughts of friends is a concern to you. By concern, I mean worry that these signs might indicate that the person is experiencing an emotionally difficult time. I am asking college students aged 13 to 15 years old, from the lower North Island to participate in the research.

If you choose to take part it involves you completing a questionnaire which will take about 30 minutes of your time. The questionnaire is to be completed at home and following completion could you please return it to me (along with the signed parental consent form) in the attached freepost envelope within one week of receiving this information. The questionnaire for males is yellow and the questionnaire for females is on green paper. Do not write your name on the questionnaire as this questionnaire is anonymous. Completion and return of the questionnaire implies consent.

By returning the completed questionnaire you are eligible to go in the draw to win a \$30 music voucher. If you would like to go into the draw, on a separate sheet of paper please supply your name and contact address or telephone number so I can let you know if you are the lucky winner.



As a participant you have the right to:

- Decline to participate
- Withdraw from the study at any time during participation
- Ask any questions about the study at any time during participation
- Provide information on the understanding that your name will not be used
- Be given access to a summary of the research findings. This will be forwarded to your principal for distribution to you by the end of the year.

The information received will only be used for this research. Questionnaires will be securely stored at Massey University and will be available only to myself and my supervisor and after a period of five years they will be discarded.



SCHOOL OF PSYCHOLOGY
Te Kura Hinengaro Tangata
Private Bag 11 222
Palmerston North
New Zealand
T 64 6 356 9099 extn 2040
F 64 6 350 5673
www.massey.ac.nz
<http://psychology.massey.ac.nz>

If thinking about friends in this way has caused you to think you may have a friend who is experiencing emotional difficulty please talk to a responsible person. This person may be your school counsellor, teacher, or parent or you may contact me via email and in consultation with my supervisor we can suggest who you may contact for support.

Researcher

Robyn Boyd

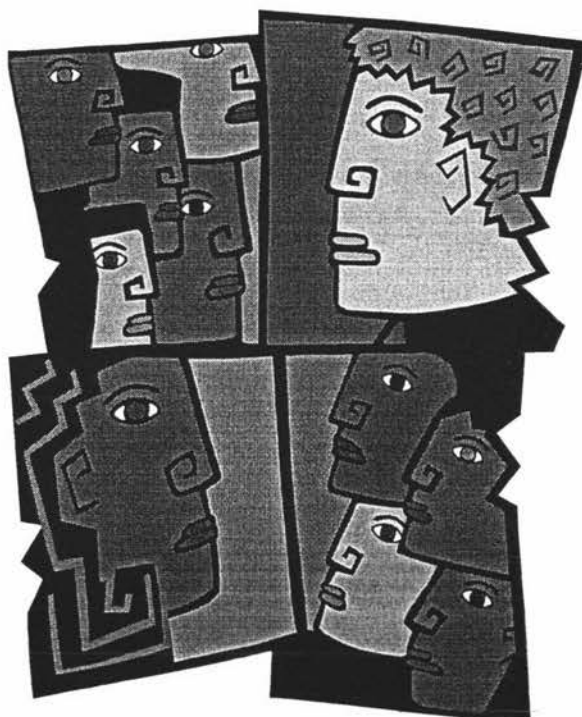


Research Supervisor

Professor Ian Evans

School of Psychology

This research has been reviewed and approved by the Massey University Human Ethics Committee, ALB Protocol No. 03/131. If you have any concerns about the conduct of this research, please contact Professor Sylvia V Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone 06 3505249, email humanethicspn@massey.ac.nz.





IS EVERYTHING ALRIGHT?

INFORMATION SHEET AND CONSENT FORM FOR PARENT/GUARDIAN/CARER

As part of my Master of Arts Degree in psychology, I am inviting your child to take part in research which looks at how concerning your child may find a friend's behaviour. Friends and fellow students often behave and think in different ways. The purpose of asking your child to participate in this research is to identify when your child thinks the behaviour and thoughts of friends is a concern. By concern, I mean worry that these signs might indicate that the person is experiencing an emotionally difficult time. I am asking college students aged thirteen to fifteen years old, from the lower North Island to participate in the research. This letter is sent to you via _____ College. I do not have access to your contact details.

If you consent to your child participating in the research and your child chooses to do so it involves your child completing a questionnaire which will take about 30 minutes. They will be completed at home and could it please be forwarded to me in the freepost envelope provided along with this signed sheet within one week of receiving the information. The questionnaires are anonymous and will in no way identify your child. For all children who complete the questionnaire a draw is made to win a \$30 music voucher. If your child would like to go in the draw, on a separate sheet of paper please supply the name and contact address or telephone number of your child so I can let the winner know.

The information received will only be used for this research. Questionnaires will be securely stored at Massey University and will be available only to myself and my supervisor and after a period of five years they will be discarded.

I invite you to contact the researcher if you have any questions about the research:

Researcher
Robyn Boyd



Research Supervisor
Professor Ian Evans
School of Psychology

This research has been reviewed and approved by the Massey University Human Ethics Committee, ALB Protocol No. 03/131. If you have any concerns about the conduct of this research, please contact Professor Sylvia V Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone 06 3505249, email humanethicspn@massey.ac.nz.

I hereby consent to my child taking part in this research

Name _____ Signature _____
Child's Name _____ Date _____

IS EVERYTHING ALRIGHT?

QUESTIONNAIRE FOR MALES

Completion and return of this questionnaire implies consent.

What is your age? _____

Which ethnic group do you identify with?

New Zealand Maori New Zealand European

Pacific Nation groups New Zealand Asian

Other ethnic group (please specify) _____

What do you think are the most important qualities in a friend? _____

As explained in the Information Sheet, all of us do at times worry about our friends' behaviour. We would feel concerned if some of the things they do indicate that they might be experiencing an emotional difficulty. In the following questionnaire we want to learn more about how concerned you would be about the things that a friend the *same age and the same gender* as you might say or do.

With the statements following, it is not necessary that you know a friend or some other person who has actually behaved this way. The important issue is: *if* one of your friends *did* show these characteristics, how concerned would you be?

Each statement begins with the phrase "**If I had a friend who...**" and ends with the phrase "**to me this would be -----.**" By placing the appropriate rating in the space at the end of each statement, you will be indicating the level of concern that you would have if someone you knew behaved this way. Remember that none of the characteristics listed necessarily need to be a concern.

Do not spend a lot of time thinking about your answer—go with your initial response.

1	2	3	4	5	6
Not a concern at all	Not concerning	Not really a concern	A mild concern	A concern	A serious concern

EXAMPLE

If I had a friend who is a sensitive person, to me this would be 3

1	2	3	4	5	6
Not a concern at all	Not concerning	Not really a concern	A mild concern	A concern	A serious concern

- If I had a friend who** is a sensitive person, **to me this would be** ___
- used to sleep well, but now has great difficulty sleeping ___
- can behave in a disorganized way ___
- is always seeing distressing things that I can not see ___
- is anxious about things the rest of us are not anxious about ___
- talks in language that seems so bizarre, I can not understand it ___
- can not concentrate long enough to be able to stay in class ___
- sometimes behaves in different ways depending on the situation ___
- can not always concentrate on things ___
- is fearful in some situations ___
- out of the blue will tell stories that I can not make any sense of ___
- tends to be highly aware of the world around him ___
- can go quickly from one topic to another when we are talking ___
- believes in spirits ___
- used to be able to stick at things but now is unable to ___
- is alert to different sounds ___
- is depressed and can't snap out of it ___
- can not concentrate on anything ___
- for no apparent reason, has difficulty sleeping at night ___
- continually talks about how he is working undercover for the IRA ___
- has nights when it is difficult to get off to sleep ___
- is always listening and responding to another voice that no one else can hear ___

1	2	3	4	5	6
Not a concern at all	Not concerning	Not really a concern	A mild concern	A concern	A serious concern

- If I had a friend who** sometimes mumbles away, **to me this would be** ___
- I used to enjoy talking to but now I can not understand his rambling ___
- sees things that are not there ___
- believes in the super natural ___
- reports that he can now see things that he never used to be able to see and that no one else can see ___
- believes he has a computer chip in his foot ___
- reports that he can now hear things that he never used to be able to hear ___
- is not like us, he has no motivation ___
- receives commands especially directed to him from the TV ___
- has a low mood when things don't go right ___
- sometimes speaks his thoughts aloud ___
- does not stop talking but what he says does not make sense ___
- experiences some anxiety ___
- cries when things are getting to him ___
- used to be outgoing but now never wants to hang out ___
- cries a lot for no apparent reason ___
- used to be relaxed but now worries a lot ___
- behaves in a disorganized way all the time ___
- is not always full of energy ___
- for no apparent reason, just can not be bothered doing things ___
- sleeps for many hours less than us per night ___

1	2	3	4	5	6
Not a concern at all	Not concerning	Not really a concern	A mild concern	A concern	A serious concern

- If I had a friend who** sometimes worries, **to me this would be**
- is always nervous
- behaves in a way that I can not understand or follow
- sometimes talks so quickly
- is sad and tearful sometimes
- believes he will one day be Prime Minister of New Zealand
- worries for no apparent reason
- is not always keen to do things
- hears things that are not there
- sometimes can't be bothered doing things
- wants to stay up late
- can no longer concentrate on school work and is failing tests
- does not always want to hang out
- is totally all over the place for no reason
- used to be happy but is now always sad
- uses words that his parents don't understand
- tends not to stick at things
- does not tend to stay doing one thing for long periods of time
- used to be organised but is now all over the place
- reads and believes in daily horoscopes
- has times when he is tense and nervous

1	2	3	4	5	6
Not a concern at all	Not concerning	Not really a concern	A mild concern	A concern	A serious concern

- If I had a friend who sleeps in, to me this would be**
- sometimes talks to himself
- is sensitive to experience
- often goes from one thing to another
- sometimes wakes up in the night
- is stimulated by different things he sees
- tends to potter around in a bit of chaos
- believes he is God
- has difficulty sleeping most nights
- seems depressed every now and then
- is aware of different senses
- never does anything
- is untidy
- sees faces in the curtains which are watching him
- never laughs or smiles
- used to spend time with other males but now will not as he believes all males have special powers which could harm him

If you indicated concern, what would you do about it? _____

Thank you for taking the time to participate and good luck in winning the CD voucher.

1	2	3	4	5	6
Not a concern at all	Not concerning	Not really a concern	A mild concern	A concern	A serious concern

- If I had a friend who is a sensitive person, to me this would be**
- used to sleep well, but now has great difficulty sleeping
 - can behave in a disorganized way
 - is always seeing distressing things that I can not see
 - is anxious about things the rest of us are not anxious about
 - talks in language that seems so bizarre, I can not understand it
 - can not concentrate long enough to be able to stay in class
 - sometimes behaves in different ways depending on the situation
 - can not always concentrate on things
 - is fearful in some situations
 - out of the blue will tell stories that I can not make any sense of
 - tends to be highly aware of the world around her
 - can go quickly from one topic to another when we are talking
 - believes in spirits
 - used to be able to stick at things but now is unable to
 - is alert to different sounds
 - is depressed and can't snap out of it
 - can not concentrate on anything
 - for no apparent reason, has difficulty sleeping at night
 - continually talks about how she is working undercover for the IRA
 - has nights when it is difficult to get off to sleep
 - is always listening and responding to another voice that no one else can hear

1	2	3	4	5	6
Not a concern at all	Not concerning	Not really a concern	A mild concern	A concern	A serious concern

If I had a friend who sometimes mumbles away, **to me this would be**

I used to enjoy talking to but now I can not understand her rambling

sees things that are not there

believes in the super natural

reports that she can now see things that she never used to be able to see and that no one else can see

believes she has a computer chip in his foot

reports that she can now hear things that she never used to be able to hear ...

is not like us, she has no motivation

receives commands especially directed to her from the TV

has a low mood when things don't go right

sometimes speaks her thoughts aloud

does not stop talking but what she says does not make sense

experiences some anxiety

cries when things are getting to her

used to be outgoing but now never wants to hang out

cries a lot for no apparent reason

used to be relaxed but now worries a lot

behaves in a disorganized way all the time

is not always full of energy

for no apparent reason, just can not be bothered doing things

sleeps many hours less than us per night

1	2	3	4	5	6
Not a concern at all	Not concerning	Not really a concern	A mild concern	A concern	A serious concern

- If I had a friend who** sometimes worries, **to me this would be** _____
- is always nervous _____
- behaves in a way that I can not understand or follow _____
- sometimes talks so quickly _____
- is sad and tearful sometimes _____
- believes she will one day be Prime Minister of New Zealand _____
- worries for no apparent reason _____
- is not always keen to do things _____
- hears things that are not there _____
- sometimes can't be bothered doing things _____
- wants to stay up late _____
- can no longer concentrate on school work and is failing tests _____
- does not always want to hang out _____
- is totally all over the place for no reason _____
- used to be happy but is now always sad _____
- uses words that her parents don't understand _____
- tends not to stick at things _____
- does not tend to stay doing one thing for long periods of time _____
- used to be organised but is now all over the place _____
- reads and believes in daily horoscopes _____
- has times when she is tense and nervous _____

1	2	3	4	5	6
Not a concern at all	Not concerning	Not really a concern	A mild concern	A concern	A serious concern

- If I had a friend who sleeps in, to me this would be**
- sometimes talks to herself
- is sensitive to experience
- often goes from one thing to another
- sometimes wakes up during the night
- is stimulated by different things she sees
- tends to potter around in a bit of chaos
- believes she is God
- has difficulty sleeping most nights
- seems depressed every now and then
- is aware of different senses
- never does anything
- is untidy
- sees faces in the curtains which are watching her
- never laughs or smiles
- used to spend time with other females but now will not as she believes all females have special powers which could harm her

If you indicated concern, what would you do about it? _____

Thank you for taking the time to participate

