A Pilot Study of Group Sandplay Therapy on College Students with Social Anxiety

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Abstract: In order to investigate the intervention effect of group sandplay therapy on social anxiety among college students, a pilot study was conducted using the Interaction Anxiousness Scale (IAS). Both online and offline questionnaire distribution methods were employed. The results indicate favorable outcomes for the Interaction Anxiousness Scale (IAS) with a KMO of 0.894 and a Cronbach's alpha of 0.845. The conclusion drawn is that the Interaction Anxiousness Scale (IAS) can be utilized for measuring social anxiety among Chinese university students, warranting further experimental research.

1. Introduction

The IAS questionnaire exhibits strong reliability and validity and is widely used in China [1]. This study conducted a pilot study using this questionnaire to explore the intervention effects of sandplay therapy on social anxiety among college students. Furthermore, it aims to delve deeper into the application of this questionnaire among Chinese university students experiencing social anxiety.

2. Research Design

2.1 Research Instruments

Interaction Anxiousness Scale (IAS) is the only questionnaire used in this study. Mark Leary was compiled in 1983 based on years of clinical experience to assess the tendency to experience subjective SA independent of behavior [2]. It is a psychometric tool used to measure individual anxiety in social situations. It involves individual restlessness, shyness, self-awareness and withdrawal in social situations.It consists of 15 self-contained items with the following selection criteria: (1) involving subjective anxiety (tension and neurosis) or its opposite side (relaxation, quiet), but not associated with specific external behavior. (2) A large number of immediate social situations are involved, that is, the individual's response is not predetermined in advance, but based on the reactions of others present (contrary to a prepared speech in public).

2.2 Participants

2.2.1 Target Population

The target population is the group of people from whom researchers plan to perform research and draw conclusions [3]. The target population of this study is specified into a few criteria.They must be current undergraduate students at four public universities in Haikou City Hainan Province and takes anything from one to four years of full-time study for a bachelor's degree. They are Hainan University, Hainan Normal University, Hainan Medical College, Qiongtai Normal University. According to the school's official website, it is predicted that 63,000 persons are spread over the four selected educational institutions in Haikou City.

2.2.2 Sample Size

According to Krejcie & Morgan's [4] sampling size in Table 1, the minimum sample size for this study should be 382 and 383 is the minimum sample size based on Desired Accuracy with Confidence Level of 95% in Table 2 [5]. So 500 college students will participate in this study out of the total pool of participants. In addition, the sample size of 500 people is deemed to be an average quantity that has the potential to make a significant contribution to the investigation. This study is a group sandplay intervention experiment. Due to the experiment's limitations, the experimental group cannot be too large. Calf's suggestion is that group sandplay is generally about 6–10 people. On this basis, considering the quantitative statistical significance of at least 30 samples, the researchers decided to randomly select 36 people to participate in the group sandplay experiment and randomly divide them into experimental groups and a control group, with 18 people in each group. The sample size in Figure 1.

Table 1: Krejcie & Morgan's 1970 sampling size table

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—N is population size. S is sample size.

Source: Krejcie & Morgan, 1970

Table 2: Sample size based on Gill et al., 2010

| Population Size	Variance of the population P=50%					
	Confidence level=95% Margin of error			Confidence level=99% Margin of error		
	5	3	1	5	3	1
50	44	48	50	46	49	50
75	63	70	74	67	72	75
100	79	91	99	87	95	99
150	108	132	148	122	139	149
200	132	168	196	154	180	198
250	151	203	244	181	220	246
300	168	234	291	206	258	295
400	196	291	384	249	328	391
500	217	340	475	285	393	485
600	234	384	565	314	452	579
700	248	423	652	340	507	672
800	260	457	738	362	557	763
1000	278	516	906	398	647	943
1500	306	624	1297	459	825	1375
2000	322	696	1655	497	957	1784
3000	341	787	2286	541	1138	2539
5000	357	879	3288	583	1342	3838
10000	370	964	4899	620	1550	6228
25000	378	1023	6939	643	1709	9944
50000	381	1045	8057	652	1770	12413
100000	383	1056	8762	656	1802	14172
250000	384	1063	9249	659	1821	15489
500000	384	1065	9423	660	1828	15984
1000000	384	1066	9513	660	1831	16244
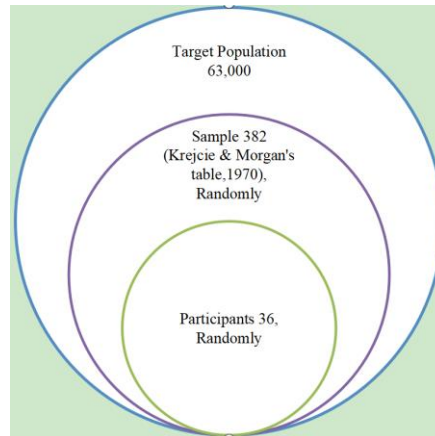
Figure 1: Population sampling. Author's Design

2.3 Method of Sampling

Both the population and the sample for this research were chosen at random, which removed any possibility of bias in the process of participant selection. The selection of the responses will be done through the use of a method called random sampling because this approach provides equal possibilities for all of the students. In order to carry out the research, a straightforward method of random sampling will be applied. According to Lohr, this particular form of probability sampling is distinguished by the fact that in addition to picking individuals at random from the population, the researchers do so as well [6]. The adoption of a straightforward random method has assisted in ensuring that all of the participants have an equal chance of being chosen.

2.4 Questionnaire Online Wen Juan Xing

The way is the acquisition of data through the use of the internet. In April of 2023, the well-known national online data gathering service in China known as Wen Juan Xing provided a substantial and extensive number of national samples. These samples were taken from around the country. Reduced sample homogeneity and improved response rates are two benefits that come as a result of utilizing the Wen Juan Xing dateset. The poll was distributed to a number of people in China. In order to guarantee linguistic and conceptual consistency in the final product, use the process of reverse translation when translating between English and Chinese. After clicking the "Continue" option, participants who have decided to voluntarily take part in the study will be given the opportunity to self-administer the questionnaire and provide their responses.

3. Result of Pilot Study

Pilot studies are the first step in the research protocol. It is often a small study that assists in the planning and modification of the main study. The pilot experiment is used to test the feasibility of this experiment. 100 questionnaire were distributed and returned.

3.1 Reliability and validity analysis

3.1.1 Reliability analysis

This research uses SPSS 26.0 to test the reliability of the research scale constructed in this paper. The Cronbach's α value is 0.845 in Table 3.

Table 3: Cronbach's Reliability analysis

Name	CITC	The item is deleted α quotient	Cronbach's α quotient
IAS1	0.9	0.811	
IAS2	0.405	0.84	
IAS3	0.62	0.827	
IAS4	0.564	0.83	
IAS5	0.584	0.829	
IAS6	-0.439	0.89	
IAS7	0.642	0.827	0.845
IAS8	0.497	0.835	
IAS9	0.596	0.829	
IAS10	0.502	0.834	
IAS11	0.626	0.826	
IAS13	0.577	0.83	
IAS14	0.395	0.841	
IAS15	0.581	0.83	
Normalized Cronbach's α coefficient: 0.852			

3.1.2 Analysis of Validity

Factor analysis is commonly used for the validity test and scale questionnaire analysis. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are the two types of factor analysis. The KMO value is 0.894 in Table 4.

Table 4: KMO and Bartlett

	KMO	0.894
Bartlett Test	Approximate chi square	594.113
	df	91
	p	0.000

4. Conclusion

The reliability test generally believes that the result is above 0.8, suggesting that the scale reliability is very high. The value of reliability between 0.7 and 0.8 indicates high reliability. A value between 0.6 and 0.7 suggests that the validity results are average and that the scale questionnaire needs to be adjusted. If the reliability is lower than 0.6, it indicates that the scale questionnaire reliability is very poor. At this time, further analysis cannot be done, and it is necessary to consider revising the questionnaire or re-testing. The questionnaire data were recovered. Through the reliability test of the IAS scale, it can be seen that the overall reliability of the work-family balance scale is 0.905, and the "Correction Item Total Correlation (CITC)" of each measurement item in the IAS scale is basically greater than 0.4, and only "IAS14" The correlation value of the corrected item total correlation (CITC) is close to 0.4, which generally indicates that the items of the IAS scale are highly correlated and that all items in the IAS scale can be completely retained for further analysis.

The KMO value of the questionnaire data extracted by factor analysis must be larger than 0.6 and p must be less than 0.001 in order for factor analysis to assess the validity of the questionnaire. It has been demonstrated that existing questionnaire data can be tested using factor analysis. The perception questionnaire's KMO and Bartlett test findings show that the KMO value is 0.894, the KMO value is greater than 0.7, and the P value is less than 0.001. For validity, the factor analysis method is appropriate.

From the experimental results on reliability and validity, the questionnaire demonstrates high reliability and internal consistency. It can be effectively utilized in studying the intervention effects of sandplay therapy on social anxiety among college students.

Acknowledgement

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