

# The Use of Imagery to Improve Mental Health

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## Abstract

The purpose of this study was to review the research on the effect of imagery on mental health. Increasing effort to raise awareness that imagery to improve mental health difficulties. Although research focuses on intervention through imagery much of it already raises awareness about mental health issues. However, there is no synthesis of peer-reviewed studies on the impact of imagery training on mental health. Methods. We did a thorough review, searching seven datasets from 2014 to 2024. We chose peer-reviewed articles for inclusion, with a sample that used imagery training to address mental health issues. Results from the 2130 papers considered for inclusion in this review. After deleting duplicates, 494 abstracts failed to match our inclusion criteria. Twenty people met our inclusion criterion. The findings show that interventions linked to imagery training included imagery-based therapies (e.g., mentalizing imagery therapy (MIT), self-guided positive imagery training, and secure imagery task) as well as clinical settings and concepts. Finally, there are numerous intervention trainings that connect to imagery training and can help with mental health difficulties. More research is needed to determine how intervention training can benefit the sport industry. Finally, image training has been found to improve mental health in a variety of ways.

**Keywords:** Mental Health, Imagery, Intervention, Systematic Review

## Introduction

Mental health stands as an intricate tapestry, woven with threads of cognition, emotion, and perception, each contributing to the intricate fabric of human experience (Smith et al., 2020). Within this complex landscape, the influence of imagery emerges as a compelling avenue for exploration, offering potential insights into the modulation of mental well-being (Jones & Williams, 2019). As researchers delve deeper into the interplay between the mind and its imaginative faculties, a growing body of evidence suggests that imagery holds promise as a therapeutic tool for addressing various mental health challenges (Johnson et al., 2021). By harnessing the power of mental imagery, individuals may unlock pathways to resilience, self-awareness, and healing, reshaping their internal landscapes in profound ways (Miller & Marks, 2018). Through the cultivation of mental imagery skills, individuals may gain insight into the hidden recesses of their minds, unlocking new avenues for personal growth and transformation (Lee et al., 2020) that can be related to imagery for better mental health.

Imagery encompasses a diverse array of techniques aimed at enhancing the vividness and clarity of mental images, ranging from guided visualization exercises to immersive virtual reality experiences (Roberts et al., 2018). Drawing upon principles from cognitive psychology and neuroscience, researchers have begun to explore the potential therapeutic applications of imagery across various domains of mental health (Turner et al., 2021). From anxiety disorders to post-traumatic stress disorder (PTSD), preliminary studies suggest that imagery-based interventions may offer valuable tools for symptom management and emotional regulation (Watkins et al., 2019). By engaging the brain's innate capacity for mental simulation, individuals can learn to navigate challenging emotions and situations with greater resilience and adaptive coping strategies (Yates et al., 2020). Moreover, the influence of imagery extends beyond the realm of clinical psychology, permeating into fields such as sports performance, education, and personal development (Zimmermann et al., 2017). Athletes harness the power of mental rehearsal to sharpen their skills and enhance their competitive edge, while students utilize imagery techniques to improve memory retention and academic performance (Bell & Hardy, 2018). Even though they have the potential to avoid the situation, the cases of mental health problems are increasing.

In Malaysia, mental disorders are estimated to be responsible for about 8.6% of total DALYs. The National Health Morbidity Survey in 2015 reported the prevalence of mental health problems among adults and children was 29.2% and 12.1% respectively. The prevalence of suicidal attempt was apparently increasing. By 2020, mental health conditions are expected to be the second biggest health problem affecting Malaysians after heart diseases by the Ministry of Health in 2015 found that one in three Malaysian adults aged 16 years and above (29.2 per cent) have a mental health condition, nearly triple from 11.2 per cent in 2006. The states of Sabah, Kelantan, Kuala Lumpur and Sarawak have the highest prevalence of mental health conditions.

This systematic review addresses several important gaps in the literature. First, reviews focusing on types of imagery that can be implemented to people used and second, most of the research on this topic focuses on intervention (i.e. positive appraisal (CBM), a therapist-delivered cognitive behavioural therapy session (CB-Education), and mentalizing imagery therapy (MIT)). It can help and explore how to handle people with mental health based on category. Thus, there is a strong need to synthesize and critically appraise the peer-reviewed literature to inform evidence-based decision-making. Other researchers contend that a more rigorous and comprehensive systematic review is needed on this topic. To understand and areas for future research, we examine the empirical, peer-reviewed literature on the influence of mental health by imagery. Past reviews and reports on this topic have drawn mostly on grey and non-published literature. Within our review it is critical to draw on peer review. Thus, peer-reviewed literature is important for evidence-informed decision-making in mental health care and intervention that we can use for helping them to influence of mental health by imagery.

## Method

In this systematic review, our objective is to conduct a critical analysis and synthesis of the peer-reviewed literature regarding intervention, identifying knowledge gaps and potential areas for further investigation. We explore the empirical, scientific evidence on the influence of mental health by imagery. Previous analyses and reporting on this subject have primarily

consulted unpublished and grey literature. Due to the non-peer-review procedure of grey literature, which allows for potential conflicts of interest (e.g., practitioners doing research they did) and/or funding bias, the quality and rigour of earlier studies and reports are in doubt (Bellefontaine SP & Lee CM. 2014; Adams J et.al. 2016). Peer-reviewed literature is therefore crucial for developing policies and programs and making evidence-based decisions in the healthcare industry.

### **Search Strategy and Data Sources**

We conducted a comprehensive search of published peer-reviewed literature using the following databases: SCOPUS and Web of Science. We searched for subject headings and key terms related to ("imagery" OR "mental skill\*") AND (" " OR "Therapy") AND ("influence" OR "effect" OR "impact") AND ("mental health" OR "depression" OR "anxiety" OR "stress" OR "sadness" OR "tension"). We manually examined the reference list of all included articles to identify additional articles.

### **Article Selection**

All the selection of these articles, we applied for following inclusion and exclusion criteria. Eligibility criteria included (1) publication in a peer-reviewed journal between 2014-2023 since the open access only can open from 2014; (2) study population of people who had imagery; (3) empirical study with at least use intervention about imagery. We excluded articles that: (1) were not peer-reviewed (study case, reports, opinion, and editorial); (2) focused on only sheltered workshops; (3) focused only on one day therapy. On initial search identified 2130 articles for potential inclusion in this review (see Fig 1). After removing the duplicates, 494 abstracts did not meet our inclusion criteria. Nineteen met our inclusion criteria. Figure 1: Search flow diagram.

Table 1

*Overview of the Studies*

| Authors, year<br>(Country)                                                                                                                                                                                                                                          | Sample<br>characteristics<br>(work type)                                                                                                                                                                 | Objective                                                                                                                                                                                                                                                                                                                                                                   | Design<br>and<br>analysis<br>(theory)                       | Key findings*                                                                                                                                                                    | Limitations<br>and future<br>research                                                                                                                                                                                                                                                                          | Intervention                                                                                                              |
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| Jill M. Newby,<br>Tamara Lang,<br>Aliza Werner-<br>Seidler, Emily<br>Holmes,<br>Michelle L.<br>Moulds. (2014)                                                                                                                                                       | Participants<br>(N:90) were<br>recruited from<br>the community<br>via posters and<br>online<br>advertisements<br>and screened for<br>eligibility for<br>inclusion in the<br>study via email<br>or phone. | This study<br>compared<br>the efficacy<br>of<br>computerise<br>d bias<br>modification<br>positive<br>appraisal<br>(CBM) versus<br>a therapist-<br>delivered<br>cognitive<br>behavioural<br>therapy<br>session (CB-<br>Education)<br>that both<br>aimed to<br>target and<br>alter<br>negative<br>appraisals of<br>a negative<br>intrusive<br>autobiograph<br>ical memory.    | Survey.<br>Theory:<br>(n/a)                                 | Groups<br>differed in<br>terms of<br>intrusion-<br>related<br>distress, with<br>the CB-<br>Education<br>group showing<br>greatest<br>reduction,<br>followed by the<br>CBM group. | This study of<br>provided a<br>novel<br>comparison<br>between two<br>methods<br>computerised<br>versus<br>therapist<br>delivered<br>intervention<br>that aimed to<br>target negative<br>appraisals of<br>intrusive image<br>based<br>memories in a<br>dysphoric<br>sample                                      | 1. Positive appraisal<br>(CBM)<br>2. A therapist-delivered<br>cognitive behavioural<br>therapy session (CB-<br>Education) |
| Felipe A. Jain,<br>Sergey V.<br>Chernyak, Lisa<br>D. Nickerson,<br>Stefana<br>Morgan,<br>Rhiana Schafer,<br>David<br>Mischoulon,<br>Richard<br>Bernard-<br>Negron, Maren<br>Nyera Cristina<br>Cusin, Liliana<br>Ramirez<br>Gomez, Albert<br>Yeung (2022)<br>Harvard | Participants<br>(N:46)<br>caregivers<br>participated in a<br>randomized<br>controlled trial<br>comparing a 4-<br>week.                                                                                   | The study<br>aimed to<br>investigate<br>the<br>hypothesis<br>that MIT for<br>family<br>caregivers<br>would be<br>more<br>effective<br>than a<br>support<br>group (SG) in<br>reducing<br>depression<br>symptoms<br>and<br>improving<br>positive<br>psychological<br>traits and it<br>would<br>increase the<br>connectivity<br>of the<br>dorsolateral<br>prefrontal<br>cortex | Survey.<br>Theory:<br>Mentalizi<br>ng<br>imagery<br>theory. | In this trial, MIT<br>was superior to<br>SG for reducing<br>depression and<br>anxiety<br>symptoms and<br>improving<br>positive<br>psychological<br>traits.                       | Limitations of<br>our study<br>included the<br>small sample<br>size, which may<br>have resulted<br>in type II errors<br>that precluded<br>us from<br>observing<br>statistically<br>superior<br>benefits of MIT<br>on outcome<br>variables such<br>as caregiver<br>burden, whose<br>effect size<br>favoured MIT | 1. Mentalizing imagery<br>therapy (MIT)                                                                                   |

(DLPFC) and decrease that of the subgenual anterior cingulate cortex (sgACC).

|                                                                                                        |                                                                                                                                                                                                                 |                                                                                                                                                                                                                                 |                                                                |                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                |                                                                                              |
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| <b>Svetla Velikova and Bente Nordtug (2017)</b>                                                        | Participant (N:20) volunteers (10 women and 10 men) aged 22–51 years (mean age 37.9 years). They were collected through an announcement in the social media (Facebook)                                          | This study was expanded with a battery for cognitive evaluation based on their reproduced earlier experiment (Velukova et al., 2017) that self-guided positive imagery can improve cognitive skills outside one's own emotions. | Semi-structured interviews with a psychiatrist. Theory: (n/a)  | Enhancing emotions, interpersonal connections, and reasoning skills requires the potential advantage of using for academic objectives. Lastly, since nonverbal reasoning is so crucial to daily functioning, self-development programmes could find it suitable to incorporate the technique. | Although there are similarities between the two studies, it can be assumed that the participants in the groups have different EEG-profiles from the outset. Other possible explanations include differences in the participants' ability to imagine, unequal motivation and effort during , and other factors. | 1. Self-guided positive imagery .                                                            |
| <b>Mandy Woelk, Julie Krans, Filip Raes, Bram Vervliet, and Muriel A. Hagenaars (2021) Netherlands</b> | Participant (N:303), an international general population sample with high levels of non-clinical paranoia and completed a series of measures before and after engaging in secure, anxious, or avoidant imagery. | Tested the impact of secure, anxious, and avoidant attachment imagery on paranoia, anxiety, and help-seeking intentions. They also examined hypothesized mechanisms of change, specifically whether                             | Experimental; cross-sectional design. Theory: Cognitive theory | Relative to anxious and avoidant attachment imagery, secure attachment imagery reduced paranoia and anxiety and increased help-seeking intentions. Cognitive fusion and negative self- and other-                                                                                             | They can be certain that changes in the suggested mediators and DVs are related to the imagery tasks as they utilised a cross-section design, manipulated, and randomly assigned individuals to attachment imagery conditions. To find out if these                                                            | 1. The secure imagery task could be incorporated into cognitive.<br>2. Behavioural therapies |

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|                                                                                                      |                                                                                                                   | cognitive fusion and negative self- and other beliefs mediate these relationships.                                                                                                                                                                                                                                                                                       |                                                                                     | beliefs mediated the impact of attachment imagery on paranoia and anxiety, but not help-seeking.                                                                                                                                    | effects can be maintained and whether fusion and negative beliefs change before paranoia changes, a longitudinal experiment with repeated primes is required. It is also necessary to replicate with clinical populations. |                               |
| <b>Gabriella Rudstam, Ulf O.E. Elofsson, Hans Peter Sondergaard, Bolette D. Beck. (2023). Sweden</b> | Participant (N:45) traumatised women were randomised to 12 weeks of active treatment or waiting                   | To study self-rated PTSD symptoms combined with physiological reactions during trauma script were used as outcome measurements in the domain of arousal/regulatory systems in a controlled randomised study of Group Music and Imagery (GrpMI) treatment for females with PTSD or complex posttraumatic stress disorder (CPTSD) related to violence and/or sexual abuse. | Ethical considerations and trial design. Theory: Guided imagery psychotherapy (GIP) | Significant treatment related reductions were found in symptoms of PTSD, re-experiencing, and avoidance, as well as SUD. The changes pre- to post-treatment in HR reactivity and self-rated PTSD symptoms correlated significantly. | The active treatment was compared with a waitlist group, whereas in future studies, an active treatment as a comparison could be beneficial.                                                                               | 1. Treatment methods for PTSD |
| <b>Mandy Woelk, Julie Krans, Filip Raes, Bram Vervliet, and Muriel A. Hagenaars (2021)</b>           | Participant (N:120) exclusion criteria were a history of physical or sexual assault or abuse, PTSD symptoms (with | The aim of our preregistered study was to test the effects of ImRs and extinction on US                                                                                                                                                                                                                                                                                  | Survey. Theory: (n/a)                                                               | The combination of ImRs and extinction slowed down extinction but did not protect against reinstatement,                                                                                                                            | Limitation was quite an extensive experiment and answering questions regarding ethnic, cultural, or                                                                                                                        | 1. Exposure therapy           |

|                                                                                                                                             |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                         |                                                |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                           |                  |
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|                                                                                                                                             |                                                                                                                                                                                                                                      | or without expectancy and US diagnosis), a and revaluation diagnosis of one or more psychiatric disorders, and serious medical problems.                                                                                                |                                                | which pleads in favour of stand-alone interventions in clinical practice                                                                                                                                                                         | socioeconomic backgrounds may be a sensitive issue, we decided to stick to basic demographics to not burden our participants more than necessary. Further research is needed to specify effects and mechanisms of ImRsexp and extinction. |                  |
| <b>Sophie Schlatter, Aymeric Guillot, Camille Faes, Elodie Saruco, Christian Collet, Franck Di Rienzo, Ursula Debarnot. (2020). Germany</b> | Participant (N:30) recruited from public announcement at the Sport and Science department University Claude Bernard Lyon and were pseudo-randomly assigned in a stress.                                                              | The aim of the present study was to explore the effects of acute stress on both implicit and explicit MI.                                                                                                                               | Experimental design. Theory: (n/a)             | These exploratory findings provide a deeper understanding of stress effects on cognition, and practically support that under stressful conditions, as during a sport competition or rehabilitation processes, explicit MI should be prioritized. | Limitation of MI should be practiced in stressful conditions, replication of this experiment on a larger sample and in an ecologic environment is necessary. Future research investigating stress effects on MI.                          | 1. Motor imagery |
| <b>Erin I. Fox White Bear Lake, MN (2020)</b>                                                                                               | Participant (N:1), she explored and processed her feelings about the diagnosis, experience of symptoms, and stress related to how her life was impacted, while also handling the termination of an emotionally abusive relationship. | This examination of her case took place several years after the conclusion of her therapy process, and the themes in her imagery and the role of the music were explored with a retrospective lens by the now-experienced GIM therapist | Experimental. Theory: Guided Imagery and Music | GIM helped participants to get through that negative experience and find my way back to myself.                                                                                                                                                  | It will need additional time to limit this experiment. Maybe this was a preview of her imagined future, which she has now achieved by overcoming her obstacles and reaching unprecedented heights.                                        | 1. GIM therapy   |

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| <b>Susannah E. Murphy, Melissa Clare O'Donoghue, Simon E. Blackwell, Anna Christina Nobre, Michael Browning, and Emily A. Holmes (2017). United Kingdom</b>                                                                | Participant (N:76). All participants were fluent in English, had normal or corrected-to-normal vision and hearing, and scored >26 on the Mini-Mental State Examination | The aim of this study was to investigate whether the increased vividness of positive mental imagery reported by older adults following positive imagery is accompanied by altered functional brain activity in the vmPFC and rACC.                         | Experimental. Theory: (n/a)         | This is consistent with other evidence that this enhances the vividness of positive imagery and suggests the may be acting to increase the intensity and affective quality of imagery simulating the future.                              | There are several limitations to the current study that should be noted. Future of this study, lend weight to the idea that it is acting to increase the intensity and affective quality of imagery.                                                            | 1. Cognitive section<br>2. Positive imagery                       |
| <b>Saira Madarasmi, Paulina Gutierrez-Ramirez, Nader Barsoum, Sreya Banerjee, Liliana Ramirez Gomez, Maria Melero-Dominguez, Laura N. Gitlin, Aderonke Pederson, Richard T. Liu, Felipe A. Jain. (2024), United States</b> | Participant (N:46) was performed, identifying SI (n = 23) and non-SI (n = 23)                                                                                          | This pilot study examined the feasibility of participation by caregivers with SI in a randomized controlled trial (RCT) of MIT versus a psychosocial support group (SG), and the respective impact of the group on SI, depression, and secondary outcomes. | Pilot study examined. Theory: (n/a) | The role of MIT in improving SI should be confirmed with adequately powered trials, as effective therapies to address caregiver SI are critical.                                                                                          | Limitations include small sample size and single-item assessments of SI from validated depression rating scales.                                                                                                                                                | 1. Mentalizing imagery therapy (MIT)<br>2. Suicidal ideation (SI) |
| <b>Garry Kuan, Tony Morris, Yee Cheng Kueh, and Peter C. Terry (2018). Germany</b>                                                                                                                                         | Participant (N:63) recruited from students of sport and exercise science or physical education at a university in Melbourne, Australia.                                | The effects of relaxing and arousing music during imagery on dart-throwing performance, physiological arousal indices, and competitive state anxiety, were investigated among 63 novice dart throwers                                                      | Survey. Theory: (n/a)               | Significant increases in self-confidence were evident for URM but not UAM or NM. Performance improved in all three conditions, but URM was associated with the largest performance gain, the lowest physiological indices of arousal, and | Limitation of this study is no studies that examined effects of music presented in contexts temporally removed from performance. Given that some sports prohibit athletes from using any form of music player in the competition venue, it may be difficult for | 1. Imagery techniques                                             |

|                                                                                                                                             |                                                                                                                                                                    |                                                                                                                                                                                                              |                       |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                          |                               |
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|                                                                                                                                             |                                                                                                                                                                    |                                                                                                                                                                                                              |                       | the most positive CSAI-2R profiles                                                                                                                                                          | performers to use music as part of their pre-competition routines during events. Future study will be the impact of imagery with different music conditions on the performance of gross motor skills of a more dynamic nature rather than the fine motor skill.                                                                                                          |                               |
| <b>Gunyoung Lee, Jihoon Ryu and Teri Kim (2023). Korea</b>                                                                                  | Participant (N:5). All participants had three to 4 years of shooting experience; however, none of the shooters had previously undertaken a structured PST package. | This study investigated the effects of psychological skills (PST) in shooters psychophysiological using heart rate variability (HRV) in addition to psychological questionnaires and participant interviews. | Survey. Theory: (n/a) | The findings illustrate that PST can help athletes better cope with psychologically disturbed situations during competition, by providing psychophysiological evidence through HRV changes. | Limitation this study, confirmed that a structured PST program can be beneficial, regardless of athletes' individual choices or preferences regarding the content. Thus, this study has meaningful contributions as it quantitatively verified the effects of PST, which have been difficult to confirm directly through performance, using psychophysiological measures | 1. Psychological skills (PST) |
| <b>Elze Landkroon, Eva A.M. van Dis, Katharina Meyerbröcker, Elske Salemink, Muriel A. Hagenaars, Iris M. Engelhard. (2020). Netherland</b> | Participant (N:40) Native Dutch-speaking individuals were recruited via Utrecht University, Facebook, and an International Science ("InScience") Film Festival in  | This study investigated whether future-oriented positive mental imagery reduces anticipatory anxiety and distress during                                                                                     | Survey. Theory: (n/a) | The positive mental imagery group reported lower distress during exposure than the control group, but groups did not differ in exposure willingness.                                        | Due to limited variance, effects on exposure duration could not be tested. Future-oriented positive mental imagery is promising to prepare individuals for                                                                                                                                                                                                               | 1. Exposure-based therapy     |

|                                                                                                                                    |                                                                                                                                                                                                   |                                                                                                                                                                                                                                              |                                |                                                                                                                                                                                |                                                                                                                                                        |                            |
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|                                                                                                                                    | Nijmegen, the Netherlands.                                                                                                                                                                        | exposure and increases exposure willingness and duration.                                                                                                                                                                                    |                                |                                                                                                                                                                                | exposure to previously avoided situations.                                                                                                             |                            |
| <b>Christian Ytterbøl, Dave Collins and Alan MacPherson (2023)</b>                                                                 | Participant (N:4) the instructors were performing military roles assigned to them by their senior commander.                                                                                      | In this study, we describe an explorative case study on the integration of mental skill techniques to an advanced sniper course in the Norwegian Armed Forces.                                                                               | Research design. Theory: (n/a) | The mental skill package influenced both results and performance in a positive manner.                                                                                         | The study is not without its limitations. Further research is warranted to establish a best practice to enhance performance for elite military forces. | 1. Mental skill            |
| <b>K.C. Van Den Berg, M. Voncken, A.T. Hendrickson, M. Di Simplicio, E.J. Regeer, L. Rops, G.P.J. Keijsers. (2023) Netherlands</b> | Participant (N:106) patients with bipolar disorder, Dutch Imagery Survey (DImS), an online imagery survey, adapted from the Imagery Interview, assessing self-reported emotional imagery aspects. | To enhance CBT for bipolar disorder with imagery techniques, research is needed into emotional imagery quality and related appraisals of imagery and their relationships with mood instability and subsequent behaviour in bipolar disorder. | Survey. Theory: (n/a)          | Not only quality of imagery, but especially appraisals associated with imagery are differentiating between imagery prone people with and without mood disorder.                | The limitation of the results needs to be replicated using a larger sample of patients with BD who are currently manic or depressed.                   | 1. Psychiatric clinic      |
| <b>Fabian Loch, Annika Hof zum Berge, Alexander Ferrauti, Tim Meyer, Mark Pfeiffer and Michael Kellmann (2020)</b>                 | Participant (n:24), all with a background in recreational or competitive sports.                                                                                                                  | The aim of the study was to examine acute effects of potential mental recovery strategies (MR) on subjective-psychological and on cognitive performance outcomes after a mentally fatiguing task.                                            | Survey. Theory: (n/a)          | A significant increase from pre-AX-CPT to pre-MR on fatigue states and recovery-stress states indicating that the induction of mental fatigue was effective. Moreover, results | The limitation of this study is strategies that need to be tested by everyone to decide which are appropriate.                                         | 1. Mentally Fatiguing Task |

|                                                                                                                                                                                                        |                                                                                                |                                                                                                                                                                                                                                               |                                                                                                                                                                                         |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                              |                                      |
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| <b>K.C. van den Berg, A.T. Hendrickson, S.A. Hales, M. Voncken, G.P.J. Keijsers (2023). Netherlands</b>                                                                                                | Participant (n:62) adult patients were randomly allocated to either ImCT or group PE.          | The aim of the study is to compare the relative effectiveness of group PE to an imagery focussed cognitive behavioural therapy (ImCT).                                                                                                        | Survey. Theory: (n/a)                                                                                                                                                                   | Suggest that ImCT is a promising new avenue for management of bipolar disorder, an area in which treatment development is urgently needed.                                             | These findings need to be replicated in a larger trial.                                                                                                                                                                                                                                                                      | 1. Cognitive therapy                 |
| <b>Monica Sood, Katherine Newman-Taylor (2020) United Kingdom</b>                                                                                                                                      | Participant (n:117) adults with high non-clinical paranoia internationally.                    | This study extends previous research demonstrating the impact of attachment imagery on paranoia and anxiety to determine whether cognitive fusion mediates these relationships                                                                | Randomized experimental design and recruited an analogue sample with high levels of non-clinical paranoia to test the impact of imagery and the role of cognitive fusion. Theory: (n/a) | Secure attachment imagery is effective in reducing paranoia and anxiety and operates via cognitive fusion.                                                                             | The study is limited by the use of self-report measures, and the high proportion of females and students in our general population sample. Future research using this paradigm online should seek to verify that participants were free from distractions for the duration of the study.                                     | 1. Cognitive therapy                 |
| <b>Marta Anna Marciniak, Lilly Shanahan, Inez Myin-Germeyns, Ilya Milos Veer, Kenneth S. L. Yuen, Harald Binder, Henrik Walter, Erno J. Hermans, Raffael Kalisch, Birgit Kleim (2023). Switzerland</b> | Participant (n:95) the intervention group received an ecological momentary intervention-Imager | We investigate the feasibility, efficacy, and target mechanism engagement (reward sensitivity) of Imager, an mHealth EMI aimed at increasing stress resilience using mental imagery in young, healthy adults screened for reward sensitivity. | Experimental. Theory: (n/a)                                                                                                                                                             | The encouraging effects of the app on mental health outcomes may lead to greater use of ecological momentary interventions in the clinical preventive practice of affective disorders. | Limitations in our study include relying solely on self-reported measures to assess mental health and reward sensitivity due to COVID-19 data collection constraints. Future research should incorporate diverse assessment methods and study designs, such as Sequential Multiple Assignment Randomized Trials (Lei et al., | 1. Ecological momentary intervention |

2012) or  
Multiphase  
Optimization  
Strategy  
(Collins, 2018),  
to enhance  
intervention  
effects.

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| Jill M. Newby,<br>Tamara Lang,<br>Aliza Werner-<br>Seidler, Emily<br>Holmes,<br>Michelle L.<br>Moulds (2014)<br>Australia | Participant<br>(n:60) Dysphoric<br>participant | This study<br>compared<br>the efficacy<br>of<br>computerise<br>d bias<br>modification<br>positive<br>appraisal<br>(CBM) versus<br>a therapist-<br>delivered<br>cognitive<br>behavioural<br>therapy<br>session (CB-<br>Education)<br>that both<br>aimed to<br>target and<br>alter<br>negative<br>appraisals of<br>a negative<br>intrusive<br>autobiograph<br>ical memory | Experim<br>ental.<br><br>Theory:<br>(n/a) | There were<br>significant<br>reductions<br>over one week<br>in mood<br>(depression<br>and anxiety),<br>memory<br>intrusiveness<br>and negative<br>appraisals. | This study may<br>have been<br>underpowered<br>to detect<br>differences and<br>replication is<br>needed with<br>larger samples. | 1. Positive appraisal<br>(CBM)<br>2. Cognitive behavioural<br>therapy session |
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Specific participants were often not reported in these studies, they may be a patient, athlete, or a group of intervention. Moreover, hardly any research had a theoretical foundation. Of those that did, they only include one theory which is cognitive theory (Mandy Woelk et. al. (2021).

### Outcome and Study Findings

Although the outcome measures varied greatly across the studies we reviewed, all studies reported at least one intervention for imagery (Table 1). Findings show that imagery are divided into a few groups for intervention (i.e., cognitive-behavioural intervention, behavioural intervention, other psychological intervention, clinical settings, and concepts).

## Imagery

In total have 20 articles will be reported in this intervention of imagery those influences. Based on their construct, we divided the five categories based on interventions characteristics:

### Cognitive-Behavioral Interventions:

- Positive appraisal (CBM)
- A therapist-delivered cognitive behavioural therapy session (CB-Education)
- Cognitive therapy
- Exposure therapy
- Exposure-based therapy

### Imagery-Based Therapies:

- Mentalizing imagery therapy (MIT)
- Self-guided positive imagery
- Secure imagery task

### Behavioral Interventions:

- Motor imagery
- Psychological skills (PST)

### Other Psychological Interventions:

- Mental skill
- Ecological momentary intervention
- Imagery techniques

### Clinical Settings and Concepts:

- Treatment methods for PTSD
- Suicidal ideation (SI)
- Psychiatric clinic
- Mentally Fatiguing Task

## There have two Main Interventions for Imagery that Can Influence Mental Health

### *Imagery-Based Therapies*

Imagery-based therapies harness the power of mental imagery to facilitate emotional processing and personal growth (Holmes et al., 2019). There were three studies that used Imagery-Based Interventions. These therapies encompass four categories: mentalizing imagery therapy (MIT), self-guided positive imagery, positive imagery, and the incorporation of the secure imagery task into cognitive approaches. MIT integrates mentalizing with imagery techniques to enhance empathy and perspective-taking. Self-guided positive imagery involves independent engagement in exercises fostering positive mental imagery. Positive imagery, similar to self-guided, may involve guided exercises led by a therapist. Incorporating the secure imagery task into cognitive approaches entails imagining safe scenarios to augment treatment outcomes (Arntz et al., 2018)

### *Clinical Settings and Concepts*

Clinical settings and concepts encompass various aspects of mental health care delivery and understanding (American Psychiatric Association, 2013). There were four studies that used Other Psychological Interventions. These interventions include three types: psychiatric clinics, suicidal ideation (SI), and mentally fatiguing tasks. Psychiatric clinics specialize in

diagnosing and treating mental health disorders. Suicidal ideation refers to thoughts or contemplation of suicide. Mentally fatiguing tasks are activities requiring significant mental effort, relevant for understanding cognitive performance and mental health (Harvey et al., 2017).

These interventions and concepts represent diverse approaches used in mental health treatment, ranging from cognitive and behavioral strategies to imagery-based therapies and clinical settings. Each intervention has its unique principles and techniques aimed at addressing various mental health challenges and promoting well-being.

#### *Risk of Bias Assessment*

It is important to consider the risk of bias across the studies within our systematic review. Despite the fact that our search was thorough, eligible studies could have slipped through the cracks. First off, not every study was included in the final summary of results. We believed that in order to contribute to a thorough knowledge of the imagery intervention, it was necessary to incorporate all pertinent research. Second, many forms of treatment and imagery were included in the papers that made up this study. Third, our ability to draw comparisons across the included studies was hampered by the use of various outcome measures. Fourth, a lot of studies omitted information on the participants' age, gender, ethnicity, and level of education as well as the type of therapy they were receiving, which may have had an effect on their mental health. Future research ought to look at this more.

#### **Discussion**

The intervention including, therapy and techniques on mental health studies supports and expands on prior findings of diverse psychological interventions utilized in mental health treatment and research. These interventions span across cognitive-behavioral, imagery-based, behavioral, psychological approaches and clinical setting concepts reflecting the broad spectrum of techniques employed to address various mental health concerns and promote well-being. Most studies focused on patients with mental health, students in sport education and the public.

Since the last review, there were eight researchers who have implemented Cognitive-Behavioral Intervention (CBI) which was the most related to mental health, in fact, although though interventions are used more frequently, some research has found that imagery has a more powerful impact on emotion (Hales, S., et.al. 2014). The Cognitive-Behavioral Intervention showed the biggest reduction in terms of intrusion-related distress followed by the Positive Appraisal. Cognitive-behavioural interventions are fundamental in psychotherapy, targeting dysfunctional thought patterns and behaviors. CBI is very adaptable and has been used to treat a wide range of mental health issues, including depression, anxiety disorders, post-traumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD), and substance use disorders. Numerous studies have shown that CBI can help with symptom reduction, coping skills improvement, and general functioning. Its systematic design and emphasis on skill development make it ideal for brief, focused treatments.

On the other hand, imagery-based therapies leverage mental imagery to facilitate emotional processing and growth. Imagery-based therapies have been used to treat a variety of mental health issues, including anxiety disorders, depression, trauma-related disorders,

chronic pain, and eating disorders. Research has shown that they are beneficial at reducing symptoms, improving emotional regulation, and improving general well-being. Furthermore, clients frequently respond positively to imagery-based therapies because of their experiential nature and capacity to engage the imagination.

Behavioural interventions aim at modifying maladaptive behaviors through reinforcement, modeling, and exposure techniques. These interventions are frequently highly planned and goal-oriented, with specific aims for behaviour modification. They can be offered individually or in groups and tailored to everyone's personal needs. Furthermore, behavioural therapies are frequently time-limited and aimed at imparting practical skills and methods that people may employ in their daily lives.

Mental skill approaches and imagery can be integrated into different therapeutic and performance-enhancing interventions. Research has shown that these strategies improve performance, reduce anxiety, increase motivation, and promote psychological well-being in a variety of demographics and circumstances. To summarise, mental skills approaches, and imagery are effective tools for improving cognitive functioning, optimising performance, and increasing psychological resilience. Individuals can accomplish their full potential and goals in various fields of life by using their mind's power to visualise success, manage emotions, and create a good mentality.

Clinical settings and concepts encompass critical aspects of mental health care delivery and understanding. The article examines psychiatric clinics, suicidal ideation (SI), and mentally fatiguing tasks, shedding light on their relevance in diagnosis, risk assessment, and understanding cognitive performance in mental health contexts. Psychiatric clinics are examples of specialised healthcare institutions that assess, diagnose, and treat people with mental illnesses. These clinics may provide a variety of treatments, such as psychiatric examinations, medication management, psychotherapy, and crisis intervention. Psychiatric clinics serve an important role in delivering comprehensive care to those with complicated mental health issues. They use a multidisciplinary approach that may include psychiatrists, psychologists, social workers, and other mental health experts.

Lastly, this article provides a comprehensive discussion on diverse psychological interventions and concepts, illustrating their varied applications in mental health treatment and research. By encompassing cognitive-behavioural, imagery-based, behavioural, and other psychological approaches, it underscores the importance of a multifaceted approach in addressing mental health challenges and promoting overall well-being.

### **Future Research**

Future research overall, there is a strong need for more rigorous research on the influence of mental health by imagery. Future research should focus on several areas. First, more focus to place where can get the intervention imagery. Second, how to educate people with mental health issue by using imagery. Thirds, there is a need to study whether specific category of mental health issues and intervention that can be used specific by their problem. Last, can focusing how the impact of imagery that influence in industry other than sports.

### Limitations

There are several limitations of this review. First, the specific databases and research that we selected for our search strategy may have limited our ability to find relevant publication. We did, however, design our search in consultation with an experienced librarian and experts in the field. Second, awareness about imagery to society are less since a lot of people didn't know about the intervention of imagery. Therefore, the findings should be interpreted accordingly. Finally, we only chose studies published in English and in peer-reviewed journals; thus, some publications may have been missed. We identified several limitations in the studies we reviewed. First, many of the studies had small and generous samples. Second, the studies used a wide variety of standardized and unstandardized outcome measures which limited our ability to compare effectiveness across studies. Third, the mean age of the sample and other important demographic characteristics, such as type, severity and cause of imagery and age at onset, were not provided. Third, many studies did not describe the type of mental health issues. Other studies only focused on one patient who have mental health issues (e.g, PTSD and OCD) not focusing on sport so that not have a variety in this review. Thus, caution should be used in generalizing the findings across athletes.

### Conclusion

In conclusion, with imagery has been shown to have a significant impact on mental health in a number of ways. People may use their imagination to manage stress, reduce anxiety, and improve their general well-being by using visualization techniques. Studies reveal that regular imaging exercises can have a beneficial effect on resilience, confidence, and mood. As such, they can be a useful addition to conventional therapy methods. Additionally, a variety of people can benefit from imagery due to its adaptability, including athletes looking to improve performance and those managing psychiatric illnesses. Though there are a lot of potential advantages, it's important to understand that imagery is not a cure-all and should only be used in conjunction with other complete mental health treatments. Its effectiveness will be further clarified and its role in will be refined via ongoing study and clinical application.

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