

The Use of Art Therapy in the Treatment of Eating Disorders: A Systematic Review

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ABSTRACT

One of the characteristics of individuals with eating disorders is the inability to express themselves verbally. Hence, art therapy is particularly effective for individuals with this disorder because of its core mechanism which is the ability to bypass verbal communication and elicit psychological and emotional response through the expression of art. Compared to other forms of therapy, there is very little study that focuses on art therapy in the treatment of eating disorders. Existing literature have shown that there are therapeutic qualities in the art therapy process that might be useful in the field of eating disorders. This systematic review discusses the use of art therapy in the treatment of eating disorders with the aim to: (1) evaluate the effectiveness of using art therapy in the treatment of eating disorders; (2) recognize several therapeutic factors that emerge based on the literature of art therapy and eating disorders—expression, catharsis, and projection, and (3) examine the use of art therapy as a tool to identify conflicts in eating disorder patients—control, body image, isolation, self-esteem, and split self-image. The articles are retrieved from APA PsycNet, CORE, Google Scholar, ResearchGate, ScienceDirect, and Wiley Online Library. The selection process is adapted from PRISMA 2009 and findings are analyzed using the systematic review method. Articles reviewed focus on the use of art therapy in the treatment of anorexia nervosa, bulimia nervosa, and binge-eating disorder—on individuals ranging from 11-60 years of age in which the majority of them are female. Findings indicate that the use of art therapy in the treatment of eating disorders is indeed effective and several therapeutic factors can be recognized. Certain themes of conflicts can also be identified through the artwork of eating disorder patients.

Keywords: *Art therapy, Eating disorder, Anorexia nervosa, Bulimia nervosa, Binge-eating disorder.*

1. INTRODUCTION

Eating disorders have the highest morbidity and mortality rate compared to other psychological disorders and can have a major impact on a person's eating behavior [5, 8]. The focus on eating disorder studies that was initially only in Western countries have now shifted to a global scale [26]. Studies have shown that eating disorders are mostly found in young women in Western countries, but are also suffered by older women and men in other parts of the world [13]. Eating disorder cases have also risen drastically in recent years [4]. A study by Pike & Dunne [26] found that there is an increase in eating disorder cases in Arab and several Asian countries as social changes progress—both in industrialization and urbanization—as well as the growing globalization.

Among various eating disorder treatments that are available, this systematic review will focus on the use of

art therapy. Art therapy is a form of psychotherapy that combines visual art and psychology, in which the patient's artwork is the central focus of the interaction between clients and therapists [1, 18]. The basis of art therapy process is the knowledge that a person's thoughts and feelings revolves around the unconsciousness and have a tendency to be expressed more easily through art compared to words. According to Sholt and Gavron [28], there are six therapeutic factors shown in art therapy; (1) facilitates the expression of emotion; (2) facilitates catharsis; (3) reveals aspects of the unconsciousness; (4) facilitates rich and deep expressions, (5) facilitates verbal communication; and (6) symbolization—a form of inner representations in visual images.

Based on previous researches, art therapy has a role in the treatment process of eating disorders—as a tool to help individuals understand themselves and create something in visual form when it's difficult to be

explained verbally. This is due to one of the characteristics of individuals with eating disorders—the inability to express emotions into words, especially in identifying and explaining feelings—that is in accordance to the central mechanism of art therapy; the ability to bypass verbal barriers, such as intellectualization, can and directly triggers psychological and emotional responses [6, 9, 25]. Studies have also shown that art therapy can be used to explore the psychopathology of eating disorders [1]. During art therapy treatment, conflicts are often illustrated in the artwork of clients with eating disorders. Hence, art therapy can be used to indicate any personality conflicts underlying eating disorders through the artwork [7]. Three types of eating disorders are recorded in the research that discusses the use of art therapy in the treatment; those are: anorexia nervosa (AN), bulimia nervosa (BN), and binge-eating disorder (BED).

Art therapy does not rely on verbal interaction in the therapy, hence why it is appropriate to use in the treatment of anorexia nervosa in which it helps client express unconscious materials without activating any defense mechanism (Rubin, Schaverien, in [27]). This approach is useful especially for clients with anorexia nervosa who often have difficulties recognizing personal boundaries, both physically and psychologically (Lunn, in [1]). Existing literatures about the pathology and treatment of anorexia nervosa focus on client's inability to be autonomous (Woodhead, in [1]). The nonverbal aspect of art therapy also helps in terms of opposition and defense mechanism. In many cases, clients with anorexia nervosa oppose various forms of therapy; with this artistic process in art therapy, clients are given an opportunity to convey their internal feelings into concrete form, much like the use of food in eating disorders [17]. Schaverian (in [27]) mentioned that the use of drawings can mediate between the internal world and the external world, just like how food can be considered a negotiator and mediator of client's internal and external world.

The aims of this research are to summarize existing literature on the use of art therapy in the treatment of eating disorders and to evaluate the effectiveness of art therapy in the treatment of eating disorders by: (1) recognizing the therapeutic effects of art therapy in the treatment of eating disorders, and (2) identifying conflicts reflected in the artwork of individuals with eating disorders.

Theoretical Framework

Art Therapy

American Art Therapy Association in [29] defined art therapy as a mental health profession where client—facilitated by the therapist—uses art materials, creative

process, and artwork to explore their feelings and resolve emotional conflicts, raise self-awareness, manage behaviors and addictions, improve social skills, raise their orientation of reality, reduce anxiety, and raise self-esteem. Art therapy can also be defined as a form of psychotherapy where the client's artwork is the central focus of interaction between client and therapist, who facilitates the therapy process through the making of art and verbal communication with therapist—as a modality to help individual express their thoughts, feelings, ideas, and problems verbally—and is an interdisciplinary of visual art and psychology [1, 18, 21].

There are three concepts by Freud and Jung that influenced the psychoanalytic approach in art therapy, which are (1) transference; (2) spontaneous expression; and (3) amplification and active imagination. Transference can be defined as feelings that resulted from the unconscious projections of the client to the therapist. This projection—which originates from repressed or unresolved situations in a person's life—is considered the main focus of the therapy; the treatment's effectiveness depends on accurate analysis of the projection.

According to Naumburg [23], transference happens in the art therapy process—where there are exchanges in art as well as verbally—and client starts to have an emotional connection not just with the therapist but with the expression of art that they have created. Rubin in [12], supported the concept of transference in art therapy, but emphasized that this could be expressed differently compared to traditional psychoanalytic. Spontaneous expression is a form of nondirective art-making; clients are asked to draw, paint, or create anything they desire, and freely choose the type of art materials they wish to use. Like free association, the purpose of spontaneous art expression is to help client express their problems as freely as possible [21]. One of the most common method used as a catalyst to spontaneous expression is the “scribble technique” (Cane, Naumburg, in [21]). Amplification itself is an analytic approach which derives from the dream interpretation method developed by Jung—where drawings or motives in dreams are amplified, clarified, and given a meaningful context by comparing them with myths, folklores, or religious tales. Based on this process, a drawing cannot be interpreted by the content alone; the symbol represented by the content has to be considered, and given a meaningful context [21].

Eating Disorders

DSM-5 [2] defined eating disorders as:

“...characterized by a persistent disturbance of eating or eating-related behavior that results in the altered consumption or absorption of food and that

significantly impairs physical health or psychosocial functioning.”

In DSM-5, eating disorders such as anorexia nervosa, bulimia nervosa, and binge-eating disorder are classified differently, but almost every individual that fulfils the criteria of either one of these disorders “migrate” between disorders. Eating disorders can be defined as a psychiatric disorder related to abnormal eating behaviors; which are maladaptive behaviors done in an effort to control body shape and weight—and affect how an individual perceives their body shape [31]. Eating disorders that are commonly discussed in literatures are anorexia nervosa, bulimia nervosa, and binge-eating disorders. Fairburn [10] defined eating disorders as continuous disordered eating behaviors or behaviors aimed to control body weight.

2. METHOD

There are four criteria of inclusion used in this study; the first criteria are any case studies, quantitative, and qualitative researches. The second criteria are researches that specifically discuss the use of expressive art therapy and contain forms of visual art media (such as drawing and painting). The third criteria are researches that focus on three types of eating disorders—anorexia nervosa, bulimia nervosa, and binge-eating disorders. The last criteria are researches that use art therapy as their main therapy. Individuals with eating disorders in the researches reviewed in this article range between the ages of 11-60 years and the majority of them were women. 13 articles were found to have fit the criteria of inclusion—published between the year 1980 to 2017.

Literatures used in this review were taken from several international databases, but the majority were retrieved from Google Scholar. Other databases used were APA PsycNet, CORE, ERIC, JAMA Network, ResearchGate, ScienceDirect, and Wiley Online Library. Articles used in this review were published in English. No publication date was specified, as the purpose of this study was to review as many articles as possible. After screening the articles based on the inclusion criteria, 13 articles were found to be used in

this article.

The selection process of references used in this research was adapted from PRISMA 2009 (Preferred Reporting Items for Systematic Reviews and Meta-Analysis).

Procedure

The keywords “art therapy” and “eating disorders” were broadly used in the first database—Google Scholar—as separate keywords, and then combined together. The search results for both keywords were 143,000 hits. The keywords “expressive art” and “treatment” were also added in the search. 89 articles were taken from Google Scholar. The second database used was APA Psycnet. 94 articles were found and three were used in the article. The next database was CORE. Only one article from the search result in CORE was used in the research. ResearchGate was the next database used. 100 articles were found after the search process—only 10 were retrieved for the research. A search in ScienceDirect resulted with 6,699 hits with only two articles taken from the search result. The next database used was Wiley Online Library. After typing down the keywords, the search resulted with 9,618 hits, but four articles were retrieved. ERIC and JAMA Network did not show relevant articles when the keywords were used. The total gathered from every database search were 109 articles.

109 articles were listed down and screened based on titles and abstracts to determined relevant articles based on the criteria of inclusion. 95 articles were excluded because they did not fit the criteria of inclusion. The number of articles that passed the screening process was 14. The articles were then read in full according to the criteria of inclusion of this research. One article was then removed in this stage because it did not fit the criteria of inclusion. There were 13 articles that met the criteria of inclusion—published between the year 1980 to 2017. Participants in all 13 articles ranged between 11-60 years of age, in which the majority were women.

All 13 articles were included in this research. Each research findings were extracted and analyzed.

Table 1. 13 Articles included in the review

Author(s)	Design
Acharya, et al. (1995)	Case Study
Anzules, et al. (2007)	Quantitative & Qualitative Research
Crowl (1980)	Case Study
Diamond-Raab & Orrell-Valente (2002)	Case Study
Jeong & Kim (2006)	Case Study
Johnson & Parkinson (1999)	Case Study
Lock, et al. (2018)	Quantitative Research
Luzzatto (1994)	Case Study Analysis
Naitove (1986)	Case Study
Rehavia-Hanauer (2003)	Qualitative Research
Sporild & Bonsaksen (2014)	Case Study
Thaler, et al. (2017)	Quantitative Research
Wolf, et al. (1985)	Case Study

3. FINDINGS

Analysis of all 13 articles indicated that art therapy is effective to use in the treatment of eating disorders. There are therapeutic effects from the use of art therapy in the treatment of eating disorders, which were: (1) expression; (2) catharsis; and (3) projection. Furthermore, certain themes of conflicts often emerge in the artwork of clients with eating disorders. Those conflicts are identified as: (1) control; (2) body image; (3) isolation; (4) self-esteem; and (5) split self-image.

Therapeutic Effects

The review of literature showed that there were therapeutic factors underlying the use of art therapy in the treatment of eating disorders [3, 9, 15, 16, 19, 20, 27, 30, 32, 33]. The therapeutic factors that commonly appeared were: (1) expression; (2) catharsis; and (3) projection.

Expression

Individuals with eating disorders find it difficult to express themselves verbally [9], and the use of art therapy can help in the process of self-expression [16, 27]. It is because art therapy does not depend on verbal interaction to keep the therapy going, which gives individuals a chance to express their thoughts and internal components of the unconsciousness without activating their defense mechanism [27]. Researches showed that art therapy used in clients with eating disorders could become a tool to facilitate their freedom in expressing themselves through expressive drawing and self-exploration—which automatically boosts the client's ego development [1, 3, 8].

The creative expression shown by clients with eating disorders gives them a means to indirectly express themselves in a non-threatening and controlled manner [3, 33]—in accordance to Bruch in [33], who regards artworks as tools to gain self-awareness. Researches have shown that art therapy can be used to examine various aspects of eating disorders using creativity and is harmless for the clients [1, 3]. Group art therapy could also help members in expressing themselves and each member of the group uses a more emotional verbal language compared to the language they use on a day-to-day basis [1, 16, 30]. A case study by Sporild and Bonsaksen [30] showed that the use of symbols in group art therapy had an important role in individual's self-expression—certain topics or feelings were often difficult to be expressed verbally, but the artwork created by one person could be used as a reflection for other members and prompt discussions about feelings that are difficult to be expressed. Apart from having a therapeutic effect from self-expression, the ability to express their feelings to other people in group therapy

could be useful for the self-esteem in clients with eating disorders.

Art therapy is reported to be more effective, especially for individuals who have difficulties with traditional verbal-based therapies [11]. Several studies showed that art therapy could be used in clients with eating disorders as a bridge to verbal therapy and help increase their verbal capabilities if combined or done simultaneously with verbal psychotherapy; using creativity and free expression, individuals with eating disorders could gain access to verbal expression [3, 33]. Feelings, behavior, and concepts could be formulized and symbolized in art before being shown verbally [33]. This is in line with what Naumburg [23] concludes; that when an individual showed their inner experiences through projective drawings, their verbal communication would automatically be more articulated.

Catharsis

Catharsis is a form of free expression from a person's emotion [30]. According to a study by Jeong and Kim [15], the process of art-making in art therapy could be useful for clients with anorexia nervosa to express their emotions in a cathartic way and in a safe place. A case study by Naitove [22] showed that clients with anorexia nervosa experienced catharsis when releasing buried emotions through art therapy. Luzzatto [20] elaborated in her case study that artwork shown by clients during art therapy could be considered their way of communicating a feeling of being a victim in front of a "persecutor" and the therapist fully accept and validate this feeling; often times there would be surprising elements felt by client and this in itself could be therapeutic.

Projection

The process of art therapy could help reveal conflicts that were experienced by individuals into the therapeutic process [27]. This is in accordance to Naumburg's theory [23] which claims that art therapy could be used to project internal conflicts in clients into visual form. Researches showed that art therapy used in the treatment of eating disorders was a form of unconscious projection from an individual unto spontaneous drawings; communication in the form of unconscious projection done by clients with themselves was the therapeutic component in art therapy [15, 27]. Client's artwork could also be seen as a projection from internal object-relationship between client and their emotional feelings towards themselves and the outside world [20].

Conflicts

Several studies that were analyzed showed certain themes of conflicts which were illustrated in the artwork of patients with eating disorders. These conflicts were identified as: (1) control; (2) body image; (3) isolation; (4) self-esteem; and (5) split self-image.

Control

In several case studies, individuals with eating disorders tend to have one or more family members that could be deemed as too controlling—making those individuals feel as if they didn't have control [1, 7, 15, 22, 27]. Individuals with eating disorders consider their body as a part of themselves, but did not feel that they have control over it [7, 9]. This aspect of control could be seen in the artwork of individuals during art therapy; such as a figure that was seen in a threatening situation but was vulnerable and had no control [1, 7], or a figure that was trapped and controlled by another creature [1, 20].

In art therapy, individuals could feel in control over the art materials that they used without the fear of losing control like how they would in verbal interaction [9, 33]. How individuals chose art materials and expressed their artwork during therapy reflected their tendency to control situations to feel secure [1, 9]. Their obsessive compulsive behavior was displayed through their art-making process [1, 7].

Body Image

Body image conflict is often shown in clients with eating disorders [24, 30]. In several case studies, body image conflict was often illustrated in drawings created during art therapy [1, 7, 15]. In Crowl's case study [7], clients were asked to draw themselves and they often drew a little girl. They saw themselves as a child.

This showed the existence of body image conflict that is divided in two: clients with eating disorders did not want to have womanly figures and thus tried to neutralize their body shape to that of a child. This conflict was reflected in a case study by Acharya and colleagues [1], where the artwork of X illustrated abstract shapes in bright colors. According to X, the artwork expressed the anxiety she felt when she gained weight. Opposite to the bright colors she used in the drawing, X expressed feeling of negativity and hatred towards herself.

Isolation

Individuals with eating disorders often feel socially isolated [24] or isolate themselves [9]. In several drawings in a case study by Acharya and colleagues [1], this conflict of isolation could be seen in drawings that illustrated a figure standing alone and isolated in its surrounding. Isolation is often related with the color

black and bad weather. A case study conducted by Luzzatto [20] also showed an artwork that reflected the theme of isolation—a figure was seen standing alone; trapped with no companions, similarly to a case study by Naitove [22] which showed themes of emptiness and loneliness in client's artwork.

The conflict of isolation was also illustrated by a client with anorexia nervosa during art therapy—which was seen as feelings of emptiness and loneliness. For example, clients would draw an empty house, abandoned and left by the family, or a figure that the client would describe as vulnerable, afraid, and alone. This illustration represented the feeling that the client felt at that time [33].

Self-esteem

Most individuals with eating disorders have low self-esteem [9, 24], and this conflict became more visible and could be identified during art therapy [7, 15, 30]. In a case study done by Crowl [7], clients with anorexia nervosa showed very low self-esteem and this was indicated when they were asked to draw themselves. Clients would take the smallest paper and fold it so that it would become smaller before drawing themselves. This implied a low self-esteem—a feeling that they are small and insignificant. Individuals with anorexia nervosa with low self-esteem tends to want to make themselves more likeable (Meechan, in [7]), and this could be seen in their artwork.

To illustrate, drawings of clowns often appeared in client's artwork [7]; clowns were often associated with fun, lowing, and likeable traits. Deeper implications related to drawings of clowns were that they were just a joke and a caricature; that they could not be taken seriously. Bruch in [7] illustrated that individuals with anorexia nervosa often found it difficult to achieve a respectable self-identity and this theory could be associated with the reason why they drew clowns as their self-identity.

Split self-image

Researches showed that there was a conflict of split self-image reflected in the artwork of clients with anorexia nervosa [7, 20, 33]. Client's artwork could be analyzed from different angles—on the pre-oedipal side; the separation between the good mother figure and the bad mother figure; and on the oedipal side; separation between different parts of the individual—where the individual's needy and dependant side were hidden, and the aggressive and full of denials side were rejected [20]. This conflict was also clearly illustrated in a case study by Wolf and colleagues [33] where there was a split self-image in the artwork of clients with anorexia nervosa. As an example, self-illustrations showed a smiling exterior but had sadness and tears behind it; or a

drawing of a face split in two—the left side with gray colors and the right side with bright colors—but either side looked unhappy. The drawing represented the client’s old self (gray side) and the new, more thoughtful side. The client often saw themselves as “the true enemy” and displayed this in the artwork (such as drawing themselves as a dueler).

In a case study by Crowl [7], there was a split self-image and this could be seen clearly in the artwork—for instance, a drawing of twin clowns with one conjoined body and both of them were seen to express opposite emotions; happiness and sadness. This conflict exhibited feelings that were often described by clients with anorexia nervosa—where they often felt split in two and were two people in the same body.

4. DISCUSSION

All 13 reviewed articles showed that art therapy was effective to use in the treatment of eating disorders. Furthermore, there were therapeutic effects in the use of art therapy in eating disorder treatments. Lastly, several conflicts were illustrated in the artwork of clients with eating disorders. The therapeutic effects shown in the use of art therapy in eating disorder treatment were (1) expression, where art therapy could be used as a tool to facilitate free expression with drawings and self-exploration; (2) catharsis, where art therapy could be useful to release emotions in a cathartic way; and (3) projection, where art therapy could help in the expression of conflicts in individuals with eating disorders into the therapeutic process. Whereas the conflicts that often emerged in the artwork of individuals with eating disorders were (1) control, seen from individuals’ artwork of vulnerable figures and how they utilized art materials; (2) body-image, seen from individual’s artwork which implied efforts in neutralizing their bodies or expressed anxiety related to weight gain; (3) isolation, seen from the themes of isolation which often emerged in the form of lonely figures and dark colors; (4) self-esteem, seen from the artwork and how individuals used art materials; and (5) split self-image, seen from how individuals portrayed a self-image divided in two.

This systematic review has several limitations. First, despite reviewing literatures of art therapy in the treatment of eating disorders, there were limitations such as the difference in the forms of art therapy used, the duration of each therapy, as well as the type of eating disorders experienced by each client. Second, the number of literatures being reviewed were relatively small. This was due to the lack of literatures that fit the criteria of inclusion for this study. Lastly, despite showing implications of being effective, there were no empirical studies that focused on researching this form of therapy in eating disorder treatments.

Literature that discussed art therapy also has its drawbacks in terms of subjective interpretation; the basis of art therapy is psychoanalysis—it does not measure visible behaviors. In art therapy, the therapist has an important role because the effectiveness of the treatment depends on accurate analysis done by the therapist. Questions of whether art therapy needs to be standardized might appear—where it is important to have at least one model of standardized art therapy in the hopes that interpretations would not be subjective. However, having art therapy standardized would only go against the basic concept of art therapy, which is individual expression [11]. By making a “standard”, the therapeutic effects of art therapy might lessen.

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REFERENCES

- [1] Acharya, M., Wood, M. J. M., & Robinson, P. H. (1995). What can the art of anorexic patients tell us about their internal world: A case study. *European Eating Disorders Review*, 3(4), 242–254. <https://doi.org/10.1002/erv.2400030406>
- [2] American Psychiatric Association. (2013). *DSM-5 Diagnostic Classification*. In *Diagnostic and Statistical Manual of Mental Disorders*. <https://doi.org/10.1176/appi.books.9780890425596.x00diagnosticclassification>
- [3] Anzules, C., Haenni, C., & Golay, A. (2007). An experience of art therapy for patients suffering from obesity. *European Diabetes Nursing*, 4(2), 72–76. <https://doi.org/10.1002/edn.81>
- [4] Branagan, A., O’Halloran, E., Canty, N., O’Neill, M. B., & Stokes, H. (2019). Children with eating disorders presenting to non-tertiary paediatric units in Ireland—a case series. *Archives of Disease in Childhood*, 104(3), 317–428. <http://dx.doi.org/10.1136/archdischild-2019-epa.751>
- [5] Bucharova, M., Mala, A., Kantor, J., & Svobodova, Z. (2020). Arts therapies interventions and their outcomes in the treatment of eating disorders: Scoping review protocol. *Behavioral Sciences*, 10(12), 1–13. <https://doi.org/10.3390/bs10120188>
- [6] Clements, C. T. (1990). *Experiential Therapies for Eating Disorders*. *Journal of Music Therapy*. <https://doi.org/10.1093/jmt/27.1.47> [7] E. Clarke, O. Grumberg, S. Jha, et al., Counterexample-guided abstraction refinement, in: E.A. Emerson,

- A.P. Sistla (Eds.), *Computer Aided Verification*, Springer, Berlin, Heidelberg, 2000, pp. 154–169. DOI: https://doi.org/10.1007/10722167_15
- [7] Crowl, M. A. (1980). Art therapy with patients suffering from anorexia nervosa. *The Arts in Psychotherapy*, 7(2), 141–151. [https://doi.org/10.1016/0197-4556\(80\)90019-2](https://doi.org/10.1016/0197-4556(80)90019-2)
- [8] Demmler, J. C., Brophy, S. T., Marchant, A., John, A., & Tan, J. O. A. (2020). Shining the light on eating disorders, incidence, prognosis and profiling of patients in primary and secondary care: National data linkage study. *British Journal of Psychiatry*. <https://doi.org/10.1192/bjp.2019.153>
- [9] Diamond-Raab, L., & Orrell-Valente, J. K. (2002). Art therapy, psychodrama, and verbal therapy. *Child and Adolescent Psychiatric Clinics of North America*, 11(2), 343–364. [https://doi.org/10.1016/s1056-4993\(01\)00008-6](https://doi.org/10.1016/s1056-4993(01)00008-6)
- [10] Fairburn, C. G. & Walsh, B. T. (2002). Atypical Eating Disorders (Eating Disorder Not Otherwise Specified). In *Eating Disorders and Obesity*.
- [11] Frisch, M. J., Franko, D. L., & Herzog, D. B. (2006). Arts-based therapies in the treatment of eating disorders. *Eating Disorders*, 14(2), 131–142. <https://doi.org/10.1080/10640260500403857>
- [12] Gussak, D. E., & Rosal, M. L. (2015). *The Wiley Handbook of Art Therapy*. In *The Wiley Handbook of Art Therapy*. <https://doi.org/10.1002/9781118306543>
- [13] Hoek, H. W. (2016). Review of the worldwide epidemiology of eating disorders. In *Current Opinion in Psychiatry*. <https://doi.org/10.1097/YCO.0000000000000282>
- [14] Holmqvist, G., & Lundqvist-Persson, C. (2012). Is there evidence for the use of art therapy in treatment of psychosomatic disorders, eating disorders and crisis? A comparative study of two different systems for evaluation. *Scandinavian Journal of Psychology*, 53(1), 47–53. <https://doi.org/10.1111/j.1467-9450.2011.00923.x>
- [15] Jeong, H. Y., & Kim, Y. R. (2006). Art therapy: Another tool for the treatment of anorexia nervosa. *Psychiatry Investigation*, 3(1), 107–111.
- [16] Johnson, K., & Parkinson, S. (1999). *There's no point raging on your own: Using art therapy in groups for people with eating disorders*. Sage Publications, 32(1), 87–96. <https://doi.org/10.1177/0533316499321007>
- [17] E. Clarke, O. Grumberg, S. Jha, et al., Counterexample-guided abstraction refinement, in: E.A. Emerson, A.P. Sistla (Eds.), *Computer Aided Verification*, Springer, Berlin, Heidelberg, 2000, pp. 154–169. DOI: https://doi.org/10.1007/10722167_15
- [18] Junge, M. B. (2015). History of Art Therapy. In *The Wiley Handbook of Art Therapy*. <https://doi.org/10.1002/9781118306543.ch1>
- [19] Lock, J., Fitzpatrick, K. K., Agras, W. S., Weinbach, N., & Jo, B. (2018). Feasibility Study Combining Art Therapy or Cognitive Remediation Therapy with Family-based Treatment for Adolescent Anorexia Nervosa. *European Eating Disorders Review*, 26(1), 62–68. <https://doi.org/10.1002/erv.2571>
- [20] Luzzatto, P. (1994). Anorexia nervosa and art therapy: The “double trap” of the anorexic patient. *The Arts in Psychotherapy*, 21(2), 139–143. [https://doi.org/10.1016/0197-4556\(94\)90020-5](https://doi.org/10.1016/0197-4556(94)90020-5)
- [21] Malchiodi, C. A. (2016). *The Art and Science of Art Therapy: Art Therapy and the Brain*. In *Handbook of Art Therapy*.
- [22] Naitove, C. E. (1986). “Life’s but a walking shadow”; Treating anorexia nervosa and bulimia. *The Arts in Psychotherapy*, 13(2), 107–119. [https://doi.org/10.1016/0197-4556\(86\)90018-3](https://doi.org/10.1016/0197-4556(86)90018-3)
- [23] Naumburg, M. (1967). Dynamically oriented art therapy. In *Current psychiatric therapies*.
- [24] Nolen-Hoeksema, S. (2014). *Abnormal psychology* (6th Ed.). In *Abnormal psychology* (6th Ed.).
- [25] Nowakowski, M. E., McFarlane, T., & Cassin, S. (2013). Alexithymia and eating disorders: A critical review of the literature. *Journal of Eating Disorders*, 1(1). <https://doi.org/10.1186/2050-2974-1-21>
- [26] Pike, K. M., & Dunne, P. E. (2015). The rise of eating disorders in Asia: A review. In *Journal of Eating Disorders*. <https://doi.org/10.1186/s40337-015-0070-2>
- [27] Rehaviah-Hanauer, D. (2003). Identifying conflicts of anorexia nervosa as manifested in the art therapy process. *Arts in Psychotherapy*, 30(3), 137–149. [https://doi.org/10.1016/S0197-4556\(03\)00049-2](https://doi.org/10.1016/S0197-4556(03)00049-2)
- [28] Sholt, M., & Gavron, T. (2006). Therapeutic qualities of clay-work in art therapy and psychotherapy: A review. *Art Therapy*, 23(2), 66–72. <https://doi.org/10.1080/07421656.2006.10129647>
- [29] Spooner, H. (2016). Embracing a Full Spectrum Definition of Art Therapy. *Art Therapy*, 33(3),

163–166.

<https://doi.org/10.1080/07421656.2016.1199249>

- [30] Sporild, I. A., & Bonsaksen, T. (2014). Therapeutic factors in expressive art therapy for persons with eating disorders. *Groupwork*, 1(1), 67–81. <https://doi.org/10.1921/10201240104>
- [31] Stice, E., & Peterson, C. B. (2007). Eating disorders. In E. J. Mash & R. A. Barkley (Eds.), *Assessment of childhood disorders* (pp. 751–780). The Guilford Press.
- [32] Thaler, L., Drapeau, C. E., Leclerc, J., Lajeunesse, M., Cottier, D., Kahan, E., Ferenczy, N., & Steiger, H. (2017). An adjunctive, museum-based art therapy experience in the treatment of women with severe eating disorders. *Arts in Psychotherapy*, 56(April 2019), 1–6. <https://doi.org/10.1016/j.aip.2017.08.002>
- [33] Wolf, J. M., Willmuth, M. E., Gazda, T., & Watkins, A. (1985). The role of art in the therapy of anorexia nervosa. *International Journal of Eating Disorders*, 4(2), 185–200. [https://doi.org/10.1002/1098-108X\(198505\)4:2<185::AID-EAT2260040206>3.0.CO;2-7](https://doi.org/10.1002/1098-108X(198505)4:2<185::AID-EAT2260040206>3.0.CO;2-7)