The Research of Medical Science Review

Received: 20 December, 2024
Accepted: 20 January, 2025
Published: 27 January, 2025

ISSN: 3007-1208 | 3007-1216
Volume 3, Issue 1, 2025

DO ANGER AND WORRY MEDIATE THE RELATIONSHIP BETWEEN INTOLERANT BEHAVIOR AND SADNESS? A STUDY IN SCHOOL CHILDREN

Dr Naseen Bano[1], Dr Aneel Kumar[2], Dr Aisha Lodi[3], Dr. Muhammad Umar Khan[*4]

[1]Assistant Professor, Institute of Clinical Psychology, University of Karachi, Pakistan
[2]associate Professor of Psychiatry Department of Medicine and Allied Jinnah Medical and Dental College Sohail Trust Hospital Korangi Industrial Area Karachi, Email Id:
[3]Postgraduate Trainee Department of Medicine Jinnah Medical and Dental College, Sohail Trust Hospital, Korangi Industrial Area, Karachi
*[*4]Assistant Professor, Department of Applied Psychology, G. C. University, Faisalabad. Old Campus, Faisalabad*

[1]nasreenbano.icp@gmail.com, [2]anu4i@hotmail.com, [3]aishalodi@ymail.com, [*4]umarkhan@gcuf.edu.pk

[2]https://orcid.org/0009-0001-5385-3854

Corresponding Author: *
DOI: https://doi.org/10.5281/zenodo.14749882

ABSTRACT

Background and Objectives: *Emotional disturbance is being increased in school children globally, which is alarming for all of us. Therefore, the current study investigates the relationship between intolerant behavior and sadness with the mediating role of anger and worry among children with minor emotional disturbances.*

Material and Methods: *The current study was conducted from October 2019 to September 2020 among different schools of district Faisalabad, Pakistan. A total of 600 participants we targeted, 400 participants met the study inclusion and exclusion criteria. In the sample, boys were 200) and girls were 200. In our study, the participants' age range was 9 - 14 years. The Distress Tolerance Scale and Children Emotional Management Scale were administered. Data were analyzed using SPSS-V 26.*

Results: *Results reveal that inhibition, dysregulation emotion, and coping subscales of anger, worry, and sadness significantly correlate with appraisal ($p<.001$), regulation ($p<.001$), tolerance ($p<.001$), and absorption ($p<.001$). Hierarchical regression analysis indicates subscales of distress tolerance, anger, and worry predicts sad emotions ($R2= .51$; $F= 20.78$; $p<.001$). Furthermore, the results indicate that anger and worry significantly mediate between intolerant behavior and sadness in emotionally disturbed school children ($R2= .425$; $F (5,394) = 58.125$, $p< .001$).*

Conclusion: *It is concluded that low tolerance behavior increases the degree of anger and worry-related emotions high degree of anger and worry predicts the intensity of sadness in children.*

Keywords: *Intolerant Behavior, Sadness Emotion, Anger and Worried Behavior, Children*

INTRODUCTION

Children's emotional disturbance is a common problem for parents, teachers, and mental health professionals (1). It is observed, for three-decade, the emotional and behavioral issues in children are increasing globally, especially in low developed countries (2). In non-school children, the Prevalence of emotional disturbance was estimated at 0.7-2.0, which is relatively higher (3). In China, emotional and behavioral problems are estimated at 17.6% in children, and Prevalence was found higher in boys (18.6%) as compared to girls (16.6%) (4). Similarly, in Malaysian children, an emotional disturbance was reported by parents (9.3%), teachers (8.5%), and the child was 3.9% (5). In a sample of Sub-Saharan Africa, 14.3% of children were found emotionally disturbed (6).

Distress tolerance is one of the reasons for emotional disturbance, which initially causes behavioral problems and then psychiatric illness (7) (8). Distress tolerance is a negative state that reflects some negative emotions in a child, usually critical and unfavorable (9). If a child feels unable to manage the situation, it causes emotional problems in children, which resulted in poor outcomes (4). Although children have different temperaments and attitudes toward the response; however, children feel more vulnerable in an intense situation and usually perceive emotional disturbance, which significantly affects the social and academic performance of the children. Distress induces different negative cognitions, behaviors, and emotions in children, which later cause severe emotional problems, negative personality growth, or psychiatric disorders (10).

Worry is related to negative things that a person fears might happen in the future (11). The abundance of the literature suggests that prejudiced behavior and worry are significantly associated with each other, and the supporting role of anger increases the intensity of sadness in children (12). A high level of intolerance sustains worry (13) and contributes to other problematic cognitive processes, including poor problem orientation and cognitive avoidance, which conjointly and paradoxically maintain worries in children (5). The Meta-analysis showed a strong association between distress tolerance, anxiety, and worry-related behaviors in children (15). A study suggests heightened distress regarding failure and uncertain events may be more central to maintaining worry (16). Female children showed higher levels of worry than males and mediated the relationship between intolerance of uncertainty and worry (17). Sadness is an emotional pain characterized by feelings of disadvantage, loss, despair, grief, helplessness, disappointment, and sorrow (18). A study demonstrates worry is more related to children's purchase intention for social status than sadness as it induced consumers to follow their perceptions associated with hedonic (19).

Anger is a negative emotion, which triggers feelings of discomfort, hostility, provocation, and threat in children (20). Furthermore, high anger causes internalizing and externalizing symptoms (21). Low distress tolerance significantly correlates with anger in children, and it may be prolonged throughout life as personality temperament if it is not managed at an early stage of life (22). It is further explained that low distress tolerance influences children's emotional ability to recognize different emotions (i.e., anger, worry, sadness). When its intensity increases, children inhibit coping skills and exhibit adverse emotional problems (21). It is observed, the irrational belief of intolerance leads to frustration and anger, which reflects in the domain of physical and verbal aggression (23).

The current study primarily sought to examine the impact of distress tolerance on children's emotional disturbance and how anger and worry-related behaviors enhance the level of sadness. The study also focuses that the components of distress tolerance relate to the aspects of anger, worry, and sadness in emotionally disturbed school children.

Materials and Methods

Research Design: The correlational research design was used in this study. This current study was completed in 2018-2020, and its protocol was approved by the Institutional Review Board (IRB) of Government College University Faisalabad. Participants were recruited from different schools of the distract hang, Faisalabad and Lahore of the Punjab Province.

Sample Size and Sampling: The study sample size was estimated using G-Power software (version 3.1.9.4) with an effect size of 0.40, α error 0.001 with a power of 0.95 (24). G-Power calculator generated a sample

size of 396 participants. In this study, we recruited more than 600 schoolchildren. 400 out of 600 meet the study inclusion and exclusion criteria. Participants were approached through a purposive sampling technique. Both boys n=200 and girls n=200 with an age range of 12 - 18 years (i.e., M±SD=16.57±1.18) were included in the study. The participants were taken from all socio-economic statuses. Participants' educational level was between middle and intermediate.

Inclusion and Exclusion Criteria: Only those participants who were included met the inclusion and exclusion criteria. Children were identified based on few set criteria. For example, teachers highlighted the student he/she has feeling difficulty in the study, lack of participation in the classroom activities, avoidance from social activities, parents noticed the child is feeling emotional and stubborn, or visit to clinician seeking help for the child regarding his/her mental health were included in the study. The children who have minor emotional, behavioral, social, and academic problems were included in the study. The children who have mild psychological problems were excluded from the study. Children with intellectual disability, medical illness, or psychiatric illness were excluded.

Demographic information and In-depth interview: First of all, detailed demographic information were taken from the child, patients and their teachers in term of academic, personal and daily living activities. In addition, an in-depth clinical interview was conducted with the patients and teachers to explore the child's problems in academic, intellectual, emotional, behavioral, and socialization.

The Distress Tolerance Scale: The DTS, a self-report measure, was used to assess the intolerant behavior among children (8). The DTS comprises fifteen items based on four dimensions, i.e., tolerance, appraisal, absorption, and regulation. Each statement is rated on a 5-point Likert scale ranging from strongly disagree =5 to strongly agree=1. High scores represent high distress tolerance among participants. It is comprised of four subscales. The tolerance subscale is comprised of 3 items (1, 3, and 5), the appraisal subscale has six items (6, 7, 9, 10, 11, and 12), and the absorption subscale is based on three items (2, 4, and 15) and regulation subscale is comprised on three items (8, 13, and 14). The reliability estimation of the original scale is calculated at .82, and for subscales, it is estimated at .72, .82, .78, and .70, respectively.

The Children Emotional Management Scale: The CEMS is categorized into three main dimensions, i.e., worry, anger, and sadness (25). Each scale domain is categorized into three subscales (i.e., emotional regulation coping, inhibition, & dysregulated-expressions). Each statement is scored on a 3-points Likert type scale, such as hardly ever=1, sometimes=2, and often=3. Children's Worry Management subscale consists of 10 items, i.e., regulation coping composed of three items with reliability .69, inhibition consist of four items with reliability is .74, and dysregulated expression comprised of three items with the reliability of .72. Children's Anger Management subscale consists of 11 items that are further categorized into three subscales, i.e., coping composed of 4 items with a reliability coefficient of .73, inhibition comprised of four items with the reliability of .69, and dysregulated expressions are composed of three items with the reliability of .68. Similarly, the Children's Sadness Management Subscale is comprised of 12 items. Such as emotional regulation coping comprised of five items, inhibition comprised of four items, and dysregulated expressions composed of three items with reliability estimation of .62, .77, and .60, respectively.

Results

Table 1

Demographics Statistics of the Sample (N = 400)

Basic Characteristics	Boys (200) M ± SD	Girls (200) M ± SD	*t*	*p*	95% CI LL, UL
Age	17.96 ±2.05	18.29 ± 2.00	-1.62	>.05	-.73, .07
Residence	1.74 ±0.44	1.83 ± 0.38	-2.06	<.05	-.16, -.00
Education	1.98 ±0.66	2.01 ± 0.64	-0.45	>.05	-.15, .98
Parents education	2.33 ±0.86	2.25 ± 0.80	0.96	>.05	-.08, .24
Father occupation	1.66 ±0.36	1.10 ± 0.30	1.65	>.05	-.01, .12
Monthly income	2.50 ±1.26	2.33 ±1.15	1.44	>.05	-.06, .41

Siblings	3.76 ±1.70	3.76 ±1.61	0.00	>.05	-.32, .32
Birth order	2.59 ±1.46	2.53 ±1.38	0.45	>.05	-.21, .34
Family income	1.56 ±0.49	1.65 ±0.48	-1.73	>.05	-.18, .01
Tolerance	7.17 ±3.14	7.17 ±2.66	-0.01	>.05	-.57, .56
Absorption	9.09 ±2.59	9.20 ±2.42	-0.41	>.05	-.59, .38
Regulation	6.94 ±2.56	7.29 ±2.39	-1.43	>.05	-.84, .13
Appraisal	16.42 ±4.24	16.59 ±3.76	-0.42	>.05	-.98, .63
Intolerant behavior	39.61 ±12.11	40.25 ±10.82	-0.45	>.05	-2.89, 1.61
Inhibition	6.93 ±1.24	7.01 ±1.10	-0.68	>.05	-.31, .14
Dys. Emotions	6.12 ±1.13	6.14 ±1.17	-0.21	>.05	-.25, .20
Coping	8.07 ±1.67	7.86 ±1.54	1.27	>.05	-.11, .52
Worry	21.11 ±1.25	21.01 ±0.95	0.89	>.05	-.11, .31
Inhibition	8.87 ±1.61	8.81 ±1.39	0.43	>.05	-.23, .36
Dys. Emotions	6.13 ±1.342	6.07 ±1.29	0.49	>.05	-.19, .32
Coping	7.67 ±1.74	7.62 ±1.65	0.29	>.05	-.28, .38
Anger	22.67 ±1.82	22.49 ±1.44	1.09	>.05	-14, .50
Inhibition	8.32 ±1.84	8.50 ±1.58	-1.01	>.05	-.51, .16
Dys. Emotions	10.71 ±2.23	10.60 ±1.99	0.49	>.05	-.31, .52
Coping	5.59 ±1.39	5.49 ±1.29	0.78	>.05	-.15, .36
Sadness	24.62 ±2.83	24.58 ±2.51	0.13	>.05	-.49, .56

p= <.05; Dys.= Dysregulated

Table 2

Hierarchical Regression Analysis of Demographic Characteristics, Distress Tolerance Scale with Anger, Worry and Sadness among Emotional Disturbed School Children (N=400)

Variables			t	Sig.	95% CI for β				Adj			
		B			LL	UL	R	R^2	R^2	ΔR^2	F	p
1	(Constant)		22.917	.000	27.04	32.11	.52	.27	.25	.27***	20.78	.000
	AGE	-0.02	-0.51	.611	-0.14	0.08						
	GEN	0.03	0.89	.370	-0.24	0.66						
	EDU	0.03	0.78	.433	-0.21	0.49						
	TOL	0.35	2.76	.006	0.09	0.55						
	ABS	-0.11	-0.89	.371	-0.38	0.14						
	REG	-0.53	-5.40	.000	-0.79	-0.36						
	APP	-0.20	-1.81	.071	-0.27	0.01						
2	(Constant)		9.84	.000	24.84	37.24	.61	.37	.35	.10***	23.16	.000
	AGE	-0.00	-0.10	.917	-0.11	0.10						
	GEN	0.02	0.69	.486	-0.27	0.58						
	EDU	0.04	0.98	.325	-0.16	0.49						
	TOL	0.47	3.91	.000	0.21	0.64						
	ABS	-0.00	-0.06	.947	-0.25	0.23						
	REG	-0.49	-5.24	.000	-0.73	-0.33						
	APP	-0.24	-2.31	.021	-0.29	-0.02						
	INHA	0.13	1.70	.089	-0.03	0.51						
	DYNA	-0.10	-1.34	.181	-0.50	0.09						

	COPA	-0.36	-5.02	.000	-0.79	-0.34						
3	(Constant)		5.37	.000	10.71	23.08	.70	.50	.48	.12***	35.63	.000
	AGE	-0.00	-0.12	.902	-0.10	0.08						
	GEN	0.00	0.13	.895	-0.35	0.40						
	EDU	0.03	0.86	.389	-0.16	0.42						
	TOL	0.44	4.18	.000	0.21	0.60						
	ABS	-0.07	-0.70	.482	-0.29	0.14						
	REG	-0.36	-4.25	.000	-0.57	-0.21						
	APP	-0.07	-0.77	.437	-0.17	0.07						
	INHA	0.11	1.58	.114	-0.04	0.44						
	DYNA	-0.02	-0.29	.767	-0.30	0.22						
	COPA	-0.07	-1.07	.284	-0.33	0.09						
	INHW	0.52	10.04	.000	0.95	1.42						
4	(Constant)		5.91	.000	12.21	24.38	.72	.52	.51	.02***	35.68	.000
	AGE	-0.00	-0.20	.838	-0.10	0.08						
	GEN	0.01	0.38	.702	-0.30	0.44						
	EDU	0.03	0.93	.351	-0.15	0.42						
	TOL	0.26	2.35	.019	0.04	0.44						
	ABS	-0.05	-0.50	.613	-0.27	0.16						
	REG	-0.34	-4.13	.000	-0.54	-0.19						
	APP	-0.09	-1.04	.299	-0.18	0.05						
	INHA	-0.01	-.152	.879	-0.27	0.23						
	DYNA	-0.10	-1.46	.145	-0.47	0.07						
	COPA	-0.35	-3.74	.000	-0.84	-0.26						
	INHW	0.61	11.13	.000	1.14	1.64						
	COPW	0.33	4.30	.000	0.30	0.81						
5	(Constant)		4.39	.000	8.31	21.78	.72	.53	.51	.00***	33.61	.000
	AGE	-0.01	-0.39	.694	-0.11	0.07						
	GEN	0.01	0.53	.592	-0.27	0.47						
	EDU	0.03	0.92	.356	-0.15	0.42						
	TOL	0.28	2.53	.012	0.05	0.46						
	ABS	-0.09	-0.88	.378	-0.31	0.12						
	REG	-0.37	-4.40	.000	-0.57	-0.22						
	APP	-0.05	-0.61	.541	-0.16	0.08						
	INHA	-0.01	-0.15	.881	-0.27	0.23						
	DYNA	-0.13	-1.87	.062	-0.54	0.01						
	COPA	-0.30	-3.22	.001	-0.78	-0.19						
	INHW	0.61	11.20	.000	1.15	1.64						
	COPW	0.41	4.83	.000	0.40	0.97						
	DYSW	0.15	2.16	.031	0.03	0.68						

Note. GEN = Gender; EDU = Education; SIB = No. of Siblings. BO = Birth Order; FI = Family Income; APP = Appraisal; REG = Regulation; ABS = Absorption; TOL = Tolerance; IB = Intolerant Behavior; INHW = Inhibition Subscale Worry; COPW = Coping Subscale Worry; DYSW = Dysregulated Emotion Worry; WOR = Worry; INHA = Inhibition Subscale Anger; DYSA Dysregulated Emotion Anger; COPA = Coping Subscale Anger; ANG = Anger; INHS = Inhibition subscale Sadness; DYSS = Dysregulated

*Emotion Sadness; COPS = Coping Subscale Sadness; SAD = Sadness; SD, Standard Deviation.*P<0.05;**P<0.01;***p<0.001*

Table 2 shows the findings of hierarchical regression analysis of subscales of the distress tolerance scale with anger, worry, and sadness. In step 1, the R^2 value is .27 showed that tolerance and regulation explained a 27% variance in sadness. In step 2, the R^2 value is .37, which revealed that coping anger indicates a 37% variance in developing sadness. In step 3, the R^2 value is .50 indicates inhibition explained 50% variance in sadness. In step-4, the R^2 value is .52, indicating coping anger and worry subscale and inhibition worry predict sadness. In step 5, the R^2 value is .53, which explains 53% variance to predict sadness by coping with anger and worry, inhibition, and dysregulated worry in children.

Discussion

Our study findings reported that intolerant behavior strongly associates with sadness which is the primary reason for emotional disturbance in children (22). Anger and worry significantly mediate between intolerant behavior and sadness, which trigger the intensity of emotional disturbance in children (13). Low distress tolerance makes the children more worried and emotionally unstable, which negatively influenced children's level of academic performance. At the early stage, anxious and worried behavior might cause severe psychopathology in children (27).

The study findings reveal that distress tolerance is associated with anger among children with emotional disturbance (28). Similarly, distress tolerance significantly negatively correlates with worry-related behaviors in emotionally disturbed children (29). Consistent anger and worry-related behaviors usually enhance unhealthy emotions and unhelpful coping behaviors, which leads to depressive symptoms in children (30). Distress tolerant behavior significantly associates with anger, and anger is moderate with depressive symptoms (31). Similarly, excessive worries promote depressive symptoms in children, which causes emotional disturbance (32) and positively correlates with inhibition (33).

Extreme stressful conditions and worries inhibit positive emotions, which decreases coping skills and enhances dysregulation emotions (34). In addition, emotionally disturbed children used avoidance coping which promotes the level of distress in children (35). Children become sensitive due to emotional disturbance, and they shatter their confidence and attitudes (36). While low anxiety and sadness behaviors in children enhance children's level of confidence, negatively associates with depressive symptoms, and positively associates with coping mechanisms (37). On the other end, worry, anger, and sadness significantly associate with each other and develop psychopathological behaviors in children (17). Hierarchical regression analysis showed distress tolerance is posited a significant impact on an emotion such as anger, worry, and sadness (38).

Our findings indicate that anger and worry significantly positively correlate with sadness in children (39). Tolerant behavior supports the individual to cope with negative emotions and promotes the person to live with equality, indiscrimination, freedom, or other social rights (40). Intolerance strongly associates with worry, which leads to anxiety-related symptoms in children. However, we do not know whether children are more likely to sadden due to distress tolerance, or this relationship is better explained by other emotions such as worry and anger (41).

The overall study findings represent a more significant role of tolerance to prevent emotional disturbance in children. Low tolerance manifests high and anger and worries-related emotions in children, which predict different negative behaviors. High anger and worry-related emotions enhance the tendency of sad emotion in children, which is the one major causes of emotional disturbance among children. Children with early teenage or with teenage when going through a transition period if they have low tolerance and high anger, worry, and sad emotion perceive significant crisis at this stage which may cause severe psychiatric illness.

Conclusion:

It is concluded that children with minor emotional problems perceive low tolerance and high sadness. Anger and worry-related emotions were found higher, and they increase the intensity of feelings of sadness. It is also concluded that distress tolerance is significantly associated with anger, worry, and sadness.

Limitation and Implications:
To enhance the generalizability of the study, sample data should be collected throughout Pakistan as our current sample was limited. We only targeted the children with minor emotional disturbance, so the study did not sufficiently explain the role of anger and worry in severe psychiatric problems. The current study provides rich information to policymakers, teachers, counselors, parents, and clinicians to understand, develop and address the emotional problems through advanced techniques, interventions and modalities.

Acknowledgment:
The authors would like to thanks the participants for their active participation. Furthermore, the authors would also thank the parents and teachers who facilitate and give precious time for the detailed history of the child.

Financial Support and Sponsorship: None

Conflict of Interest: None

REFERENCES

1.Klein AM, Otto Y, Fuchs S, Reibiger I, von Klitzing K. A prospective study of behavioral and emotional symptoms in preschoolers. Eur Child Adolesc Psychiatry. 2015;24(3):291–299.
2.Qi D, Wu Y. Family income and children's emotional wellbeing: the mediational role of parents' life satisfaction and emotional wellbeing in China. Int J Environ Res Public Health. 2020;17(20):7573.
3.Philipp J, Zeiler M, Waldherr K, Truttmann S, Dür W, Karwautz AF, et al. Prevalence of emotional and behavioral problems and subthreshold psychiatric disorders in Austrian adolescents and the need for prevention. Soc Psychiatry Psychiatr Epidemiol. 2018;53(12):1325–1337.
4.Cui Y, Li F, Leckman JF, Guo L, Ke X, Liu J, et al. The Prevalence of behavioral and emotional problems among Chinese school children and adolescents aged 6–16: a national survey. Eur Child Adolesc Psychiatry. 2021;30(2).
5.Idris IB, Barlow J, Dolan A. A longitudinal study of emotional and behavioral problems among Malaysian school children. Ann Glob Health. 2019;85(1).
6.Cortina MA, Sodha A, Fazel M, Ramchandani PG. Prevalence of child mental health problems in sub-Saharan Africa: a systematic review. Arch Pediatr Adolesc Med. 2012;166(3):276–281.
7.Leyro TM, Zvolensky MJ, Bernstein A. Distress Tolerance and Psychopathological Symptoms and Disorders: A Review of the Empirical Literature Among Adults. Psychol Bull. 2010 Jul;136(4):576–600.
8.Simons JS, Gather RM. The Distress Tolerance Scale: Development and validation of a self-report measure. Motiv Emot. 2005;29(2):83–102.
9.Zvolensky MJ, Vujanovic AA, Bernstein A, Leyro T. Distress tolerance: Theory, measurement, and relations to psychopathology. Curr Dir Psychol Sci. 2010 Dec 14;19(6):406–10.
10.Blackledge JT, Hayes SC. Emotion regulation in acceptance and commitment therapy. J Clin Psychol. 2001;57(2):243–255.
11.Hirsch CR, Mathews A. A cognitive model of pathological worry. Behav Res Ther. 2012;50(10):636–646.
12.Dugas MJ, Gosselin P, Ladouceur R. Intolerance of uncertainty and worry: Investigating specificity in a nonclinical sample. Cogn Ther Res. 2001;25(5):551–558.
13.Buhr K, Dugas MJ. The intolerance of uncertainty scale: Psychometric properties of the English version. Behav Res Ther. 2002;40(8):931–945.
14.Hebert EA, Dugas MJ. Behavioral experiments for intolerance of uncertainty: Challenging the unknown in the treatment of generalized anxiety disorder. Cogn Behav Pract. 2019;26(2):421–436.
15.Osmanağaoğlu N, Creswell C, Dodd HF. Intolerance of Uncertainty, anxiety, and worry in children and adolescents: A meta-analysis. J Affect Disord. 2018;225:80–90.

16.Ranney RM, Behar E, Bartoszek G. Individuals intolerant of uncertainty: The maintenance of worry and distress despite reduced uncertainty. Behav Ther. 2019;50(3):489–503.
17.Bottesi G, Martignon A, Cerea S, Ghisi M. Worry and associated cognitive features in Italian university students: Does gender make a difference? Personal Individ Differ. 2018;126:38–43.
18.Lokko HN, Stern TA. Sadness: Diagnosis, evaluation, and treatment. Prim Care Companion J Clin Psychiatry. 2014;16(6).
19.Zvolensky MJ, Vujanovic AA, Bernstein A, Leyro T. Distress tolerance: Theory, measurement, and relations to psychopathology. Curr Dir Psychol Sci. 2010 Dec 14;19(6):406–10.
20.Stangor DrC. The Biological and Emotional Causes of Aggression. BCcampus; 2014.
21.Zeman J, Shipman K, Suveg C. Anger and Sadness Regulation: Predictions to Internalizing and Externalizing Symptoms in Children. J Clin Child Adolesc Psychol. 2002;31(3):393–8.
22.Leyro TM, Zvolensky MJ, Bernstein A. Distress Tolerance and Psychopathological Symptoms and Disorders: A Review of the Empirical Literature Among Adults. Psychol Bull. 2010 Jul;136(4):576–600.
23.Martin RC, Dahlen ER. Irrational beliefs and the experience and expression of anger. J Ration - Emotive Cogn - Behav Ther. 2004 Mar;22(1):3–20.
24.Faul F, Erdfelder E, Buchner A, Lang A-G. Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. Behav Res Methods. 2009;41(4):1149–1160.
25.Zeman J, Shipman K, Penza-Clyve S. Development and initial validation of the Children's Sadness Management Scale. J Nonverbal Behav. 2001;25(3):187–205.
26.Dugas MJ, Gosselin P, Ladouceur R. Intolerance of uncertainty and worry: Investigating specificity in a nonclinical sample. Cogn Ther Res. 2001 Oct;25(5):551–8.
27.Zeman JL, Cassano M, Suveg C, Shipman K. Initial validation of the children's worry management scale. J Child Fam Stud. 2010;19(4):381–392.
28.Fracalanza K, Koerner N, Deschênes SS, Dugas MJ. Intolerance of Uncertainty Mediates the Relation Between Generalized Anxiety Disorder Symptoms and Anger. Cogn Behav Ther. 2014;43(2):122–32.
29.Full article: Is dysphoria about being red and blue? Potentiation of anger and reduced distress tolerance among dysphoric individuals [Internet]. [cited 2021 Jul 29]. Available from: https://www.tandfonline.com/doi/full/10.1080/13803390902851176
30.Lass ANS, Winer ES, Collins AC, Rokke PD. The Associations among Distress Tolerance, Unhelpful Coping Behaviors, and Symptoms of Depression: A Network Analysis. Cogn Ther Res. 2020 Dec 1;44(6):1077–90.
31.Onyedibe MCC, Ibeagha PN, Onyishi IE. Distress tolerance moderates the relationship between anger experience and elevated blood pressure. South Afr J Psychol. 2020;50(1):39–53.
32.Williams AD, Thompson J, Andrews G. The impact of psychological distress tolerance in the treatment of depression. Behav Res Ther. 2013 Aug 1;51(8):469–75.
33.Macatee RJ, Albanese BJ, Crane NA, Okey SA, Cougle JR, Schmidt NB. Distress intolerance moderation of neurophysiological markers of response inhibition after induced stress: Relations with cannabis use disorder. Psychol Addict Behav. 2018;32(8):944–55.
34.Vujanovic AA, Bonn-Miller MO, Bernstein A, McKee LG, Zvolensky MJ. Incremental validity of mindfulness skills in relation to emotional dysregulation among a young adult community sample. Cogn Behav Ther. 2010;39(3):203–13.
35.Iverson KM, Follette VM, Pistorello J, Fruzzetti AE. An investigation of experiential avoidance, emotion dysregulation, and distress tolerance in young adult outpatients with borderline personality disorder symptoms. Personal Disord Theory Res Treat. 2012 Oct;3(4):415–22.
36.Shahdara Z, Dehghani M, Heidari M, Mahmoud Aliloo M. Distress Tolerance, Impulsivity, and Aggression: The Role of Emotional Dysregulation and Reward Sensitivity in Individuals With Borderline Personality Disorder Features. Pract Clin Psychol. 2021 Jan 1;9(1):37–50.

37.Pearte C. Temperament, emotion regulation, and distress tolerance as related correlates of psychological symptoms. Electron Theses Diss 2004-2019. 2015 Jan 1;
38.Distress tolerance and symptoms of depression: A review and integration of literature - Lass - 2020 - Clinical Psychology: Science and Practice - Wiley Online Library [Internet]. [cited 2021 Jul 29]. Available from: https://onlinelibrary.wiley.com/doi/full/10.1111/cpsp.12336
39.Social- versus personal-oriented purchases: impacts of worry versus sadness on young consumers | Emerald Insight [Internet]. [cited 2021 Jul 29]. Available from: https://www.emerald.com/insight/content/doi/10.1108/JCM-02-2017-2117/full/html
40.Full article: The interaction of distress tolerance and intolerance of uncertainty in the prediction of symptom reduction across CBT for social anxiety disorder [Internet]. [cited 2021 Jul 29]. Available from: https://www.tandfonline.com/doi/full/10.1080/16506073.2017.1334087
41.Zlomke KR, Jeter KM. Stress and worry: Examining intolerance of uncertainty's moderating effect. Anxiety Stress Coping. 2014 Mar;27(2):202–15.