DEVELOPMENT AND VALIDATION OF DYSFUNCTIONAL DAYDREAMING SCALE

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ABSTRACT

Objective: To develop a valid and reliable Dysfunctional Daydreaming Scale (DDS).

Methodology: This study aimed to create the item pool for the DDS and was conducted in three phases. In the second phase, 45 items out of a total of 67 items were selected for administration to a sample of 40 individuals, chosen through purposive sampling from Gujrat and Sialkot and ranging in age from 12 to 60 years. In the first phase, semi-structured interviews were conducted with four clinical psychologists and two psychiatrists, as well as ten individuals aged 20 to 60 years. The items were evaluated by five experts in psychology.

Results: The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO=0.924) and Bartlett's test of sphericity ($x2=6717.842$, $p<.001$) were satisfactory. The exploratory factor analysis identified two factors, "Escapes" and "Emotional Distress," for the DDS with a reliability coefficient of .94 and satisfactory concurrent validity with the MDS ($r=.75$, $p<.01$).

Conclusions: The DDS is a reliable and valid psychometric test that has been developed locally to evaluate maladaptive thought patterns that may serve as a risk factor for the development of psychiatric disorders.

Keywords: Defense mechanisms; Fantasy; Psychological distress.

INTRODUCTION

Daydreaming is a cognitive process where individuals focus on one external reality stimulus and ignore others.[1] It is a normal phenomenon, but excessive involvement in daydreaming can lead to difficulties in social, educational, and relational aspects of life. Under certain conditions, daydreaming has been linked to unhealthy effects on cognition and behavior.[2] Maladaptive daydreaming refers to excessive fantasy or fiction that hinders a person's ability to perform tasks and affects their personality, academic career, and daily life.[3] The irresistible urge to immerse in a world of fantasy and the difficulty in cutting it down is similar to other behavioral addiction disorders.[4]

Long-lasting daydreaming, highly vivid daydreams, trouble in performing daily activities, sleep disturbance, and constant movements and expressions during daydreaming are some of the manifestations.[5] Cultural practices and desire to escape reality, hostile conditions, and solitude can also trigger daydreaming.[6] Studies have found that people with mental illness are more likely to have daydreaming and feelings of fatalism, authority, counter-attack, money, and suffering extraction.[7-10] Media such as files, TV, music, social media, and others are the most common triggers of maladaptive daydreaming, according to 72% of sufferers.[11] The brain is the main motor during daydreaming, which occurs during the brain's default mode network (DMN), focused in the ventromedial prefrontal cortex and posterior cingulate cortex. The DMN fosters mind wandering and allows the brain to access previously learned material.[12]

Maladaptive Daydreaming Scale (MDS) is a 14-item self-assessment tool to measure irregular fantasizing with good validity, internal consistency, and stability.[13] However, as the scale is in English, it may not be the best option for populations with language and cultural barriers, such as Pakistan where most of the population is illiterate.[2]

The present study aims to explore and measure facets of dysfunctional daydreaming in the general population in Pakistan where there is a lack of research and scales developed on the subject. The results of this study can be presented at seminars and workshops to raise awareness about dysfunctional daydreaming among young people and be used by psychologists in their treatment of patients with psychological distress.

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METHODOLOGY

The purpose of this cross-sectional correlational study was to create a reliable and valid indigenous assessment tool called the Dysfunctional Daydreaming Scale (DDS) for measuring maladaptive thought absorption in Pakistanis. It was conducted in three phases. In Phase I, to generate an item pool for the Dysfunctional Daydreaming Scale (DDS), semi-structured interviews were conducted with four clinical psychologists and two psychiatrists working at the Lahore Psychiatric Hospital and Fountain House Lahore, Pakistan, and interviews were also conducted with ten persons (5 individuals diagnosed with depressive disorders and 5 individuals diagnosed with anxiety disorders) whose ages ranged from 20 to 60 years.

They were either in partial or full remission and were staying at Fountain House Lahore. These interviews were transcribed. Participants with depressive and anxiety disorders were chosen because, according to recent research[14], pre-existing psychiatric diagnoses of anxiety and depression served to amplify the phenomenon of dysfunctional daydreaming in the individuals. Number of items in the item pool was 67, which were categorised on a five-point Likert scale ranging from 0 to 4. Five experts (3 PhDs and 2 MPhils) from the Department of Psychology at the University of Gujarat were asked to evaluate 67 items. The experts were asked to weight the items based on their level of understanding. The ambiguity and the clarity of the item were also judged by those experts.

They were also asked to recommend items that they thought needed to be rephrased or changed. Agreed on a 5-point Likert scale varying from 0 to 4. On the basis of the expert evaluation for content validity, some items were changed, added, or removed. At the completion of this step, repetitive items were discarded, a few items were altered, and some were removed. Out of 67 items, 45 were selected based on the scale that best explains the content. In the tryout step, after finalising the draught of 45 items, evaluated by the experts, it was administered to a sample of 40 respondents (females: 28, males: 12) ranging in age from 12 to 60 years, chosen by a purposive sampling technique in Gujrat and Sialkot. This broad age range is chosen to make the scale applicable for specific years of life in future research.

Their education level was from primary to master's. Before the administration of the questionnaire and written consent form, a brief introduction to the scale was given. It was explained that their given information would be kept confidential, and if you do not feel comfortable at any time while filling out the form, you have the right to quit. In the sample, 90% of people belong to rural areas because these areas have agricultural lands and inhabitants. There were 52.5% who were married, 42.5% who were unmarried, and 5% who were widows or widowers.60% of people claim to have nuclear families, while 40% claim to have joint families. Cronbach's alpha, which is.91, was used to assess the reliability of 45 DDS items. The objective of the tryout was to assess the linguistic clarity and comprehension of the scale, which was satisfactorily achieved.

Purposive sampling was used in Phase 2 to select 350 participants ranging in age from 12 to 60 years from the districts of Gujrat and Sialkot. The sample size was determined by the rule of thumb in statistics, which holds 10 participants for each item on a scale. 450 individuals participated, but only 350 filled the scale completely and did not withdraw. There were 205 females and 145 males in the study. Their education ranged from primary school to doctorate level. This data was collected over the course of three months, from January to March 2020. People with any physical or intellectual disability were also excluded from the study.

The Dysfunctional Daydreaming Scale (DDS) consists of 45 items with a 5-point Likert scale: 0 = "never," 1 = “to some extent not," 2 = “occasionally," 3 = "frequently,” and 4 = “very frequently." EFA factors were fixed into two factors with a minimum factor loading of 0.30. Item numbers 5, 7, and 8 were not present in any of the components so these three items were discarded. All the individuals were personally approached. After receiving consent from each participant, the data were collected from them. The importance and purpose of the study were explained in detail to the participants. It was also instructed to carefully read the statements and truly respond to them. As the scale is a little lengthy, it takes 15 to 20 minutes to fill it. The respondents were not forced to participate; only the willing participants were encouraged to take part in this study.

After the data was collected, all of the questionnaires were rechecked to see if any responses to the item were missing and if so, it was requested that they be filled out again. Finally, after completing the questionnaire, each participant is thanked for their heartfelt cooperation. Because 90% of the researchers used sample sizes of 100 or greater to validate their instruments, a sample of 120 was recruited in Phase 3 using a convenient sampling technique.[15] Urdu forms were generated online on March 19, 2020. Due to the COVID-19 lockdown, data in Urdu was collected from March 19, 2020, to May 14, 2020.The participants in this study ranged in age from 12 to 70 years. Maladaptive Daydreaming Scale 2 was translated into Urdu by the forward-backward translation method. The DDS was translated by 3 bilingual experts (2 PhDs and 1 MPhil) in the Department of Psychology, University of Gujarat.

A committee approach comprised of two PhDs and one MPhil in the Department of Psychology selected the best Urdu translation of MDS. Later, the best selected Urdu

version was translated back into English by two PhDs and two MPhil bilingual experts from the Department of English. For the present study's data collection, the participants were aware of the study's objectives. They were informed about the purpose of this study, and they have the right to withdraw at any time. Their answers were not marked as right or wrong. The data obtained was analysed in SPSS-24. Descriptive statistics (such as frequencies and percentages) were calculated for the exploration of the demographic characteristics of the participants. For the validity study, inferential statistics such as Cronbach's alpha, exploratory factor analysis (EFA), and Pearson product moment correlation analysis were used. DDS confirmatory factor analysis was performed using AMOS-24.

RESULTS

A total of 350 participants, the age range of 16 to 60 years (M=30.40, SD=12.68) have the basic demographic categorization as shown in table 1. Frequencies and Percentages of Demographic Variable of the participants. The percentage of male was 41.4% and female was 58.6%. Out of the whole sample, 46.5% were between 16-24 years, 31.5% were between 25-40 years, 22.0% were between 41-60 years. 9.1% respondents belong to high class, 89.1% respondents reported that they belong to the middle class, 1.7% belongs to low class. 57.7% people belong to rural areas and 42.3% belong to urban areas in which 41.4% were married, 55.4% were unmarried, 2.3% were widow/widower and 1.0 % were divorced people of the sample live in nuclear family 52.9% and 47.1% people claim that they live in joint family (Table 1).

Table 3 showed EFA factors were fixed into two factors with minimum factor loading at 0.30 The total items in EFA were 42 after removal of item no. 5, 7, and 8. Factor 1 contained first 23 items and was named as Es-

Table 1: Frequencies of demographic characteristics of the sample (n=350)

Variables	Characteristics	Frequencies (%)
Gender	Female	205 (58.6%)
	Male	145 (41.4%)
Age	16-24 years	163 (46.5%)
	25-40 years	110 (31.5%)
	41-60 years	77 (22.0%)
Residential Area	Rural area	202 (57.7%)
	Urban area	148 (42.3%)
Marital Status	Married	145 (41.4%)
	Unmarried	194 (55.4%)
	Widow/ Widower	8 (2.2%)
	Divorced	4 (1.0%)
Family System	Nuclear	185 (52.9%)
	Joint	165 (47.1%)

Table 2: KMO, bartlett's sphericity, factor loading, and rotated sum of squared loading for DDS (n=350)

Sr.no	Items	Escape Factor Loading	Items	Emotional Distress Factor Loading
1	DDS42	0.788	DDS2	0.697
2	DDS34	0.685	DDS31	0.689
3	DDS37	0.683	DDS18	0.669
4	DDS38	0.682	DDS39	0.658
5	DDS43	0.657	DDS20	0.655
6	DDS30	0.648	DDS22	0.651
7	DDS16	0.644	DDS1	0.632
8	DDS21	0.633	DDS4	0.602
9	DDS28	0.631	DDS26	0.591
10	DDS17	0.622	DDS14	0.572
11	DDS44	0.610	DDS25	0.559
12	DDS36	0.604	DDS40	0.524
13	DDS41	0.604	DDS32	0.462
14	DDS45	0.603	DDS3	0.418
15	DDS24	0.570	DDS6	0.411
16	DDS33	0.554	DDS27	0.383
17	DDS10	0.534	DDS29	0.373
18	DDS12	0.523	DDS15	0.363
19	DDS23	0.485	DDS19	0.345
20	DDS11	0.465	-	-
21	DDS9	0.437	-	-
22	DDS35	0.423	-	-
23	DDS13	0.335	-	-
% of variance		20.065		
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy		0.924		

Table 3: Confirmatory factor analysis of DDS (n=120)

	CMIN	df	GFI	CFI	RMSEA
Model 1	2090.36**	818	0.69	0.78	0.06
Model 2	392.08**	134	0.88	0.89	0.07

Table 4: Cronbach's alpha, mean, standard deviation and concurrent validity of DDS with maladaptive daydreaming scale (n=120)

Variables	Total Items	Cronbach's Alpha	M	SD	2
DDS	18	0.93	25.33	14.64	-
MDS	16	0.89	22.88	11.63	.71**

**p<.01

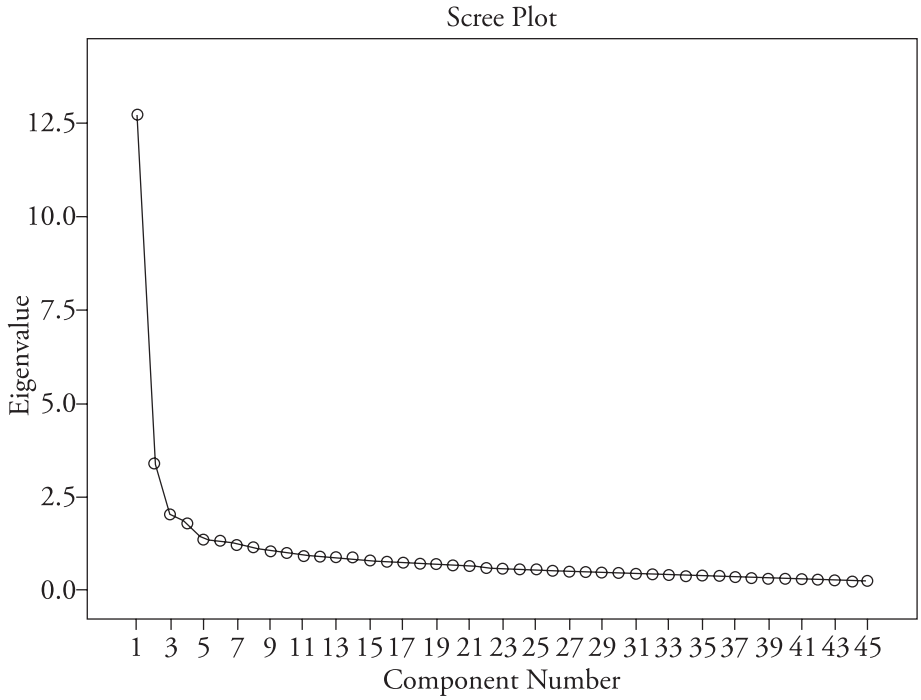

Figure 1: Scree plot for EFA in DDS

cape which included items 9, 10, 11, 12, 13, 16, 17, 21, 23, 24, 28, 30, 33, 34, 35, 36, 37, 38, 41, 42, 43, 44 and 45. Remaining 19 items (1, 2, 3, 4, 6, 14, 15, 18, 19, 20, 22, 25, 26, 27, 29, 31, 32, 39, and 40) were in the factor 2 named as Emotional Distress. Its Cronbach Alpha reliability was .94 for DDS. Percentage of variance explained by factor 1 is 20.06% and of factor 2 is 15.78% in DDS. Figure 1 showed extraction of two factors as distinct sub-categories for DDS. Factor 1 is named as 'Escapes' and factor 2 is named as 'Emotional Distress'.

Table 3 showed confirmation of 18 items in two factors, each with 9 items for acceptable model fit indices in Model 2. Out of 42 items, 24 items were removed. Factor 1 'Escape' included item no. 10, 16, 21, 24, 28, 37, 38, 42, and 44. Factor 2 'Emotional Distress' included item no. 1, 2, 18, 20, 22, 25, 26, 31, and 39.

Table 3 showed satisfactory concurrent validity. Dysfunctional daydreaming scale significantly and positively associates with maladjustment daydreaming scale (r=.71, p<.001). Internal consistency Cronbach's alpha reliability of DDS (α=.93) and Urdu version of MDS (α=.89) were good.

DISCUSSION

The factor analysis conducted on the present data obtained for maladaptive daydreaming in 12- to 60-year-old participants has three main advantages. First, it helps to understand variables. Second, it aids in the creation of a survey, and third, it aids in the reduction of data to a manageable size while obtaining as much information as possible. For the purpose of conducting exploratory factor analysis, the Kaiser-Meyer-Olkin degree of sampling adequacy and Bartlett's test of sphericity are checked. Kaiser gives an index of factorial simplicity. Values greater than .9 are excellent, while values less than .5 are unacceptable.[17] The sampling is satisfactory or appropriate if the value of Kaiser Meyer Olkin (KMO) is 0.6 or greater. The value of KMO is 0.924, which is greater than 0.5.[19], so we can say that the data has an adequate sample size.

Further, the values of Bartlett's test of sphericity were substantial at p.001. It indicates that the data is accepted for further exploratory factor analysis. A study was conducted by Anwar, Aqeel, and Shuja (2018) in Rawalpindi, Pakistan. The focus of the study was to examine the role of social support in maladaptive daydreaming and social anxiety. The relationship between these three variables was also examined. This survey contacted 200 university students, 100 of whom were males and 100 of whom were females, with ages ranging from 19 to 25. They concluded from their experiment that social support had no moderating effect on social anxiety and MD in university-level students. [20] Similarly, Kiran et al. (2010) discovered that the presence of self-generated thoughts was a significant predictor of depression in adults aged 18 to 28.[21]

The current study's findings revealed the emergence of emotional distress as a significant factor of dysfunctional daydreaming among individuals. The findings of the pres-

ent study showed the emergence of "escapes" as a means of expressing dysfunctional daydreaming. Daydreaming usually occurs during idle time, whereas nowadays a very small portion of the population is redundant and completely occupied with the internet and mobile devices. aggravating the phenomenon of dysfunctional daydreaming during leisure time.

Uslu in 2015 found maladaptive daydreaming as a mechanism for spending time on activities such as listening to music, playing video games, and surfing the internet for longer hours.[22] Thus, the implications of the current findings highlighted the need for intervention programmes to raise public awareness of dysfunctional daydreaming and its negative effects on health and performance in daily life routines.

CONCLUSION

An indigenous 18 item Dysfunctional Daydreaming Scale was developed in Urdu version with high reliability α=0.93 and concurrent validity (r=.71, p<.01). Thus, is useful to be added as a screening tool for identification and prevent future mental disorders such as depression, anxiety, obsessive compulsive disorder in Pakistani population. The study has certain limitations. Participants were taken from Gujrat and Sialkot city only. In future this study should be made in Punjab and sample should be taken from other cities of Pakistan for identifying depth of the issue. Psychologists and Clinical Psychologists should conduct workshops, seminars regarding this emerging topic and promote awareness regarding its importance in mental health.

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Author's Contribution

SS conceived the idea, designed the study, collected data, analysed data, and prepared the manuscript. HZ, and NK collected and analyzed the data, and wrote and revised the manuscript. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

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None

Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.