Development and psychometric validation of an indigenous Urdu-language scale for Paranoid personality disorder in Pakistani adults

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ABSTRACT

Objectives: To develop and validate an indigenous Urdu-language scale to assess Paranoid Personality Disorder (PPD) in Pakistani adults, addressing the need for culturally appropriate diagnostic tools in mental health.

Methods: This cross-sectional analytical study followed a rigorous scale development process from February to June 2019, including item generation, content validation, pilot testing, and factor analysis. Participants included 234 male and female adults, selected thorough purposive sampling technique from various government and private colleges, universities, hospitals and communities of Gujrat, Pakistan, encompassing both clinical and non-clinical populations. The scale development involved exploratory and confirmatory factor analysis to ensure the reliability and validity of the final 26-item self-report measure.

Results: The PPD Scale demonstrated excellent psychometric properties. The confirmatory factor analysis yielded a Comparative Fit Index (CFI) of .915, indicating good model fit, and a Cronbach's alpha of .934, reflecting high internal consistency. Additionally, the scale showed good convergent validity, with a significant correlation (.641, p<0.01) with the Social Suspiciousness Scale.

Conclusion: The Urdu-language PPD Scale developed in this study is a reliable and valid tool for assessing PPD in Pakistani adults. Its robust psychometric properties, including excellent internal consistency and good model fit, make it a valuable instrument for both clinical and research purposes. The scale's strong convergent validity further supports its effectiveness in measuring paranoid traits. This culturally appropriate diagnostic tool fills a significant gap in mental health assessments in Pakistan and can aid mental health professionals in diagnosing and understanding PPD within the local context.

Keywords: Personality Disorders (MeSH); Personality disorder assessment (Non-MeSH); Paranoid Personality Disorder (MeSH); Behavior (MeSH); Scale development (Non-MeSH); Reliability (Non-MeSH); Convergent validity (Non-MeSH); Personality (MeSH).

INTRODUCTION

Suspicion is not inherently negative. While it can propel us towards uncovering truths and addressing queries, excessive suspicion may impair mental functioning and social interactions. Historically, Emil Kraepelin first described Paranoid Personality Disorder (PPD) in 1921 as a form of dementia precox, highlighting traits of mistrust and sensitivity.[1] Subsequent distinctions between paranoid and delusional disorders were made by Bleuler in 1906, emphasizing their non-identity.[2] PPD's association with psychopathic behaviors was further elucidated by Schneider in 1950,[3] and since 1952, PPD has been recognized in the DSM, distinguished from schizophrenia and delusional disorder by its specific diagnostic features.

PPD is characterized by pervasive and undue suspiciousness, doubt, and mistrust of others. Individuals with PPD often harbor unfounded doubts about the loyalty or trustworthiness of others, frequently speak ill of others behind their backs, and may misuse or distort information. This disorder can be succinctly described by terms such as "suspiciousness" and "excessive doubts and mistrust." For a clinical diagnosis, at least four out of seven well-defined symptoms must be present. Epidemiological studies indicate its prevalence ranges from 2.3% to 4.4%.[4] Symptoms typically manifest in childhood and adolescence and may include loneliness, poor peer relationships, social anxiety, underperformance academically, hypersensitivity, unconventional thoughts and speech, and odd fantasies. Such children often appear "anomalous" or "eccentric," attracting mischievous or negative attention. Clinically, PPD is more frequently diagnosed in males than in females and is considered to be influenced both genetically and by socio-cultural factors, particularly in populations such as immigrants and various ethnic or minority groups.[5]

PPD is often mistaken for schizophrenia due to phenomenological similarities such as suspiciousness and paranoid delusions. However, research has demonstrated that these disorders are distinctly different; PPD is notably severe, clinically prevalent but challenging to treat.[6] Epidemiological data from the United States identify PPD as a significant cause of disability,[7] a finding supported by Australian epidemiological studies that also highlight PPD's contribution to disability.[8] In clinical settings, PPD is associated with aggressive behaviors,[9] and within the forensic domain, it is linked to violent and unlawful acts.[10]

While evidence regarding suicidal attempts in PPD remains ambiguous, there is noted comorbidity with depressive and borderline personality disorders, both of which are associated with suicidal ideation and attempts.[11]

Although the exact cause of PPD is not definitively known, a study conducted with twin adults by the Norwegian Institute of Public Health Twin Panel using the Structured Interview for DSM-IV Personality suggested that both genetic and environmental factors play roles.[12] Personality disorders have long captured the attention of psychologists, clinicians, psychoanalysts, psychiatrists, and researchers. While these disorders have been extensively studied, the approaches and assessments are often culturally bound. Literature indicates a diversity in the assessment measures for personality disorders across different countries. There is a significant gap in the availability of culturally relevant assessment tools for PPD in Pakistan, particularly those developed in the national language, Urdu, and tailored to the country's unique cultural and linguistic context. Existing scales often fail to account for regional norms, values, and language nuances, limiting their effectiveness and applicability. To address this gap, the current research was aimed to develop and validate an indigenous scale specifically designed for adults in Pakistan. The scale seeks to comprehensively evaluate personality psychopathology by assessing thought patterns, behaviors, relational challenges, and misinterpretations of others' intentions, while adhering to the DSM-5 framework. This effort strives to create a culturally sensitive and linguistically appropriate tool to enhance the understanding and assessment of PPD in the region.

METHODS

The study was approved by Departmental Research Review Committee (DRRC) of Department of Psychology, University of Gujrat, Pakistan for ethical concerns and was conducted from February 2019 to June 2019. The study used cross-sectional analytical study design and the data was collected from different government and private colleges, universities, hospitals and communities of Gujrat,

Pakistan. The inclusion criteria was based on age group of adult that were above 19 years and both male and female. People below age 19 and psychiatric patients were excluded from the research. Purposive sampling technique was used for the selection of the participants due to time constraint. Initially, rapport was developed with the participants while giving the introduction, affiliation information and the aim of the research. The respondents were also assured about anonymity and confidentiality of the information. Both oral and written consent was taken from the participants and only willing persons were included in the study. Furthermore, the data collected with self-reported questionnaire. The respondents were given the detailed instructions about how to fill the scale after reading the scale items carefully and select the most appropriate response. The responses of participants were recorded on the questionnaire.

Phase I: Development of an Indigenous Paranoid Personality Disorder Scale: The first phase of study based on the development of paranoid personality disorder scale. An item pool was generated to assess the paranoid personality. The scale was developed in national language (Urdu) of Pakistan. Standard steps for the scale construction followed.[13] In the first step Items were generated by using Guttman's facet analysis, ordinal level measurement, and assort sequentially from weaker to stronger terms (Guttman, 1944, 1947).[14] Item pool was generated on the basis of symptoms, literature and diagnostic criteria of paranoid personality disorder, for the evaluation of paranoia personality among adults. Selected response format, multiple choice format, used to construct the questionnaire. A pool of 83 items for paranoid personality disorder was generated. These items reflected the individual thoughts, behaviours and interpersonal relationships. The initial draft of the scale was content validated by related subject experts. DeVellis (2017)[15] the stage of item pool generation is completed with expert panel item pool reviews. The experts considered each item with respect to its essentiality, appropriateness of material in

reference to adults, and construct of paranoid personality disorder. After the vigilant analysis 81 items for paranoid personality disorder were selected. They finalized the 5-point Likert scale ranging from 1 (for authorization of items at one extreme) all through 5 (for authorization of items at the other extreme) yes absolutely with the exception of reverse items.[16] Then try out carried out to check the user appropriateness and understanding about the test to identify potential problem so that the anticipated future study could begin confidently and smoothly.[17] The tryout draft was filled from 104 adult individual's age range 18 and above, both male and female, that recruited from the general community to assess the clarity and relevance of items. Correlation analysis was run on the scale and below .4 values item were discarded. After extraction 45 items were left. In step four factor analysis was administered.

Paranoid Personality Disorder Scale (English & Urdu versions) are given as Annexures (1 & 2).

RESULTS

Exploratory Factor Analysis (EFA): The items with less than .4 values were suppressed. Factor loading find the relationship range between factor and item. Factor loading prescribed value is +1 to -1, the extent to which factor loading closer to +1 or -1, there will be higher association among factors. Significant cut-off value for factor loading is .32,18 but literature also supported .3-.4.19 Total eight factors were explored by rotation component matrix (Table I).

Table II shows the results of the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity. Kaiser-Meyer-Olkin measure of sampling adequacy was .93, above the normally suggested value of .6, and Bartlett's test of sphericity was significant (p<.001).

Exploratory factor analysis initially formed 8 factors which explain 62.35% variance. Factors with one item were rejected and seven factors left. Items with factor loading below .4 were eliminated, and factor loading ranging from .44 to .72 (Table III).

Table I: Correlation coefficient of 45 items of Paranoid personality disorder (n=234)

Sr. No.	Item No.	R	Sr. No.	Item No.	R
1	2	.533**	24	34	.526**
2	3	.633**	25	35	.482**
3	4	.513**	26	39	.538**
4	5	.428**	27	41	.661**
5	6	.484**	28	42	.659**
6	7	.566**	29	43	.704**
7	8	.483**	30	46	.401**
8	9	.475**	31	47	.458**
9	10	.494**	32	48	.637**
10	11	.670**	33	49	.661**
11	12	.639**	34	50	.670**
12	13	.608**	35	54	.482**
13	14	.614**	36	61	.503**
14	17	.665**	37	62	.625**
15	19	.428**	38	65	.572**
16	20	.450**	39	66	.417**
17	22	.445**	40	71	.405**
18	23	.508**	41	73	.483**
19	27	.631**	42	75	.487**
20	28	.492**	43	77	.554**
21	29	.449**	44	78	.444**
22	30	.576**	45	79	.517**
23	32	.571**			

** Correlation is significant at the 0.01 level (2-tailed)

Table II: Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity (n=234)

Variable	Kaiser-Meyer-Olkin	Bartlett's Test	
		Df	Sig
Paranoid Personality Disorder Scale (PPDS)	.931	6222.561	990	.000

questions, minimum two and maximum six items in a factor. Worthington and Whittaker (2006)[17] indorsed two item factors with high correlation (i.e., r < .70),[20] if the sample size is small.[21] Studies revealed that 15.8% of the journal articles comprised two-itemed factors in their new measures. Confirmatory factor analysis resulted in 26 item Paranoid Personality Disorder Scale for Adults (Figure1).

In Table IV, the figures of confirmatory factor analysis of Paranoid Personality Disorder Scale for adults depicted with seven factors. Number of items were deleted i.e. 3, 5, 8, 10, 12, 15, 16, 22, 24, 25, 26, 28, 30, 32, 33, 35, 37, 39, and 44. CMIN/DF reflected good fit as value .2 or low considered as good fit,[22] preferred[23] and should not surpass .3.[24] RMSEA less than or equal to ≤ .06 considered as cut-off for a good model fit.[25]

Phase II: Determination of Psychometric Properties of Paranoid Personality Disorders Scale

A) Cronbach's alpha reliability: Paranoid Personality Disorder has .93 Cronbach alpha reliability coefficient (Table V and Table VI). A scale or subscale with a greater number of items may have reliability >.7.[26] Other studies depicted that .6, .7 and >.70 value considered as acceptable reliability values.[27]

B) Construct validity of paranoid personality disorder scale: Sample of 45 (N=45) Male=21, Female=24 recruited from colleges and university faculty and students and community population (Table VII). To estimate the convergent validity of Paranoid Personality Disorder Scale, Social Suspiciousness scale (SSS) (Linett, et al., 2019) was selected.[28] SSS was designed to evaluate suspiciousness, and associated concepts of anger and hostility, within a social context.

DISCUSSION

Our study on development and validation of the indigenous Urdu scale for assessing Schizoid Personality Disorder in adults provided strong evidence for its validity and reliability. The scale demonstrated excellent internal consistency, with a Cronbach's alpha of 0.887, and the subscales showed reliable scores ranging from 0.768 to 0.852. Factor analysis confirmed a robust three-factor structure with satisfactory model fit indices, including CFI and RMSEA values. The scale also exhibited good convergent validity, with a significant positive correlation (r = 0.452, p < 0.01) with the UCLA Loneliness Scale, indicating its effectiveness in assessing schizoid personality traits.

Individuals with paranoid personality disorder have persistent feelings of mistrust towards others without sufficient basis, perceive environmental clues negatively, bear grudges, and act in a spiteful manner towards others.[29] Pervasive mistrust to other people is a main characteristic of paranoid personality disorder. Moreover, hostility, quarrelsome, and emotional coldness serve as contributing factors.[30]

Table III: Factor loading of 45 item on Paranoid personality disorder scale after varimax rotation (n=234)

Sr. No.	Item No.	1	2	3	4	5	6	7	8	Sr. No.	Item No.	1	2	3	4	5	6	7	8
1	5	.567								24	1				.628				
2	6	.630								25	2				.724				
3	11	.677								26	3				.686				
4	12	.728								27	4				.607				
5	19	561								28	10				.443				
6	22	.441								29	15					.577			
7	30	.572								30	16					.639			
8	35	.591								31	21					.488			
9	44	.598								32	25					.492			
10	14		.485							33	39					.451			
11	26		.541							34	41					.626			
12	27		.561							35	42					.492			
13	28		.693							36	18						.495		
14	29		.717							37	20						.536		
15	32		.444							38	23						.515		
16	33		.652							39	34						.519		
17	36		.580							40	43						.442		
18	37		.608							41	45						.431		
19	7			.552						24	17							.501	
20	8			.623						43	31							.678	
21	9			.717						44	38							.501	
22	13			.492						45	40								.720
23	24			.497															

Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization; Note: (Values<.4 are suppressed)

Table IV: Model fit summary of confirmatory factor analysis (n=234)

P Value	CMIN/DF	GFI	AGIF	CFI	RMSEA	RMR
.000	1.765	864	.828	.915	.057	.67

CMIN/DF: chi-square minimum/degree of freedom; GFI: Goodness of Fit Index; CFI: Comparative Fit Index, AGFI: Adjusted Goodness of Fit Index; RMSEA: Root Mean Square of Error Approximation, RMR:root mean square residual

Table V: Cronbach alpha of Paranoid personality disorder scale (n=234)

Scale	Cronbach's Alpha	Number of Items	Sig
Paranoid Personality Disorder Scale (PPDS)	.934	27	.000

Exploratory factor analysis findings for paranoid personality disorder are in accordance with the Diagnostic Statistical Manual of Mental Disorder accompanying seven symptoms. Response on the six factors i.e., unjustified doubts about friend's companion's faithfulness, suspiciousness about other's thoughts, reluctant to confide, perceive hidden demeaning, bear grudges, and perception of personal attack and counterattack. The factor attacks and counter attacks was the single factor but get separated through scrutiny. The symptom about spousal fidelity was not extracted by exploratory factor analysis. So, this dimension does not fit to the current culture. They hesitate to respond properly on sexual partner related questions.

Confirmatory factor analysis (CFA): There was total eight factors draw out through EFA, which was further gone through CFA and final seven factors were confirmed with varying number of

Table VI: Cronbach alpha of subscales of Paranoid personality disorder scale (n=234)

Subscales	Total items	Cronbach Alpha
1. Suspiciousness	5	.805
2. Perceived personal attack	3	.785
3. Perceived hidden meaning of words	3	.765
4. Exploiting behaviour	3	.743
5. Bear grudges	4	.679
6. Unsuspected suspiciousness	6	.812
7. Reluctant to confide	2	.501

Note: **P<.01

Table VII: Validity analysis of Paranoid personality disorderscale (n=45)

Scales	1	2
1. Paranoid personality disorder scale	-	
2. Social Suspiciousness Scale	.641**	-

Note: ** p<.01
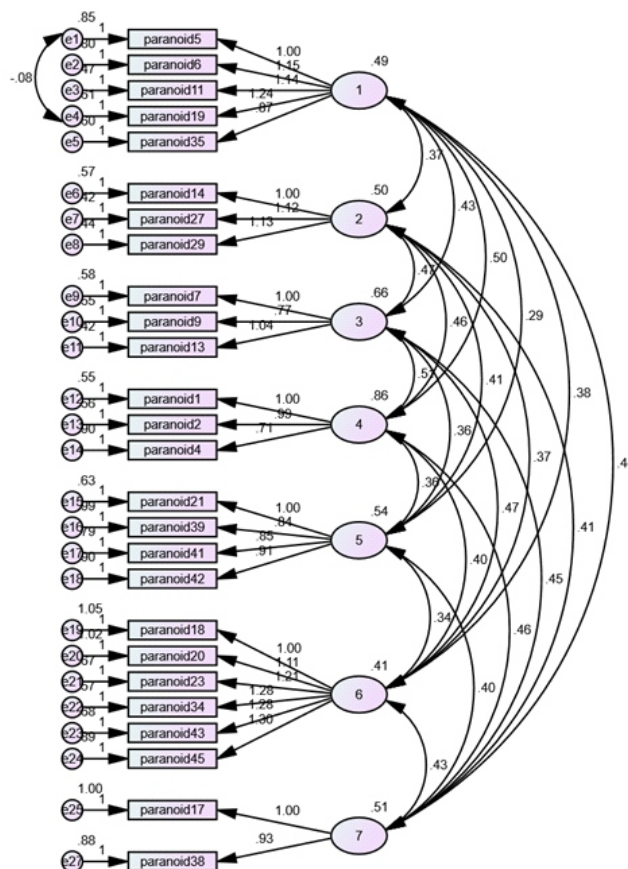
Figure 1: Confirmatory factor analysis of paranoid personality disorder scale for adults

The current study is based on the scale development of paranoid personality disorder. There are some scales available to assess this disorder Moreover, hostility, quarrelsome, and emotional coldness serve as contributing factors.[30] The current study is based on the scale development of paranoid personality disorder. There are some scales available to assess this disorder like Paranoid Personality Disorder Features Questionnaire which consists of 23 items and designed to assess six scales like mistrust, hypersensitivity, introversion, antagonism, hyper vigilance and rigidity based on DSM-IV criteria.[31] Similarly, Kosson et al. (2008)[32] Interpersonal Measure of Schizoid Personality Disorder (IM-SZ) is 12 items measure and used to assess several sides of social interaction (e.g., rapport, absenteeism of artlessness in speech, lack of verbal responsiveness and poor interpersonal hygiene). Furthermore, Schizotypal Personality Questionnaire-Brief (SPQ-B) is precise version of SPQ (74 items). It has three dimensions i.e., cognitive-perceptual deficits, interpersonal deficits and disorganisation, and 22 items. Completion time of this test is just two minutes. This test constructed on the basis of DSM-III-R criteria[33]

Although personality assessments are available in larger extent each with the unique concept and entity, but Personality disorders measures in native (Pakistani) language is so limited at the time. So, there was a need to develop a measure that could overcome language, comprehension, and cultural barriers. The current self-report measure is constructed in national language, Urdu, of Pakistan which would be an objective measure, not just for researchers and clinicians but also a layman could report by self. It will assess personality psychopathology and explores the effectiveness of constructing a scale for DSM-5, capturing intensities of impairment in personality functioning. For scale development, standardized procedure was followed like generation of item pool, content validity, pilot testing, final admistration and factor analysis. In factor analysis step, less than .4 value was suppressed, eight factors explored in rotation component matrix with factor loading ranges from .44 to .72 and 62.35% variance, KMO = .931, 0.6 KMO value considered as acceptable value.[34] The factor analysis of the seven-criterion paranoid personality disorder scales resulted in the same composition of the same criteria mentioned in DSM-5. CFA

confirmed seven factors, considering modification indices 19 items were rejected and finalizing 26 items likewise, to better fit the model covariance was drawn between item 5 and 19. With every deletion CFA run again until accepted value. CFI = .915; as prescribed 0.90 to 0.95 cut-off value and RMSEA <.6 suggested as cut-off value.[24] Model fit indices values of CMIN/DF and RMSEA were satisfactory but to better fit the model CFI modification indices of covariance and regression weights were applied. Problematic questions were observed in regression weight, modification indices, and that Problematic items were discarded. After one-by-one item deletion model estimates were re-calculated until the good CFI value establishment.

In order to evaluate test's psychometric properties reliability and validity was checked. Inter item reliability of scales and subscales is excellent i.e., α = .934. Construct validity was measured by using social suspiciousness scale (SSS).[27] The convergent validity of SSS with Social Phobia Inventory (SPIN) was in moderate range i.e., r = .56, p < .0001. Whereas convergent validity of paranoid personality disorder scale with SSS is r = .641** which is strong. Hence, a valid and reliable measure for paranoid personality disorder has been constructed and fulfil the criteria of standardized test construction procedure which would be helpful in both clinical and non-clinical setting.

CONCLUSION

Indigenous paranoid personality disorder scale 26-item scale was developed in native language of Pakistan i.e., Urdu. To evaluate the paranoid personality this is a reliable and efficient measure which can be used by the researcher, psychologist, psychiatrist, social worker and other mental health professionals for research and diagnostic puposes.

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APPENDIX-01

Paranoid Personality Disorder Scale

Test Instructions

Item Scoring Format

1 = Strongly Disagree. 2 = Disagree. 3 = To some extent. 4 = Agree. 5 = Strongly Agree.
*No reverse scoring for any item.

Subscales	Item No.	Total items
1. Suspiciousness	1-5	5
2. Perceived personal attack	6-8	3
3. Perceived hidden meaning of words	9-11	3
4. Exploiting behaviour	12-14	3
5. Bear grudges	15-18	4
6. Unsuspected suspiciousness	19-24	6
7. Reluctant to confide	25-26	2

Development and psychometric validation of an indigenous Urdu-language scale for Paranoid personality disorder in Pakistani adults

APPENDIX-02

Paranoid Personality Disorder Scale (PPDS)

نام: ------------- عمر: ----------- جنس:(مرد) (عورت) تعلیم: -------------

ماہانہ آمدنی:(۱۵۰۰۰، ۱۲۰۰۰ سے ۲۰۰۰۰، ۲۱۰۰۰ سے ۵۰۰۰۰، ۵۰۰۰۰ سے اوپر)

ازدواجی حیثیت:(غیر شادی شدہ) (شادی شدہ)   خاندانی نظام:(غیر جاندار) (مشترکہ)

بالکل متفق	متفق	کسی حد تک متفق	غیر متفق	بالکل غیر متفق	سوالات	نمبر شمار
					لوگ میری کردار کشی کرتے ہیں۔	۱
					میرے دوست مجھ سے وفادار نہیں۔	۲
					مجھے اپنے دوست احباب کی وفاداری پر شک ہے	۳
					لوگ میرا نام خراب کرنا چاہتے ہیں۔	۴
					میں تعریف کے غلط معنی اخذ کرتا/ کرتی ہوں۔	۵
					لوگ میرے ساتھ برا سلوک کرتے ہیں۔	۶
					لوگ مجھ پر ذاتی حملہ کرتے ہیں۔	۷
					لوگ میرے لیے خطرناک عزائم رکھتے ہیں۔	۸
					لوگ مجھ پر جملے کستے ہیں۔	۹
					لوگ مجھے دھمکیاں دیتے ہیں۔	۱۰
					لوگ مجھ پر ظلم کرتے ہیں۔	۱۱
					لوگ مجھے دھوکہ دینے کی کوشش کرتے ہیں۔	۱۲
					لوگ مجھے نقصان پہنچانے کی کوشش کرتے ہیں۔	۱۳
					لوگ مجھ سے فائدہ اٹھاتے ہیں۔	۱۴
					میرا دل لوگوں کی طرف سے صاف نہیں ہے۔	۱۵
					اگر کوئی میرے ساتھ برا کرتا ہے تو میں اسے معاف نہیں کر سکتا/ سکتی۔	۱۶
					لوگ کہتے ہیں کہ میں منفی سوچ رکھتا/ رکھتی ہوں۔	۱۷
					مجھے دوسروں سے تو قعات وابستہ کرنا نقصان پہنچاتا ہے۔	۱۸
					میں اس خیال سے خوفزدہ رہتا/ رہتی ہوں کہ لوگ میری معلومات کا غلط استعمال کریں گے۔	۱۹
					میں جوابی حملے کے لیے تیار رہتا/ رہتی ہوں۔	۲۰
					لوگ تعریف کی آڑ میں مجھ پر ظلم کرتے ہیں۔	۲۱
					مجھے ڈر لگتا ہے کہ لوگ میری ذاتی باتیں منتشر کر دیں گے۔	۲۲
					لوگ میرے بارے میں باتیں کرتے ہیں۔	۲۳
					مجھے سمجھ نہیں آتی کہ لوگ مجھ سے برابرتا ؤ کیوں کرتے ہیں۔	۲۴
					میں دوسروں پر اعتماد کرتے ہوئے پچھتاتا ہوں۔	۲۵
					جب کوئی میری مدد کرتا/ کرتی ہے تو مجھے بہت حیرت ہوتی ہے۔	۲۶