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# *Figure 8: Regression of standard difference in means on duration of program for anxiety outcome*



# *Figure 9: Regression of standard difference in means on duration of session for anxiety outcome*



# *Figure 10: Regression of standard difference in means on number of sessions for anxiety outcome*



# *Figure 11: Regression of standard difference in means on duration of program for depression outcome*



# *Figure 12: Regression of standard difference in means on duration of sessions for depression outcome*

# 



# *Figure 13: Regression of standard difference in means on number of sessions for depression outcome*



# *Figure 14: Regression of standard difference in means on duration of program for distress outcome*



# *Figure 15: Regression of standard difference in means on duration of sessions for distress outcome*



# *Figure 16: Regression of standard difference in means on number of sessions for distress outcome*

# 



# *Table 6: Intervention characteristics (N=65)*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Study (Author, Year)** | **Intervention name and theoretical underpinning** | **Components** | **Dosage** | **Delivery agent** | **Clinical outcome** | **Recruitment Setting** | **Beneficiary population (age [Mean (SD)], gender)** | **Effectiveness Time-points** | **Relaxation type** |
|  | (Caldwell et al., 2016) | Tai chi chuan intervention | **Tai chi chuan (TCC)** (static and dynamic qigong exercises, assigning homework) | 10 weeks, 20 sessions, 60 minutes each | instructors | Anxiety | Educational settings | 18-40 (mean and SD missing)  Both | 10 weeks | Relaxation |
|  | (Gold et al., 2017) | Group Music Therapy  Theoretical basis not specified | Music, writing,  group improvisation, song contributions, song writing, playlist creation | 8 sessions | Music therapists | Depression | Educational settings | 13.84 (0.74)  Both | 3 months | Relaxation |
|  | (Robledo-Colonia et al., 2012) | Not specified | Relaxation\*, Walk, Aerobic exercise, stretching, music, | Three per week, starting between week 16 and 20 of gestation and continuing for 3 months, 60 minutes each | Physiotherapist and physician | Depression | Health centre | 21 (SD missing)  Females | 3 months | Relaxation |
|  | (Harmat et al., 2008) | Music therapy  Theory: Not specified | Relaxing classical music | 3 weeks, 45 minutes | CD delivered | Depression | Home based | 22.6 (2.83)  Both | 3 weeks | Relaxation |
|  | (Nabkasorn et al., 2006) | Physical exercise/ jogging  Theory: Not specified | Physical exercise (jogging) | 8 weeks, 40 sessions, 50 minutes each | Physical fitness instructor | Depression | Educational settings | 18.8 (0.7)  Females | post training | Relaxation |
|  | (Putra et al., 2018) | None (banana consumption) | Banana consumption, walk | Missing | Self-delivered | Depression | Home based | 15-17  Females | 2 weeks | Relaxation |
|  | (MacMahon & Gross, 1988) | aerobic exercise.  not specified | Exercise, long-running, vigorous basketball | 12 weeks, 36 sessions, 40 min each. | Physical education staff | Depression | Others (Juvenile detention facilities) | 16.3 (SD missing), Male. | Post intervention | Relaxation |
|  | (Reynolds & Coats, 1986) | Relaxation training  Theoretical: Not specified | Relaxation (Assigning homework, practicing relaxation, PMR, reviewing homework) | 10 sessions, 50 minutes each | Doctoral-level school psychology graduate student ( School psychologist) | Depression and anxiety | Educational settings | 15.65 (SD missing)  Both | 5 months after the intervention | Relaxation |
|  | (Roth, 1989) | Aerobic exercise  Not specified | Aerobic exercise (Bodyguard 990 bicycle ergometer) | Only 1 sessions of 120 minutes | Not specified | Depression & Anxiety | Not specified | 20.8 (SD missing)  Both | Post intervention | Relaxation |
|  | (Roth & Holmes, 1987) | Two intervention group; aerobic exercise training and Progressive relaxation training | Aerobic Exercise Training (Running and brisk walking, stretches), Jacobson's Progressive Relaxation Training, mental imagery procedures | 11 weeks, 29 sessions, 90 minutes each | Trained instructor | Depression & Anxiety | Educational settings | 18.9 (1.3)  Both | 2 months | Relaxation |
|  | (Velasquez et al., 2015) | Yoga  Not specified | Postures (asanas), breathing exercises (pranayamas),  relaxation (yoga nidra), and meditation techniques\* | 12 weeks, 24 sessions, 120 minutes each | Yoga instructor | Depression & Anxiety | Educational settings | Not specified | Post intervention | Relaxation |
|  | (Norris et al., 1992) | 3-intervention groups 1) high intensity exercise 2) moderate intensity exercise 3) stretching and flexibility  Not specified. | Aerobic exercises | 10 weeks, 20 sessions, 30 min each | Experienced instructors | Depression, anxiety and stress. | Educational settings | 16 (SD missing)  Both. | Post intervention | Relaxation |
|  | (Walsh et al., 2016) | Brief Mindfulness Training, | Mindfulness (body scan, sitting meditation, yoga) | 4 weeks, 4 sessions, 50 minutes each | Clinical psychologist | Depression | Not specified | 19.15 (SD missing)  Females | 3 weeks post | Multicomponent |
|  | (Raes et al., 2014) | Mindfulness group program  Mindfulness-Based Cognitive Therapy (MBCT) and Mindfulness-Based Stress  Reduction (MBSR) | Guided experiential mindfulness exercises (e.g., mindfulness of breathing, breathing space, body scan),  sharing of experience of these exercises; reflections in small groups, inspiring stories;  psycho-education (e.g., stress, depression, self-care), and review of homework. | 8 weeks, 8 sessions, 100 minutes each | Trained mindfulness instructor (two psychologists, one medical doctor) | Depression | Educational settings | 13- 20 (mean and SD missing)  Both | 6 months after the intervention | Multicomponent |
|  | (Sagon et al., 2018) | The Mindful Way through the Semester  Acceptance Based Behavioral Therapy (ABBT) | Mindfulness practices (awareness & acceptance, mindfulness exercises [mindfulness of breadth, inviting a difficulty]), journal  writing, social support, problem solving, and distraction or avoidance, identifying thoughts, self-awareness, behavioural choices (values concept) | 2 hours, 4 videos, 10-15 minutes | Instructor | Depression | Educational settings | 18.15 (0.46)  Both | 2 months | Multicomponent |
|  | (Stasiak et al., 2014) | Computer-Based CBT & Computerized Psychoeducation  CBT & psychoeducation | cCBT (Behavioural activation and pleasant activity scheduling, Problem solving, conflict resolution, Cognitive restructuring: identifying unhelpful thoughts, challenging unhelpful thoughts, thought stopping. Relaxation techniques) computerizedpsychoeducation i.e. CPE [Depression education and mind-body connection, Physical health (nutrition, exercise, sleep) and how to stay healthy, Friendships, conflict and anger, Time management: making schedules and routines (exam time), reaching goals (setting realistic goals and rewards)], Stress management: signs of stress, some stress can be OK but how much is too much?, Personal fulfilment (creativity, music, poetry, community involvement)] (imploding and exploding) |  | Online Modules | Depression | Online | 13-18 (mean and SD missing)  Both | 1 month | Multicomponent |
|  | (Cui et al., 2016) | Group Cognitive Behavioural Intervention having relaxation component  CBT | Weekly goal setting, relaxation techniques, homework task, psychoeducation about depression; 2) behavioural activation,  graded exposure, (identifying thoughts and feelings);  problem solving, identifying affect, identifying thoughts, cognitive restructuring, distraction, mood monitoring, assigning homework | 8 weeks, 8 sessions, 120 minutes | Senior graduate student | Depression | Educational settings | 19.42 (1.66) Both | post intervention | Multicomponent |
|  | (Felver et al., 2015) | Yoga  Not specified | Yoga (physical exercises, muscular strength, balance, coordination, and somatic awareness, breathing exercises), mindfulness practices (ability to control attention, mind-body awareness), somatic self-awareness, introducing basic physiological response of stress (i.e., the fight-or-flight response), mindful breathing, brief relaxation activity (e.g.,  5 min spent lying on back and focusing on somatic  sensations of non-activity), group discussion (e.g., dealing with stress, non-judgmental self-awareness). | 3 weeks, 15 sessions, 35 minutes each | Yoga practitioner | Depression | Educational settings | 15 (SD missing)  Both | Post intervention | Multicomponent |
|  | (Khalsa et al., 2012) | Yoga intervention  Theoretical basis not specified | Simple yoga postures, breathing exercises, visualization, and games with an emphasis on fun, relaxation (breathing exercises), mindfulness, meditation, self-awareness, non-violence, mind–body interactions and awareness, body systems, stress management, emotional intelligence, self-talk and critical voice, contentment, discipline, decision making, values and principles, commitment, and acceptance | 11 weeks, 23 -32 sessions, 30-40 minutes | Yoga instructors | Stress | Educational settings | 16.8 (0.6)  Both | immediate | Multicomponent |
|  | (de Vibe et al., 2013) | Mindfulness-Based Stress Reduction (MBSR) programme  Mindfulness | MBSR programme (physical and mental exercises, didactic teaching on mindfulness, stress management and mindful communication using a course manual and CDs for home practice, a group process to facilitate reflections) | 7 weeks, 7 sessions, duration of 1-6 sessions was 1.5 hours, while 7th session was of 6 hours, 30 minutes’ homework practice | Trained MBSR instructors | Stress | Educational setting | 23 (SD missing) both | 2 weeks | Multicomponent |
|  | (Erogul et al., 2014) | MBSR programme  Mindfulness | Mindfulness (meditation, body scan, and breathing-based yoga), psychoeducation (mindfulness, provide a cognitive curriculum about understanding stress and how best to manage reactivity) | 8 weeks, 8 sessions, 75 minutes each. | Psychotherapist | stress | Educational settings | 23.5 (SD missing) Both. | 8 weeks | Multicomponent |
|  | (Phang et al., 2015) | Mindful-Gym: mindfulness-based stress management (MBSM/Mindful- Gym) program  Mindfulness | Mindfulness (e.g. mindful breathing, mindful stretching, and body scan). | 5 weeks, 5 sessions, 120 minutes each. | Psychiatrist | stress | Educational settings | Experimental group: 21.14 (SD = 1.10), control group : 20.94 (SD = 1.17), Both | 1 week | Multicomponent |
|  | (Scholten et al., 2016) | Dojo (Game)  Theoretical basis (Not specified) | Biofeedback system, guided imagery, positive self-talk, muscle relaxation, deep breathing | 3 weeks, 6 sessions, 60-120 minutes each | Game | Anxiety | Educational settings | 11-15 9 (mean SD missing)  Both | 3 weeks | Multicomponent |
|  | (Grassi et al., 2011) | A Stress Inoculation Training-based protocol  CBT | Stress management (Imaginary exercises, emotional regulation, muscular relaxation, relaxation exercise) | 1 week, 6 sessions | Multimedia (CD, DVD, Mp3, Universal mobile telecommunication system) | Anxiety | Educational settings | 20.86 (1.27)  Females | Pre post | Multicomponent |
|  | (Dvořáková et al., 2017) | Learning to BREATHE (L2B) program  Mindfulness-based curriculum | Breathing, Stress management, mindfulness (three mindful breaths), emotional regulation, guided meditations (body scan, loving-kindness practice) | 8 weeks, 8 sessions, each session of 80 minutes | Not specified | Depression and anxiety | Others | 18.2 (0.4)  Both | 6 weeks | Multicomponent |
|  | (Vázquez et al., 2012) | Relaxation training | Breathing, meditation, PMR, Imagery, mood monitoring, Assigning homework, | 8 sessions, 90 minutes each | Clinical psychology PhD students | Depression and anxiety | Not specified | 23.3 (SD missing)  Both | 3 months | Multicomponent |
|  | (McGrady et al., 2012) | Wellness program  Mindfulness based stress reduction | Stress Management (deep breathing, progressive relaxation, guided imagery, survival thinking, mindfulness meditation, nutrition, coping, managing fatigue and anxiety and balancing life), relaxation technique (mindful breathing or imagery) | 8 sessions, 45 minutes each | Experienced practitioner (psychologist, counselor, or physician) | Depression and anxiety | Others | First year medical students (mean, SD missing)  Both | 9 months follow up | Multicomponent |
|  | (Levin et al., 2017) | Acceptance and commitment therapy  ACT with mindfulness components | Acceptance, values, mindfulness (audio guided mindfulness exercises\* mindful breathing exercise; Mindfulness of internal experiences), goal setting, ACT skills, writing. | 3 weeks, 6 sessions | Online | Depression and anxiety | Educational settings | 21.61 (5.48)  Both | After completion of sessions: 4 weeks | Multicomponent |
|  | (Blake et al., 2018) | Sleep SENSE intervention  Cognitive behavioral Therapy | Stress management, Psychoeducation,  sleep education, sleep hygiene, stimulus control, and cognitive restructuring, Motivational interviewing techniques, problem solving, identifying thoughts, sleep diaries, thought monitoring, assigning & reviewing homework, goal setting, empathy. | 7 sessions, each session of 90 minutes | Clinical psychologists or graduate clinical psychologists | Depression and anxiety | Educational settings | 14.48 (SD missing)  Both | 7 weeks | Multicomponent |
|  | (Merry et al., 2012) | Computerised CBT (SPARX)  CBT | CBT (Psychoeducation about depression, Relaxation: controlled breathing, Activity scheduling and behavioural activation, progressive muscle relaxation, Basic communication, and interpersonal skills, dealing with strong emotions, Interpersonal skills, Problem solving, Cognitive restructuring, recognizing different types of negative automatic thoughts, Mindfulness: tolerating distress) | 7 modules | CD delivered | Depression and anxiety | Online | 15.6 (SD missing)  Both | 3 months follow up | Multicomponent |
|  | (Seligman et al., 2007) | Classroom-based cognitive-behavioral workshop  CBT with relaxation | identifying automatic negative thoughts and underlying beliefs, replacing automatic negative thoughts, thought stopping, distraction, behavioural activation, problem solving, assertiveness, stress management  (relaxation training), emotional regulation | 8 weeks, 8 sessions, 120 minutes each | Trained and experienced cognitive therapists | Depression and anxiety | Educational settings | First year undergraduates (mean age, SD missing  Both | 6 months | Multicomponent |
|  | (Kenardy et al., 2003) | Online Anxiety Prevention Program  CBT with relaxation | Psychoeducation about anxiety, relaxation training,  interceptive exposure, cognitive restructuring and relapse prevention, self-monitoring, | 12 weeks 6 sessions | Online | Depression and anxiety | Both educational settings & home | 19.92 (4.78)  Both | 6 weeks: Post session | Multicomponent |
|  | (Seligman et al., 2000) | Cognitive–behavioural workshop  CBT | Identifying automatic negative thoughts and underlying beliefs; replacing automatic negative thoughts, stopping, distraction techniques); behavioural activation strategies, anti-procrastination techniques, creative problem solving, assertiveness training, interpersonal skills (active listening, taking each other’s perspectives, controlling emotions, passive vs. assertive vs. aggressive behaviours), stress management (relaxation training\*), games, emotional regulation, role play, assigning & reviewing homework, motivational interviewing, | 8 sessions, 120 minutes each | Cognitive therapist | Depression and anxiety | Educational settings | 1st year Under-graduates (mean, SD missing)  Both | 8 week | Multicomponent |
|  | (Calear et al., 2009) | MoodGYM Program  Theory: CBT | CBT (identify negative thinking patterns and change them, identify the situations or events that may precipitate negative thinking, Relaxation techniques, Teaches users about relationship breakups and how to cope with them, problem solving) | 5 weeks, 5 sessions, 20-40 minutes | Online/self-paced | Depression and anxiety | Educational settings | 14.34 (SD missing)  Both | post intervention | Multicomponent |
|  | (Chen et al., 2013) | Mindfulness meditation training  Mindfulness | Mindfulness (cognitive practice of mindfulness meditation, concentration on breathing with eyes closed, non-judgmental awareness of thoughts, feelings, and sensations with a focus on the flow of breath through the nostrils; body scan, paying attention to the breath and focusing on the dynamic sensations of the whole body, mindfulness with the help of background music) | 1 week, 7 sessions, 30 minutes | Senior psychological counsellor | Anxiety and Depression | not specified | 19.5 (0.87)  Both | post intervention | Multicomponent |
|  | (Delgado et al., 2010) | Mindfulness based stress reduction  Mindfulness | Mindfulness (guided meditation, breathing, re-cognition of the experience of the present mental state.; body scan, focus on present mental and emotional state, generating positive, feelings of acceptance; relaxation training (guided relaxation practice, muscle relaxation, relaxation training of speech and imagination) | 5 weeks, 10 sessions, 60 minutes | Not specified | Anxiety and Depression | not specified | 18-24 (mean SD missing)  Females | post intervention | Multicomponent |
|  | (Shapiro et al., 1998) | Meditation based stress reduction and relaxation  Mindfulness | Body scan, sitting meditation, hatha yoga, mindful breathing, lovingkindness and forgiveness meditation, empathy, mindful listening skills | 8 weeks, 7 sessions, 150 minutes | Not specified | Anxiety and Depression | Educational setting | Age is not specified, Both | Post intervention | Multicomponent |
|  | (Astin, 1997) | Mindfulness meditation- based stress reduction  Mindfulness and CBT based | Body scan, sitting meditation, hatha yoga | 8 weeks, 8 sessions, 120 minutes | Researcher trained in meditations | Anxiety and Depression | Both educational and residential setting | Age is not specified, Both | 6 to 9 months | Multicomponent |
|  | (Shearer et al., 2015) | Mindfulness meditation intervention  mindfulness | Mindfulness (breathing exercises, basic yoga including light stretching and  balancing exercises, short meditation sessions, and education, about the physiology of the stress response.) | 4 weeks, 4 sessions, 60 mins. | Not specified | Depression, anxiety and stress. | Educational settings | Undergraduate students, age is not specified, Both. | Post intervention | Multicomponent |
|  | (Hilyer et al., 1982) | Physical fitness program & counselling | Flexibility exercise, praise, reinforcements, movements | 20 weeks, 60 sessions, 90 minutes each. | Physical fitness trainer | Depression and anxiety | Educational setting | Experimental group: 17.01 (SD missing), control group: 16.90 (SD missing), Male. | Post intervention | Multicomponent |
|  | (Melnyk et al., 2009) | The COPE Healthy Lifestyles TEEN Program  CBT | Psychoeducation (creating a healthy lifestyle, strategies to build self-esteem, stress management, goal setting, effective communication, nutrition, and physical activity), physical activity (Frisbee, kickball, walking, and relay games), self-esteem, positive self-talk, goal setting, problem solving, stress & coping, emotional & behavioural regulation, communication skills, stretching, food groups, nutrients, influence of feeling on eating, social eating strategies, role plays | 9 weeks, 15 sessions, 50 minutes each | Research personnel | Depression & Anxiety | Educational settings | 14-16 (mean SD missing)  Both | Post intervention | Multicomponent |
|  | (Ștefan et al., 2018) | Mindfulness-Based Stress Reduction Intervention  Mindfulness-based stress reduction   and mindfulness-based cognitive therapy | Psychoeducation (mindfulness, initial meditation and body scan)  Meditation, walk, mindfulness (sound and walking, breathing with spaciousness) identifying thoughts, | 6 weeks, 6 sessions, 90-120 minutes each session | CBT trainer with experience in mindfulness meditation | Anxiety and stress | Not specified | 18.92 (1.04)  Females | 1 week | Multicomponent |
|  | (Chiauzzi et al., 2008) | Mystudentbody-stress website  CBT | Stress management (Strategies include tips on time management, developing good sleep habits, practicing relaxation skills or meditation, handling depression and anxiety, developing social support, and communicating with family members) | 4 sessions, 20 minutes each | Self-delivered | Anxiety and stress | Not specified | 18-24 (mean SD missing)  Both | 6 months | Multicomponent |
|  | (Saravanan & Kingston, 2014) | PMRT, systematic desensitization  Theoretical basis (Not specified) | Psychoeducation\*, PMR (assigning homework), systematic desensitization (exposure, relaxation technique) | 3 weeks, 5 sessions | Clinical psychologist | Anxiety and stress | Educational settings | 19 (1.04)  Both | 3 weeks | Multicomponent |
|  | (Fleming et al., 2012) | Computerized CBT, SPARX  CBT | Psychoeducation\*, problem solving, relaxation\*, social skills, cognitive restructuring, activity scheduling | 5 weeks, 7 sessions, 30 minutes each | Self/ computerized | Anxiety and stress | Educational settings | 14.9 (0.79)  Males | 5 weeks | Multicomponent |
|  | (Deckro et al., 2002) | Mind/Body Intervention  CBT and relaxation | Relaxation (Diaphragmatic breathing, Guided imagery, Progressive muscle relaxation, Brief relaxation exercises (“minis”), yoga stretches, mindfulness.),  Cognitive behavioural interventions (Identifying automatic thoughts, Challenging cognitive distortions, Affirmations, Goal setting)  Psychoeducation (Stress, stress symptoms, and coping, Mind/body connection, Physiology of stress and the relaxation response, Weekly discussion of relaxation practice) | 6 weeks, 6 sessions, 90 minutes each | Trainers | Anxiety and stress | Educational settings | 24 (SD missing)  Both | immediate | Multicomponent |
|  | (Nguyen-Feng et al., 2017) | Web-based stress management intervention  Theory: Not specified | Present control+mindfulness (psychoeducational video on mindfulness, completed mindfulness exercises such as listening to mindfulness meditation audio files that taught breath awareness and noticing emotions that arise) | 4 weeks, 3 sessions, 20 minutes each | Not specified | Anxiety and stress | Online | Age is not specified  Both | 4 weeks | Multicomponent |
|  | (Zhang et al., 2018) | Mindfulness-based Tai Chi Chuan | Breathing, meditation, Tai-chi, mindfulness (mindfulness based breathing, walking meditation), muscle relaxation, gentle stretches, chest expanding, knee movement, shape up exercise | 16-8 weeks, twice a week, 90 minutes each | Experienced Physical Exercise coaches | Depression and stress | Educational settings | 18.41 (2.01)  Both | 8 weeks | Multicomponent |
|  | (Bluth et al., 2016) | Learning to BREATHE (L2B)  Mindfulness based stress reduction | Meditation, walk, yoga, music, exercise, mindfulness  (the body scan, sitting, meditation, lovingkindness practice, walking meditation and mindful movement, mindfulness of thoughts and emotions) | 11 sessions, 50 minutes each | Experienced mindfulness practitioner | Depression, anxiety and stress | Educational settings | 16.8 (1.3)  Both | post-intervention | Multicomponent |
|  | (Flett et al., 2019) | Two Mobile mindfulness meditation applications (Headspace & Smiling Mind)  Mindfulness | Mindfulness (mindful breathing, body scan, mindful eating, sitting meditation, other guided meditations) | 4 weeks, 10 sessions, 10 minutes each | Online | Depression, anxiety, and stress | Others | 20.08 (2.8)  Not specified | 10 days | Multicomponent |
|  | (Song & Lindquist, 2015) | Mindfulness-based stress reduction (MBSR)  Mindfulness | Mindfulness (hatha yoga, sitting, eating & walking meditation, gentle stretching, breath-work, body scan, and, assigning & reviewing homework) | 8 weeks, 8 sessions, 120 minutes each | Trained instructor | Depression, anxiety, and stress | Educational settings | 19.6 (1.7)  Both | Post intervention (8 weeks) | Multicomponent |
|  | (Rentala et al., 2019) | Stress management program  Chan’s body–mind–spirit (BMS) model & psychoeducation | Psychoeducation strategies (emotional management, stress reduction techniques such as acupressure exercises, breathing techniques and meditation, connecting to spiritual and self‑healing resources),  holistic stress management program (singing activity hand swinging exercises, breathing exercises, clay therapy, meditation acupressure exercises craftwork stress sorting exercise focusing on stressful situation, their reaction, and ways of coping, therapeutic writing drawing, self-love techniques mirror exercises, progressive muscle relaxation storytelling, mindful eating) | 4 weeks, 8 session, 90-120 minutes | Psychiatrist | Depression, anxiety and stress | Educational settings | 16-19 (SD missing)  Females | 1 month | Multicomponent |
|  | (Hall et al., 2018) | Low intensity Health enhanced mindfulness intervention  Mindfulness | Mindfulness & meditation (mindful eating, sitting, and breathing), mindfulness exercises (body scan and mindful walking), home based practice | 7 weeks, 7 sessions, 90 minutes each | Facilitator head of student counselling section | Depression, anxiety, and stress | Home based | 22.30 (2.63)  Both | week 7 | Multicomponent |
|  | (Hindman et al., 2014) | Mindful Stress Management (MSM)  MBSR, mindfulness-based cognitive therapy (MBCT and ACT) | Psychoeducation (mindfulness), stress management [mindfulness (a focus on the present  moment, acceptance, reviewing progress, mindful walking, eating,  listening to music, meditation, free association task] | 6 weeks, 6 sessions, 60 minutes each | Group leaders. One co-leader (experienced clinical psychologist having mindfulness (meditation) experiences) | Depression, anxiety, and stress | Educational settings | 22.35 (SD missing)  Both | immediate | Multicomponent |
|  | (Levin et al., 2019) | Acceptance and commitment therapy & Mental Health Education Website  ACT with mindfulness component | Costs of experiential avoidance, (diffusion), (mindfulness), (acceptance of difficult emotions), (clarifying personal values), and (committed action and goal setting), breathing mindful exercise, imagery, goal setting. | 3 weeks, 2 sessions | Online | Depression, anxiety, and stress | Educational settings | 20.51 (2.73)  Both | 3 month | Multicomponent |
|  | (Ellis et al., 2011) | MoodGYM (online CBT) and Mood Garden (online social support)  CBT | Problem solving, enhancing relationship, stress management (relaxation), identifying thoughts | 3 weeks, 5 sessions, 60 minutes | Online | Depression, anxiety, and stress | Others | 19.67 (1.66)  Both | Post intervention | Multicomponent |
|  | (Gallego et al., 2015) | mindfulness training  Mindfulness Based Cognitive Therapy (MBCT) | Body scan, mindful breathing, breathing space, yoga, sitting meditation | 8 weeks, 8 sessions, 60 minutes | Therapist | Anxiety, Depression and Stress | both educational and home based | 20.07 (SD missing)  Both | Post intervention | Multicomponent |
|  | (Berger et al., 1988) | Jogging, Benson relaxation  Not specified | Jogging, Benson relaxation, group interaction | 12 weeks, 14 sessions, 45 minutes each | Not specified | Depression, Anxiety & stress | Not specified | 20 (SD missing)  Both | Post intervention | multicomponent |
|  | (Van Aubel et al., 2020) | Acceptance and Commitment Therapy in Daily-Life (ACT-DL)  Behavioural therapy | ACT+mindfulness awareness, exercise | 5 sessions, 90 minutes each | Trained therapist | Depression, Anxiety & stress | community | 21.36 (2.39)  Both | Post intervention, 6 months, 12 months | Multicomponent |
|  | (Nguyen-Feng et al., 2016) | Mindfulness | Stress reduction videos, mindfulness exercise-meditation | 4 weeks, 3 sessions, 20 minutes | Not specified | Depression and Anxiety | college | 18-21 (SD missing)  Both | Post intervention, 3 weeks | Multicomponent |
|  | (Warnecke et al., 2011) | Guided mindfulness practice | Mindfulness | 8 weeks, 30 minutes | audio compact disc  (CD) | Depression, anxiety and stress | university | 23.92 (3.2)  Both | Baseline, 8 weeks, 16 weeks | multicomponent |
|  | (Moir et al., 2016) | Peer-Support and Mindfulness Program | Mindfulness | 34 weeks,18 sessions, | peer leaders | Depression and Anxiety | university | 21 (SD missing)  Both | Post intervention, 6 months | multicomponent |
|  | (Nguyen-Feng et al., 2019) | Mindfulness | Psychoeducation, written exercise, motivational interviewing techniques, self-monitor | 4 weeks | online course management system | Depression and Anxiety | college | 21.3 (SD missing)  Both | Post intervention, and 2  follow-ups (2–3 weeks and 4 –5 weeks post intervention) | Multicomponent |
|  | (Levin et al., 2016) | Acceptance and commitment therapy & Mental Health Education Website | Defining values (e.g., values as a direction animation); clarifying personal values (e.g., card sort); reflecting on values (e.g., journaling); defining SMART and values-based goals; setting a values-based goal for the week; summary of session, Reflect on actions consistent with values (day 3 text); reflect on important value and a goal for the day (day 6 text), Reminders to work on session 1 goal and to practice reflecting on values you admire in others (day 2 e-mail) or on values engaged in that day (day 4 e-mail), Intro and definition of mindfulness; mindful breathing exercise; instructions to practice mindful breathing, Review of session 1; identifying internal barriers; problems with control strategies (e.g., passengers on the bus animation); defining willingness (e.g., and vs. but exercise); practicing willingness (e.g., breath holding exercise); setting a willingness goal for the week; summary of session, Prompts to practice willingness, Reminders to work on session 2 goal and to practice the NAME acceptance technique (day 2 e-mail) or future ways to practice ACT skills, Mindfulness of internal experiences, labelling mindfulness exercise, resources for practicing other exercises | 3 weeks | online | Depression and Anxiety | university | 20.51(2.73)  Both | Post intervention | Multicomponent |
|  | (Hazlett-Stevens & Oren, 2017) | Self-help bibliotherapy format of the evidence-based mindfulness-based stress reduction (MBSR) intervention | Intervention was basically a book on Mindfulness-Based Stress Reduction. It was comprised of 10 chapters. It was comprised of formal and informal mindfulness practices, and mp3 recordings of guided practice instructions included with the workbook. Participants were required to do reflection exercises as well | 10 sessions,10 weeks | Self help | Depression and Anxiety | college | 22.1 (4.7)  Both | Post intervention | Multicomponent |

**Abbreviations:** ACT, Acceptance and Commitment Therapy; CBT, Cognitive Behavioral Therapy; MBSR, Mindfulness-Based Stress Reduction; PMR, progressive Muscle Relaxation

# *Table 7: Certainty of outcomes pertaining to anxiety, depression and distress using GRADE framework*

| **Certainty assessment** | | | | | | | **№ of patients** | | **Effect** | | **Certainty** | **Importance** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **№ of studies** | **Study design** | **Risk of bias** | **Inconsistency** | **Indirectness** | **Imprecision** | **Other considerations** | **relaxation training** | **treatment as usual** | **Relative (95% CI)** | **Absolute (95% CI)** |
| **Anxiety (assessed with: Psychometric scales)** | | | | | | | | | | | | |
| 46 | Randomized trials | serious a | serious b | not serious | not serious | publication bias strongly suspected c | 2486 | 2759 | - | SMD **0.39 SD lower** (0.52 lower to 0.25 lower) | ⨁◯◯◯ VERY LOW | CRITICAL |
| **Depression (assessed with: Psychometric scales)** | | | | | | | | | | | | |
| 50 | Randomized trials | serious d | serious e | not serious | not serious | none | 2719 | 3013 | - | SMD **0.28 SD lower** (0.4 lower to 0.15 lower) | ⨁⨁◯◯ LOW | CRITICAL |
| **Distress (assessed with: Psychometric instruments)** | | | | | | | | | | | | |
| 23  **CI:** Confidence interval; **SMD:** Standardized mean difference Explanations a. A total of 40 out of 46 studies were rated as having a high risk of bias overall, with >= matrices rated as high risk on Cochrane tool for risk of bias assessment in RCTs. Subgroup analyses using mixed effects revealed high risk studies yielding higher effect sizes than studies at low risk of bias. However, this subgroup difference was statistically non-significant.  b. The reporting of this outcome was substantially heterogeneous with an I squared of 79%, this was explained by clinically heterogeneous population and interventions.  c. Egger's regression test revealed significant publication bias (P=0.02)  d. A total of 40 out of 50 studies were rated as having a high risk of bias overall, with >= matrices rated as high risk on Cochrane tool for risk of bias assessment in RCTs. Subgroup analyses using mixed effects revealed high risk studies yielding higher effect sizes than studies at low risk of bias. However, this subgroup difference was statistically non-significant.  e. The reporting of this outcome was substantially heterogeneous with an I squared of 73%, this was explained by clinically heterogeneous population and interventions.  f. 19 out 23 studies were rated as having high risk of bias, with studies with low risk of bias yielding lower effect sizes.  g. The reporting of this outcome was substantially heterogeneous with an I squared of 85%, this was explained by clinically heterogeneous population and interventions. | Randomized trials | serious f | serious g | not serious | not serious | none | 1122 | 1124 | - | SMD **0.48 SD lower** (0.71 lower to 0.24 lower) | ⨁⨁◯◯ LOW | CRITICAL |

# *Table 8: List of outcome measures used in studies*

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| --- |
| **Depression**   * + Beck depression inventory (BDI-II)   + Centre for Epidemiologic Studies Depression Scale (CES-D)   + The Profile of Mood States (POMS)   + Reynolds’ Adolescent Depression Scale (RADS)   + Patient Health Questionnaire 9 (PHQ-9)   + Child Depression Rating Scale Revised (CDACR)   + Montgomery Åsberg Depression Rating Scale (MADRS)   + Self-Rating Depression Scale (SDS)   + Inventory of Depressive Symptomatology, Self-Report (IDS-SR)   + Zung Self-Rating Depression Scale (SDS)   + Kessler 10 depression scale (K10)   + Brunel University Mood Scale (BRUMS) |
| **Depression/anxiety**   * + Depression, Anxiety and Stress Scale (DASS) |
| **Anxiety**   * + The Spielberger State-Trait Anxiety Inventory (STAI)   + Zung Self-Rating Anxiety Scale (SAS)   + Beck anxiety inventory (BAI)   + State Trait anxiety (STAI)   + The Anxiety Sensitivity Index   + Spence Children’s Anxiety Scale (SCAS)   + Hospital Anxiety and Depression Scale–Anxiety Subscale (HADS-A)   + Revised Children’s Manifest Anxiety Scale (RCMAS) |
| **Distress**   * + Perceived Stress Scale   + Kessler perceived distress scale   + Generalized Anxiety Disorders (GAD) scale   + The Chinese version of the Perceived Stress Scale (CPSS)   + Educational Stress Scale for Adolescents |

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