

The effect of online laughter therapy on depression, anxiety, stress, and loneliness among Corporate employees who work from home during covid time

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Abstract

Aim: This study was conducted to evaluate the effects of online laughter therapy sessions on depression, anxiety, stress, and loneliness levels in Corporate employees who work from home during covid time

Methods: In this randomized controlled trial, 61 healthy Corporate employees (WFH) were randomly assigned to intervention (n = 32) and control groups (n = 29). The intervention group received online laughter therapy twice weekly for four weeks. The control group received no intervention. The data were collected using a demographic questionnaire, the Depression Anxiety Stress Scale, and the De Jong Gierveld Loneliness Scale at the study initiation and week four in both groups.

Results: There was no difference between the mean scores of the groups in the pre-test ($p > 0.05$). There was a statistically significant difference between groups in terms of depression after online laughter therapy sessions ($p < 0.05$), but there was no significant difference between anxiety, stress, and loneliness levels ($p > 0.05$).

Conclusions: Online laughter therapy sessions significantly reduced depression but had no effect on anxiety, stress, and loneliness. During the COVID-19 pandemic, online laughter therapy can be organized to reduce depression levels.

Keywords: Laughter therapy, Corporate Laughter Yoga, Work from home employees, Depression, Anxiety, Stress, Loneliness, Yoga, Happiness, Hasya Yoga & Laughter Yoga

Introduction:

The COVID-19 pandemic has greatly boosted working from home as a way of working, which is likely to continue for most companies in the future, either in fully remote or in

hybrid form. To manage stress levels in employees working from home, insights into the stressors and distressors in a home office first need to be studied.

The World Health Organization predicts that mental illnesses such as depression, anxiety,

stress, and loneliness will increase in society due to the impact of the Covid-19 pandemic ([WHO, 2021a](#)). It has been reported that nursing students have experienced psychological problems such as depression, anxiety, and stress due to quarantine and social isolation measures during the pandemic process ([Akdeniz et al., 2020](#); [Kalkan Uğurlu et al., 2021](#); [Yanik & Yeşilçinar, 2021](#)). Starting to the nursing profession, which carries many health risks, especially the risk of contracting infectious diseases, may have negatively affected the depression, anxiety, and stress levels of students ([Arabacı et al., 2015](#)). In addition, it is stated that problems such as lifestyle changes, social isolation, the anxiety of disease transmission, and adaptation to distance education during the pandemic process negatively affect the mental health of students ([Akdeniz et al., 2020](#); [Fruehwirth et al., 2021](#); [Wang et al., 2020](#)).²

Loneliness is a negative subjective experience and an important public health problem due to the inadequacy of social relations and interactions ([Bu et al., 2020](#)). It is claimed that measures such as the “Stay at Home” call, curfews, temporary closure of schools, and social distance implemented in the COVID-19 pandemic restrictions adversely affect the mental health of the society and cause a feeling of loneliness ([Usher et al., 2020](#)). It is emphasized that with these measures taken to prevent the spread of the contagious disease, the feeling of loneliness intensifies as a result of the inability of people to communicate face to face with their friends, neighbors, and relatives ([Rossi et al., 2020](#)).

Laughter therapy is a complementary medicine technique using breathing techniques and laughter ([Kataria, 2011](#)). It is stated that laughter therapy reduces levels of stress, depression, anxiety, and loneliness ([Alici & Bahçeli, 2021](#); [Kataria, 2011](#); [Kaur & Walia, 2008](#); [Kim et al., 2015](#); [Shahidi et al., 2011](#); [Yazdani et al., 2014](#)). In a study of nursing freshmen before the COVID-19 pandemic, it was reported that face-to-face laughter therapy significantly reduced salivary cortisol, a biomarker of stress, as well as

depression and anxiety ([Ozturk & Tezel, 2021](#)). It is recommended to conduct online activities to improve the mental state of students and provide support during the pandemic process ([Wang et al., 2020](#)). Although laughter therapy is usually done face-to-face, it has been observed that it can also be done remotely with online sessions on social media during the pandemic process. This is the first study to use online laughter therapy to reduce students' mental problems. This study was conducted to evaluate the effects of online laughter therapy sessions on depression, anxiety, stress, and loneliness levels in first-year nursing students.

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Laughter therapy is a complementary medicine technique using breathing techniques and laughter. Laughter therapy is best medicine for depression ([Laughter Therapy for Depression eBook : Rawat, Harish: Amazon.in: Kindle Store](#))

The hypotheses are as follows:

H.1

Online laughter therapy has an effect on reducing the level of depression.

H.2

Online laughter therapy has an effect on reducing the level of anxiety.

H.3

Online laughter therapy has an effect on reducing the level of stress.

H.4

Online laughter therapy has an effect on reducing loneliness.

Materials and methods

Design

The present study was designed as a parallel, two-armed, randomized controlled trial. This study was conducted on the employees who are working from home between August 01 and August 31, 2021. Participants were randomized to intervention (online laughter therapy) and control group.

Participants

Participants eligible for inclusion criteria in this study were:

- (a) Corporate employees who were working from home
- (b) Being aged above 18 years old
- (c) feeling in good health to go about their daily lives, performing normal lives.
- (d) Employees willing to participate in the study
- (e) Employees of both gender.

Exclusion criteria in this study included having any condition where laughter therapy should be avoided (having had abdominal surgery in the last three months, taking regular medications, epilepsy, uncontrollable hypertension, glaucoma, hernia) (Kataria, 2011).

The reason of choosing those exclusion criteria was to avoid unintended side effects of laughing. People might over-strain themselves while laughing and that can cause a rise in intra-abdominal pressure (Kataria, 2011).

Sample size and sampling

The study population comprised 213 Corporate employees from different location of India who work from home. The sample size was calculated with the use of software (G-Power) considering the study design, and the main statistical test of the study. In the power analysis, the required sample size was calculated as 26, with an effect size of 0.80, a power of 0.80, and a margin of error of 0.05. Thus, the sample of the research was composed of 70 Corporate employees who work from Home, considering the dropout rate Figure 1.0

For sampling, a screening tool was applied online to 213 Corporate employees who work from home for the inclusion criteria, and 194 Corporate employees who met the inclusion criteria were included in the study. To form the intervention group and control group, a random selection was made from a real random number selector website, www.random.org, among 194 Corporate employees who met the inclusion criteria. There were 35 Corporate employees in the intervention group and 35 Corporate employees in the control group. However, three corporate employees from the intervention group did not attend the sessions and six corporate employees from the control group did not complete the post-test. As a result, this study was completed with a total of 61 Corporate employees, 32 from the intervention group and 29 from the control group (Fig. 1). In this study, only the second author was blinded to the group allocation.

Procedure

The Corporate employees who work from home were obtained through Social Media platform and the intervention and control groups were reached.

An online information meeting was held with the intervention and control group Corporate employees one week before the start of the laughter therapy sessions.

Pre-test: Before the online laughter therapy sessions started, the link to the online questionnaire was shared with the intervention and control group corporate employees. employees were asked to fill out the questionnaire.

Intervention (online laughter therapy sessions): A person who has been trained in laughter therapy and applies this intervention to a group is called a laughter therapy trainer. The corresponding author is the international Laughter yoga guru, Guinness world record holder who lead this online session. The intervention group took eight online sessions of laughter therapy, that is two sessions per week for four weeks. The number of laughter therapy sessions in this study was determined

in line with the studies in the literature ([Ozturk & Tezel, 2021](#); [Yazdani et al., 2014](#)).

Each laughter therapy session lasted about 40–60 minutes. A laughter therapy session consists of clapping and warming-up exercises, deep breathing exercises, childlike playfulness, and laughter exercises (Annexure 1 -Online Laughter yoga process)

Post-test: After all the online laughter therapy sessions were completed, the online questionnaire link was shared with the Corporate employees in the intervention and control groups and the c were Corporate employees asked to fill in the questionnaire.

Instruments

An online questionnaire was prepared via Google Forms, using the questionnaire, DASS-42, and De Jong Gierveld Loneliness Scale to collect data.

The questionnaire included closed-ended questions related to demographic features (age, gender, residence, marital status, whether there are any health problems, taking regular medications, surgery in the last three months). The Depression, Anxiety, and Stress Scale (DASS-42) was developed by [Lovibond and Lovibond \(1995\)](#) and adapted into Turkish by [Bilgel and Bayram \(2010\)](#). The scale consists of 42 items, 14 of which are depression, 14 are anxiety and 14 are stress. Depression items measure dissatisfaction, helplessness, worthlessness, loss of interest, and low energy level. Anxiety items assess the individual's level of autonomic arousal, situational anxiety, subjective anxiety, and muscle response. Stress items measure persistent tension, irritability, and a tendency to overreact to stressful events. The scale is a four-point Likert-type scale, and the items are evaluated between 0 and 3 (0 = not at all suitable for me, 1 = somewhat appropriate for me, 2 = usually suitable for me, 3 = completely suitable for me). The total scores of the scale range from 0 to 42 for each sub-dimension. Scores considered in the normal range are 0–9 for depression, 0–7 for anxiety, and 0–14 for stress. Scores above these ranges indicate the degree of the problem from mild to extreme ([Bilgel & Bayram, 2010](#)). The Cronbach's alpha

reliability coefficients for the depression, anxiety, and stress sub-dimensions of the scale are 0.92, 0.86, and 0.88, respectively. In this study, the Cronbach's alpha reliability coefficient for the depression, anxiety, and stress sub-dimensions of the scale were 0.95, 0.88, and 0.92, respectively.

The De Jong Gierveld Loneliness Scale (DJGLS) was originally developed by [De Jong-Gierveld and Kamphuis \(1985\)](#) and adapted into Turkish by [Cavdar et al. \(2015\)](#). De Jong Gierveld Loneliness Scale consists of 11 items and two subscales. On the scale, six negatively worded items measure emotional loneliness and five positively phrased items measure social loneliness. The sum of these two subscales constitutes the overall loneliness score. Since the items in the social loneliness dimension contain positive statements, the items are reverse coded. After reverse coding, “not applicable = 0” and “not applicable = 0”; A total of 11 points can be obtained by recoding as “appropriate = 1” and “very suitable = 1”. According to these scores, people can be divided into four groups: not alone (0, 1, 2 points), moderately lonely (range 3 to 8), severely lonely (9, 10 points), and very severely lonely (11 points). In the study of [Cavdar et al. \(2015\)](#), the Cronbach Alpha reliability coefficient of the scale was found to be 0.87. In this study, Cronbach's alpha reliability coefficient for the DJGLS was 0.80.

Statistical analysis

The data were analyzed via the Statistical Package for the Social Sciences (SPSS) version 26.0. Demographic characteristics such as gender, marital status, and residence were determined by percentage and frequency. The age of the participants was calculated by analysing the mean, minimum, and maximum values. The values of skewness and kurtosis were all within the recommended limit of ± 2 , which indicates the normal distribution of all the constructs of the study ([George & Mallery, 2010](#)). Independent sample *t*-test was used to compare the pretest and post test scores between the intervention and control groups. Statistical significance level was accepted as $p < 0.05$.

Result: The demographic characteristics of the Corporate employees (Work from Home) in the intervention and control groups were similar. The Corporate employees were all girls, all single, and all stayed in their own homes. The mean age of the corporate employees was 19.59 ± 2.31 (min = 18, max = 36).

The outcome variables of depression, anxiety, and stress were measured using data from the DASS-42, with means for each of the measures at pre-test and post-test by group shown in [Table 1](#). At baseline (i.e., before the intervention group had undergone the online laughter therapy intervention), no significant difference was found between the intervention and control groups in terms of mean DASS-42 total score ($t = 0.875, p = 0.385$). After online laughter therapy intervention, there was a

statistically significant difference between mean DASS-42 total scores of the intervention and control groups ($t = -2.268, p = 0.027$). While there were no statistical difference between the groups in terms of depression ($t = 0.854, p = 0.960$), anxiety ($t = 1.563, p = 0.123$), and stress ($t = 1.128, p = 0.264$) subscale scores before laughter therapy, it was found that the mean scores of depression subscale in the intervention group after online laughter therapy were lower than those before the intervention and also the results of the independent t -test showed a significantly difference between intervention and control groups ($t = -2.997, p = 0.003$). However, there was no significant difference in anxiety and stress subscale scores between intervention and control groups ($p > 0.05$) ([Table 1](#)).

Table 1

Comparison of Depression Anxiety Stress Scale mean scores before and after the intervention according to groups.

DASS-42	Intervention ($n = 32$)	Control ($n = 29$)	t	P	
	Mean (SD)	Mean (SD)			
DASS-42 (pre-test)	44.65 (22.70)	39.44 (23.78)	0.875	0.385	
DASS-42 (post-test)	27.78 (17.95)	39.65 (22.84)	-2.347	0.024	
Subscales	Depression subscale (pre-test)	13.93 (9.67)	14.06 (10.74)	0.854	0.960
	Depression subscale (post-test)	7.03 (6.11)	13.44 (9.94)	-2.887	0.002
	Anxiety subscale (pre-test)	11.90 (7.31)	9.13 (6.42)	1.563	0.123
	Anxiety subscale (post-test)	7.90 (6.70)	6.51 (6.58)	-0.945	0.348
	Stress subscale (pre-test)	18.81 (8.63)	16.24 (9.16)	1.128	0.264
	Stress subscale (post-test)	12.84 (7.31)	16.68 (9.13)	-1.824	0.073

Independent samples t -test. Red Bold values indicate a statistically significant difference.

Table : 2

Comparison of De Jong Gierveld Loneliness Scale mean scores before and after the intervention according to groups.

DJGLS		Intervention (n = 32)	Control (n = 29)	<i>t^a</i>	<i>P</i>
		Mean (SD)	Mean (SD)		
DJGLS (pre-test)		3.75 (3.25)	3.93 (2.71)	0.177	0.815
DJGLS (post-test)		2.84 (2.42)	3.72 (3.08)	-1.246	0.218
Subscales	Social Loneliness (pre-test)	6.65 (2.90)	5.31 (3.32)	1.687	0.097
	Social Loneliness (post-test)	1.15 (1.34)	1.58 (1.65)	-1.116	0.269
	Emotional Loneliness (pre-test)	2.37 (1.77)	2.34 (1.71)	0.067	0.947
	Emotional Loneliness (post-test)	1.68 (1.49)	2.13 (1.82)	-1.059	0.294

Discussion:

This study was conducted to examine the effects of online laughter therapy sessions on depression, anxiety, stress, and loneliness levels in Corporate employees who work from home. This study is the first in the literature to show that laughter therapy can be done online during the COVID-19 pandemic and is effective in reducing depression. In addition, this study was carried out in August, when full closure measures were taken, and the curfew and Work from home continued in India. It is thought that this study will be an important basis for future online laughter therapy studies. The findings of the study were discussed with previous studies since there was no study examining the effects of laughter therapy on Corporate employees who work from home feel depression, anxiety, stress, and loneliness levels during the pandemic process.

Depression affects >264 million people worldwide, and it is predicted that its prevalence and degree may increase with the effect of the pandemic. It is estimated that 76–85 % of people in low- and middle-income countries do not have access to treatment for depression (WHO, 2021a; WHO, 2021b). In the studies, it is stated that nursing students experience depression at various frequencies and degrees during the pandemic (Kalkan Uğurlu et al., 2021; Wang et al., 2020; Islam et al., 2020). Laughter therapy is an effective complementary medicine technique for

reducing depression (Kataria, 2011; Shahidi et al., 2011). In this study, it was found that online laughter therapy sessions significantly reduced corporate employees (Work from home) depression. According to this result, H.1 hypothesis was accepted. The findings of our study are similar to the studies in which face-to-face laughter therapy was performed on nursing students before the pandemic (Ozturk & Tezel, 2021; Yazdani et al., 2014). In a study of elderly women with depression in Iran, laughter therapy was found to be effective in the improvement of depression (Shahidi et al., 2011). In this study, the significant decrease in the level of depression may be related to the introduction of more oxygen into the body with deep breathing exercises, increased energy level with warm-up exercises, various physiological changes (increase in beta-endorphin level and decrease in cortisol) in the body with childlike playfulness and laughter exercises. More, it is thought that during the COVID-19 pandemic restrictions, by participating in an online activity that provides group interaction such as laughter therapy in a socially isolated environment at home, they interact with their friends so that there could be an improvement in depression.

It is stated that anxiety and stress are commonly seen in nursing students during the COVID-19 pandemic (Islam et al., 2020; Kalkan Uğurlu et al., 2021; Naser et al., 2020). Laughter therapy is an intervention that

has positive effects on anxiety and stress levels. In this study, although there was a significant decrease in the anxiety and stress levels of the Corporate employees (Work From Home) in the intervention group with the online laughter therapy, this decrease did not reach the level of significance in the intergroup analysis. According to this result, hypotheses H.2 and H.3 were rejected. The lack of a significant decrease in anxiety and stress levels might be associated with the students having a concern about disease transmission due to the ongoing pandemic process for more than a year, the distance education process, and the inability to practice face-to-face even though they are receiving training in a profession that requires practice/skill. All these concerns might be settled and chronic (Yanik & Yeşilçinar, 2021). In addition, students might still feel intense and constant sources of anxiety and stress such as the ongoing pandemic process, the change in daily lifestyle with the restrictions made during the pandemic process, the desire to return to the normal lifestyle before the pandemic, economic difficulties, false information circulating about the disease, and lack of social activity.

In studies conducted with nursing students during the pandemic, it has been reported that most of the students socially isolate themselves to protect themselves from infectious disease and experience a severe sense of loneliness (Akdeniz et al., 2020; Yanik & Yeşilçinar, 2021). Laughter therapy is reported to reduce loneliness (Alici & Bahçeli, 2021; Sabori et al., 2019). In this study, a decrease was observed in the loneliness level of the intervention and control groups, but this decrease did not reach the level of significance between the groups.

References :

1. Akdeniz G., Kavakci M., Gozugok M., Yalcinkaya S., Kucukay A., Sahutogullari B. A survey of attitudes, anxiety status, and protective behaviors of the university students during the COVID-19 outbreak in Turkey. *Frontiers Psychiatry*. 2020;11:695. doi: 10.3389/fpsy.2020.00695. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
2. Alici N.K., Bahçeli P.Z. Effects of laughter therapy on life satisfaction and loneliness in older adults living in nursing homes in Turkey: A parallel-group randomized controlled trial. *Rehabilitation*

Thus, H.4 hypothesis was rejected. The decrease in the level of loneliness in both groups may be related to the gradual reduction of restrictions and the gradual transition to normalization in India after dec 2021. It is thought that with the reduction of restrictions, the students may have met their friends and relatives and reduced their loneliness levels.

Strengths and limitations

In this study, delivering an online intervention can be considered both a strength and a limitation. This study shows that online intervention attempts can be made to improve mental health even in an environment where face-to-face interventions are not possible, curfews are applied, measures to combat pandemics are taken, which can be considered the strength of this study. On the contrary, implementing laughter therapy online is also a limitation, because there is more face-to-face interaction in nature of laughter therapy, so laughter therapy sessions are held more enthusiastically. Also, a small number of attendees rarely experienced technical connectivity issues and joined a few sessions late, so technical issues may be a limitation. The results of this study can only be generalized to the study sample.

Conclusion:

Online laughter therapy was found to be effective in reducing depression among Corporate employees who work from home but was not found to be effective for anxiety, stress, and loneliness. It is recommended to apply for a laughter therapy program online and integrate it into the daily training program and offline laughter yoga session with team members during work from office hours which helps in reducing depression, stress and anxiety .

- Nursing Journal*. 2021;46(2):104–112. doi: 10.1097/RNJ.0000000000000266. [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
3. Arabacı L.B., Korhan E.A., Tokem Y., Torun R. Nursing students' anxiety and stress levels and contributed factors before-during and after first clinical placement. *Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi*. 2015;2(1):1–16. [[Google Scholar](#)]
 4. Auerbach R.P., Mortier P., Bruffaerts R., Alonso J., Benjet C., Cuijpers P., Murray E. WHO world mental health surveys international college student project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology*. 2018;127(7):623. doi: 10.1037/abn0000362. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
 5. Bilgel N., Bayram N. Turkish version of the depression anxiety stress scale (DASS-42): Psychometric properties. *Archives of Neuropsychiatry/Noropsikiatri Arsivi*. 2010;47(2) [[Google Scholar](#)]
 6. Bu F., Steptoe A., Fancourt D. Who is lonely in lockdown? Cross-cohort analyses of predictors of loneliness before and during the COVID-19 pandemic. *Public Health*. 2020;186:31–34. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
 7. Çavdar D., Bağıcı V., Çorbacı E.C., Sarıtaş S., Taşdelen M.K. Adaptation of De Jong Gierveld loneliness scale into Turkish. *International Journal of Humanities and Social Science*. 2015;5(9):84–92. [[Google Scholar](#)]
 8. De Jong-Gierveld J., Kamphuis F.H. The development of a Rasch-type loneliness scale. *Applied Psychological Measurement*. 1985;9:289–299. [[Google Scholar](#)]
 9. Fruehwirth J.C., Biswas S., Perreira K.M. The Covid-19 pandemic and mental health of first-year college students: Examining the effect of Covid-19 stressors using longitudinal data. *PloS one*. 2021;16(3) [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
 10. George D., Mallery M. 17.0 update (10a ed.) Pearson; Boston: 2010. SPSS for windows step by step: A simple guide and reference. [[Google Scholar](#)]
 11. Islam M.A., Barna S.D., Raihan H., Khan M.N.A., Hossain M.T. Depression and anxiety among university students during the COVID-19 pandemic in Bangladesh: A web-based cross-sectional survey. *PloS one*. 2020;15(8) doi: 10.1371/journal.pone.0238162. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
 12. Kalkan Uğurlu Y., Mataracı Değirmenci D., Durgun H., Gök Uğur H. The examination of the relationship between nursing students' depression, anxiety and stress levels and restrictive, emotional, and external eating behaviors in COVID-19 social isolation process. *Perspectives in Psychiatric Care*. 2021;57(2):507–516. doi: 10.1111/ppc.12703. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
 13. Kataria M. Madhuri International; Mumbai (India): 2011. Laugh for no reason; pp. 61–66. [[Google Scholar](#)]
 14. Kaur L., Walia I. Effect of laughter therapy on level of stress: A study among nursing students. *Nursing & Midwifery Research Journal*. 2008;4(1):34–38. [[Google Scholar](#)]
 15. Kim S.H., Kim Y.H., Kim H.J. Laughter and stress relief in cancer patients: a pilot study. *Evidence-Based Complementary and Alternative Medicine*. 2015;2015 doi: 10.1155/2015/864739. 6 pages. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
 16. Lovibond P.F., Lovibond S.H. Depression Anxiety Stress Scales. 1995. <https://psycnet.apa.org/doiLanding?> [[PubMed](#)]
 17. Laughter Therapy for depression E Book [Laughter Therapy for Depression eBook : Rawat, Harish: Amazon.in: Kindle Store](#)

STEPS :

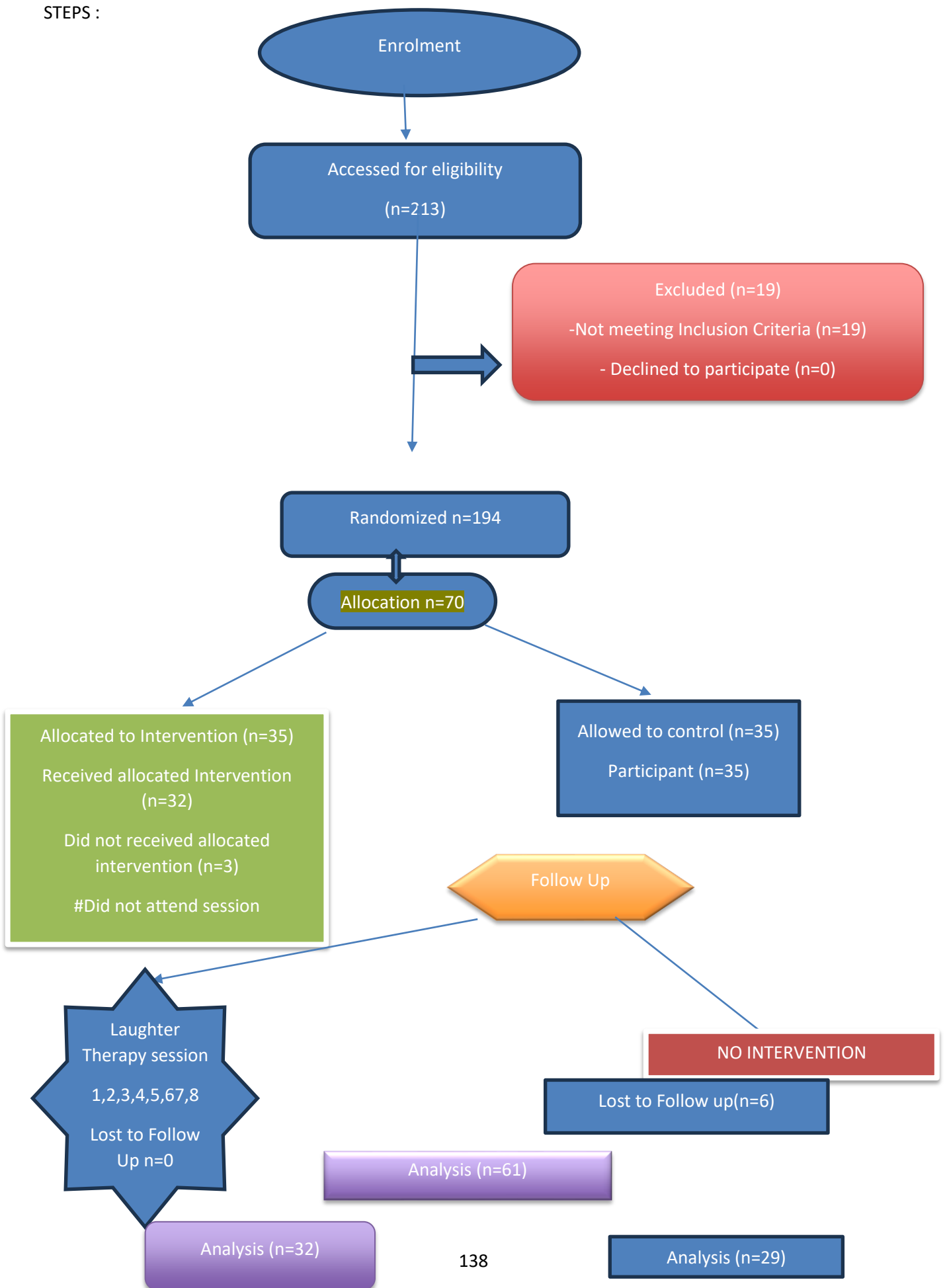


Figure:1.0 CONSORT DIAGRAM