

Spring 5-19-2018

# Integrating Art Therapy and Horticultural Therapy to Best Serve the Needs of At-Risk Adolescents: A Literature Review

Kara Rodecker

Lesley University, rodecka@gmail.com

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## Recommended Citation

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INTEGRATING ART AND HORTICULTURAL THERAPIES FOR AT RISK  
ADOLESCENTS

Integrating Art Therapy and Horticultural Therapy to Best Serve the Needs of At Risk

Adolescents: A Literature Review

Capstone Thesis

Lesley University

May 5, 2018

Kara Rodecker

Art Therapy

Thesis Instructor: Elizabeth Kellogg

## INTEGRATING ART AND HORTICULTURAL THERAPIES FOR AT RISK ADOLESCENTS

### Abstract

This capstone thesis examines existing literature on art therapy, horticultural therapies, and positive youth development, as they specifically meet the emotional needs of at-risk adolescences. The following paper provides an overview of the adolescent stage of development and how early attachment styles and environmental risk factors contribute to youth being labeled as at risk. At risk adolescents are more likely to have missed out on early attachments that are necessary to experience empathetic attunement, which should serve as the foundation of relationships throughout their life. The multiple environmental risk factors contribute to a sense of lack of control over their lives and a scarcity of positive community interactions. Art therapy as a creative means of expression is especially equipped to meet the needs of adolescents and can directly provide the opportunity for a corrective experience. The benefits of interaction with nature have been found to be extremely therapeutic for multiple populations, however at risk youth from urban environments have limited access to nature and its benefits. By integrating art therapy practices into community gardening with a positive strength based approach, a therapeutic program can be developed to meet the specific needs of at risk adolescents by facilitating empathetic connections, a positive community experience, self expression, and a sense of control.

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Integrating Art Therapy and Horticultural Therapy to Best Serve the Needs of At Risk

Adolescents: A Literature Review

### **Introduction**

Being immersed in my own education as a future expressive therapist, I have devoted a great deal of time to self-exploration, and determining the impact I would like to have when I envision my practice. I have witnessed the debilitating impact that societal systems have on individual mental and physical health, and recognize that in order to best serve, I must influence change on both a greater overarching level and in my daily interactions. Recognizing the multitude of oppressive systems that continuously divide and dehumanize the majority, can lead to feeling helpless, especially in today's current global situation. As an individual with the privilege to pursue an education of my choosing, I have deliberated and concluded that I must focus my efforts on what I identify as the most immediate and encompassing areas of concern. On a global scale, I believe empathy must be built between individuals regardless of the presence of shared experiences and effort must be invested to save our natural world.

The impact that humankind has had on natural environments is catastrophic, and is in direct conflict to humankind's own long-term prosperity. Humans have put their own desires above the wellbeing of the other creatures and plants with which they co-exist, and the exponential detrimental impact is being observed. The inability for plants and animals to communicate the impact humankind has had on the environment, in the same manner that humans communicate, has led to a convenient disregard in exchange for personal progress. This same process of individual success at the expense of the other

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is also enacted in interactions across cultures. Many rely on shared experiences to determine how they should interact with others, grouping like with like, and labeling to distinguish from the other (Tajfel & Turner, 1986). This can include anything from a shared heritage, to socioeconomic status, to race, religion, sexual orientation, or spoken language. Humans group themselves, and play out a hierarchical categorization, which has resulted in a society that benefits those in charge at the expense of those who have been labeled as other (Tajfel & Turner, 1986). As products of this system, many see a gain for those who are repressed as a loss for those who are trying to succeed within this system, and are unwilling to aid others, as they believe it will be at their own personal expense. I see this disconnect, between ourselves and nature, and ourselves and others, as a fundamental issue which I must address.

I believe that empathy is the foundation of the therapeutic relationship, and see the therapeutic relationship as my tool to impact the world around me. I want to find a way to foster empathic relationships while nurturing an investment in one's environment. My own modality of expression is art, as I believe it has the ability to transcend verbal expression. As Medeiros, Denise, Silva, and Yohko describe, "Both Environmental Education (EE) and Art Therapy strive to improve quality of life by making man more aware of his relationship with himself, with other living beings and with the environment"(2013, p. 24). It is through the therapeutic relationship that individuals are able to explore their own identity and work through a variety of emotional and mental health issues. Art therapy lies at the intersection of the therapeutic relationship and creative expression, allowing for individuals to engage beyond direct verbal exchanges.

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Because visual expression can bypass communication barriers, art therapy is a tool that can be utilized to build empathetic attunement between individuals from different backgrounds. Recognizing the need for this connection in order to combat the destruction and oppression that is founded on differences, I suggest the need for the merger of art and horticultural therapies. Fostering individual exploration and growth, while learning to connect with others, all while engaging with the natural world, addresses the needs of the individual, while striving to make the world a better place.

The need to experience empathy and a sense of belonging to a community can be seen as universal. However, there are certain populations for which this need is dire and the opportunities are limited. At-risk youth from low-income urban communities are exposed to multiple risk factors and trauma, while also having limited access to positive interventions. This paper aims to provide a review of theoretical literature for how art therapy and horticultural therapy can uniquely address the specific needs of at-risk adolescents.

Both art therapy and horticultural therapies are under-represented in research, and the practice of incorporating elements of gardening into the existing field of art therapy should be developed further to determine the impact on specific populations. Ruiz-Gallardo, Verde, and Valdés (2013) reported a positive correlation between students' academic success and involvement with garden-based learning program. Fieldhouse (2003) concluded that the majority of group members at a mental health center experienced a sense of peace, self-accomplishment, and belonging to a group after their involvement with a horticultural allotment group (Fieldhouse, 2003). Additional known

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benefits, as well as the practical integration of specific horticultural directives into art therapy are areas for further exploration.

### **Literature Review**

This literature review will introduce the reader to a general overview of the adolescent stage of development in order to better understand how an individual processes emotions and social situations during this stage. Special considerations for youth exposed to multiple risk factors is examined, so that the reader can understand the impact these risk factors have upon adolescent development, as well as the theories behind positive youth development programs which aim to meet the needs of this population. After discussing adolescent development specific to at risk youth, the field of art therapy is introduced, as it is especially equipped to meet the needs of this population. Specific art therapy interventions that have been used with at risk youth are discussed through a critical lens. This literature review then discusses the impact of nature on mental health, and specifically examines the possible benefits of nature based therapeutic groups for at risk adolescents. Several youth gardening programs are discussed, in order to evaluate the therapeutic impact of incorporating nature into working with at risk teens. The following literature review will serve as a foundation of information which can be used to develop programs for at risk youth by incorporating art therapy and exposure to nature into a therapeutic practice to best serve the specific needs of at risk adolescents.

### **Adolescence**

This section will discuss the stage of adolescence from a developmental orientation, examining the goals associated with this stage and some of the challenges for mental health professionals working with this population. It then looks specifically at the

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challenges in place for at risk youth, and the multidimensional forces, which contribute to an adolescent being considered at risk. Finally it presents several programs that have been implemented for this population, and how they strive to address the needs of at-risk adolescents.

Adolescence is an integral, though often difficult, period of development during which individuals must experience and learn how to process various social and internal conflicts. From ages 11 to 25, the human brain strengthens and eliminates neuronal pathways, engaging in a period of drastic developmental change. Engaging in new experiences allows the brain to receive input, which contributes to the forming of synapses allowing the individual to develop social cognition and executive functions (Roaten, 2011).

Ideally, as they process and react to numerous emotional stressors, individuals begin to empower themselves in order to develop the internal view that they are self-sufficient, with the ability to impact their world (Wallace-DiGarbo & Hill, 2006). This internal process often takes years to unfold; all the while teens receive a multitude of messages from the various social and societal influences with which they interact. Social Learning Theory is based on the idea that an individual's behavior is determined by the presence of reinforcement, or a lack of reinforcement, after a particular action (Catalano, Berglund, Ryan, Lonczak, and Hawkins, 2004). In their study on positive youth development, Catalano et al., theorized that "behavior is strengthened through reward (positive reinforcement) and avoidance of punishment (negative reinforcement) or weakened by aversive stimuli (positive punishment) and loss of reward (negative punishment)" (Catalano, Berglund, Ryan, Lonczak, and Hawkins, 2004, p. 107). The

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reinforcement, whether it is positive or negative, that an individual receives is directly tied to their motivation to participate in a similar action in the future. Adolescents are constantly receiving messages from their families, school, peers, and community as they modify their behavior to continue getting a desired response, or avoid a negative one (Catalano, Berglund, Ryan, Lonczak, and Hawkins, 2004).

These interactions impact the choices adolescents make and their initial bond with their caregiver often dictates the style with which they connect and is often an indicator for healthy relationships (Catalano, Berglund, Ryan, Lonczak, and Hawkins, 2004). This fundamental primary attachment, when combined with the social, peer, scholastic, and societal reinforcements that converge during adolescent development, have led to researchers being able to identify specific risk factors which indicate that a teen is “at risk”.

Alleyne and Wood studied at risk youth to determine what factors may contribute to individuals joining gangs and found that, “gang membership results from a reciprocal relationship between the individual and peer groups, social structures (i.e., poor neighborhood, school, and family environments), weakened social bonds, and a learning environment that fosters and reinforces delinquency” (Alleyne & Wood, 2014, p. 548). Teens with a history of delinquency, mental health issues, or learning disabilities have an increased risk of gang involvement due to these individual risk factors. Alleyne and Wood further theorized that the more risk factors an individual has experienced, the greater the chance that they will join a gang (Alleyne & Wood, 2014). In neighborhoods with high rates of gang involvement, there was found to be low levels of parental supervision, though no one factor has been found to entirely lead to gang involvement

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(Alleyne & Wood, 2014). For many at risk youth, gang membership is thought to lead to greater opportunities for increased social status, prestige, and material possessions at a much faster rate than conventional methods. This is due in part to the fact that gangs are more likely to thrive in communities that are socially disorganized and disadvantaged (Alleyne & Wood, 2014).

Many teens that are characterized as at risk have experienced a series of events throughout their lives that can be considered traumatic. This prolonged and repetitive exposure impacts their development and attachment. Slayton, an art therapist who runs groups with at risk adolescent males, has found that the individuals she works with have been exposed to multiple interconnected adversities. These factors include, domestic and community violence, child neglect and abuse, poverty, untreated mental illness, substance abuse, and evident racial oppression (Slayton, 2012). Young children do not have the developmental ability to comprehend the causes or impact of prevalent social problems, which can be developmentally detrimental. Slayton summarized that, “chronically traumatized children are unable to achieve secure attachments to parents or caregivers, are unable to develop emotional regulation skills, and may reenact their traumatic experiences in attempts to gain control of their experiences” (Slayton, 2012, p. 180). The adolescents Slayton worked with often presented aggressive behaviors as a result of disorganized attachment and a disintegrated sense of self (Slayton, 2012). Despite the multitude of adverse factors, adolescence provides the opportunity to integrate a new sense of self. Slayton uses the group therapy approach as a model for social interactions, mirroring the outside world.

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Positive Youth Development programs and Positive Youth Learning models have been found to be particularly effective for at-risk youth. As Forrest-Bank, Nicotera, Bassett, and Ferrarone found, “opportunities that foster achievement, positive peer interaction, and social support promote positive development and are protective against risk factors associated with low socio-economic factors, including specific neighborhood factors such as violence and crime” (2016, p. 429). They theorized that rather than targeting and punishing specific negative behaviors, focusing on cultivating protective factors can actually prevent negative behaviors allowing individuals to prevail in adverse situations (Forrest-Bank et al., 2016). Positive youth development framework strives to focus on positive traits of the individual while providing resources that compliment the development of adolescents.

In studying positive youth development programs, Catalano et al., found that the more social domains that a program addresses, the more impactful the intervention can be (Catalano, Berglund, Ryan, Lonczak, and Hawkins, 2004). This makes sense when one considers how many risk factors contribute to impacting at risk youth, as addressing only one at risk domain does not seem to be enough. Because teens rely on messages from multiple influences to shape their behavior, Catalano et al., found that “it is especially important that youth have the opportunity for interaction with positively oriented peers and for involvement in roles in which they can make a contribution to the group, whether family, school, neighborhood, peer group, or larger community”(Catalano, Berglund, Ryan, Lonczak, and Hawkins, 2004, p. 115). However, the presence of a positive relationship alone is not enough to determine if a youth development program will be

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successful. After studying 77 programs in the United States, Catalano et al., found that the more successful programs were those that addressed the following 15 objectives:

Promotes bonding, fosters resilience, promotes social competence, promotes emotional competence, promotes cognitive competence, promotes behavioral competence, promotes moral competence, fosters self-determination, fosters spirituality, fosters self-efficacy, fosters clear and positive identity, fosters belief in the future, provides recognition for positive behavior, provides opportunities for pro-social involvement, and fosters pro-social norms. (Catalano, Berglund, Ryan, Lonczak, and Hawkins, 2004, p. 102).

After examining the literature related to the needs of at-risk adolescents and several studies on programs that strive to address those needs, I will now discuss the field of art therapy, and how this therapeutic practice is innately ideal for at risk adolescents. Positive strength based approaches are necessary when working with at risk youth, as they facilitate protective factors rather than promoting delinquency through negative reinforcement. Art therapy is an inherently strengths based approach that allows the individual to express themselves through means other than verbal exchange. I will then discuss several art therapy programs that work specifically with at risk youth, and areas for future research.

### **Art Therapy**

The practice of art therapy involves a professional art therapist facilitating personal growth through the creative process within the safe environment of a therapeutic relationship. The American Art Therapy Association defines art therapy as “an integrative mental health and human services profession that enriches the lives of

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individuals, families, and communities through active art-making, creative process, applied psychological theory, and human experience within a psychotherapeutic relationship” (American Art Therapy Association, 2017). Art therapy, like all the expressive therapies, aims to meet the emotional needs of an individual by reducing their anxiety, meeting their cognitive needs, developing social skills and increasing their self-esteem and acceptance (Hoffmann, 2016). During the practice of art therapy, individuals are invited to explore their own emotions, and as they build an understanding, are provided with an outlet to express difficult themes in a socially acceptable and internally validating way. For some individuals, engaging in art therapy becomes a process of externalizing internal experiences through the use of symbols (Hoffmann, 2016). By creating art, the individual is able to create a personal symbol that is able to embody an aspect of themselves or a difficult emotion. The art, as a tangible external creation, is separate from the individual, providing a safe distance from which to explore deeper. The individual is able to project by incorporating aspects of themselves throughout the art making process and into the final product (Johnson, 1998). Once this aspect of the self has been externalized through art, it can be safely explored with the art therapist in order to engage in personal transformation. As the therapeutic relationship and the internal self evolve, the individual can internalize aspects, bridging the gap between verbal communication and nonverbal expression (Johnson, 1998). The individual learns to develop their own sense of insight and can safely practice emotional adjustment in order to address what is not serving them. In this way, the visual concrete representation serves as a way to explore and validate the internal sense of self.

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Lusebrink (2004) theorized that one of the reasons art therapy is found to be effective is due to how the brain processes emotions and art making. Emotions, especially those thought of as negative, like fear and sadness, are processed in the right hemisphere. The left hemisphere on the other hand, is where one processes verbal information. Emotions, particularly the negative ones, are especially important in the formation of memories, and it has been found that memories that are considered emotional are easier for an individual to recall than non-emotional memories (Lusebrink, 2004). Lusebrink found that “Art therapy offers the possibility to deal with basic sensory building blocks in the processing of information and emotions. The most elementary expressive forms may reflect the underlying brain structures” (Lusebrink, 2004, p. 133). Art therapy allows individuals to process visual and sensory information, learning to express and reflect upon their own emotions and link the emotional thoughts to behavior.

Starting in early childhood, individuals begin forming emotional reactions to external stimuli and need a sense of emotional security in order to process their desires, internal conflicts, anxieties and feelings (Hoffmann, 2016). In many situations individuals receive messages from those around them, which enforce the idea that one should not talk about or express their emotions, especially the difficult ones. This conditioning leads to young children withdrawing, or releasing their emotions as uncontrolled outbursts that seem to exceed an expected response. Without a proper outlet for release, these children move into adolescence continuing to internalize or repress difficult emotions. Art making can serve as a form of communication between the intrapersonal perceptions and feelings and the outside world (Regev, Green-Orlovich, and Snir, 2015).

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Throughout adolescence, the brain undergoes major changes such as synaptic pruning and formation. Roaten (2011) studied MRI's of the teenage brain and found that adolescents rely more on the amygdala for decision making, rather than the prefrontal cortex. These decisions tend to be based on instinct and emotion, where as adults are able to utilize a more developed prefrontal cortex, which is associated with language production. During this period of development, individuals may have a more difficult time finding the verbal expression to describe their internal experience. Engaging in art as a form of expression alleviates some of the need to rely upon putting thoughts and feelings into words and may be more developmentally appropriate for adolescents. Roaten found that, "art activities often activate the limbic system of the brain, process the input through the experiential activity and stimulation it provides, and enhance connections with the prefrontal cortex" (Roaten, 2011, p. 308). Creativity in general is a skill that is important to practice during the adolescent years. Brinks (2007) theorized that an active fantasy life and creative thinking are necessary for the development of ego strength and emotional maturity. Adolescents may be reluctant to engage in traditional talk therapy, and often display resistance at various points throughout the therapeutic process. Art therapy provides a flexible intervention, which has the ability to adapt to the individual's level of participation on any given day (Brinks, 2007). Because it is activity-oriented, creative expression is able to immediately engage the individual in the therapeutic process, without the immediate pressure of a verbal exchange.

Utilizing art as the therapeutic interaction also helps to alleviate the power differential that may be present, allowing the teen to feel more in control and respected. Most adolescents desire a sense of control, however, within the therapeutic relationship,

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this is especially important for individuals from an at-risk background. Many of these teens have experienced negative interactions from those viewed as authority figures. They may expect to be limited, judged, or controlled, and it is important for the therapist to keep this in mind as it may impact the formation of the therapeutic relationship (Slaton, 2012). One of the major developmental goals of adolescents is to engage in a process of individuation, as the individuals are able to emotionally separate themselves from their family and view themselves as their own autonomous being. Gaining a sense of control over their lives is extremely important, and can be practiced through the creation of art and then internalized.

For individuals who have experienced trauma, creative expression can be especially impactful, as they must learn mastery and integration. Within the safety of the therapeutic relationship, adolescents can approach complex issues as entities separate from themselves, allowing them to not be defined by the traumatic event. As they put their feelings into tangible forms, they are allowed the space for insight and mastery over the trauma, followed by reintegration and healing (Brinks, 2007).

**Art therapy with at risk adolescents.** Using art as a means of expression and therapeutic agent has been implemented in many programs that serve at risk youth, however there are few quantitative studies documenting the effects and possible long-term therapeutic value. Anne Wallace-DiGarbo and David Hill wrote about the effects of a community art therapy workshop for a group of at risk youth living in a city in Pennsylvania. Participants engaged in individual art making that centered on self-expression, and empowerment, as well as group work, which involved painting a mural. The group consisted of 12 students and met for 10 sessions over the course of 6 weeks,

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however only 6 of the participants completed the self-assessments, limiting any conclusions that may have indicated a trend. Of the data that was collected, Wallace-DiGarbo and Hill found the most promising effects as, “the results on the measures of psychological adjustment and attitudes, where the statistical trend was in the predicted direction of improved psychological adjustment and improved attitudes”(Wallace-DiGarbo & Hill, 2006, p.122). While due to the small sample size, a statistical cause and effect relationship cannot be concluded, they did find a statistical trend in the direction of reduced risk and improved function (Wallace-DiGarbo & Hill, 2006). The study also concluded that it was those individuals deemed the most at-risk who displayed the greatest improvements.

During group art therapy sessions with at risk adolescent males, Slayton found that having the group engage in projects together, evoked kinesthetic energy (Slayton, 2012). Hinz (2009) theorized that it is “the stimulation of arousal or energy through involvement with kinesthetic action, or the discharge of energy that reduces the individual’s level of tension” (Hinz, 2009, p. 41). This tension release not only fosters individual healing, but also contributes to a positive group dynamic. Adolescents who have a history of experiencing trauma often exhibit a disconnection between their emotional experience and their physical body. Art therapy aims to channel the individual’s physical and mental energy into the single activity of creation (Slayton, 2012). Integrating these two aspects promotes a sense of mastery, and as van der Kolk stated, “mastery is, most of all, a physical experience: the feeling of being in charge, calm, and able to engage in focused efforts to accomplish goals” (van der Kolk, 2005, p. 408). Slayton worked with adolescent males over 9 weeks, utilizing mixed media to

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engage the group in building their own city. While no formal assessments took place to measure the impact of group art therapy, Slayton observed that the adolescents took risks in the creation of their individual contributions, as well as in joining in with one another to achieve common goals (Slayton, 2012). She observed that, “the group became a mutual exchange of respectful interactions—a community building a community—with the art product as the container for both the said and the unsaid” (Slayton, 2012, p.184).

Kay and Wolf (2017) conducted group art therapy with adolescent females from different ethnic and racial backgrounds in residential care. The 18 participants met weekly to engage in personal art making and group exploration, most of which centered on female empowerment. The research was collected through interviews with the participants about their personal experience, as well as reflections of the facilitators. Kay and Wolf observed that “creative engagement in a safe learning environment with adults and peers, offered opportunities for the girls to explore concerns, express hopes, support positive coping skills, develop inner strengths and foster resilience” (Kay & Wolf, 2017, p.32). Though no statistical data was produced, Kay and Wolf witnessed increased amounts of pride being displayed by the participants, as well as group camaraderie, support, and collaboration (Kay & Wolf, 2017).

Wallace-DiGarbo and Hill, who wrote about a community art therapy workshop for at risk urban youth in Pennsylvania, indicated that one of the greatest obstacles in their study was resistance of the at risk youth to participate in the formal assessments, as many implied that they did not see the value in this component. This may indicate a universal hindrance in conducting research on this population, and could account for the limited statistical data for art based therapeutic interventions with at risk youth.

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Recognizing the adverse factors that contribute to an adolescent being at risk, and looking at both positive youth development programs and expressive arts programs that strive to address those needs, I hypothesize that integrating nature and gardening into therapeutic curriculum, can enhance positive youth experience. Art therapy is found to be effective with this population because it allows the individual for insight and mastery over the traumatic events in their life, providing them with an opportunity for control outside of reenacting detrimental experiences. When art therapy takes place in a group, the dynamic of the group mirrors social interactions of the outside world, allowing a safe environment in which to engage positively with peers. The sense of community that is built from the group, and self-expression which comes from insight and mastery, can also be applied to nature based therapeutic interventions.

### **Impact of Nature**

Recognizing the therapeutic value of interaction with nature and horticultural practices, the American Horticultural Therapy Association was founded in 1973 as a way to legitimize and add standardization to the practice. Therapeutic horticulture is defined as a process, led by a registered horticultural therapist, of helping participants to “enhance their well-being through active or passive involvement in plant and plant-related activities” (American Horticultural Therapy Association, 2017). Horticultural therapy works in conjunction with a treatment plan and is focused on the therapeutic value of the process. This section examines the theories behind the positive therapeutic implications of contact with nature, as well as several examples of therapeutic horticulture being utilized to meet the specific needs of at risk youth.

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Exposure to nature is often associated with reduced stress levels and a sense of relaxation. Bratman, Daily, Levy, and Gross stated that this is due to Stress Reduction Theory, which is based on the idea that because of how homo sapiens evolved as a species, natural environments can positively impact an individual's affect and are considered restorative when compared to artificial environments (Bratman et al., 2015). The positive effects of interacting with nature have also been tied to overall happiness. Capaldi, Dopko, and Zelenski (2014) conducted a meta-analysis of 21 studies, all of which measured individuals' level of connectedness with nature as it directly relates to their measure of happiness. To define happiness, Capaldi, Dopko and Zelenski identified patterns in reports of life satisfaction, positive affect, and vitality, and their findings confirmed their hypothesis that there was a positive significant relationship between happiness and nature connectedness.

Bratman, Daily, Levy, and Gross claimed, "nature scenes activate our parasympathetic nervous system in ways that reduce stress and autonomic arousal, because of our innate connection to the natural world" (Bratman et al., 2015, p. 42). To test this theory, Bratman et al. conducted a study during which they measured the cognitive and affective functioning of sixty adults before and after a walk in either a natural or urban environment. Based on their assessment, Bratman et al. noted that the walk in nature decreased negative affect, anxiety, and rumination as compared to a walk in an urban environment. The participants were all from the Bay area of San Francisco, and did not have a history of psychiatric disorders or neurological diagnoses. Bratman et al. based the design of their study on previous findings by Leather, Pyrgas, Beale and Lawrence (1998) and a study by Kaplan (2001) which "found that window views of

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nature from the office and home were associated with higher degrees of well-being and life satisfaction” (Bratman et al., 2015, p. 41).

Bratman et al. concluded that the participants of their study experienced these results because the natural environment was able to redirect people’s attention giving them the feeling of “being away.” Attention restoration theory is based on the idea that individuals must internally filter external stimuli, a function that is exacerbated due to overstimulation found in urban environments. It is therefore theorized that if urban environments impair ones ability to focus attention, exposure to natural environments will support directed attention and working memory (Bratman et al., 2015). This theory may have played a role in a research study conducted by Ruiz-Gallardo, Verde, and Valdés (2013), which examined the relationship between participants in a Garden-Based Learning program and academic success for at risk teens.

Ruiz-Gallardo et al. (2013) conducted a study that monitored the number of subjects passed by each student before and after participating in a garden-based learning program for at least two years. They also compared the data as an overall class, calculating the number of students who dropped out, graduated, and failed high school, and compared these percentages of students to the percentages of students from the past three years before the program was introduced (Ruiz-Gallardo et al. 2013). The students were selected from a public high school, and had previously been identified as at-risk students with behavioral challenges which impacted their education. The study was repeated for six academic years, and examined qualitative observations from teachers, parents, and the students themselves, in addition to the statistical data gathered. Ruiz-Gallardo et al. found that prior to participating in the garden-based learning program for

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two years, the majority of students failed five subjects or more, and after participating, these same students failed two subjects or fewer (Ruiz-Gallardo et al. 2013). This data is statistically significant and has a direct correlation to the overall statistics of student drop out and graduation rates. While this study demonstrated a positive relationship between student participation in a garden-based learning program and academic success, one is not able to determine a cause and effect relationship, nor is there external validity. A standard curriculum should be developed and further research should be conducted using similar programs with different populations. All discussion of therapeutic benefits was based on qualitative data, consisting of interviews and questionnaires from third parties and the participants, so no quantitative conclusions can be made regarding the therapeutic impact of gardening with at-risk teens.

Beil and Hanes proposed that the sense of stress reduction and improved ability to focus is due to a phenomenon known as “biophilia”. Biophilia is characterized as an “evolutionary adaptation” causing “the innate tendency to focus on life and life-like processes” (Beil & Hanes, 2013, p.1251). This evolutionary trait is thought to have served our ancestors need to be in tune with their natural environment in order to survive. Needing to rely on the environment for food, as well as awareness of possible physical threats, would have required focused attention. Presently it is estimated that over half of the world’s population lives in urban areas (Bratman et al., 2015). Without the proximity to, or ability to access sprawling natural environments, those who reside in urban communities do not have the same opportunities to regularly receive the benefits associated with interactions with nature. In their study on the impact of nature for those in urban public housing, Coley, Kuo, and Sullivan (1997) found that in comparison to

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residents of middle class communities, those who are living in public housing tended to have higher rates of unemployment, higher rates of poverty, lower rates of recreational options and have a lack of transportation. Because of this restricted access, residents of public housing tend to structure the majority of their interactions in or around their apartment units. In interviewing and observing the trends of residents of public housing in Chicago, Coley, Kuo, and Sullivan found that “the presence of trees in the two public housing developments under study consistently predicted greater use of outdoor spaces by all people, young and older, as well as groupings of people consisting of both youth and adults together” (Coley, Kuo & Sullivan, 1997, p. 474). They also found that the more accessible, or closer to the housing the trees were, the more likely residents were to gather, and the more trees present, the greater the number of individuals that would use the space. As opposed to spending the majority of time in an apartment unit, the presence of public green spaces with trees, provided more opportunities for communities to gather.

Within low-income communities, along with having less access to green space, individuals are more likely to be obese or overweight (Chawla, 2015). As Chawla found in researching both the physical and psychological effects of nature contact for children, individuals were more likely to report themselves as healthy if they had access to green space in close proximity to their home. The study looked at youth in Finland and Germany and found that “urban ten-year-olds who lived in areas of high greenness had lower levels of blood pressure, after controlling for temperature, air pollution, noise, and other potential confounding factors”(Chawla, 2015, p. 441).

Due to the evidence and felt experience of the positive effects of nature, and considering the lack of access that those from low-income urban communities have,

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many programs have been implemented in order to provide access to urban youth. Norton and Watt (2014) conducted pre and post participation surveys for adolescents who participated in a positive youth development wilderness program. The program works with under-resourced adolescents from urban communities and focused on fostering positive relationships. Participants engaged in group-building activities, followed by a seven-day wilderness backpacking expedition, and a final reflection. Norton and Watt compared pre and post results from the Developmental Assets Profile and concluded that the expedition had a positive impact on the external and internal assets, with particular improvement in the areas of “Support, Empowerment, Boundaries and Expectations, and Constructive Use of Time” (Norton & Watt, 2014 p. 345). Unfortunately less than half of the 159 participants completed both the pre and post assessment, limiting the implications of the findings. This appears to be part of a trend for studies involving at-risk youth, and further work must be done to identify improved methods of data collection specific to this population.

Mark Sandel (2004) observed the effects of a community garden at a Post Adjudication Secure Treatment Facility in Texas. The facility houses male and female youth for 6-9 months and focuses on substance abuse treatment, individual, and group therapy. The gardening program was offered to all residents, and fostered a positive youth development approach, as individuals would not receive external punitive consequences for behaviors exhibited in the garden. Sandel noted that the staff was surprised to find that the residents did not take advantage of the non-punitive approach, but rather were observed to be more relaxed and calmer than during other activities (Sandel, 2004). In fact, there was found to be “reduction in disruptive incidents of more

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than 25% after starting the garden” (Sandel, 2004, p. 129). Staff reported less aggression towards other residents and towards staff and an increase of positive group interactions and individual pride (Sandel, 2004).

Lautenschlager and Smith conducted a study comparing the effects of participation in a community gardening program on inner city youth, compared to youth that were not exposed to community gardening. They focused their study on the participant’s beliefs about themselves and nature, their experience with cooking and gardening, and dietary behaviors. In addition to an increase in the amount of vegetables being consumed while in the community gardening program, the study found that participants reported “a better understanding of the food system,” and that “garden program participants demonstrated heightened values for other individuals and other cultures” (Lautenschlager & Smith, 2006, p. 225). While these results are promising, they are taken from youth immediately after participating in the program, and there is no data to show if these effects are long lasting.

It is during adolescence that individuals typically gain a sense of self as they engage with different social groups and learn to empathize with others. Unfortunately reoccurring environmental trauma can hinder an individual’s ability to form healthy relationships and develop a positive sense of self. Teens exposed to these traumas are often labeled as being at risk, and can successfully master these developmental traits if they are provided with the opportunity. Positive youth development programs have shown to be particularly effective with this population, as they focus on peer interaction and personal achievement. These traits are also integral elements to the practice of art therapy and horticultural therapy. Both forms of therapy allow participants to express

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themselves in order to gain a sense of control, while engaging empathically with the other participants. These ideas have been discussed throughout the literature review, and can serve as the foundation for implementing future programs. Additional programs should be created and researched in order to determine the possible impact they may have on at risk youth.

### **Discussion**

Ideally, throughout their lives, individuals develop a sense of relating to others and empathy. Relational experiences and empathetic attunement can serve to help build positive relationships. In order to develop these traits, adolescents need to have experienced empathy through early relationships. For teens that have experienced trauma due to their environment, a relationship with a counselor can provide the opportunity to experience empathy. These connections have been linked to positive outcomes such as improved “regulation of emotion, empathy, insight, intuition, fear extinction, and moral development” (Roaten, 2011). Modalities that help foster positive relationships allow space for individuals to experience and internalize empathy. Beyond just the presence of an empathetic counselor, both art therapy and horticultural therapies serve to integrate elements of empathy into the therapeutic experience. By treating at risk adolescents with empathy, they learn that they are valued as individuals and learn to practice empathy both towards themselves and towards those around them.

The increased sense of value for peers and different cultures as found by Lautenschlager and Smith (2006), may be related to the increased sense of community reported by being in the presence of green spaces as reported by Coley, Kuo, and Sullivan (1997). The idea that group interactions in nature can promote understanding

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and a sense of community is an important finding considering that a lack of sense of community is a risk factor for at-risk urban youth. This same sense of community and understanding of the other is also a fundamental therapeutic element in group art therapy projects. For adolescents who come from adverse backgrounds, gang involvement acts as a supplemental community. Youth often seek out a sense of belonging and a place within a community, and as the research indicates, therapeutic group programs for youth can provide this (Alleyne & Wood, 2014). Exposure to nature fosters a greater sense of connection to the environment, and both horticultural and art therapy groups provide participants with a sense of connection and positive group interactions. Adolescents involved in these programs displayed positive interactions with their peers as well as emotional support, which during this developmental stage can help counteract the effects of adverse community risk factors (Forrest-Bank et al., 2016). These experiences can be integrated into the individual's sense of self, helping them to continue to strive for healthy relationships as they grow.

Beyond building a positive sense of belonging to a community, both art therapy and horticultural therapeutic practices can increase an individual's sense of control. This is especially important for at risk youth, as they have very little control of the adverse environment that surrounds them. Control is also a vital factor for those who have experienced trauma, and is an essential in developing a more positive sense of self (Slaton, 2012). Gaining a sense of control is a goal of the developmental stage of adolescents, and without a safe space in which to practice and gain a sense of control, individuals may miss out on the opportunity to integrate control into their sense of self

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(Slaton, 2012). By implementing art making and gardening into youth programs, adolescents can gain a sense of control in the creation of a physical product.

Because at risk youth experience such a multitude of adverse factors all of which contribute to a greater system of oppression, I feel that a therapeutic approach aimed at meeting the needs of this population should also incorporate a multitude of therapeutic approaches. In reviewing the specific needs of at risk adolescents, as well as the inherent therapeutic qualities of horticultural and art therapy interventions as they specifically meet these needs, I am proposing the formation of positive youth therapeutic programs, which integrate exposure to nature, gardening, and expressive therapy. By providing at risk youth with such a program, they would be exposed to opportunities for empathetic engagement, gaining a sense of control, a sense of positive community inclusion, and creative expression.

Those who have the most limited access to natural surroundings seem to need the positive effects the most. The same can be said for access to therapeutic art programs. As the presented literature has indicated, there is little quantifiable evidence based research available on the impact of such therapeutic programs for at risk youth. This is in part due to the high program drop out rates and lack of assessment responses associated with this population, and indicates a much-needed area for future work and research. Ideally, this paper would serve as informational foundation from which to develop and implement strength based community arts and gardening therapeutic groups, as well as a call for conducting further research.

After analyzing the overwhelmingly positive effects of implementing a gardening program with adolescents at a long-term detention setting in Texas, Sandel (2004)

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theorized how to improve the program for the future. One of the reasons this program was thought to be effective, is due to the positive, strengths based approach, where accomplishments were celebrated and there were no external consequences for negative behaviors. This program was able to combine community gardening with positive youth development. After interviewing the staff involved, he found the majority thought the impact would be even more significant by introducing a journaling component in order for the participants to record their thoughts and feelings about their work and personal growth while participating in the garden (Sandel, 2004). Participation in group gardening in and of itself was found to be effective in reducing disruptive incidents and promoting positive behavior, and the staff recognized that there was potential for additional benefits through reflective journaling.

While journaling can be an effective tool for self-reflection, incorporating art as the means of expression would allow individuals the opportunity for expression without relying on the formation of descriptive language. Group art projects would also allow the participants more opportunities for empathic attunement and building community. Individuals would be able to experience a sense of control over the art that they create and internalize this sense of control as they express their role as a contributing member to the gardening group. I believe that having these therapeutic elements working in conjunction with each other will further combat various risk factors as individuals achieve a sense of individual control over their lives, learn to empathically engage, develop a sense of belonging to a community, and learn how to appropriately express themselves.

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**THESIS APPROVAL FORM**

**Lesley University  
Graduate School of Arts & Social Sciences  
Expressive Therapies Division  
Master of Arts in Clinical Mental Health Counseling: Art Therapy, MA**

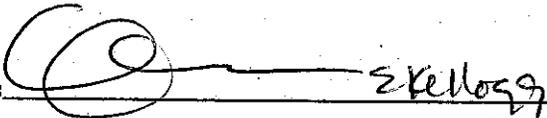
**Student's Name:** Kara Rodecker

**Type of Project:** Thesis

**Title:** Integrating Art Therapy and Horticultural Therapy to Best  
Serve the Needs of At Risk Adolescents: A  
Literature Review

**Date of Graduation:** May 19 2018

In the judgment of the following signatory this thesis meets the academic standards that have been established for the above degree.

**Thesis Advisor:**  E Kellogg