# Paranoid Tendencies Scale: Development and Establishment of Psychometric Properties in Young Adults

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Paranoid tendencies refer to the exaggerated suspiciousness and difficulty in building relationships with trust. In this research, paranoid tendencies of young adults were explored, and psychometric properties were established in two studies. In study I, a phenomenological approach was used to extract key components of paranoid tendencies from 20 young adults aged 18-24 years ($M = 20$, $SD = 1.68$) in phase I. In phase II, content validity was established. In phase III pilot testing was done on 20 young adults with equal number of men and women. A sample of 200 young adults was acquired for psychometric properties of the Paranoid Tendencies Scale using the Quality of Relationship Inventory (Pierce et al., 1991) and Paranoid Thought Scale (Freeman et al., 2019). The result of exploratory factor analysis revealed three factors of Paranoid Tendencies Scale named as Interpersonal Mistrust, Poor Self-image, and Social Isolation. In study II, Confirmatory Factor Analysis verified the three factored Paranoid Tendencies Scale on the sample of 250 young adults. Overall, the scale was found to have good internal consistency ($\alpha = .93$), construct validity (.87), discriminant validity (.52), and split half reliability (.89) along with the significant gender differences in experiencing paranoid tendencies.

*Keywords.* Paranoid tendencies, interpersonal mistrust, poor self-image, social isolation, young adults, suspiciousness

Young adulthood is the critical transition between adolescents and adulthood within the age bracket of 18-25 years (Curtis &

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L'Engle, 2019). Previous literature has highlighted this age period as a vulnerable period of life with an increase in the prevalence of depression, suicidal ideations, eating disorders and substance use. The increase prevalence of anxiety and depression is associated with paranoid ideations in adolescents and early adulthood (Bird et al., 2019). Paranoid tendencies are comprised of irrational suspiciousness and mistrust in daily life causing hindrances in daily life functioning and social interactions. Usually, cultural orientation and cultural efficacy promotes good mental health functioning (Liu et al., 2020) whereas Pakistan has an increase in the depressive symptomology with an average of 22% to 60% reported depression (Nisar et al., 2019) hence increases the vulnerability of paranoid tendencies. This contradiction highlights that in Pakistan young adults are entangled within the knots of western and eastern culture and hence sum up identity crises with a raise in mental health issue (Arnett, 2002) Moreover, young adulthood comes with numerous opportunities of new relationships and interactions which can end up in good as well as bad consequences. Interpersonal sensitivity becomes the key to survive this age period resulting in paranoid ideations if not kept intact (Masillo et al., 2017). Negative beliefs about oneself based on life experiences increase the susceptibility of a young adult towards paranoid ideations.

The behavioral perspective of paranoid personality also aligns with it stating that the delusion behavior (based on irrational beliefs) pumps up the personality of the person towards paranoia. The delusion behavior is based on psychological inference, social norms and consensual invalidity (Ullmann & Krasner, 1975) and any kind of lack in consensual validity gets it tagged by paranoia. For example, keep referring oneself as the object of broadcast on radio stations, this rigid and consistent pattern of thinking make them believe that they are thinking accurate and lacking consensual validity adds in their perspective based on deviation from the prescribed norms. It is predominantly significant to reminisce that paranoid characteristics are mainly inferred thoughts (expectations, characteristics, and misperceptions) acquired from apparent behavior and depend upon average based labeling. One of the hallmark features of paranoid individuals that maintain the delusional behavior as well as preoccupation of the person is the severe rigidity in their pattern of perceiving any scenario that are based on their previous lived experiences creating irrational core beliefs (Kendler, 2016).

The psychoanalytical perspective of paranoid personality disorder explains it through defense mechanism. It is believed that the defense mechanism: projection is responsible in piling up the paranoid

tendencies). There are many studies that highlight the use of projection as other defense mechanisms in different personality disorders. For example, studies have revealed that usage of projection as a defense mechanism has strong association with intense personality disorders, including paranoia, antisocial personality disorders and borderline (Koenigsberg et al., 2005). The improvement in such defense mechanism highly predicts the outcome of therapy based on psychoanalytical perspective (Perry & Bond, 2012). Projection is also classified as one of the immature defense mechanisms (Waqas et al., 2018) and is associated to the younger age when one doesn't have proper education, income, late marriages or never married (Blanco et al., 2023). Keeping in view young adults in Pakistan are also experiencing all these issues due to rising inflation and hence provide logical explanation of increased chances of being at risk of paranoid tendencies through projection. Though, paranoid phenomenon may also be clarified using cognitive processing in stressful paranoia (Flower et al., 2015) for instance, the misattributions of surroundings with paranoid personality disorder may be assumed in terms of specific cognitive biases (Pot-kolder et al., 2017) including attentional biases interpretative biases, and memory biases. Such cognitive models are all set and prepared for laboratory testing and associated standardized procedures. According to evolutionary perspective, the persecutory trait seems to be the hallmark feature for the paranoid personality. The concept either focuses that harm will occur to them or an attribution that other will intend to harm them. It usually begins with the tendencies of being spontaneous on flexibility or inflexibility but usually ends up on clinical perspective (Raihani & Bell, 2019).

The social relationships and interactions are the primary requirements to survive in collectivistic culture (Liu et al., 2020) and keeping in view the interpersonal sensitivity of relationships in young adulthood make this population at stake of paranoia (Masillo et al., 2017) The paranoid tendencies can not only hinder the healthy social interactions by over shadowing it under the lightening of mistrust and suspiciousness (Combs et al., 2013; Phalen et al., 2017) but also causes dysfunctionality in daily life (Buck et al., 2016). The constant increase in the statistics of paranoia in general population (Raihani & Bell, 2019) requires significant attention towards it. Research has also highlighted the significance of culture in understanding the psychopathology in culture because symptoms are always culture based and so is the manifestation. In the view of above-mentioned literature and recommendations it was identified that increase in paranoia as well as its predictors (e.g., depression, anxiety, projection,

cultural connation) requires a cultural understanding of paranoid tendencies and since no Indigenous scale to measure paranoid tendency has developed in Pakistan so it gives a direction to develop one in the light of cultural expression of paranoia.

## Method

Study I was conducted for the exploratory factor analysis whereas study II was conducted for the confirmatory factor analysis. In study 1 the following phases were undertaken:

### Phase I:  Item Generation

The aim of this phase of study was to explore phenomenology to generate item pool for paranoid tendencies. The phenomenology was explored from 20 participants (10 men and 10 women) from young adults through open ended interview question based on the operational definition of the main construct highlighting the hallmark of paranoia; that is, irrational suspiciousness and mistrust. The verbatim of participants were noted word to word. The verbatims were aligning with the core of paranoia for example, do not easily trust others, high suspiciousness in relationships, etc.  After that, the list was generated through the item pool and the slang words and duplications were removed from the raw list. As a result, a final list was generated having 43 items in total.

### Phase II: Expert Validation and Content Validity

The aim was to establish the content validity of the measure from experts for further administration. The eight experts were selected for expert validation based on their qualification, field exposure and relevance. The final list of items, generated because of phase I was used as a measure in this phase. A form was created for every expert with the instructions of rating each item on the Likert type scale of 0- 4 where 0 = *not at all relevant* and 4 = *very much so*. After getting all the responses the league table was generated for the collation of responses from the experts. A criterion of approximately 80% was decided to retain the item on the bases of collated score. As a result of the league table, items were modified with minor changes of words. A final measure of 43 items was generated because of this phase. For the present research, good content validity of Paranoid Tendencies Scale was found to have .90 S-CVI/Ave. Finally, Paranoid Tendencies Scale was modified into a self-report measure comprising of a 5-point rating scale ranging from 0 = *not at all* to 4 = *always*.

**Phase III: Pilot Study**

The aim of this phase was to determine time requirement, quality of scale, nature, and wording of items so that the in-time modifications were made with the scale. Twenty young adults were taken for the pilot study or try out session of the scale. Few observations were made from pilot study resulted in modifying the instructions and font of the measure. The final measure free from difficult and ambiguous instructions was generated. Overall, no ambiguity in any item was reported and observed.

**Phase IV: Establishing Psychometric Properties of the Paranoid Tendencies Scale**

The aim of this phase was to develop the psychometric properties i.e. reliability and validity of the Paranoid Tendencies Scale (PTS). The internal consistency, split half reliability and discriminant validity were measured using SPSS. For concurrent validity, the Revised Paranoid Thought Scale (Freeman et al., 2019) was administered along with Paranoid Tendencies Scale on 200 participants. Overall, the results were satisfactory and are reported in the result section with good concurrent validity (.86), discriminant Validity (.52), internal consistency (.93) and split half reliability (.89).

**Participants**

The participants ($N$ = 200) were selected through multistage sampling for study I. In Pakistan the public and private educational sectors are two main and key disciplines of education and hence the participants were equally selected from both sectors, that is 100 each. The participants were selected based on gender (men and women) and the secondly based on educational year (BS1, BS2, BS3, and BS4). So, the age range of 18-24 years was identified. The average age for this group was 20 years ($SD$ = 1.68). Overall, more participants reported nuclear family system (61%) than joint family system (39%). The 250 participants were selected for study II having 49 % participation of men and 51% participation of women. The sample was collected through multistage sampling from two different universities (one public and one private)

**Measures**

*Paranoid Tendencies Scale*

The Paranoid Tendencies Scale refined in phase III was utilized to measure the general tendencies of paranoia in young adults. It has

43 items to be rated on 5-point Likert scale to measure the responses as *never* (0), *rarely* (1), *sometimes* (2), *often* (3) and *always* (4).

### Quality of Relationship Inventory

The Quality of Relationship Inventory (Pierce et al, 1991) was used to measure discriminant validity of scale. It is a 25 item self-report inventory to assess the quality of interpersonal relationships. The scale has three subscales: Support, conflict, and depth. It is based on 4-point Likert type scale where 1 = *not at all* and 4 = *very much*. The inventory has a good internal consistency with the alpha value of .84, .91 and .85 for subscales.

### Revised Paranoid Thoughts Scale

This scale developed by Freeman et al. (2019) was used to measure concurrent validity of the Paranoid Tendencies Scale. The scale has 18 items, 10 items for the persecution and 8 items for the reference to be rated on 4-point Likert type scale measures the responses as *not at all* (0) to *totally* (4). The scale has very high reliability as well (.90).

## Procedure

The approval was taken from Institutional Review Board proceeding to the permission taken from four universities: two private and two public along with the explanation of core objectives and aim of the study I. The authority of universities was explained with the inclusion criteria based on age, gender, and academic class. After approval was taken by competent authorities of the universities, verbal consent was also taken from participants. Participants were also guaranteed the confidentiality of the information taken from them. The data collection was composed and disciple in groups having 25-30 students. The average time to complete the research protocol was nearly 25 minutes. The same ethical protocol was considered for study II. The approval was taken from two universities: one public and one private along with the explanation of aims and goals. The data was collected in group form and an average of 30 minutes was taken to complete the protocol. The participants were also ensured the free counseling services if they felt triggered during or after filling the research protocol.

## Results

### Exploratory Factor Analysis

The normality of data found acceptable within the ranges of -3 to +3 through skewness and -10 to +10 for kurtosis (Brown, 2006) Exploratory Factor Analysis with Varimax rotation was done on a data set consisting of 200 participants (men = 45%; women = 55%) to explore the key dimensions associated with Paranoid Tendencies Scale. The number of participants for Exploratory Factor Analysis was determined after the criterion suggesting that there should be five participants for each item of the scale (Tabachnick & Fidell, 2007).

### Table 1

*Retained Factors and Item Correlation of 22 Items of Paranoid Tendencies With Varimax Rotation (N = 200)*

| Sr. No. | Items | F1 | F2 | F3 |
|---------|-------|------|------|------|
| 1 | 41 | **.76** | .12 | .06 |
| 2 | 42 | **.73** | .13 | .05 |
| 3 | 35 | **.72** | .16 | .19 |
| 4 | 33 | **.66** | .08 | .16 |
| 5 | 7 | **.62** | .48 | .06 |
| 6 | 34 | **.59** | .09 | .30 |
| 7 | 17 | **.58** | .24 | .14 |
| 8 | 8 | **.51** | .39 | .29 |
| 9 | 38 | **.50** | .29 | .23 |
| 10 | 36 | **.44** | .21 | .38 |
| 11 | 3 | .13 | **.68** | .08 |
| 12 | 1 | .39 | **.66** | .21 |
| 13 | 16 | .19 | **.60** | .25 |
| 14 | 2 | .51 | **.58** | .12 |
| 15 | 21 | .38 | **.56** | .24 |
| 16 | 20 | .31 | **.47** | .11 |
| 17 | 26 | .24 | **.46** | .30 |
| 18 | 11 | .11 | .19 | **.67** |
| 19 | 25 | .30 | .23 | **.63** |
| 20 | 30 | .18 | .09 | **.58** |
| 21 | 31 | .35 | .15 | **.57** |
| 22 | 37 | .08 | .05 | **.49** |
| Eigen Values | | 14.90 | 2.78 | 1.73 |
| % Variance | | 35.40 | 6.63 | 4.11 |
| Cumulative % | | 35.40 | 42.03 | 46.13 |

*Note.* Items loaded above 0.4 have retained and boldface items belonging to the factor.

Initially, accuracy of the current data for factor analysis was checked. The Cronbach alpha for PTS was found to be 0.93 indicating

good internal consistency and scale is suitable for factor analysis. Moreover, in the current research, to check the adequacy of the factor analysis Kaiser-Meyer-Olkin measure was also used and it was found to .861 ($p < .001$) Bartlett's test of Sphericity (see Table 1). The number of factors for PTS was determined based on Eigenvalue greater than 1 (Kaiser, 1974) and factor loading greater than .40 on that factor (Tabachnik & Fidell, 2013). Communalities refer to indicate the variance in each item explained by the extracted factors. The values $> 0.5$ are considered ideal. The explored communalities were above 0.5 and gave an ideal situation for further analysis. Scree plot showing the Eigenvalues of each factor is given in Figure 1. The three-factor solution was found to be the best as it has minimum dubious items and the most interpretable factor structure. Therefore, Exploratory Factor Analysis with Varimax Rotation was done on 43 items of PTS with three-factor solution and 22 items having low factor loadings were omitted. The factor loadings of 22 items are given in the Table 1 given above.

**Figure 1**

*Scree Plot of Paranoid Tendencies Scale*
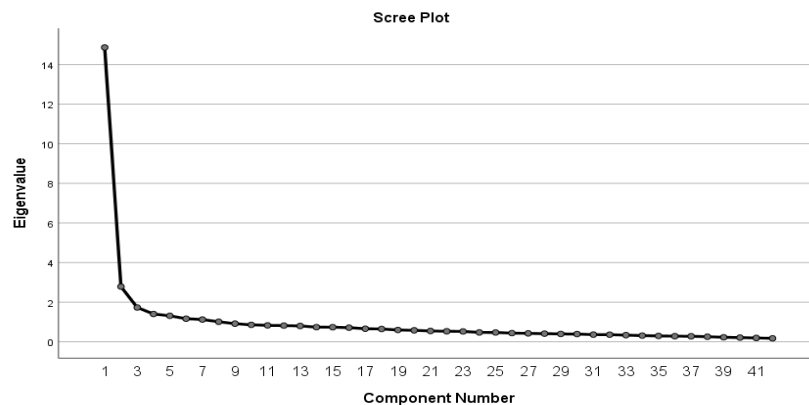


*Factors Description*

After careful consideration, the 3 factors were retained, and each factor was observed and read in detail. A name was assigned to each factor grounded on the collective theme of each factor.

**Factor 1: Interpersonal Mistrust.** It can be described as the confident feeling of negative expectations regarding other's conduct. This distrust involves the manifestation of fear, suspiciousness, and vigilance (Vlaar et al., 2007). 10 items were retained in this factor. A

high score on this subscale refers to interpersonal trust issues and difficulties in relationships.

**Factor 2: Poor Self-Image.**  The negative evaluation of self-involving self-destructive and self-abusive thoughts and behavior is poor self-image.  A total of 7 items were retained in this factor. A high score on this subscale refers to low self-esteem and distorted perception of self.

**Factor 3: Social Isolation.** The lack of meaningful relationships or social interactions is known as social isolation. It further involves the absence of contacts, links, familial relationships, and friends. This subscale has 5 items and a high score on this subscale refers to the poor socialization and lack of social skills.

**Table 2**

*Sample Items of Three Factors of Paranoid Tendencies Scale*

| Item No. | Statements |
|---|---|
| Factor 1: Interpersonal Mistrust (10 items) | |
| 41 | to keep an eye on others |
| 42 | to view others with suspicion |
| 35 | To be mean for one's sake |
| 33 | To hurt others |
| 7 | Do not feel happy for other's success |
| 34 | To not fulfill promise |
| 17 | To control  others |
| 8 | To criticize others |
| 38 | Do not feel safe from others |
| 36 | Avoid taking advice from others |
| Factor 2: Poor Self-Image (7 items) | |
| 3 | To feel emotional weak |
| 1 | To feel inferiority complex |
| 16 | Feel difficulty in decision making |
| 2 | To feel victimized |
| 21 | Lack of self confidence |
| 20 | Lack of satisfaction in every matter |
| 26 | To keep on thinking about the same thing |
| Factor 3: Social isolation (5 items) | |
| 11 | Lack of socialization |
| 25 | Lack of friends |
| 30 | To be alone |
| 31 | Difficulty in relationships |
| 37 | Being self-absorbed |

**Inter-Factor Correlation of Paranoid Tendencies Scale**

Table 3 depicts the inter-factor correlation of the Paranoid Tendencies Scale. Findings recommended that Interpersonal mistrust, poor self-image, and self-isolation are significantly positively correlated with each other ($r$ = .61 to .69; $p$ < .01).

**Table 3**
*Intra-scale Correlation of Subscales of Paranoid Tendencies Scale*

|   | Variables | 1 | 2 | 3 |
|---|---|---|---|---|
| 1 | Interpersonal Mistrust | - | .69[*] | .61[*] |
| 2 | Poor Self Image | | - | .64[*] |
| 3 | Social Isolation | | | - |
|   | *M* | 14.90 | 13.11 | 9.87 |
|   | *SD* | 9.50 | 6.87 | 4.93 |

[*]$p$ < .00.

**Validity of Paranoid Tendencies Scale**

The concurrent validity of the Paranoid Tendencies Scale with Paranoid Thoughts Scale (Freeman et al., 2019) was high (0.86[**]) which validated the construct of the scale. Moreover, the discriminant validity of the paranoid scale with the subscale (Supportive Relationship) of Quality of Relationship Inventory (Pierce et al., 1991) was also found out in moderate to high category ($r$ = -.52[**]).

**Confirmatory Factor Analysis**

Following Exploratory Factor Analysis, the three-factor solution of the PTS was cross-validated amongst 250 participants (men = 49%; women = 51%). The findings and results of confirmatory factor analysis were aligned with guiding principle provided by Jackson et al. (2009). Initial analysis was done to confirm multivariate normality (Jackson et al., 2009) of current data (skewness = -0.52, kurtosis = 0.61, $M$ = 99.10, 5% trimmed $M$ = 99.58). Confirmatory Factor Analysis was done through AMOS 24.0 version. The total number of participants for analysis was determined by considering the criteria set by Schumacker and Lomax (2015). The fit indices are CMIN/df, Tucker Lewis Index, Comparative Fit Index, Goodness of Fit Index, Root Mean Square Error of Approximation, and Standardized Root Mean Square Residual. Figure 2 symbolizes the final CFA for the sample. Covariance between error terms was added, however it was tried to add a minute covariance to obtain the model fit. It was confirmed that all the covariance has strong theoretical or logical affiliation. After adding covariance, the factor structure remained the

same as it was explored in EFA and no item was removed. The model resulted from CFA indicated good fit to the data with CFI = 0.92, GFI = 0.90, TLI = 0.91, RMSEA = 0.06 (Schumacker & Lomax, 2015).
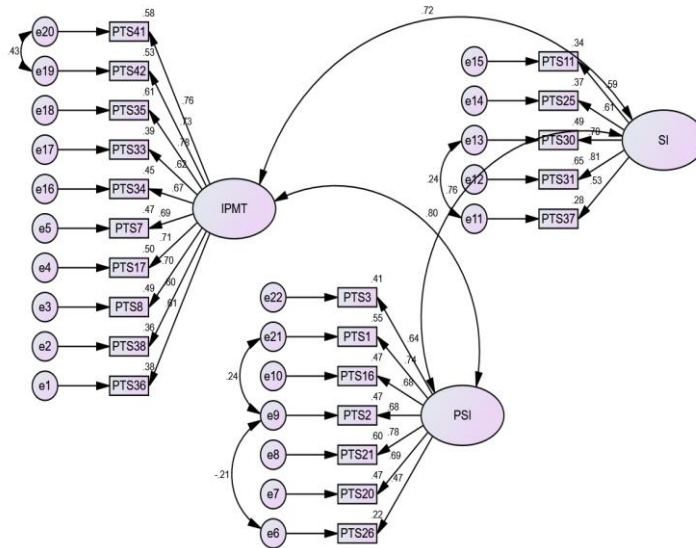
**Table 4**

*Fit Indices for Paranoid Tendencies (N=250)*

|          | χ2/df | CFI | GFI | NFI | TLI | RMSEA |
|----------|-------|-----|-----|-----|-----|-------|
| Model 1  | 3.69  | .89 | .86 | .97 | .87 | .07   |
| Model 2  | 3.05  | .92 | .90 | .88 | .91 | .06   |

*Note.* CFI = Comparative Fit Index; GFI = Goodness of Fit Index; TLI = Tucker Lewis Index; RMSEA = Root Mean Square Error of Approximation prior to covariance.

**Figure 2**

*Confirmatory Factor Analysis of Paranoid Tendencies Scale (N=250)*



*Note.* IPMT = Interpersonal Mistrust, PSI = Poor Self-Image, SI = Social Isolation.

A significant difference of paranoid tendencies between men (*M* = 33.40, *SD* =15.6) and women (*M* = 41.97, *SD* = 19.72) was found. It further demonstrated that women tend to experience more paranoid tendencies (*t* = -4.97, *p* < .01) as compared to men.

## Discussion

Paranoid personality is comprised of irrational suspiciousness and lack of trust (Kendler, 2016). The tendencies in this regard assumed as

an initial warning signs in adapting this personality. The irrational suspiciousness is becoming a prevalent part of society and ultimately pushing people towards the darkness of mistrust and distress (Lee, 2017).

Pakistan is a practicing collectivist culture country and young adults depend on their parents for decisions and finances, but the need of autonomy is always there, the battle between these two can also lead one towards pathological tendencies. Therefore, the manifestation of paranoid tendencies can also be different in Pakistan as the traditional behaviors and cultural boundaries are also restricted here. That is why an indigenous scale was developed to explore the paranoid tendencies. Exploratory factory analysis was implied to 43 items and 22 items were retained. At initial level 8 factors emerged but 3 factors were retained considering Kaiser's criteria, factor loadings, scree plot and thematic relevance. The eigen value of 1 was considered appropriate to retain factors. The first factor retained was named as interpersonal mistrust because it covered the items relevant to the suspiciousness and distrust in relationships and other's acts. The retained items were of jealousy, dominance in relationships, need of power and control in relationships, suspiciousness in relationships, spying, danger from others and criticism on other's behaviors The literature also supported the items of retained factors.

The literature has defined suspicious and distrust as the hallmark of paranoid (Lewis & Ridenour, 2017). The paranoid behaviors have also been defined as the behaviors associated to jealousy, mistrust, control, and dominance (Lee, 2017). The evolutionary perspective of paranoid personality also validates the persecutory attribute present in the factor as the hallmark of paranoid tendencies (Raihani & Bell, 2019). Moreover, if we look at the previous scales developed on the same population having different constructs also has come up with the mistrust as the prevalent factor in university population or young adults (Saleem & Zahid, 2014).

The second retained factor was named as poor self-image because the factor was covering items relevant to one's self-image. The retained factors were of low self-esteem, low self-confidence, and self-victimization. In the light of literature, it is evident that low self-esteem is always being associated to paranoia (Cicero & Kerns, 2011) and diverts the person from positive self-schemas hence make him vulnerable towards doubting others as well as oneself (Monsonet et al., 2021).

The third factor was named as social isolation because it contained the items relevant to poor socialization with factor loadings

> .40. The retained items were of isolation, poor connections, poor social skills, lack of friends and connections in society. Literature has highlighted social isolation as one of the maintaining factors of paranoid delusion (Michalska da Rocha et al., 2018) and their constant criticism, suspiciousness and distrust make them isolated and socially isolated. Overall if we look at DSM related features section (APA, 1994), mistrust, aggressiveness, excessive autonomy, oversensitivity, hyper-vigilance, and inflexibility come under this which also validate the retained factors. After retaining the factors, internal consistency of the scale was measured by running the reliability analysis and it showed that the PTS had the high internal consistency.

As far as the subscales are concerned, Cronbach's alpha was found appropriate for the three subscales as it ranged from $\alpha$ =.80 (social isolation) to .90 (interpersonal mistrust) and split half reliability ranged from .78 (social isolation) to .89 (interpersonal mistrust). Moreover, the factors of the Paranoid Tendencies Scale for young adults were expected to inter correlate and the results showed moderate to high inter factor correlation between interpersonal mistrust a poor self-image, moderate correlation between interpersonal mistrust and social isolation and between poor self-image and social isolation. The highest correlation between interpersonal mistrust and poor self-image indicated that a person who tends to have more irrational suspicious, mistrust, criticism and control in relationship is more prone towards relatively low self-esteem and associated self-victimization and insecurities (He, 2022).

Furthermore, the concurrent validity of the paranoid tendencies scale with Paranoid Thoughts Scale was high which validated the construct of the scale. Few items found similar between these two scales like people conspire against me, I become angry when someone hurts me and people criticize me, etc. Therefore, the previous literature, theoretical frameworks and previous scale developments validate our retained factors and their themes.

The results have also found out a significant gender differences in the prevalence of paranoid tendencies in young adults and precisely in women this might be because of cultural connotation that in collectivistic culture, the women have been brought up with low confidence. They have been experiencing traumatic events and that might have developed paranoid tendencies in them out of safety or experiential learning (Subzwari, 2020). Hence the results are intact in the light of culture and literature.

**Implications and Conclusion**

Overall, the study revealed three factors of Paranoid Tendencies Scale including interpersonal mistrust, poor self-image and social isolation consisted on statistically significant factor loadings. The study also highlighted the good internal consistency, split half reliability, concurrent and discriminant validity of the paranoid tendencies scale. Furthermore, the results concluded women having more paranoid tendencies than men. Based on results and discussions in relevance to literature and culture it is recommended to utilize this scale for the timely psychological assessment and eradication of these tendencies from the society to prevent for future malfunctioning in relationships and daily life as well.

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