

Art therapy with meditation for children diagnosed with ADHD and their caretakers

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## ABSTRACT

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The focus of this theoretical, bibliographic research is the review and synthesis of literature to develop a new understanding of the feasibility of multi-modal approaches, specifically art therapy and meditation, for children up to age 17 (adolescents included) diagnosed with Attention Deficit/Hyperactivity Disorder (ADHD) together with their adult primary caretakers. The three subject areas (i.e. both modalities and ADHD) were researched separately in order to define and most extensively where they intersect. While there is new and promising research available for each modality, no published, peer-reviewed research was available within the specified search parameters about how the two could work together for children with ADHD and their caretakers. Important components and benefits of related studies where *some* intersection occurred are conveyed in a review and synthesis of findings. Core symptoms of ADHD in the children (i.e. hyperactivity, impulsivity, and inattention) often saw improvement while other positive outcomes were noted in various interventions. When directly involved, caretakers experienced benefits too. These sometimes included increased calm, increased self-care, reduced parenting stress, reduced parental overreactivity or relational improvements. However, it is only possible to theorize about the viability and outcomes of a *complete* intersection of such modalities when used together for this population. In order to respond to the gap in the literature, future research is necessary.

## **Acknowledgements and Dedication**

Sincere appreciation is offered to my family, friends, clients, supervisors, professors, classmates, and editor. In addition, this work is dedicated to all my students over the years.

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## **Chapter 1. Introduction**

Attention-deficit/hyperactivity disorder (ADHD) has become a very common diagnosis for children when behavioural problems create difficulties with caretakers, teachers, and classmates (Le Heuzey, 2020). It is essential to study whether various therapeutic modalities have the potential to provide skills and tools in order to help those affected. The purpose of this paper is to study how art therapy (AT) when combined with meditation may be helpful to these children and their adult caretakers, often parents. ADHD can be thought of as a larger societal issue necessary to study because troubles between parent and child manifest not in isolation but within larger social contexts and because issues on an individual level reverberate in classrooms, workplaces, and the larger society as a whole. In short, as noted by Keirns et al. (2013), society influences the development of individuals, but each person and their struggles also affect and change society in a dynamic reciprocity.

Therefore, in order to assist these children and caretakers with the challenges both groups face, it is important to examine the situation. While there is new and promising research available for both AT and meditation modalities, they are not yet commonly researched as a combined topic in the current literature—even if, in AT practice, they may be jointly implemented as per observation and experience. It seems even less common to publish peer-reviewed research about how the two could work together for children with ADHD and their caretakers—no such peer-reviewed, published article has been revealed through the delimited database searches herein described. It is clear that AT and meditation have the potential to traverse the internal and external worlds. Such methods can be highly portable and require little in the way of materials for daily self-regulation strategies.

The idea for this topic coalesced at the intersection of four topics: one is a Brazilian study by Ciasca et al. (2018) in which guided imagery and regular AT sessions with an art therapist helped depressed participants with their anxiety. The research related to the topic of this paper because anxiety is said to be a common companion of people diagnosed with ADHD. Second, Perry and Szalavitz (2007) curiously suggested that some cases of ADHD may in actuality be post-traumatic stress disorder (PTSD). It is beyond the scope of this paper to deal with possible misdiagnoses. Researching on behalf of children with the ADHD diagnosis, with an openness to whether it is accurate or not, is the researcher's aim. The third source of motivation was the Expressive Therapies Continuum (ETC; Hinz, 2009) with its AT case studies on employing guided imagery and on addressing ADHD—in separate studies. Finally, sheer curiosity brings together the ideas. Via these sources the researcher's perspective initially took shape and informed this paper. Furthermore, through experience the researcher noted that AT is occasionally combined with different sorts of meditation in actual practice. While AT can be used with this population, the researcher wanted to find out how the addition of meditation, at first seemingly but intriguingly counter-intuitive, for those diagnosed with ADHD might fare.

### **Attention-deficit/hyperactivity disorder (ADHD)**

This section addresses the emergence of the diagnostic category, conventional definitions of ADHD, and conventional treatments. Before the emergence of the diagnostic category of ADHD, early traces of behaviors with symptoms corresponding to ADHD evidently appeared well before the formal diagnostic category as shown in the following. Mention of earlier accounts is herein noted: “Sir Alexander Crichton (1763–1856) described something akin to attention deficit disorder as early as 1798, when he wrote of a child's ‘incapacity of attending with a necessary degree of constancy to any one object’” (Crichton, 1798, as cited in Abdesslem et al., 2019, p. 19).



Other later accounts allude to similar issues such as a German storybook *Struwwelpeter* from 1845 (Armstrong, 2017) and Kramer and Pollnow in 1932 (Abdesslem et al., 2019). The emergence of a formal description and disorder label can be traced to at least the 1970s with the linking of attention to hyperkinesis; in the 1980s, the DSM-3 designated a new disorder related to attention, also mentioned in *Academic Therapy Quarterly* (Armstrong, 2017). A pandemic unfolded to even encompass toddlers (Schwarz, 2014). As for global prevalence, ADHD is rather common (Mehta et al., 2011). A recent systematic review of 135 studies from different countries over almost three full decades (i.e. 1985-2012) concluded that “variability in ADHD prevalence estimates is mostly explained by methodological characteristics of the studies” (Polanczyk et al., 2014, p. 434) and that “increasing rates of diagnosis and treatment of ADHD are likely a reflection of increasing awareness, access to treatment or changing clinical practices” (Polanczyk et al., 2014, p. 441). According to the DSM-5, ADHD occurs in “most cultures in about 5% of children” and in approximately 2.5% of adults (APA, 2013).

### ***Conventional Definitions***

Attention-deficit/hyperactivity disorder or attention deficit hyperactivity disorder is often referred to by the acronyms ADHD, AD/HD, or A.D.H.D. Herein, it is referred to in this paper as ADHD. This disorder involves long-term symptoms of inattention, hyperactivity, and impulsivity which impair typical functioning (American Psychiatric Association [APA], 2013). This paper used the following definition as it often appeared in articles.

In defining the disorder, ADHD falls under Neurodevelopmental Disorders in the DSM-5; “Inattention [...] Hyperactivity and impulsivity” interfering “with functioning or development” characterize this difficulty that is not better explained by “defiance or lack of comprehension” (APA, 2013, p. 49). Certainly, the symptoms should not be better explained by another disorder.

A brief summary of the problem is as follows: “Inattention manifests behaviorally in ADHD as wandering off task, lacking persistence [...] Hyperactivity refers to excessive motor activity [...] Impulsivity refers to hasty actions that occur in the moment without forethought and that have high potential for harm to the individual” (APA, 2013, pp. 49-50). Inattention is often accompanied by disorganization, “seeming not to listen, and losing materials, at levels that are inconsistent with age or developmental level” (APA, 2013, p. 53). It is expected that at least six identified problematic markers in a single category (e.g. “hyperactive-impulsive”) are present in at least two settings; they have been present for at least six months and were present before age twelve. The markers of ADHD and the compromised performance may often persist “into adulthood, with resultant impairments of social, academic and occupational functioning” (APA, 2013, p. 3). Three subtypes are specified: hyperactive whilst impulsive, inattentive, and a combination of all three. Other specifiers include severity and if in partial remission. Similarly, the disorder is called “trouble déficit de l’attention/ hyperactivité (TDAH)” and is found under the category “troubles neurodéveloppementaux” in the French translation “DSM-5 : manuel diagnostique et statistique des troubles mentaux” (APA, 2015, pp. 33-75).

In comparison, the World Health Organization manual called the “International Statistical Classification of Diseases and Related Health Problems 10th Revision” (ICD-10) organizes disorder by codes. ADHD has the code “F90.0” and appears under the sub-categories “Disturbance of activity and attention (F90.0)” and “Hyperkinetic disorders (F90)” which fall under the larger sub-category of “Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98)” (World Health Organization [WHO], 2016). Other aliases by which the disorder goes are attention deficit disorder with hyperactivity and attention deficit syndrome with hyperactivity (2016). The French “La Classification internationale des maladies” or CIM has

the corresponding code of “F90.0” for its “Perturbation de l'activité et de l'attention” under the categories of “Troubles du comportement et troubles émotionnels apparaissant habituellement durant l'enfance et l'adolescence (F90-F98)” and “Troubles hyperkinétiques (F90)” (l'Organisation mondiale de la santé [OMS], 2008). The criteria correspond to those listed above for the ICD-10. This concludes conventional definitions of ADHD; alternate ones appear in Chapter 4’s discussion.

### *Conventional Treatments*

In terms of routine care for children with ADHD, two main methods are in the foreground. “To date, there are two evidence-based treatments for children with ADHD, medication (mostly stimulants) and behavioral treatments” (van der Oord et al., 2012, p. 139), which have shown some effectiveness (van de Weijer-Bergsma et al., 2012). Other methods may only be briefly mentioned in articles within the scope of the research. For example, “cognitive behavioral treatments do not meet criteria for empirical support; long term effects are limited and generalization of the learned skills to other settings than the therapy setting is often low” (van der Oord et al., 2012, p. 139).

**Medical Drugs.** With the goal of relieving symptoms of ADHD, Singh et al. (2010) indicate that “Pharmacotherapy is the standard treatment for ADHD, with the stimulants (i.e., methylphenidate, amphetamine) being the first choice of drugs” (p. 157). Specifically, “Research evidence suggests that the average effect size for stimulants (0.9 for immediate release and 0.95 for long acting) is much higher than for non-stimulants (0.62)” (Faraone, 2003, as cited in Singh et al., 2010, pp. 157-158). Singh et al. (2010) also convey evidence that “the non-stimulant, atomoxetine, may be moderately effective” (p. 158). Abdesslem et al. (2019) state: “Although stimulant drugs can be considered as relatively effective, a growing proportion of physicians and parents are concerned about both the costs and the side-effects from such treatment” (p. 20). Stimulant medication would not remedy all ADHD-type issues (Huguet et al., 2017). Drawbacks

include the use of an external agent for behavior regulation with physical and emotional side effects (Singh et al., 2010). Likewise, Harrison et al. (2004) note that stimulants may produce addiction with unknown long-term effects. There is “concern relating to the escalating use of stimulants in the management of ADHD symptoms, treatment acceptability, side effects, potential long-term effects, danger of drug abuse and dependency”; some side effects are cited as “insomnia, appetite loss, stomach-aches, dizziness and daytime drowsiness, in addition to emotional and motor symptoms” (Harrison et al., 2004, pp. 480-481). Taken together with the problems above, many ADHD issues remain throughout the lifetime—not having been relieved with medication (Modesto-Lowe et al., 2015).

**Behavioral Parent Training (BPT).** According to van der Oord et al. (2012), for childhood cases of ADHD, the most common form of behavioral training is actually for parents. Inconsistent parenting—higher in parents also dealing with their own symptoms of ADHD—has been connected to susceptibility to ADHD symptoms for children with such a genetic predisposition (van de Weijer-Bergsma et al., 2012). BPT is an approach aimed at assisting parents to cease tension-producing cycles of “parent–child interaction. BPT primarily emphasizes social contingencies in which the parent provides positive reinforcement for the child’s prosocial behavior and ignores or punishes negative behavior by nonphysical discipline techniques such as removal of privileges or time out” (Lee et al., 2012, p. 2041). However, as van der Oord et al. (2012) mention, ADHD tends to run in families, and if parents have the diagnosis, it is not surprising that they show a tendency to not have persisted with training; “ADHD is highly heritable and a diagnosis of ADHD of parents is a predictor of non-response” to BPT (p. 145). Furthermore, BPT “has been investigated predominantly in preadolescent children, and effects for adolescents seem lower” (van de Weijer-Bergsma et al., 2012, p. 776).

In sum, “Evidenced-based psychosocial (behavioral) and pharmacological interventions are the two most frequently utilized treatments for ADHD. While effective, both treatment approaches have limitations, including lack of significant effects on some key outcomes” especially academic success and “executive functioning” (Chimiklis et al., 2018, p. 3155). “In both of these approaches, pharmacotherapy and behavior therapy, treatment is provided to the children by external agents, a physician or parents trained in behavior management. Although effective, there are inherent limitations to both approaches” (Singh et al., 2010, p. 158). The two approaches are sometimes used together with more benefit than if used separately, although the results had not persisted when assessed 3 years later (Singh et al., 2010). “Thus, Gimpel (2008) has advocated the alternative approach of stimulating the brain by a combination of physical and mental exercises; in addition to direct favorable effects upon ADHD, such an approach would carry many other important health benefits” (Abdesslem et al., 2019, p. 20). Combined methods of physical and mental activation could lead to approaches discussed in this paper. In short, there is room for varied research pathways, be they apart from or in conjunction with medication or BPT (Lee et al., 2012).

### **Problem Statement and Objectives**

While being mindful of associated risk factors, the intent of this research was to explore the literature to find what could come of utilizing AT with meditation for children diagnosed with ADHD and their caretakers, including possible benefits or drawbacks. This was due to not yet finding peer-reviewed, published articles that report on this exact combination of subjects and the potential synergy. Given that, not infrequently, pharmacological prescriptions for ADHD have been found to insufficiently reduce symptoms and/or to cause significant side effects (Mitchell et al., 2015), that there can be serious concerns for caretakers when giving these children such medications, sometimes for those as young as two years old (Armstrong, 2017, p. 4), and that

customary parental behavioral training may fall through (van der Oord et al., 2012), pharmacology and such training are not where intervention options begin and end.

The main objective was the review of literature that may develop a new understanding of the feasibility of a multi-modal AT and meditation approach for children diagnosed with ADHD and their caretakers. The objective of Chapter 2 was to discuss the methodology including steps in procedure, databases and search terms, inclusion and exclusion criteria, data collection and extraction, and ethics. Chapter 3's literature review subsequently concentrated on ADHD and the two modalities for data extraction; for clarity's sake, sections were divided up by meditation types where applicable. Where caretakers were included in the actual interventions, relevant subheadings were assigned. Therein, the articles within the inclusion criteria revealed through searching the literature are introduced. Chapter 4's discussion covered the synthesized findings concerning the primary research question, subsidiary topics, limitations, and future directions. Finally, Chapter 5 and the Appendix on Erikson's Psychosocial Stages (Berk, 2012) have concluded the paper.

## **Chapter 2. Method**

### **Overview of Methodology**

This chapter explores the rationale and procedures for a theoretical inquiry to answer the primary research question: What might be the benefits of pairing art therapy with meditation for children who have been diagnosed with attention-deficit/hyperactivity disorder (ADHD) and their primary caretakers? The subsidiary research question is: What definitions and risk factors are associated with ADHD? This qualitative study is theoretical-bibliographical, a methodology which calls for "The collection, analysis, and synthesis of the significant empirical, qualitative, and/or other research done on a chosen subject. The purpose of this type of research is to organize and structure, as yet, non-synthesized areas of study, and to identify topics in need of future

clarification” (Concordia University, 2015, p. 7). Among other methodologies which employ a single case interview, embody an author’s own heuristic experience, or produce quantitative data through a controlled experiment, to name a few examples, bibliographical has been chosen because it is a perfect fit for the researcher’s aim: to enable the exploration of ideas and outcomes that the expansive, worldwide literature both past and present hold. The methodology has helped to answer the research question through piecing together, comparing, and contrasting the relevant data available in 25 articles within search criteria. Whereas, other methodologies were too constrictive, not feasible, or not appropriate for the present research question. A bibliographical method employs immersion into existing research and the linking of vital results. The goal was to explore and build upon what has already been done in order to highlight the need for a synthesis of topics. A chief way to do so is by carefully sifting through, collecting, and coding relevant published, peer-reviewed contributions of others via inclusion criteria. Data is then analyzed and synthesized to envision what potential benefits are created by pairing modalities for the population.

In sum, the motivation for choosing this method was to begin addressing a gap in the literature by bringing together material currently available without running an experiment or proposing an intervention; the rationale was also to help create a springboard for future research on these combined topics. Specifically, the chosen methodology is a type of extended literature review as cited in Gilroy (2006):

The first step in many research projects is a bibliographic search for literature relevant to the topic and a review of what has been found. This is, in itself, a form of historical research because the review requires the identification and analysis of past work—the literature *is* the data. (p. 104)

While there have been various recent systematic reviews surveying methods used to assist those with ADHD or their caretakers, the researcher's methodology differs from such meta-analyses in that the categories of data extracted, analyzed, and synthesized through coding were not strictly fixed and predetermined (other than the topics of ADHD, AT, and meditation) and arose from the articles themselves.

### **Steps in Procedure**

To begin, online search engines and peer-reviewed articles were determined to be the resources engaged for the data extraction as applied to the Modalities and ADHD section of Chapter 3—including the reference pages of articles (noted whenever used). A record of search terms and inclusion/exclusion criteria was detailed. Next, the three subject areas (i.e. both modalities and ADHD) were researched, especially where they partially intersected. In this way, the primary and subsidiary research questions were addressed. Further, the inquiry as to whether or not attentional difficulties make participation in interventions impracticable for these children—individually or in groups—was considered. Finally, data was extracted and synthesized according to a method of qualitative analysis through open, axial, and selective coding as outlined by Neuman (2006). According to the author, the initial stage involves being immersed in the data and noting important points from the reading through highlighting and taking notes via sticky notes, index cards or computerized notes (Neuman, 2006). Such open coding consists of allowing categories to emerge by identifying “critical terms, central people, key events, or themes”; the list of codes is flexible and may be reworked as new information is revealed “from deep inside the data” (Neuman, 2006, p. 461). Next, axial codes develop from immersion in the open codes themselves while researchers notice links during “a ‘second pass’ through the data”; linking may take the form of organizing open codes under themes and sub-themes, abstractions, and cause and effect



relationships (Neuman, 2006, p. 462). New inquiries may result from linking and cause researchers to reconsider existing themes and codes. In the final stage, specific instances are sought in the data for support of the established, central themes, i.e. axial codes (Neuman, 2006). These specific sources can be compared and contrasted and serve to develop the themes and interactions among them. The instances are called selective codes (Neuman, 2006).

### **Databases and Search Terms**

For the formal data extraction process, systematic searches concentrated on the Discovery search engine of Concordia University; to download articles, this engine frequently accesses PubMed and ProQuest. Also, the Atrium and Sofia search engines of l'Université de Montréal and TÉLUQ as well as the PsycINFO database (of PsycNET) were occasionally consulted. Relevant journals also searched were *The Arts in Psychotherapy* offered via Elsevier ScienceDirect CRKN and journals offered through Taylor & Francis Online, namely *Arts & Health: An International Journal for Research, Policy and Practice* and *Art Therapy: Journal of the American Art Therapy Association*. It was noted when additional sources were gleaned from articles' reference lists.

Additional sources informing the paper's general material (i.e. not data extraction and synthesis) were as follows: excluded articles, relevant AT and psychology course readings, e.g. articles and the books by Berk (2012) and Hinz (2009), and the reference lists of all the above. Such sources included psychodynamic perspectives on attention deficits and intergenerational trauma research (Knight, 2017; Muhlegg, 2016; Silverman & Lieberman, 1999; Waska, 2014, 2015). A limited number of relevant, timely sources and their antecedent bibliographic sources were used to reflect on the general topics, e.g. Schwarz (2014) and the book by Armstrong (2017). The DSM-5 and the ICD-10 were employed among other sources to define the clinical states.

Subject search terms in English and French included *ADHD*, *art therapy*, *meditation*, *attention deficit*, *attention-deficit/hyperactivity disorder*, *hyperactivity*, *hyperkinesis*, *hyperkinetic*, *trouble d'attention et hyperactivité*, *TDAH*, *hyperkinésie*, *hyperkinétique*, *art-thérapie*, and *meditation*. The Boolean operator “and” was used to link and narrow the topics. Search terms<sup>1</sup> were entered into the search fields and advanced search fields. Further delimiters were then applied through the search system and the review of articles according to the following criteria.

## **Inclusion and Exclusion Criteria**

### ***Inclusion Criteria***

Relevant peer-reviewed articles included were qualitative and quantitative in nature, e.g. pilot studies. Articles published in English and French were the focus. The date range was limited to the last twenty years, expanded from ten years. The range served to find enough but not too much data with a variety of approaches beyond current trends. The only exception outside the range was Henley (1998), an antecedent based in AT practice that was important for some studies also being examined (Cheng, 2016; Habib & Ali, 2015; Lee & Liu, 2016) and cited by 79 sources on Google Scholar. In terms of reliability and validity, high quality research was prioritized. Tracy (2010) outlined eight “big tent” criteria for excellent qualitative research.

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<sup>1</sup> A note about method and terms: the researcher employed an exploratory, bottom-up approach. Initial searches and area of interest involved ADHD, AT, and guided imagery, but various types of meditation were revealed, with an abysmal amount on guided imagery itself. Therefore, it was necessary to widen the net to ADHD, AT, and the more general category of “meditation” in order to find whatever was out there—maybe only a speck of research, if anything. The researcher did not then look for specific versions or techniques of AT or meditation, as the researcher wanted to include all relevant studies; so, searches did not include specific terms, e.g. “transcendental meditation” (i.e. a method based on “the ancient Vedic tradition”; Orme-Johnson, & Walton, 1998, p. 299; Travis & Pearson, 2000) or “anthroposophic art therapy” (i.e. “founded by Rudolf Steiner and Ita Wegman”; Hamre et al., 2010, p. 240). Searches were limited to published, peer-reviewed articles and sources derived from reference lists. Thus, the researcher had not come across the specific topic of Mindfulness-Based Art Therapy (MBAT) intervention-type research until told of a prior Concordia research paper focusing on children ages six to twelve with ADHD (Jin, 2017). While the study approaches this target topic, both papers are unique and differ greatly. Jin (2017) writes that there was no research available on MBAT for young children with ADHD and hypothesizes about a specific intervention. Whereas, this current bibliographic methodology addresses children of all ages diagnosed with ADHD and adult caregivers. The wide net caught various kinds of AT and meditation.

Furthermore, the criteria included the population under age 18 identified as having ADHD. If there was no formal diagnosis or the diagnostic situation was not clarified, the article was not excluded when relevant. In searches, distressed youth were prioritized over other clientele if the study did not focus solely on ADHD. Studies were included if primary caretakers directly participated in interventions too. In short, children of all ages with adult caregivers fit the inclusion criteria. In terms of interventions, various AT and meditation methods were included.

### ***Exclusion Criteria***

Pertinent articles beyond the twenty-year range were not part of the data extraction, with one exception. Certainly, articles or publications not peer-reviewed, duplicates, student research, dissertations/theses, and conference or symposium abstracts were part of the exclusion criteria. While the inclusion criteria comprised all meditation, Mind Subtraction Meditation (Yoo et al., 2016) may not compliment AT as the researcher has experienced it due to emotion erasure rather than AT's exploration, acceptance, and processing of emotions. Also, meta-analyses and articles primarily about diagnostic tools were utilized for sections of the paper other than the data extraction of the literature review.

Furthermore, in terms of population samples, subclinical ADHD was not the focus. Articles about other disorders, whether mental or physical, but with no significant connection to the population, AT, or meditation were excluded. Sources primarily about other Creative Arts Therapies (CATS), schema therapy, ecotherapy, dialectical behavior therapy, exercise, dance, martial arts, and bouldering were similarly excluded. However, if a multi-faceted program for ADHD encompassed AT or meditation as a primary component (according to subjective decision), it was not excluded if there was a movement component such as mindful walking or Sahaja yoga.

### **Data Collection and Extraction**

The primary search through Concordia's online library Discovery search engine for the keywords *ADHD* and *art therapy* and *meditation* revealed 548 sources. When the results were limited to the peer-reviewed digital collection and the format of academic journals, results were reduced to 170. 163 remained when further selecting the date range of 2000-2020 and omitting articles not published primarily in English or French (e.g. with only an abstract in English but the rest in Hungarian). Finally, reading through the titles and abstracts revealed that there were many irrelevant studies, e.g. on vocal training or on eurythmy therapy with brief mention of AT. Other similar searches, e.g. using the keywords *attention-deficit/hyperactivity disorder* and *art therapy* and *meditation*, were conducted in the same manner. 25 articles remained within the search criteria for data extraction related to the primary research question.

The researcher downloaded and labeled articles as such: *authors (year) study name.pdf* and kept the files on a USB key in a folder labeled "Research Readings" within a folder called "Research Paper" and in corresponding back-up folders on Google Drive. When reading the pdf files, with Adobe Acrobat Reader's highlight and sticky note functions the researcher open coded—beginning with the search terms listed above in this paper. The following information was considered for open coding: ADHD information, intervention types (i.e. AT, arts-based, meditation-based), research participant demographic information, whether there was a movement component, intervention delivery (e.g. group), voluntary participation, methodology, caretaker participation in interventions, caretaker or teacher ratings, study location, and benefits or drawbacks. Demographic information included age ranges, median age, genders, cultural and racial identities, and socio-economic status. ADHD information denoted if the study was only for those diagnosed with ADHD and the number of participants identified as having ADHD. Many other codes came about through open coding such as peer-mediated, student stress, downtime,

stress relief, easily learned, teacher reports, parent-child relationship, better sleep, less anxiety, happier, and so on.

The search function of Excel assisted in the process of finding common open codes in order to develop themes through axial coding. Examples of axial codes were: Current treatments, Dangers of medication, Alternatives sought, Systemic approaches, Outcomes. Specific examples in the text were recorded with page numbers and authors' names for the selective coding, e.g. teacher reports (BRIEF) of exec. func. improved: Grosswald et al. (pp. 7-8). The open, axial, and selective coding was kept in a Microsoft Excel file labeled "Research"; tabbed worksheets made Excel an efficient choice for storage of data and searches in a virtual file cabinet. Articles suitable for inclusion criteria were summarized in this paper in the section labeled "Literature Review."

## **Ethics**

For all stages of investigation, the contextual frame of research was considered through the technique of bracketing; it assists with considering the possible effects of bias from past experience or elsewhere which may possibly cause reductionism, generalization, or misunderstanding. For example, hearsay may prescribe that these children are tremendously difficult due to inborn properties and only strong medication renders them manageable to parents and teachers. Whereas, the researcher's intention is to, with curiosity, analyze the literature on the population and modalities. Aspects to bracket, to name a few, are an investigator's demographic identifiers such as age, cultural background(s), race(s), physical and mental health status, political perspectives, sex, socio-economic status, and views, e.g. studying from a Western viewpoint in Canada. The researcher has incorporated a bracketed, open, and thorough approach at all stages. For example, one lens was prior teaching experiences with caution around both the diagnostic category and the now commonplace way of dealing with it. The researcher recognized that after the experience of

teaching studio arts and studying art therapy, there was a bias that the arts and AT can be powerful and beneficial for many people. By the same token, having learned and utilized meditations, the researcher was aware of benefits such as a potential for developing a balanced life.

In further maintaining an ethical frame, relevant standards (i.e. codes) for AT, counselling, and psychotherapy were respected. The principles concerning research as outlined by professional associations (American Art Therapy Association [AATA], 2013; Association des art-thérapeutes du Québec Inc. [AATQ], 2019; Canadian Art Therapy Association [CATA], 2003-2004; Canadian Counselling and Psychotherapy Association [CCPA], 2020) have informed this paper and have been upheld. To name a few ethical codes, researchers have the responsibility to act in an ethical manner as specified by relevant laws, regulations, standards, and principles and to respect the rights of those who submitted research (AATA, 2013; CCPA, 2020). Therefore, appropriate credit was given to others who have contributed their ideas and research in academic journals and who have shared in any other manner (CATA, 2003-2004). Also embodied were principles of respect for the population (e.g. in collecting and analyzing data) and of concern for potential impacts of research on direct or indirect participants; research was conducted with respect for their dignity and welfare (AATQ, 2019).

### **Chapter 3. Literature Review**

Within this chapter, articles meeting the inclusion criteria are reviewed. The sources reveal aspects related to the primary research question. First, in order to familiarize readers, condensed summaries are displayed in this chapter's literature review. The sections of the chapter are organized by: modalities as used with the population or when used together. The subheadings are examples of overarching axial codes which emerged from the data and which serve to categorize

articles. Second, the data synthesis of common themes follows in Chapter 4, as does research on the subsidiary question of definitions and risk factors associated with ADHD.

## **Modalities and ADHD**

### ***Art therapy + ADHD + Meditation***

In the literature to date, a published article on this precise topic has not yet been found with the present search criteria. However, there is some intersection of topics, e.g. meditation-based studies on ADHD sometimes include an art component but not AT, specifically. Some papers may approach the target topic but do not cover it. The study by Kim et al. (2014) on AT combined with breath meditation for depressed and anxious adolescents has been the closest thus far. It must be included in the AT + Meditation section as it does not focus on ADHD. The social-work-oriented writings of Coholic and colleagues (Coholic, 2011; Coholic & Eys, 2016; Coholic et al., 2009; Coholic et al., 2012a; Coholic et al., 2012b; Coholic et al., 2020; Lougheed & Coholic, 2018) also approach this topic but do not focus exclusively on ADHD and do not specifically use AT, but rather arts-based mindfulness. These studies appear in the ADHD + meditation section, as some participants were identified as having ADHD.

### ***ADHD + Art Therapy***

Studies which lend support for AT with this population include the mixed-methods publication by Liao and Liu (2012). The authors introduce a six-session program that seems to be in Taiwan for children ages six to nine with ADHD. The AT interventions allowed for “exposure to cues provoking anger in a less threatening manner and allowed children to contain escalating unpleasant emotions and physiological hyperactivity, leaving mental space for self-awareness; emotional diaries and visual imagination helped the children to recount the stories” (Liao & Liu,

2012, p. S302). Test-retest measurements of both anger and internalizing/externalizing capacity showed there were differences between the pre- and post-test scores. “Qualitative analysis of children's drawings demonstrated the progress of coping from aggression (e.g. a burning volcano to kill everyone) to soothing mastering. The study provided supports for effectiveness of art therapy” (Liao & Liu, 2012, p. S302).

A quantitative approach to studying AT as used with children with ADHD comorbid with intellectual disability was taken by the authors Habib and Ali (2015). For this controlled study in Pakistan, a group of fourteen children aged six to twelve participated (Habib & Ali, 2015). The experimental group received 25 AT sessions, e.g. with the use of free drawing, and there was a waitlist control group. While the co-morbid status of participants complicates conclusions, the test-retest components reflected an improvement for the experimental condition on impulsivity via the “Attention Deficit Hyperactivity Disorder Test” and “Human Figure Drawing” assessment (Habib & Ali, 2015). The authors concluded that “art therapy might be one of the most single effective therapies to help children and adults to concentrate, slow down and stabilize” (Habib & Ali, 2015, p. 30) and noted that Henley (1998) found support for AT and its sublimation of destructive impulses with behavioral regulation. The therapist who was a part of this study witnessed the unique art expressions of the children while moods tended to stabilize (Habib & Ali, 2015).

The article written by art therapist Henley (1998) detailed an on-going “therapeutic and socialization program” offered to children with ADHD “up to latency age” (i.e. ages six to eleven); groups employing “free play, group discussion, and an expressive arts activity” meet for two hours twice a week (p. 2). AT interventions such as drawing, painting, clay, and group collage were employed; meetings likely occur in the U.S. The author used vignettes to describe participants; in terms of methodology, the detailed clinical record-keeping process was outlined, i.e. the therapist’s



impressions of motivation, participation, sublimation, and improvement that were shared with a psychiatrist and the parents. Henley (1998) concluded there is “support for an integrated, multi-modal approach to ADHD, which, I believe, has more potential for effectively addressing children's problems than isolated approaches. The expressive arts, in particular, can facilitate and enhance the effectiveness of all the other interventions” (p. 11). The program was delivered “in concert with behavioral, cognitive, psychodynamic and medical approaches” (Henley, 1998, p. 2). So too has Hamre et al. (2010) delivered AT within a much larger framework, that of “a complementary system of medicine” called anthroposophic medicine (AM; p. 240). For 61 children ages three to sixteen with ADHD in Germany, the study was comprised of AT for twelve 45-minute sessions offered once a week as well as eurythmy, tailored medications, and massage therapy; core symptoms of ADHD (i.e. inattention, hyperactivity, and impulsivity) showed improvements that were maintained at 24-month follow-up (Hamre, 2010).

With a different design, Lee and Liu (2016), conducted a pilot study for fourteen weeks on AT with six children aged six to ten with special educational needs (SEN) in Hong Kong; four children had ADHD co-occurring with other issues. One-a-week sessions lasted 75 minutes and utilized drawing, painting, and clay work. Lee and Liu (2016) incorporated information from Henley (1998) while comparing results therein. Positive changes were observed in the children’s autonomy and competence in-session whereas fewer changes were observed in relatedness; while pre- and post-test measures did not show much change, parents’ ratings affirmed that “art therapy had improved the emotional and behavioral adjustment of their children” (Lee & Liu, 2016, p. 24). One mother noted her son’s new confidence as he began to willingly perform music for the family when invited (p. 28).

### ***Art Therapy + Meditation***

**AT + Breathing Meditations.** One rare example of combining modalities with a related population would be the publication of Kim et al. (2014) on AT and breath meditation as used with 24 depressed and anxious adolescent boys in a public-school setting. While children with ADHD may indeed experience such comorbid symptomology and while ADHD may often persist through the life stages of adolescence and adulthood as noted by Huguet et al. (2017), this article by Kim et al. (2014) did not focus on ADHD. The control group study took place in South Korea with two experimental conditions, i.e. group AT with breath meditation or group AT alone; the study spanned about five months for a total of thirteen sessions and primarily focused on drawing. The boys voluntarily participated and experienced decreased stress (Kim et al., 2014). Subjective well-being increased more for the first group, but the second group's scores increased more than those of the control group; also, group work fostered growth as portrayed in vignettes (Kim et al., 2014).

**AT + Guided Imagery Meditations.** The random, controlled trial of Ciasca et al. (2018) in Brazil used guided imagery and AT with a very different population, namely depressed, elderly women. Ciasca et al. (2018) proposed the study because they believed “active engagement in creative activities, including art, can bring many benefits, including improved well-being, quality of life, health, and socialization” (p. 256). These positive aspects of life may be greatly reduced when someone is facing depression. Ciasca et al. (2018) wanted to test their idea that “the therapeutic function of art is related to the possibility of concretization of thoughts, feelings, desires, and the facts of life using expressive resources [...] which mobilize several aspects of the human mind: cognition, the sensorimotor system, emotions, and intuition” (p. 256). For the experimental group (EG), ninety-minute AT sessions were given once a week for twenty weeks. According to Ciasca et al. (2018), after a short, guided imagery and relaxation technique used to help place clients in the “here and now,” themes surrounding self-esteem, loss, control, and coping

were employed; in addition to seed mandalas, rock art, and soda straws, “techniques such as painting, drawing, clay modeling, weaving, and collage were used” (p. 259). While Ciasca et al. (2018) found that there were no differences between the EG and control group (CG) in cognitive improvement, the EG’s depression and anxiety were reduced. The inclusion of a relaxation exercise for the EG may limit conclusions; the results may be due to an interaction of the relaxation/guided imagery and AT or due to one or the other exclusively (Ciasca et al., 2018).

**AT + Mindfulness Meditations.** Kalmanowitz and Ho (2016) adapted therapeutic interventions to meet the needs of refugees (number of participants indeterminate) from seven countries living in Hong Kong at the time; a short-term, intensive, and inclusive studio approach to AT and meditation was found to be more suitable than a long-term intervention. Within an eight-day period, two full-day, eight-hour workshops took place; it seemed that only adults participated. Mindfulness meditation was employed; Coholic (2011) presented the Eastern origins of mindfulness meditation which are relayed in the next section. Within this “Inhabited Studio” of Kalmanowitz and Ho (2016), nine features of combining meditation and AT were observed and qualitatively conveyed through vignettes in the article: “safety, doing versus thinking, changing our relationship to our thoughts and feelings, the notion of time in the context of trauma, change and making meaning, flexibility, catharsis, increased self-awareness and self knowledge, coping with loss” (p. 59). Within this study, Kalmanowitz and Ho (2016) conveyed the view that the context of AT with meditation was found to be important and complimentary as difficult memories may arise when encountering traumas through artwork when alone and outside of the studio; plus, the mindfulness helped to re-center clients in the current time and location of safety.

In contrast, while thick with detailed discussion of AT and meditation, the studies of Franklin et al. (2000) and Wardi-Zonna (2020) focused respectively on transpersonal graduate AT

training and on mindful clay work, also part of graduate AT work. Much philosophical and experiential information is gleaned from these educative sources. However, without a group of clients pinpointed as participating in research, these articles are not a focus.

### ***ADHD + Meditation***

**ADHD + Mindfulness Meditations.** Meditation was but one component of the integrative, arts-based mindfulness program of Coholic (2011). “The origins of mindfulness are ancient and as a holistic philosophy, mindfulness is usually attributed to Gautama Siddhartha, the Buddha, about 2,600 years ago” (Coholic, 2011, p. 304). Van de Weijer-Bergsma et al. (2012) also noted that mindfulness practice is rooted in the wisdom of Buddhism and Western psychology. The mindfulness program of Coholic (2011) was offered for more than three years to children in need aged eight to twelve, some of whom were identified as having ADHD. The author stated that “Mindfulness was developed as a holistic teaching whose purpose was to relieve human suffering, to increase compassion and loving-kindness among its practitioners, and to help individuals attain the peace of enlightenment” (Coholic, 2011, p. 304). Jon Kabat-Zinn (Kabat-Zinn, 1990, 1994, as cited in Coholic, 2011, p. 303) is credited with developing early programs in North America; mindfulness is now seen as third wave cognitive-behavioral therapy (CBT). Coholic (2011) found that the adaptation of such a program through the use of arts-based methods enhanced the work with these youth in Canada:

The delivery of mindfulness via arts-based methods appears to make sense for young people in need as these children and youth may not have the abilities or skills to learn a traditional mindfulness practice based on meditation, and through no fault of their own, they also lack skills for the usual talk therapies. (p. 314)

Space did not permit detailed summaries of the seven peer-reviewed articles written by Coholic and colleagues (see References), including the work done by Loughed and Coholic (2018) with adolescents, as there is some overlap in the writings and as it is necessary to allow for other voices. It should be noted, however, that they have been making what seem to be vital contributions. In their qualitative data-gathering, positive results were seen in the groups according to observations and self-reports, e.g. fostering of peer connections, fun, self-awareness, improved mood, confidence, and arts-facilitated acquisition of skills like meditation and coping.

In another part of the world, a quantitative, control-group study was undertaken with 101 children in elementary-school grades three to five by Tarrasch (2018). The experimental group in Israel participated in mindfulness workshop interventions for ten weeks, while the control group did not. Interventions included “Breathing awareness,” “Walking meditation,” and “Meditation bubble,” among others (Tarrasch, 2018, p. 2635). The attentional capacities “Sustained Attention” and “Selective Attention” were examined via test-retest measures, i.e. “two computerized tasks of attention” called “Continuous performance task” and “Conjunctive visual search task,” on which the experimental group showed improvement (Tarrasch, 2018, pp. 2635-2637). The author wrote of “Sharing experiences during mindful eating [...] Practice during the week the own safe peaceful place, draw it, and vividly remember it in stressful situations” (Tarrasch, 2018, p. 2635). Here, art-making had been incorporated but not specifically AT approaches, per se.

With a much smaller sample and shorter test period, a test-retest pilot study with no control group was conducted in Spain by Huguet et al. (2017). Five children aged “7-12 years newly diagnosed with ADHD received an eight-week group-based mindfulness treatment. The program consisted of once-per-week sessions lasting 75 minutes and daily homework assignments” (Huguet et al., 2017, p. 305). The group interventions consisted of a breathing meditation and a walking

meditation; the latter was paired with a homework assignment of mandala painting. The researchers note that drawing and painting mandalas are common AT interventions (Huguet et al. (2017). For example, a 1996 AT mandala drawing study of children with ADHD was cited by Habib and Ali (2015), authors mentioned above. As with the study done by Tarrasch (2018), there could conceivably be room for AT in sessions by further developing and supporting arts-based components, according to the researcher's view. While the results are to be interpreted with caution, Huguet et al. (2017) recorded improved scores for executive functioning through a list of surveys, computerized tests, cognitive flexibility card tests, and interviews. This study's "assessments included pre- and post-test measure of psychiatric symptoms and cognitive functioning" (Huguet et al., 2017, p. 305); "furthermore, no side effects were observed and treatment was well-accepted by families and patients" (p. 314). Another study with a relatively small sample size offered mindfulness meditation training to 23 adolescents and adults (not related) with ADHD in the U.S. (Zylowska et al., 2008); in their pre- and post-test design, the authors tested functions similar to those tested by Huguet et al. (2017). In their often-cited study, Zylowska et al. (2008) stated that "improvements in self-reported ADHD symptoms and test performance on tasks measuring attention and cognitive inhibition were noted. Improvements in anxiety and depressive symptoms were also observed" (p. 737).

***Inclusion of Caretakers in Mindfulness Meditations.*** This study, also cited often, is of particular interest due to its systemic involvement (Singh et al., 2010). According to the authors, common problems encountered when parents care for children with ADHD include strained relations due to reduced compliance to parental direction (Singh et al., 2010). Parents felt dissatisfied with conventional approaches because of the need to "impose external control on the children which not only results in the children not learning self-control strategies, but also does

not enhance positive interactions between them and their parents” (Singh et al., 2010, p. 157). The study involved four participants—two mothers and two children ages ten and twelve—in the U.S., it seems. Comparing the baseline to post-test results, Singh et al. (2010) noticed there were

clear increases in the children’s compliance levels during their mother’s training in mindfulness, but these were followed by even larger increases after the children received the planned training in mindfulness. Training the children in mindfulness positively enhanced mother–child interactions. (p. 163)

Singh et al. (2010) stated the following: “We suspect that the mindfulness training produces personal transformations, both in parents and children, rather than teaching strategies for changing behavior” (p. 157). The mothers said informally that the meditations were originally “physically and mentally difficult, and foreign to their way of life. Both reported that they would have given up the practice within the first few sessions if they had not personally requested this training” (Singh et al., 2010, p. 162). However, after persisting, enjoyment and anticipation of practice increased with the “calmness and lightness of being that it produced”; meanwhile, relations with spouses and children improved as calm and listening without judgments developed (Singh et al., 2010, p. 163). Children also shared that training was fun and they “were hooked” as they “could remain calm and attentive in school” (Singh et al., 2010, p. 163). Generalizing from small samples is not advisable, but the outcomes and anecdotes herein informed studies such as the next two.

Another systemic mindfulness investigation was the within-group, pre-post study with waitlist by van der Oord et al. (2012) in the Netherlands; they studied children aged eight to twelve diagnosed with ADHD and their parents ( $N = 22$ ). In light of the authors’ assertion that “parenting stress is elevated in parents of children with ADHD” and that “parental overreactivity” is high (p. 140), the outcomes and anecdotal accounts relayed by other authors stand out, e.g. those of Singh

et al. (2010). Positive outcomes from mindfulness training were also reported by van der Oord et al. (2012): reduced ADHD-type symptoms in children and “a significant reduction of parental stress and overreactivity from pre- to follow-up test” (p. 139). In comparison, the non-controlled pre-post design study on mindfulness by van de Weijer-Bergsma et al. (2012) also in the Netherlands trained older children, i.e. 36 adolescents with ADHD, as well as their parents and tutors. Positive outcomes such as reduced paternal parenting stress, reduced adolescent behavioral problems, increased attentional performance, and increased executive function may necessitate regular training as outcomes had waned by the follow-up at sixteen weeks, according to van de Weijer-Bergsma et al. (2012).

**ADHD + Sahaja Yoga Meditations.** One study on Sahaja meditation training was revealed by the general searches; as with the few mindfulness studies appearing immediately above, the caretakers of youth with ADHD were included in the following intervention.

*Inclusion of Caretakers in Sahaja Yoga Meditations.* Harrison et al. (2004) studied 44 families—children diagnosed with ADHD, their parents, a sibling, and a grandmother—in a systemic six-week, twice-weekly Sahaja yoga program in Australia. Five to fifteen-minute sessions “to achieve a state of thoughtless awareness” were originally developed by Shri Mataji Nirmala Devi Shrivastava (Harrison et al., 2004, p. 484). In this small-scale, within-group design, the quasi-control waitlist group was included in the second phase of studies (Harrison et al., 2004). Significant positive outcomes were reported for both parent and child; the investigation found that Sahaja may be an effective management tool because signature difficulties of ADHD were reduced while increases in calm and relaxation were reported in children’s self-reported data (Harrison et al., 2004). While no evaluations were given by teachers, parents and children reported that “associated symptoms of ADHD, such as anxiety and poor confidence, were reduced; parent



ratings of child self-esteem showed significant improvements in children's confidence, social abilities and involvement. Third, functional benefits were noted, child-parent relationship quality improved" as conflicts reduced (Harrison et al., 2004, p. 491). Meanwhile, concentration, sleep, and attitude towards school improved for these children (Harrison et al., 2004). Two of the authors have notably investigated topics including the physiological (e.g. neurobiological) implications of meditation, ADHD, and depression (Harrison et al., 2004). While movement-based interventions such as yoga were typically excluded from this paper, there is a predominant portion of meditation in this style and in the following approach.

**ADHD + Sound and Breathing Meditations with Yoga.** The multimodal behavior program tested by Mehta et al. (2011) incorporated yoga, meditation, and behavioral play therapy; the intervention was peer-mediated in that it was implemented by high school volunteers. This controlled, pilot study took place in India for six weeks with 80 children ages six to eleven. Mehta et al. (2011) affirmed that "a low-cost, effective method" of therapy for children diagnosed with ADHD would be helpful in improving "the quality of life for a significant portion of the school age population [...] Ideally, strategies that are culturally familiar would be more acceptable and easier to incorporate" (p. 2). Follow-up teacher and parent ratings were collected for 63 children on overall academic and behavioral performance; as noted by Mehta et al. (2011):

57 of the 63 (90.5%) children had some form of improvement in their performance impairment from this therapy, and more than half the students, 35 of the 63 (55.5%) students, improved to the normal range with no performance impairment reported by teachers. (p. 3)

Furthermore, "Improvement did not really vary by age, gender, or type of diagnosed ADHD" (Mehta et al., 2011, p. 4). Measures of meditation ability were reported: "We compared the

children's ability to control their breathing with their initial impairment in academic performance. We show that children could learn meditation and control their breath irrespective of their initial impairment score" (Mehta et al., 2011, p. 4). Finally, it should be noted that the program was integrated within a public school.

**ADHD + Transcendental Meditations.** An exploratory, non-controlled, pre-post study in the U.S. by Grosswald et al. (2008) lends support for the use of Transcendental Meditation® (TM) with children ages eleven to fourteen years old with ADHD. Grosswald et al. (2008) concluded that attention, executive function, and overall problematic states improved. They stated that this meditation is unique as it is neither contemplation-based (i.e. non-judgement of mental states as in mindfulness techniques) nor concentration-based (i.e. focused attention on one point), takes little time to learn, and involves effortless transcendence instead of effortful control (Grosswald et al., 2008, pp. 3-4). TM employs a special sound or word (i.e. "mantra") which is said at ever quieter levels (Grosswald et al., 2008, p. 5). So, the authors felt it may be particularly suited to these children upon appraisal of TM and the contemplation- and concentration-based meditation techniques (Grosswald et al., 2008, pp. 3-4). The "portability" and short time to employ the method are emphasized as helpful in dealing with "the epidemic of student stress" (Grosswald et al., 2008, pp. 7-8). For ten participants, regular practice occurred twice daily for ten to fifteen minutes in a school setting; allowing for "downtime" imbued with deep relaxation may have reduced the stress, anxiety, and ADHD symptoms of these students (Grosswald et al., 2008, p. 7). "Statistically significant improvements were noted on both the teacher-rated BRIEF" (Behavior Rating Inventory of Executive Function) and performance tests of attention and executive function (Grosswald et al., 2008, pp. 7-8). In referring back to the emphasis Mehta et al. (2011) placed on low-cost methods, to the researcher's knowledge, TM is not the most inexpensive training.

However, Grosswald et al. (2008) reported an ease of learning the methods on the part of the children with whom they worked.

#### **Chapter 4. Discussion**

Art therapy has its roots in primordial art-making (Rubin, 1998; Vick, 2003), and meditation has similarly persisted time immemorial. In recent times, AT has been used with people diagnosed with ADHD. While not a peer-reviewed article, the Hinz (2009) book on the Expressive Therapies Continuum (ETC) is a manual many art therapists and AT students employ in their practices—often as a staple resource. It illustrates individual interventions and case studies. Therein introduced is a series of AT interventions, part of an ADHD case study about eight-year-old Adam; the levels of the ETC were carefully traversed with scribble drawings and house construction (Hinz, 2009, pp. 51-54). As a result, he seemed to be learning valuable life skills, e.g. self-regulation, in the process. To illustrate a preliminary example of the synthesis of findings (but outside the data collection criteria): in the researcher’s view, it is conceivable that a form of meditation could be added to the intervention series for Adam so as to work with other core issues.

Guided imagery is outlined in the ETC manual in conjunction with AT (Hinz, 2009). The meditation is also called a “guided daydream” in the manual. Clients may imagine traveling to places such as caves, mountains or lakes, “where they meet with archetypal characters and face situations that must be navigated, revealing their inner resources. After completing the guided imagery journey in imagination, clients can be asked to illustrate three scenes from it” (Hinz, 2009, p. 149). Potential benefits listed in the book are the “realization of internal wisdom and strengths projected onto characters in the story” and the “integration of new strengths” (Hinz, 2009, p. 167). The target population is not specified for this paired intervention. The following section reveals

the intersection of findings from the articles gleaned from focused searches for ADHD, AT, and meditation—the sources outlined in the literature review.

## **Synthesis of Findings**

Due to the gap in the literature concerning studies on the combined topic of ADHD, AT, and meditation as specified by the primary research question, it is impossible to relay any concrete results of such a combination; such research is still needed. No study was found within the search parameters outlined in this paper. It is possible only to present and synthesize important notions, components, and outcomes from the related studies which point to benefits. Grounded in the examined data, the combined topic can only be theoretically discussed. In this section, key concepts—presented as subheadings—arose from the open and axial coding. Selective codes appear as the specific instances from articles. Research on subsidiary topics follows this section.

### ***Multimodal: Art and meditation***

Research on meditation sometimes includes an art component. For example, the “Mindful eating” drawing homework component is part of a larger mindfulness training including meditation (Tarrasch, 2018, p. 2635). It is here the researcher identifies a link between meditation and art. One may ask if the drawing component could be brought into an AT setting. Equally, AT could perhaps have been employed after other interventions such as conscious walking outlined by Tarrasch (2018); Loughheed and Coholic (2018) used an arts-based approach, but not AT specifically, at that very juncture.

Coholic (2011) used an adjusted mindfulness training for youth with an array of difficulties, for a few this meant ADHD; the training was shorter and more frequent than an adult-oriented kind. Arts-based interventions appeared to have increased the accessibility and delivery

of mindfulness programming for the youth who may lack the skills or ability to learn to use this kind of meditation (Coholic, 2011). Art therapist Henley (1998) may mirror this support for an integrative creative arts approach to ADHD when noting that the arts have the potential to enable and enrich other routes. Henley (1998) concluded that there is “support for an integrated, multi-modal approach to ADHD, which, I believe, has more potential for effectively addressing children's problems than isolated approaches. The expressive arts, in particular, can facilitate and enhance the effectiveness of all the other interventions” (p. 9). This could conceivably support the use of AT and meditation in unison, especially considering the utility of guided imagery is highlighted by Henley (1998). Similarly, following a discussion of music therapy in a meta-analysis on meditation for adolescents, Cheng (2016) concluded: “Mindfulness-based interventions can likewise be infused into art therapy, which shows positive indicators related to attention deficit hyperactivity disorder [...] This synthesis would further extend the versatility of art therapists” (p. 16). While meta-analyses were part of the exclusion criteria for the literature review, this comment and one by Modesto-Lowe et al. (2015) in the Meditation Types category below were pertinent and included to inform these discussions.

Two other key ideas became apparent for the children’s participation: voluntary and group-based. The study by Kim et al. (2014) included these features. To recap, in their study, the drawing component was in fact AT, and the meditation was breath-based (Kim et al., 2014). Whereas, the Coholic (2011) study employed the arts-based methods of painting, clay work, and drawing, e.g. "Feelings Inventory," as well as guided imagery and sitting, eating, walking, and breathing meditations (p. 309). The group dynamics for both studies changed over time to provide fun or mutual support—two other key notions. It is left unanswered how those groups may have fared had participation been involuntary. Group participation, also an aim of Henley (1998), in both

studies served as a challenge at first that evidently evolved to have more apparent benefits than drawbacks.

### ***Socialization***

Whether articles focused on art or mediation, a variable entering into the consideration of the primary research question was socialization. Be they small or large groups, as just mentioned above and in the other studies by Coholic and colleagues (Coholic & Eys, 2016; Coholic et al., 2009; Coholic et al., 2012a; Coholic et al., 2012b; Coholic et al., 2020; Loughheed & Coholic, 2018), be they peer-mediated interventions (Mehta et al., 2011), or be they the systemic, parent-child approaches of Singh et al. (2010), Harrison et al. (2004), van der Oord et al. (2012) and van de Weijer-Bergsma et al. (2012), the adaptive benefits of expanding participation in interventions beyond an individual are illustrated. One caveat Coholic et al. (2012b) highlight is that their groups were not entirely composed of children diagnosed with ADHD in order to aid feasibility of implementation and delivery of interventions. Also, optimal group size for them fell between five and twelve children with four facilitators on duty (Coholic et al., 2012b). Considering how ADHD in children is not isolated to them but rather affects caretakers, teachers, classmates, and others in society, the development of social involvement was evident in the literature, both as a contextual factor and as an outcome. If combining AT and meditation for this population, it may be important to consider socialization components and variables.

In terms of parent participation, some participant observations relayed by Harrison et al. (2004) begin with a mother stating, “‘I truly understand how me meditating and becoming more relaxed has helped my son 150% because he feeds off a calmer mum.’ Parents also said they had used meditation at home to help deal with difficult situations” (p. 491). Thus, further key concepts were household engagement, instructions, and intensity; instructions were given to parents for

home implementation as part of intensive treatment (i.e. twice daily; Harrison et al., 2004, p. 492). The researcher notes that such modeling in the home by parents might support a child's overall growth through teaching self regulation, problem-solving, and organizational skills—useful for living within the larger society. In no way negating interventions for individuals, socialization was an important component of the AT and meditations studied and likely for this population. Such multi-person involvement could lead to the next topic.

### ***Relational Improvements***

Harrison et al. (2004) discussed attachment in light of beneficial parent-child outcomes: “a decrease in ADHD symptoms was strongly correlated with an increase in CPRS scores, that is, less conflicted (more secure) parent–child interaction” (p. 490). Singh et al. (2010) also noted positive parent-child interactions, discussed in detail in the next section. After the Sahaja yoga meditation interventions, there was better stress management, and parent-child relationships were less characterized by angry conflicts (Harrison et al., 2004). A possible key notion is parents' increased sense of competence with ADHD (Harrison et al., 2004, p. 493). The shared home use of the techniques (mentioned in the section immediately above) also could contribute to improved relationships. Given that parents already tend to be under mental and emotional strain when ADHD-like symptoms present in a child (van der Oord et al., 2012; van de Weijer-Bergsma et al., 2012), reduced financial stressors could be beneficial. A key concept noted in some studies was the benefit of low-cost alternatives to ADHD medication (Mehta et al., 2011).

### ***Benefits for Caretakers***

While overlapping a little with the previous sections, an important intersection of data occurs with respect to caretakers of youth with ADHD, usually parents. Varied positive outcomes

for them were presented after meditation training in four studies (Harrison et al., 2004; Singh et al., 2010; van der Oord et al., 2012; van de Weijer-Bergsma et al., 2012). Three of these studies looked at mindfulness training systemically. With regards to the outcomes of the training for both children with ADHD and their parents, Singh et al. (2010) wrote:

the calmness resulting from sustained personal meditation practice is manifest in the parents in many ways, most commonly in the non-escalation of potentially negative interactions with their children, thus producing peace and calmness in both themselves and their children. Similarly, with loving kindness, parents and children gradually develop unconditional love for each other, and this provides the underpinnings of their social interactions, regardless of the actual content of the interactions, and increases empathy in both parent and child. (p. 164)

In their work with adolescents and their caretakers, van de Weijer-Bergsma et al. (2012) noted reduced “parental overreactivity” in mothers and reduced parenting stress in fathers, with other mixed results (pp. 783-784). For their study on younger children and their caretakers, van der Oord et al. (2012) reported a “significant reduction of parental stress and overreactivity from pre-to follow-up test” (p. 139); furthermore, the authors postulate that parents (perhaps suffering with ADHD themselves) who ordinarily would not seek out treatment could be reached through targeting both child and parent (p. 145). In short, parents may respond instead of react habitually and may make time to “take care of themselves, as this is the basis for parenting” (van der Oord et al., 2012, p. 142).

In that anger and conflicts were more manageable for parents, a greater sense of parenting competence was mentioned by Harrison et al. (2004) after Sahaja yoga meditation training for both parents and children diagnosed with ADHD. As a result, parents reported feeling "happier, less



stressed and more able to manage their child's behaviour" (Harrison et al., 2004, p. 479). Parental calmness, as mentioned above by Singh et al. (2010), was also a feature noted by Harrison et al. (2004); this factor interacted with family relationships in both studies. This research would point to beneficial experiences for caretakers and the importance of including them. What is left unanswered is a definitive response as to how blending such approaches with AT might fare for this population.

### ***ADHD Symptoms & Related Issues***

The arts-based and AT studies covered have offered a positive forecast for the use of art with various populations including those diagnosed with ADHD or those with the related issues of student stress (Grosswald et al., 2008), anxiety, or depression in childhood or adolescence (Kim et al., 2014). Specifically, Habib and Ali (2015) have stated that "art therapy might be one of the most single effective therapies to help children and adults to concentrate, slow down and stabilize" (p. 30). Liao and Liu (2012) have reported the key concepts of self-awareness and increased mental space after intense emotional expression and containment through AT. This may lead to the next concept of readiness for meditation; meditation-based intervention studies overall have similarly reported efficacy in addressing some ADHD-related issues. A key concept that sometimes runs through studies and that may bring this research full circle is the ease and feasibility of trainings for these children, peer mediators, parents, and tutors. For example, it would seem that TM is easily learned by these children (Grosswald et al., 2008) but that their mindfulness training could be aided by a multimodal approach with AT (Coholic, 2011).

### ***Meditation Types***

While initially it may not have seemed possible to use meditation with such active, restless, and impulsive children, it is interesting to note that after beginning research, it has become apparent that meditation is in fact possible for at least some. Furthermore, it may in fact help with distractibility and sustaining attention—notable outcomes among other improvements that are beginning to be discovered; the use of and research on meditation for ADHD is only in the early stages according to the meta-analysis by Modesto-Lowe et al. (2015). Any kind of meditation may overlap with and incorporate other types of meditation (e.g. by including a component focusing on breathing or guided imagery).

### **Subsidiary Research Topics**

In this section, the subsidiary research question concerning definitions of ADHD and associated risk factors for ADHD are addressed. The question was not bound by the specific inclusion criteria of the database searches; therefore, additional sources were included to assist in painting a more complete picture of definitions presently available. The section has expanded to include etiological concerns as there is some overlap of this area with risk factors. Definitions other than the conventional ones listed in the Introduction were researched and are herein presented. Limitations and future directions follow this section.

### ***Alternate Definitions of ADHD***

From his psychodynamic perspective, Waska (2014) ventures that at least some people suffering with attentional disorders are in fact fundamentally “suffering from an object detachment process in which they are overwhelmed with a variety of unconscious relational conflicts, which create internal and external dynamics that in turn create symptoms of inattention, difficulty in

focusing, disorganization, and scattered thinking” (p. 367). The author recommends looking deeper into psychological conflict and attachment in counseling.

When looking upon children as part of ever larger groups, often beginning with family, they are viewed systemically. Family difficulties, be they evident, suppressed, or repressed, could be viewed as outwardly manifesting to the world through a “symptom child” or “enfant symptôme” in French (Feldman, 2013). Finally, Erlandsson and Punzi (2016) suggest that stress parents feel in regards to their own life challenges, while normal, could be absorbed and acted out by children.

On a more philosophical level, it is important to examine the use and validity of the operationalized term ADHD. It can be viewed as a construct made by dominant social forces employing “social constructionism”—which could contribute to stifling heterogeneous representations of existence and grassroots meaning-making of behavior associated with ADHD (Danforth & Navarro, 2001; Patton, 2002, p. 96). Some authors may call into question the labeling of symptoms as ADHD (Armstrong, 2017) or otherwise encourage a comprehensive or strengths-based, holistic view of those diagnosed (Lougheed & Coholic, 2018). Finally, questions of ADHD as a misdiagnosis of giftedness versus dual diagnoses were posed by Mullet and Rinn (2015).

### ***Etiology and Risk Factors***

As for etiology, the DSM-5 (2013) lists variables correlated or associated with ADHD (i.e. environmental, genetic, temperamental, physiological) as contributing to the appearance of ADHD symptoms and distinguishes it from other disorders. Specifically, in addition to genes, “ADHD is associated with environmental factors. Prenatal teratogens—such as tobacco, alcohol, illegal drugs, and environmental pollutants—are linked to inattention and hyperactivity” (Berk, 2012).

Alternately, Perry and Szalavitz (2007) suggest that some cases of ADHD may in actuality be post-traumatic stress disorder (PTSD). Traumas can be defined as direct and/or

intergenerational. Silverman and Lieberman (1999), Muhlegg (2016), and Knight (2017) describe a psychodynamic process of projective identification, whereby parents unknowingly perpetuate the transmission of disowned, encrypted family traumas and identities they themselves inherited. Parents may unconsciously expect a child to be an extension of the self and thereby seek expression and resolution of trauma or resultant losses vis-à-vis the child. In sum, an intergenerational bequest may unintentionally pass through two generations via symbiotic parent-child identification (Muhlegg, 2016). The trauma can manifest as an indistinct, persistent disturbance that the child will carry in the background or foreground throughout the lifetime (Muhlegg, 2016).

When considering etiology and definitions of what constitutes disorder as compared to natural development (Ronchewski Degorre, 2017), there may be some overlap. Specifically, “authoritative” parenting is considered “the most successful approach” (Berk, 2012, p. 398); an adaptive balance is found as parental control frames a child’s developing autonomy. These parents scaffold the child’s growth through warmth and care; obedience to such parents can be developmentally supportive and beneficial, e.g. a child learns not to run into traffic through compliance to parental alerts. In contrast, “permissive” parents are “warm and accepting but uninvolved” and neglect setting appropriate boundaries while “authoritarian” parents are “low in acceptance and involvement, high in coercive control, and low in autonomy granting” with a “cold and rejecting” style (Berk, 2012, p. 399). Thus, authoritative parenting is not at either extreme of this spectrum but rather balances boundary-setting for children with support for independence.

While some articles may highlight obedience, the authors of one study qualify their statements: “Total compliance with the mothers’ requests was neither expected nor achieved because a certain amount of noncompliance is considered developmentally normal” (Singh et al., 2010, p. 163). While adolescence may often be thought of as the critical period for autonomy,

Erikson's psychosocial approach<sup>2</sup> of natural human development identifies independence at various stages. Within his eight stages (see Appendix) are the initial stage of "basic trust versus mistrust" and the second stage (ages one to three) of "Autonomy versus shame and doubt" when "children want to decide for themselves. Autonomy is fostered when parents permit reasonable free choice and do not force or shame the child" (Berk, 2012, p. 16). Another passage of independence is in the "Initiative versus guilt" stage from ages three to six (Berk, 2012, p. 16). As with abusive parental figures or with authoritarian ones, demands might be detrimental to a child; nevertheless, compliance may be enforced under threat of harsh punishment<sup>3</sup>. "If children emerge from the first few years without sufficient trust in caregivers and without a healthy sense of individuality, the seeds are sown for adjustment problems" (Berk, 2012, p. 249). In the long run, "Adults who have difficulty establishing intimate ties, who are overly dependent on a loved one, or who continually doubt their own ability to meet new challenges may not have fully mastered the tasks of trust and autonomy during infancy and toddlerhood" (Berk, 2012, p. 249). This leads the discussion to risks this population faces.

In terms of risk factors, Saneei et al. (2011) intended to show through the arts-based assessment called Draw-A-Person the possible vulnerabilities of children with ADHD—such as anxiety and low self-esteem—as compared to average children. Children were selected and placed into an experimental group of 30 (with a diagnosis of ADHD) or a control group (not diagnosed) of 30 in Iran. "The results revealed significant differences between the performance of the children

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<sup>2</sup> Erik Erikson's "life cycle schema was first presented in *Childhood and Society* (1950, 1963) in a chapter titled, "Eight Ages of Man" (Capps, 2004, p. 3). Erikson built upon and revised Freud's theories of childhood development, creating his own framework (Berk, 2012). "In his psychosocial theory, Erikson emphasized that in addition to mediating between id impulses and superego demands, the ego makes a positive contribution to development, acquiring attitudes and skills that make the individual an active, contributing member of society. A basic psychological conflict, which is resolved along a continuum from positive to negative, determines healthy or maladaptive outcomes at each stage" (Berk, 2012, p. 15). This conflict, i.e. crisis, which will normally arise in a developmental stage does not mean "overwhelming stress, but rather a turning point in the life of the individual, when a new problem must be confronted and mastered" (p. 16) If not successfully resolved, the next stage is rendered more challenging (Atalay, 2007).

<sup>3</sup> The researcher states emphatically that the intention is not for the present research to be used in an attempt to render youth passive and obedient which could risk interfering with the natural development of the authentic self, as herein outlined in Erikson's stages.

with ADHD and normal children in terms of size and line characteristic ( $p < 0.05$ )” of the drawings (Saneei et al., 2011, p. 256). As the authors noted, these children may be at risk not only for relational and academic problems but may have frequent anxiety and low self-esteem (Saneei et al., 2011); this could feed into a negative loop that is difficult to escape. ADHD is present in a portion of suicidal cases, and suicidal risk is elevated approximately three times above controls and typical averages through age 25 (James et al., 2004). Also, in terms of duration, ADHD often persists through the lifespan and is associated with significant adulthood impairment as an array of mood, anxiety, substance use, and impulse control disorders are highly comorbid (Berk, 2012; Huguet et al., 2017; Kessler et al., 2005; Kessler et al., 2006). Finally, the work by Harrison et al. (2004) is one example of a publication which notes the risks related to the side effects of medications used to treat ADHD.

It is also important to consider the risk factors faced by the caretakers of children with ADHD. According to Le Heuzey (2020), the parent-child relationship may deteriorate due to the conflicts around the children’s distractibility, hyperactivity, impulsivity, and resistance against doing homework, everyday tasks (e.g. going to sleep at bedtime), and chores at home. Social relations with parents and people in general may be strained as the children can be aggressive, impolite, intrusive, noisy, noncompliant, self-centered, uncooperative, and unpredictable; parents may be “harassed” until impulsive wishes are fulfilled (Le Heuzey, 2020, pp. 102-103). Parents may be overwhelmed and may feel the home life is being destroyed by ADHD (Schwarz, 2014). Parents of children with ADHD tend to experience high levels of parenting stress which feed into reduced patience, more focus on problems, and more reactivity—due to being under more stress (van de Weijer-Bergsma et al., 2012; van der Oord et al., 2012). Further, parents may suffer from

their own ADHD-related symptoms which compound problematic relations (van der Oord et al., 2012). Therefore, interwoven issues of parent and child were considered in this paper.

## **Limitations**

### ***Multimodal***

From the perspective taken by some authors, one limitation refers to multifaceted programs for it is hard to tease out possible outcomes of one facet. Such programs are what the researcher conjectured may be helpful, and a synergy may be in effect from a combined approach. No doubt, validity when naming variables and outcomes is therefore more complex. The two combined meditation-yoga programs demonstrate this. For example, “The improvements seen from the program would need to be sustained in the long term, and further prospective studies are needed to dissect out factors that may be relevant to improvement” (Mehta et al., 2011, p. 4). Another example is mindfulness programs which are multi-faceted. For example, the outcomes of art as homework amongst all the other activities may not be discernable. The homework would seemingly be done at home and away from the study facilitators. These components could conceivably be moved into an AT space where they would be supported by an art therapist and studied as part of research.

Another facet mentioned by Mikulas (2011) relates to mindfulness, in particular. There is concern about taking mindfulness out of its traditional Buddhist context. Therefore, when considering mindfulness interventions, it is essential to consider if enhanced efficacy and a fuller embodiment of mindfulness are lost if not a part of the larger practice. From the researcher’s perspective, it is important to consider if offering holistic approaches could potentially alleviate the divide between psychology (mind) and all the rest of life (e.g. body, spirit, social interactions, and nutrition) rather common in the West. Mikulas (2011) mentions an Eastern view that

“Psychological health is part of the overall health of body/mind/spirit” and mentions current tendencies for psychological services to be integrative (p. 6). Conversely, for those who may not have necessarily wished to enter the full Buddhist religious experience, Grosswald et al. (2008) called the mindfulness practice “a secularized version of Vipassana or Insight meditation” (p. 3).

### ***Meta-analyses***

If there are adverse affects of the modalities researched not mentioned in this paper for the population, they did not stand out and were not the primary, current focus—namely, exploring possible benefits. In the systematic review of four studies on ADHD and meditation by Krisanaprakornkit et al. (2010), it was stated that “No adverse effects of meditation in children have been reported” (p. 2). The authors could not draw any conclusions due to variables such as including only four studies, the small sample size of those studies, and the concern about bias (Krisanaprakornkit et al., 2010, p. 2). More recently, similar study limitations were portrayed in the meta-analysis by Evans et al. (2018) in a review of meditation-based interventions for children with ADHD. Some meta-analyses consulted on the three subject areas covered in this paper that point out longitudinal patterns, study strengths, and methodological flaws include Cheng (2016), Chimiklis et al. (2018), Lambez et al. (2020), Lee et al. (2012), and Polanczyk et al. (2014).

### ***Intervening Factors***

In terms of study validity, if variables such as exposure to environmental toxins, television, junk food, prenatal smoking, malnourishment, and lack of physical exercise (APA, 2013; Armstrong, 2017; Berk, 2012; Sadiq, 2007) are not controlled for, it is difficult to know what may actually be occurring with regards to interventions and, therefore, to judge efficacy. Likewise, it is difficult to surmise just how much improvement can be expected from an intervention if the



variables mentioned above are in place. Finally, voluntary or involuntary participation and group therapy dynamics (Kim et al., 2014) are important variables to explore in depth.

Furthermore, it is important to explore how important setting might be for interventions. The placement might be a critical factor, e.g. when integrated into school schedules. This may provide added levels of consistency, normalization, group participation, and convenience. By the same token, another limitation to consider is comprehensiveness. It is conceivable that there may indeed be a lot of fieldwork done in schools and at other sites where AT and/or meditation techniques are used for the target population. These may not have been made public in peer-reviewed articles. So, the sample of literature is likely not a truly comprehensive one.

### **Future Directions**

Through this theoretical-philosophical project, the researcher would like to set the stage for future interventions and research. For future directions, the researcher would propose seeking out or creating AT with meditation programs for participant interviews and control-group research. Also, more studies on interventions for both diagnosed children and their primary caretakers would be necessary. If there are other family members (e.g. siblings) interested in participating, they could be included in future studies for a fully family-centered approach (Harrison et al., 2004).

Some studies not covered fell under exclusion criteria but intervene on behalf of this population or overlap with arts-based or meditation-based interventions, e.g. martial arts, other CATS fields, nature- or yoga-centered interventions, eurythmy, and so on. While the focus of the paper is not on movement or spending time outdoors, perhaps these interventions could be considered as future directions for combined research, i.e. as choices for an important third modality in a larger multi-step program. This could involve dietary modifications as mentioned by some authors (Armstrong, 2017; Harrison et al., 2004; Sadiq, 2007). Furthermore, studies on

neurological activity recorded during art making (Belkofer et al., 2014; King et al., 2017) note important similarities to brain wave frequencies and activation during meditation—as presented by other authors—but did not actively test meditative states themselves. Thus, those studies could not be included. However, the empathy of an art therapist was also a piece that was studied. Further interesting research could occur for children diagnosed with ADHD and their caretakers in the context of an AT setting with meditation incorporated.

## **Chapter 5. Conclusion**

It is important to find ways to work with children often thought of as difficult and to incorporate their primary caretakers. The methods utilized in the context of an art therapy setting may make the participants more aware of internal resources they already have to cope with life challenges. An AT art-making activity typically does not occur in isolation but in sessions may be preceded by, followed by, or overlap with periods of other activities, e.g. discussion, reflection, “sitting with” an image in a deeply immersed state, emotional expression, or play. Meditation may compliment this process by giving additional, typically low-cost, “portable” resources to both children diagnosed with ADHD and their caretakers (e.g. increased ability to concentrate and deal with stressors) that can be utilized in school, at home, or beyond. The arts in practice may also enhance other interventions, in part by rendering them more accessible. The present research may spark the interest of other researchers and could enable them to more easily conduct various forms of research, e.g. controlled ADHD studies. In short, finding ways to increase attentional capacities and decrease stress levels for all involved could thereby improve quality of life.

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## Appendix

### ERIKSON'S PSYCHOSOCIAL STAGES\*

Approximate age	Erikson's psychosocial stage
Birth-1 year	<i>Basic trust versus mistrust:</i> From warm, responsive care, infants gain a sense of trust that the world is good. Mistrust occurs if infants are neglected or handled harshly.
1-3 years	<i>Autonomy versus shame and doubt:</i> Using new mental and motor skills, children want to decide for themselves. Autonomy is fostered when parents permit reasonable free choice and do not force or shame the child.
3-6 years	<i>Initiative versus guilt.</i> Through make-believe play, children gain insight into the person they can become. Initiative—a sense of ambition and responsibility—develops when parents support their child's sense of purpose. If parents demand too much self-control, children experience excessive guilt.
6-11 years	<i>Industry versus inferiority:</i> At school, children learn to work and cooperate with others. Inferiority develops when negative experiences at home or school lead to feelings of incompetence.
Adolescence	<i>Identity versus role confusion:</i> By exploring values and vocational goals, the young person forms a personal identity. The negative outcome is confusion about future adult roles.
Early adulthood	<i>Intimacy versus isolation:</i> Young adults establish intimate relationships. Because of earlier disappointments, some individuals cannot form close bonds and remain isolated.
Middle adulthood	<i>Generativity versus stagnation:</i> Generativity means giving to the next generation through child rearing, caring for others, or productive work. The person who fails in these ways feels an absence of meaningful accomplishment.
Old age	<i>Integrity versus despair:</i> Integrity results from feeling that life was worth living as it happened. Older people who are dissatisfied with their lives fear death.

\*(Berk, 2012, p. 16)