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# Navigating Psychological Misconceptions: A Journey to Truth- A Validation Study of Perceived Myths about Psychology Scale (PMPS)

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## Abstract

The aim of this study was to design and develop a comprehensive indigenous scale to measure perceived myths about Psychology and establish its psychometric properties. The first phase involved generating an item pool of 80 items through literature review, focus group discussions, and semi-structured interviews. The Content Validity Index (CVI) of 0.81 was calculated based on the ratings of five experts. To determine the face validity of the preliminary scale, a pilot study was conducted on the target

population (n = 16). Using a cross-sectional research design, a random sample of 300 males and females aged between 18 and 57 years was collected. The internal consistency and dimensionality of the scale were empirically measured through Exploratory Factor Analysis (N = 300), which resulted in five factors: Negative Attitude towards Psychology, Myths about Mental Health, Importance of Psychotherapy, Lack of Understanding, and Misconceptions. In the second phase, Confirmatory Factor Analysis (N = 205) was conducted to confirm the factor structure of the scale. Psychometric properties were established ($\alpha$ = 0.89), and the convergent and discriminant validity of the scale were determined through CR = 0.92 and the square root of Average Variance Extracted = 0.61, respectively. Finally, the Perceived Myths about Psychology Scale (PMPS) was constructed and validated with its five factors.

**Keywords:** Myths, Psychology, Validation study, Confirmatory Factor Analysis (CFA)

## Introduction

Psychological misconceptions are beliefs in false and widely held assumptions that are against the findings of psychological research (Bensley & Lilienfeld, 2015). Believing in such psychological misconceptions may give birth to psychological misunderstandings. They can have a negative effect on not just a person but also on the entire society. Myths and misconceptions about Psychology are widespread misinformation, that people consider accurate (Lilienfeld et al., 2010). Myth is defined as a "commonly believed but false idea" (Cambridge dictionary, 2023), myth is a popular belief or tradition that has grown up around something or someone, especially one embodying the ideals and institutions of a society or segment of society (Merriam Webster, 2023). Myths are those beliefs or assumptions about human behavior that exhibit great social support but are not consistent with the present scientific evidence (Lilienfeld et al. 2010; Stanovich, 1992). Myths are relatively stable, resistant to change, and prevalent among the common population (Fasce & Ventura, 2020).

People misunderstand the nature of Psychology as a subject. This study investigates myths about psychology as widely spread non-scientific beliefs and ideas about Psychology, studying Psychology and the practice of Psychology in the clinical field. The topic of myths is multifaceted and complex. By the 20th century, studies on misconceptions and myths in psychology had started (Rodríguez-Prada et al., 2022). There have been many studies since then from developmental and neuropsychology (Furnham, 2018) to popular psychology (Lilienfeld et al., 2010), abnormal psychology (Curtis & Kelley, 2023) and clinical psychology (Jungmann & Witthöft, 2022).

Cognitive dissonance theory is one of the theories that has been proposed to explain why people believe in myths about Psychology. According to this theory, people experience psychological discomfort when they hold two or more conflicting beliefs or attitudes. This discomfort motivates people to reduce the dissonance by changing one of the beliefs or attitudes, or by seeking out information that supports one of the beliefs or attitudes (Cooper, 2016).

Conspiracy theories explain why people believe in myths prevalent in society. Research has shown that people who are drawn to conspiracy theories tend to have a greater need for cognitive closure (Marchlewska et al., 2018) and a tendency to be hypersensitive to agency detection. This makes people more prone to believing in myths and misconceptions about Psychology and mental health. The persistence of myths about Psychology may be due to their repeated exposure in popular culture and the media, which can reinforce inaccurate beliefs (Douglas et al., 2016). According to Burns et al. (2003), having knowledge of how scientific information is communicated to the public could impact the acceptance of myths. Scientific dissemination refers to the use of various skills, media, activities, and dialogue to produce personal responses such as awareness, enjoyment, interest, opinion-forming, and understanding of scientific knowledge (Burns et al., 2003).

Self-report questionnaires have been the default choice for studying misconceptions and myths because they allow participants to express agreement or disagreement but also the extent of agreement/disagreement (Bensley & Lilienfeld, 2017; Hughes et al., 2013). Prior researches have discussed the relevance of different methods such as response formats and content, used to measure myths (Bensley & Lilienfeld, 2017; Taylor & Kowalski, 2012). For years the popular method among researchers has been dichotomous response format i.e. true/false (Rodríguez-Prada et al., 2022) but they are not without limitation such as un clarity lies in them, they do not provide any further detail (Lucas et al., 2009) and agreement bias where participants are more likely to respond positively (Bensley & Lilienfeld, 2017). Likert scales are another way of measuring responses that can measure the intensity (Watson et al.,1988). Moreover, Likert responses provide more confidence on the selection of responses and item statements can be discriminated with higher certainty (Prada et al., 2022). Therefore, a comprehensive Likert Scale is used in the present study to measure perceived myths about Psychology.

## Rationale of the Study

The aim of this study was to develop a scale to measure perceived Myths about Psychology as a core subject and its professionals in the general population. There are scales that measure general scientific myths like Science-Related Myths Scale (Swami et al.,2012), scales that measure misconceptions in psychology (Gardner & Brown, 2013) and scales that measure myths in specific fields of psychology (Jungmann & Witthöft, 2022). Research on myths in psychology has been conducted in different parts of the world (Prada et al., 2022) but no such study is conducted in Pakistan. Mainly, myths in psychology have been the focus of research in the English-speaking world (Jungmann & Witthöft, 2022) so there is yet a need to develop a standardized indigenous scale in Urdu for measuring perceived myths about Psychology.

As reported before, most of the current questionnaires are about misconceptions and myths in psychology (e.g. humans only use 10% of their brain) but the present study aims to measure common myths regarding the Psychology as a subject and myths about its professionals exist among people of Pakistan. The current study takes into account the cultural, religious and social factors that contribute in establishment of myths among Pakistani population. There is a dearth of information on the specific myths about Psychology that may be prevalent among people. Developing a scale to measure these myths could help to fill this gap in knowledge and provide a more nuanced understanding of the factors that contribute to mental health stigma in Pakistan.

Objectives

- Developing an indigenous scale for Pakistani people to use in measuring perceived myths about Psychology in Urdu.
- Validating and establishing psychometric properties of the newly developed scale.

Method

The study was conducted in two phases:

Phase 1: Development of Perceived Myths about Psychology Scale (PMPS)

Phenomenology of perceived myths about Psychology was identified through literature review, semi structured interviews and focus group discussions with the subject matter experts. Themes drawn from these interviews and FGDs.

Items Generation

Below are the steps that made the conceptual basis for the initial phrasing of the items possible.

Review of Relevant Literature. Extensive and exhaustive literature review is the most crucial part of conceptualizing myths about psychology. So, primarily a thorough review of the literature on perceived myths regarding psychology was conducted. Evaluation of the current literature, theories and progress of the field gave a clear idea of the background of the construct. Existing scales that had some similarity to the construct were evaluated and their limitations and usefulness were noted. This led to the construct of myths about psychology being conceptualized.

Semi Structured Interview. In the second phase of conceptualizing the construct, semi-structured interviews were conducted with four MPhil and PhD experts in the field of Psychology who had at least three years of experience. The experts were selected using a convenience sampling technique from different private universities. Prior to conducting and recording the interviews, permission and consent were obtained from the experts. The interviews were then transcribed carefully. During the interviews, the experts were asked to share their expert opinion on the perceived myths about Psychology that are prevalent among Pakistani people. The themes related to these myths were then thoroughly identified.

Focused Group Discussion. To strengthen the concept of perceived myths about Psychology, focus group discussions were conducted with the normal adult population. The purpose of these discussions was to explore as many myths as possible that are commonly believed by people in Pakistani society. Participants for each focus group were selected using a convenience sampling technique. The focus group participants were informed that the information they shared would remain secret and

gave their consent for the focus group sessions to be recorded on audio. 30 to 45 minutes were allotted for each group discussion. Focus group discussions were conducted until the point of saturation arrived. Two focus group discussions (N=20) were conducted to gather sufficient information. The first focus group was composed of female participants (n = 10) with age range 25-45 years, while the second focus group was conducted with male participants (n = 10) with age range 25-45 years. Participants were encouraged to report as many myths related to psychology that they believed, had heard, or read somewhere as possible. The audio recordings of the focus group conversations were transcribed once the discussions were over. A thorough examination of the conversations revealed hints and insights about the kinds of myths that the public typically believes.

Five broad themes were identified from the semi-structured interviews and focus group discussions, i.e. Negative attitudes towards mental health, Lack of understanding, Expertise of psychologists, Misconceptions about Psychology, and Importance of therapy. These themes were incorporated with those identified through review of the literature to make an item pool for scale construction. The themes that were identified and investigated through close observation, in-depth analysis, critical evaluation of previous researches, semi-structured interview analysis, and focus group discussions were used to build the item pool of 80 statements representing different types of myths

دماغی بیماریاں غیر قابل علاج ہیں اور عمر بھر رہتی ہیں. بچے نفسیاتی مسائل کا سامنا نہیں کرتے۔

Content Validity Index (CVI)

Once the item pool was generated it was empirically validated. According to Haynes et.al (1995) evaluating all items on the basis of clarity and relevance to the actual construct is the main objective of Item Content Validity Index (I-CVI) (Haynes et al., 1995). The items were reviewed and rated by five judges who were experts in the field. They were instructed to rate the items on three dimensions that are relevance, understandability, and clarity in relation to the construct of perceived myths about Psychology on a 4-point Likert scale. According to the experts' ratings 15 items were deleted leaving behind 65 items of which two of the items were edited and reworded to make them clearer on experts' advice. Total scale CVI was calculated and was found to be .81 which is acceptable (Lynn, 1986; Wynd, Schmidt, & Schaefer, 2003).

Pilot Study

Pilot study was conducted to establish face validity and to guarantee its understandability to the sample. A sample of 16 individuals including both men (n=7) and women (n=9) was selected through convenience sampling technique. The sample age ranged from 18-35 years. The 65 items in the item pool were put together into response format using a 4-point Likert scale. Each statement required a response from the respondents on a scale of 1 to 4, with 1 denoting "strongly disagree" and 4 denoting "strongly agree". The items were then pilot tested (n=16) on 16 people including both men and women. No ambiguity and non-clarity was reported. As a result, the Perceived Myths about Psychology scale kept all 65 items.

Establishing Construct Validity through Factor Analysis

The construct validity was established by applying Exploratory factor analysis. The main objective was to investigate the internal factor structure and scope of Perceived Myths in Psychology and finalize the scale items.

Sample. Data was collected through the convenience sampling strategy. A sample size of n=300 including males (n = 87) and females (n=213), age ranged from 18 to 55 years (M=25.78, SD=7.517), was used to validate the scale for the general population. Literate men and women were selected after their willingness to participate in the study. They had reported no psychological, physical, or health-related issues.

Undergraduate students made up the majority of the participants n= 195 (65.7%), while graduates, n= 72 (24.2%), postgraduate, n=10 (3.4%) and those below undergraduate were n= 20 (6.7%). The sample comprised of both employed, n= 109 (36.7%) and unemployed, n= 188 (63.3%) population. The socioeconomic status of the sample included people from middle class n= 261 (90.3%), high class, n= 19 (6.6%) and lower class, n= 9 (3.1%). Marital status of both men and women was taken as demographics categorized as married, n=83 (28. 3%) and unmarried, n= 210 (71.7%). Majority of the sample were Muslims, n= 285 (96.0%) while non-Muslims, n= 12 (4.0%) also participated in the study. To increase the generalizability of our data on Pakistani population, data was collected from people belonging to different provinces of Pakistan as mentioned in demographics; Punjab, n= 200 (69.7%), Sindh, n= 8 (2.8%), KPK, n= 26 (9.1%), Gilgit, n= 1 (.3%), AJK, n= 44 (15.3%) and Federal Capital Islamabad, n= 8 (2.8%).

Procedure

Consent was taken from the participants before the study. Data was collected individually from participants who were willing to participate in the study. They were assured that their data would be kept confidential and the Perceived Myths about Psychology Scale (PMPS) was administered on the selected sample. To analyze the component of factor structure EFA was performed using SPSS version 26.

Results

Investigating the preliminary factor analysis on 65 items to identify the factorial structure of the scale. The items were measured on a 4-point Likert type scale, where 1=Strongly disagree, 2=Disagree, 3=Agree and 4=Strongly agree. For exploring the depth in Perceived Myths about Psychology Scale, Principal Axis Factoring with varimax rotation was implemented. The Kaiser-Meyer-Olkin value of .88 in Table 1 shows that data is highly suitable for factor analysis. The Kaiser-Meyer-Olkin test assesses the suitability of data for EFA by measuring the degree of coherence between variables. It tells us whether enough items are predicted by each factor. The test score varies between 0 and 1, and KMO test values greater than 0.6 are acceptable, greater than 0.7 are good while 0.8 and higher are considered very good for analysis (Kaiser & Meyer, 1974). Bartlett's test assesses the hypothesis of homogeneity of the correlation matrix. Bartlett's test is appropriate when the significance value is less than 0.05 (Bartlett, 1954). As illustrated by our results, the significance value of Bartlett's test of sphericity is .000, which indicates that correlations between variables are large enough to be used in factor analysis. Cumulative variance is above 50%, it signifies that a substantial portion of the overall variability in the observed variables is captured by the retained latent factors (Lorenzo-Seva, 2013). Initial Eigen values of five factors are

6.17, 1.61, 1.38, 1.28, and 1.18 respectively. Six factors were extracted from EFA where the first five factors of Myths about Psychology showed significant correlations with the main construct ranging between .52 to .88. Factor 6 was eliminated due to its low reliability, low correlation with the construct and not properly representing the construct intended to measure (Tay & Jebb, 2016).

Table 1

Mean, Standard Deviation, Factor Loadings, Alpha Reliabilities, Eigenvalues, Percentage Variance, Cumulative Percentage Variance, KMO and Bartlett's Test of Sphericity of Exploratory Factor Analysis of Perceived Myths About Psychology Scale (N=300).

| | M | S.D | FI | F2 | F3 | F4 | F5 | F6 | *A* |
|---|---|---|---|---|---|---|---|---|---|
| PMPS | | | | | | | | | .87 |
| FI | | | | | | | | | .84 |
| Item19 | 2.00 | .90 | **.68** | .02 | .05 | -.04 | .21 | .10 | |
| Item46 | 2.13 | .81 | **.64** | .16 | .04 | .13 | .00 | .00 | |
| Item17 | 2.26 | .85 | **.58** | .10 | .14 | .07 | .17 | .09 | |
| Item65 | 1.84 | .87 | **.57** | .01 | .16 | .17 | .17 | .02 | |
| Item39 | 2.09 | .87 | **.56** | .22 | .09 | .30 | .05 | .03 | |
| Item16 | 2.12 | .81 | **.53** | .25 | .15 | .15 | .10 | .16 | |
| Item15 | 2.10 | .80 | **.50** | .04 | .08 | .18 | .17 | -.13 | |
| Item42 | 2.03 | .78 | **.47** | .24 | .14 | .25 | .25 | .04 | |
| Item13 | 1.96 | .84 | **.47** | .16 | .08 | .19 | .24 | -.16 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2.33 | .81 | **.44** | .22 | .21 | -.02 | -.02 | -.02 | |
| Item18 | | | | | | | | | |
| F2 | | | | | | | | | .71 |
| Item3 | 2.09 | .78 | .24 | **.67** | .13 | .13 | .13 | 0.04 | |
| Item2 | 2.08 | .75 | .23 | **.62** | .14 | .12 | .25 | -0.14 | |
| F3 | | | | | | | | | .59 |
| Item52 | 2.55 | .82 | .27 | -.01 | **.70** | .14 | .14 | .04 | |
| Item4 | 2.60 | .80 | .00 | .21 | **.50** | .18 | .04 | .25 | |
| Item53 | 2.61 | .76 | .24 | .14 | **.38** | -.04 | .15 | .01 | |
| F4 | | | | | | | | | .5 |
| Item14 | 2.57 | .91 | .20 | -.02 | .21 | **.54** | .04 | -.04 | |
| Item1 | 2.90 | .88 | .12 | .23 | -.04 | **.47** | .14 | .07 | |
| Item6 | 2.17 | .75 | .19 | .25 | .26 | **.31** | -.02 | .08 | |
| F5 | | | | | | | | | .55 |
| Item28 | 2.48 | .81 | .10 | .03 | .19 | -.06 | **.53** | .15 | |
| Item12 | 2.20 | .82 | .25 | .16 | .05 | .20 | **.43** | .01 | |
| Item10 | 2.23 | .83 | .23 | .21 | .02 | .17 | **.42** | .04 | |
| F6 | | | | | | | | | .37 |
| Item29 | 2.96 | .83 | -.02 | .08 | .16 | -.06 | 0.03 | **.58** | |
| Item27 | 2.51 | .80 | .12 | .09 | -.02 | .23 | 0.25 | **.42** | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Eigenvalue | | 6.17 | 1.61 | 1.38 | 1.28 | 1.18 | 1.03 |
| % of Variance | | 26.84 | 6.98 | 6.02 | 5.58 | 5.11 | 4.48 |
| Cumulative % | | 26.84 | 33.82 | 39.84 | 45.42 | 50.53 | 55.01 |
| KMO | .88 | | | | | | |
| Bartlett's Test of Sphericity | .00 | | | | | | |

Note: PMPS=Perceived Myths about Psychology scale; F1= Factor 1, F2= Factor 2, F3 = Factor 3, F4= Factor 4, F5 = Factor 5. Rotation converged to 7 iterations.

Given below is the description of each factor explained in Table 1.

Factor 1: Negative Attitude. Myths related to negative attitudes towards Psychology as a subject. This factor indicates that most people prefer psychology as not having a positive impact on our daily lives. It includes 10 items (19, 46, 17, 65, 39, 16, 15, 42, 13 &18), which contribute to 26.84% of variance.

Factor 2: Myths about Mental Health. This factor indicates myths regarding the treatment of psychological issues. It includes two items (2 & 3), which contribute to 6.98% of variance.

Factor 3: Importance of Psychotherapy. The factor highlights viewing supportive friends as a therapy alternative, underscores therapy's time, commitment, and signifies perceived risk with mentally ill individuals. It includes three items (52,53 and 2), contributing to 6.02% of variance.

Factor 4: Lack of Understanding. This factor indicates that psychologists are mostly helpful when it is needed, and they don't need to have any experience or competent skills related to their profession. It includes three items (14,1 and 6), which capture 5.58% of variance.

Factor 5: Misconceptions. This factor shows misinformation about the psychology profession and how this is so economically expensive. It includes three items (10, 12 and 28), considered as 5.11% of variance.

Phase 2: Establishing Psychometric Properties of PMPS

The aim of this phase was to establish the psychometric properties of Perceived Myths about Psychology Scale. It was conducted in the following two stages.

1. Confirmatory Factor Analysis.
2. Convergent and Discriminant Validity.

Confirmatory Factor Analysis (CFA).

In this stage, 21 items were examined with 5 factors studied through EFA and CFA was used to validate the PMPS factor structure. The goal of this section was to validate dimensionality and PMPS factor structure using AMOS 24.

Sample. The design of the study was cross-sectional and convenience sampling was used in the selection of the sample. Our sample consists of the general population of Pakistan. The sample of this study consists of 205 male and female participants. Men accounted for 41% (n=84) of the total sample and women accounted for 59% (n=121) of the total number of participants.

The sample age ranged from 16-57 years (M = 26.88, SD = 9.22). There were n=144 undergraduates, n= 55 graduates and n= 6 postgraduates in our study sample (M= 2.23, SD=.65) from which 34.1% are employed, 63.9% are unemployed, and 2% businessperson (M=1.68, SD=.51). Our sample consisted of 33.7% married (n=69) and 66.3% unmarried (n=136) from which 54.1% have nuclear family system and 45.9% have joint family system (M=1.5, SD=.50). The sample included 93.2% Muslims and 6.8% of non-Muslims. All the participants belonged to different provinces of Pakistan. 71.2% from Punjab, 7.3% from Sindh, 11.2% from KPK, 1% Baluchistan, 2% from Gilgit, 0.5% from FATA, 6.3% from AJK.

Procedure. The data was collected through convenience sampling technique. For data collection, informed consent was taken from the participants. Participants were assured of the confidentiality of the information they shared. The sample of (N =205) participants were presented with MAPS. All the other research requirements and ethical procedures were kept in mind and followed during data collection and other processes. Each participant took almost 10-15 minutes to fill in all the items present in MAPS. A total of 220 forms of questionnaire were distributed in the study sample. Out of which only 205 were returned.

Results. The factor structure of the MAPS was analyzed to describe the model fit indices as shown in table 2, with $\chi 2$ =270.42, df (155). The measurement model (5 factors) has best fit indices to the data set, which is $\chi 2/(df)$ =1.75, TLI = .90, IFI = .92, CFI = .92, RMSEA = 0.06, SRMR = 0.06. All these indices have values within the acceptable range ($\chi 2/(df) < 3$, CFI > .90, TLI > .90, IFI > .90, RMSEA < 0.08, (Hu & Bentler, 1999). SMRM values below 0.08 are required for a model to be accepted (Kyndt & Onghena, 2014).

Table 2

Confirmatory Factor Analysis Model Summary of Myths About Psychology Scale (N= 205).

| | $\chi 2$ | *Df* | RMSEA | CMIN/*Df* | CFI | TLI | IFI |
|---|---|---|---|---|---|---|---|
| Model I | 377.24 | 160 | .08 | 2.35 | .84 | .81 | .84 |
| Model II | | 155 | .06 | 1.75 | .9 | .90 | |

| | | | |
|---|---|---|---|
| | 270.42 | 2 | .92 |

Note: Model I= Default Model, Model II= Modified model after adding covariance, χ2=chi square, Df= Degrees of freedom, CMIN/Df=Minimum Discrepancy/ Degree of freedom; CFI=Comparative Fit Index, TLI=Tucker Lewis Index, IFI=Incremental Fit Index, RMSEA=Root Mean Square Error of Approximation

Measurement Model of Perceived Myths about Psychology Scale (PMPS). The factor loadings for items that have been obtained using the CFA are shown in Figure 1. A total of 20 items with 5 factors were retained to fit the model. Item 28 from the fifth factor was discarded after CFA analysis, as it was poorly load on the factor i.e. 0.06, moreover, the item presenting the same contextual meaning as the rest of the items of the same factor. The standard regression weight of all other items was above .4. Hence, the factor structure developed through EFA was confirmed by applying CFA except item 28 due to poor factor loading. The e1and e3 in F1 have positive covariance of .32 because both items are measuring the negative attitude and behavior towards psychologists. e14and e15 have covariance of .40 and by having a look at the statements it is seen that both the items are about the importance of psychotherapy so have positive covariance. Same is the case with e16 and e22 having positive covariance of .45 as both the items are about the lack of understanding about practitioners in psychology. It is noted that e9 and e22 both depict poor understanding so have the positive covariance of 0.25, and e15and e16 belong to different factors but are of same domain about the psychotherapy and psychologist so have positive covariance (0.29).

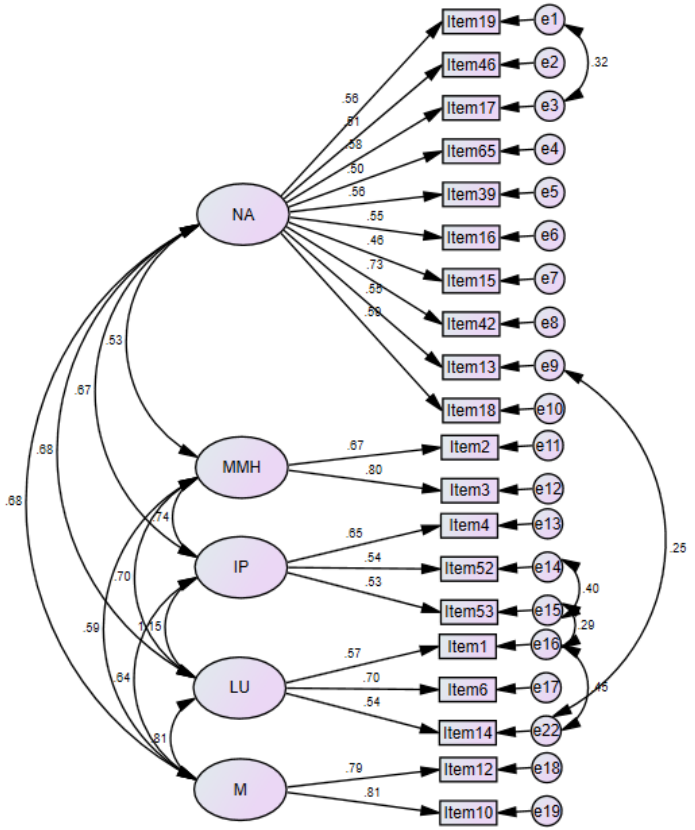


Table 3 reveals the strong positive correlation between PMPS and its subscales. PMPS highly correlates to all the subscales because every subscale measures a dimension of Perceived Myths about Psychology (Raykov & Marcoulides, 2011). All the subscales are also inter-related with correlations ranging between .85 to .39 thereby demonstrating the internal consistency (Nunnally, 1994).

Table 3

Inter scale correlations of 5 subscale of MAPS (N=205).

| | MAPS | NA | MMH | IP | LU | M |
|---|---|---|---|---|---|---|
| MAPS | - | .85** | .49** | .66** | .67** | .65** |
| NA | | - | .39** | .45** | .47** | .51** |
| MMH | | | - | .43** | .42** | .44** |

| | | | |
|---|---|---|---|
| IP | - | .70** | .41** |
| LU | | - | .51** |
| M | | | - |

Note: MAPS=Myths about Psychology, NA= Negative Attitude, MMH= Myths about Mental Health, IP= Importance of Psychotherapy, LU= Lack of Understanding, M= Misconceptions
**= Correlation is significant at the 0.01 level (2-tailed).
Table 4 shows the alpha reliability of all the subscales of PMPS. All the values lie in acceptable range (Taber, 2018) showing the high internal consistency of PMPS.
Table 4
Alpha Reliabilities, Means, Standard Deviations of subscales of PMPS (N=205).

| | | | | | Range | |
|---|---|---|---|---|---|---|
| | K | M | SD | α | Actual | Potential |
| PMPS | 20 | 45.36 | 9.40 | .89 | 22-79 | 20-80 |
| NA | 10 | 21.4 | 5.15 | .82 | 10-40 | 10-40 |
| MMH | 2 | 4.36 | 1.37 | .70 | 2-8 | 2-8 |
| IP | 3 | 7.41 | 1.94 | .69 | 3-12 | 3-12 |
| LU | 3 | 7.37 | 1.98 | .73 | 3-12 | 3-12 |
| M | 2 | 4.83 | 1.46 | .78 | 2-8 | 2-8 |

Note: NA= Negative Attitude, MMH= Myths about Mental Health, IP= Importance of Psychotherapy, LU= Lack of Understanding, M= Misconceptions

## Convergent and Discriminant Validity.

The second part of the phase was to establish validity of the scale so it could be used to measure myths about psychology. For that purpose, the discriminant and convergent validity were explored.

Table 5

*Convergent and Discriminant Validity of the Perceived Myths about Psychology Scale (N=205)*

| | CR | AVE | PMPS | NA | MMH | IP | LU | M |
|---|---|---|---|---|---|---|---|---|
| PMPS | .92 | .40 | **.63** | | | | | |
| NA | .82 | .42 | | **.56** | | | | |
| MMH | .70 | .54 | | .16** | **.73** | | | |
| IP | .73 | .43 | | .22** | .16** | **.58** | | |
| LU | .74 | .40 | | .24** | .17** | .47** | **.61** | |
| M | .78 | .64 | | .29** | .18** | .16** | .26** | **.80** |

Note: Boldfaced values are squared roots of AVE. PMPS= Perceived Myths about Psychology Scale, NA= Negative Attitude, MMH= Myths about Mental Health, IP= Importance of Psychotherapy, LU= Lack of Understanding, M= Misconceptions

Convergent and discriminant validity was assessed to show psychometric properties of the scale. Criteria for evaluation of validity by Fornell and Larcker (1981) were used, and CR and AVE were calculated using factor loadings. Table 5 shows the Alpha reliability, Composite reliability and average variance extracted of MAPS. Alpha (.89) and composite reliability (.92) are above the acceptable range (Hair et al, 2011). AVE is below .5 but since the threshold of AVE is over-conservative Fornell claimed that a value below .5 is acceptable if the value of CR is above .7 (Fornell & Larcker, 1981). The square root of average variance extracted for each measure was compared to their correlation in order to evaluate divergent validity. As shown in Table 6 for all factors, the square root of AVE is greater than their matching squared correlations (Fornell & Larcker, 1981). Thus, the criteria for convergent, and divergent validities of the scale was satisfied.

Discussion

Sources of commonly held beliefs include information passed on by others, a preference for simple solutions to complex problems, biased perception and memory, the assumption of causation from correlation, and inaccurate media information. The Internet has also played a role in spreading misinformation (Lewandowsky et al., 2012). The role of common sense and intuition is increasingly accepted in the field of psychology, which may give birth to misconceptions (Lilienfeld, 2010). Comparing means of the collected data in our study revealed that the sample from people with

non-psychology background believe more strongly in the perceived myths about psychology (M=145.92, SD=24.28) than those having educational backgrounds in Psychology (M=131.60, SD=22.85).

The aim of present study was to develop a measure for assessing "Perceived myths about psychology" in Pakistani population and to test its factor structure and psychometric properties. The previously available scales assess the prevalence of myths specifically in clinical psychology and psychotherapy (Jungmann & Witthöft, 2022). Another scale developed by Gardner and Brown (2013) is a measure of psychological misconceptions but in a true/false format. Thus, there is no previously available scale in Urdu language that measures common myths about psychology in the general population. The item pool was generated using different techniques including literature review, semi structured interviews and focused group discussions. Experts' reviews about the relevance, understandability and clarity of items led us to either modify or discard any item which created a challenge to the face validity of the scale. Factor Analysis concluded that MAPS is comprised of five factors and a total of 21 items.

Exploratory Factor Analysis was done to explore the latent variables in the main construct "Perceived myths about psychology". Initially 17 factors appeared to be contributing to overall variance in results, but the items presented multicollinearity. EFA was repeatedly done to remove cross loading, leaving behind 6 factors containing 23 items. The last factor containing two items did not yield good reliability, correlations with the main construct and captured only 4.5% variance in results. It was concluded that it did not relate to the construct due to which it was eliminated (Tay & Jebb, 2016) and only 5 factors were retained for further analysis i.e. "negative attitudes about psychology," "myths about mental health," "importance of psychotherapy," "lack of understanding," and "misconceptions related to the field of Psychology."

Confirmatory Factor Analysis was run to confirm the factor analysis and all items produced sufficient (.46) to good (.81) factor loadings. One item of factor 5 was loading below required criteria for standard regression weight/ loadings; the minimum criterion of 0.40 (Ford, MacCallum, & Tait, 1986; Ryu, Han & Jang, 2010) is required for standard regression weight of each item to be considered in the factor structure. Covariances among the measurement errors of some items were taken to fit the model indices. Finally, the model with 5 factors and 20 items was best fit with acceptable values of fit index tests, including the relative chi-square (CMIN/DF: chi-square/degree of freedom), Tucker Lewis Index (TLI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), and Normed Fit Index (NFI), are used to evaluate the goodness of fit of a model. Schumacker and Lomax, (2004) proposed the acceptable values for relative chi-square, CMIN/DF to be as high as 5 while the cut-off point for TLI, CFI, NFI and IFI is between 0 to 1. RMSEA value of less than or equal to .05 indicates a good model (Schumacker & Lomax, 2004).

Perceived Myths about Psychology exhibited a significantly positive correlation with its subscales. All the subscales also inter-correlate well presenting internal consistency; proving that they are measuring the same construct (Nunnally,1994). The alpha reliability of the scale and its subscales has been measured to determine additional psychometric characteristics. The MAPS' alpha reliability was between .69 and.82. By taking composite reliability and average variance, convergent

and discriminant validity has been successfully established. The results showed that Perceived Myths about Psychology is a unique and psychometrically sound measure.

Limitations and Recommendations

Convenience sampling was used for collection of data because of traveling limitations so a random sampling technique is recommended in future for greater generalization. Furthermore, the data set was low in diversity, more than half the participants were women, Muslims and from the same province. A larger sample of data from every province that represents the whole Pakistani population is recommended. The scale was developed in Urdu so it can be used all over Pakistan without any language barrier issues, but it can also be translated in other languages to be used in non-Urdu speaking countries. The scale can be used in many areas, especially in education, to check the effects of myths about psychology on choosing a subject to major in and to seek psychological help.

Conclusion and Implications

In the present study, a short, comprehensive, and indigenous scale for assessing myths about psychology was developed. It caters to the cultural and social aspects of the population of Pakistan. As the scale is developed in Urdu (native language) so it can be used all over Pakistan without any hesitation. The scale can be used to check the prevalence of perceived myths about psychology in society and to determine its impact on the life of individuals. This scale of Perceived Myths about Psychology is valid and reliable so it can be used without reluctance in all levels of society by anyone interested. It is a new and indigenous scale that can open new avenues for research in Pakistan as there is no scale present that measures perceived myths about Psychology.

References

Bensley & Lilienfeld (2017) Bensley AD, Lilienfeld SO. Psychological misconceptions: recent scientific advances and unresolved issues. Current Directions in Psychological Science.2017

Bensley, D. A., & Lilienfeld, S. O. (2015). What is a psychological misconception? Moving toward an empirical answer. Teaching of Psychology, 42(4), 282-292.

Burns T, O'Connor DJ, Stocklmayer SM. (2003). Science communication: a contemporary definition. Public Understanding of Science 12(2):183-202.

Cambridge Dictionary (2023). Myths.

Cooper, J. (2016). Vicarious cognitive dissonance: Changing attitudes by experiencing another's pain. In J. P. Forgas, J. Cooper, & W. D. Crano (Eds.), The psychology of attitudes and attitude change. Psychology Press.

Curtis, D. A., & Kelley, L. J. (2023). Psychomythology of psychopathology: Myths and myth busting in teaching abnormal psychology. Teaching of Psychology, 50(1), 14-25.

Douglas, K. M., Sutton, R. M., Callan, M. J., Dawtry, R. J., & Harvey, A. J. (2016). Someone is pulling the strings: Hypersensitive agency detection and belief in conspiracy theories. Thinking & Reasoning, 22(1), 57-77.

Fasce A, Adrián-Ventura J. 2020. Alternative psychotherapies: conceptual elucidation and epidemiological framework. Professional Psychology: Research and Practice 51(6):580-587.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of marketing research, 18(1), 39-50.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.

Furnham & Hughes (2014) Furnham A, Hughes DJ. Myths and misconceptions in popular psychology: comparing psychology students and the general public. Teaching of Psychology. 2014;41(3):256–261.

Furnham, A. (2018). Myths and misconceptions in developmental and neuro-psychology. Psychology, 9(02), 249.

Gardner, R. M., & Brown, D. L. (2013). A test of contemporary misconceptions in psychology. Learning and Individual Differences, 24, 211-215.

Haynes, S. N., Richard, D., & Kubany, E. S. (1995). Content validity in psychological assessment: A functional approach to concepts and methods. Psychological Assessment, 7(3), 238-247.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis:

Conventional criteria versus new alternatives. Structural equation modeling: a

multidisciplinary journal, 6(1), 1-55.

Hughes S, Lyddy F, Lambe S. (2013). Misconceptions about psychological science: a review. Psychology Learning and Teaching. 2013

Jungmann, S. M., & Witthöft, M. (2022). Myths of clinical psychology and psychotherapy: Development and testing of a questionnaire for standardized assessment. Verhaltenstherapie, 32(Suppl. 1), 160-169.

Kishore, J., Gupta, A., Jiloha, R. C., & Bantman, P. (2011). Myths, beliefs and perceptions about mental disorders and health-seeking behavior in Delhi, India. Indian journal of Psychiatry, 53(4), 324

Kyndt, E., & Onghena, P. (2014). The integration of work and learning: Tackling the complexity with structural equation modelling. In C. Harteis, A. Rausch, & J. Seifried (Eds.), Discourses on professional learning: On the boundary between learning and working (pp. 255–291).

Lewandowsky, S., Decker, J. H., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. Psychological Science in the Public Interest, 13(3), 106-131

Lilienfeld SO, Lynn SJ, Ruscio J, Beyerstein B. (2010). 50 great myths of popular psychology: shattering widespread misconceptions about human behavior. Chichester, England: Wiley-Blackwell; 2010

Lorenzo-Seva, U. (2013). How to report the percentage of explained common variance in exploratory factor analysis. Technical Report. Department of Psychology, University Rovira i Virgili, Tarragona.

Lynn, M. R. (1986). Determination and quantification of content validity. Nursing Research, 35(6), 382-385.

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. Social Indicators Research, 46(2), 137-155.

Marchlewska M, Cichocka A, Kossowska M. (2018). Addicted to answers: Need for cognitive closure and the endorsement of conspiracy beliefs. European Journal of Social Psychology; 48:109-117.

McDonald, R. P. (2013). Test theory: A unified treatment. psychology press.

Merriam-Webster. (2023). Myths.

Nunnally, J. C. (1994). Psychometric theory (3rd ed.). New York, NY: Tata McGraw-Hill Education.

Raykov, T., & Marcoulides, G. A. (2011). Introduction to psychometric theory. New York: Taylor & Francis.

Rodríguez-Prada, C., Orgaz, C., & Cubillas, C. P. (2022). Myths in psychology: psychological misconceptions among Spanish psychology students. PeerJ, 10, e13811.

Ryu, K., Han, H., & Jang, S. (2010). Relationships among hedonic and utilitarian values, satisfaction and behavioral intentions in the fast-casual restaurant industry. International journal of contemporary hospitality management, 22(3), 416-432.

Schumacker, R. E., & Lomax, R. G. (2004). A beginner's guide to structural equation modeling. psychology press.

Stanovich (1992) Stanovich KE. How to think straight about psychology. HarperCollins Publishers; New York: 1992

Swami, V., Stieger, S., Pietschnig, J., Nader, I. W., & Voracek, M. (2012). Using more than 10% of our brains: Examining belief in science-related myths from an individual differences perspective. Learning and Individual Differences, 22(3), 404-408.

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. Research in science education, 48, 1273-1296.

Tay, Louis & Jebb, Andrew. (2016). Scale Development.

Taylor & Kowalski (2012) Taylor AK, Kowalski P. Students' misconceptions in psychology: how you ask matters…sometimes. Journal of the Scholarship of Teaching and Learning. 2012

Watson, D., & Clark, L. A. (1999). The PANAS-X: Manual for the Positive and Negative Affect Schedule - Expanded form. Ames: The University of Iowa

Wynd, C. A., Schmidt, B., & Schaefer, M. A. (2003). Two quantitative approaches for estimating content validity. Western Journal of Nursing Research, 25(5), 508-518.