*An Exploratory Study of Horticultural Therapeutic Community Center Gardens in Fresno County*

Executive Summary

by

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***Abstract***

This exploratory qualitative study examined how horticultural therapeutic community center garden clients describe their lived experiences of participating in a garden and the ways they believe their participation has affected them. Structured interviews with eight horticultural therapeutic community center garden clients residing in Fresno County, California were conducted. This study is guided by the principles of hermeneutic phenomenology. Three themes emerged in this study: socialization, purpose, and wellbeing. Findings indicate that participants believe their experiences within horticultural therapeutic community center gardens have a significant effect on their health and wellbeing.

***Introduction***

Garden therapy has been utilized for its power to heal for many centuries. In Mesopotamia, dating as far back as 2000 B.C., lush agricultural plots that lay in the fertile river valleys of the Tigris and Euphrates rivers provided inspiration for the first designed gardens in this otherwise very arid landscape (Jellicoe & Jellicoe, 1995). In 1812 Dr. Benjamin Rush, known for his role in the development of modern psychiatry, published a book titled, “Medical Inquiries and Observations Upon Diseases of the Mind”. Rush stated that “digging in a garden” was one of the activities that distinguished those male patients who recovered from their mania from those that did not (Rush, 1812).

 Since 2011, Fresno County Behavioral Health has established eight Horticultural Therapeutic Community Center (HTCC) gardens with the use of Mental Health Services Act (MHSA) funding. These centers specifically serve Southeast Asian, Slavic, Hispanic, Anglo, African American and Punjabi populations, as well as other populations within Fresno County. These horticultural therapeutic community center gardens were developed as a means of prevention and early intervention for mental health needs and to allow an avenue for a conversation about mental illness in the community with clients. In addition to gardening, these centers provide mental health education, outreach, focus groups, preventive activities, and peer support treatment for non-serious mental illness (SMI) clients.

It’s important to note the recent surge of interest in horticultural activities in treatment programs which has led to the use of many terms for these programs and activities, such as therapeutic horticulture, garden therapy, social horticulture, and therapeutic gardening. Because these terms are used interchangeable it is difficult to distinguish one from another. Horticultural therapy has often been used as the catchall phrase, but there are some important differences between terms. The horticultural therapeutic community center gardens in Fresno County specifically utilize a therapeutic horticulture model, which is a process that uses plants and plant-related activities to improve participant wellbeing through active (e.g. gardening) or passive involvement (e.g. visually observing nature stimuli) (American Horticultural Therapy Association, 2012). For the sake of consistency and brevity, Fresno County HTCC gardens will be referred to as “gardens” for the remainder of this paper.

***Problem Statement***

Since inception these gardens have been unable to present compelling outcomes to satisfy the skepticism of funders and elected officials (Behavioral Health, Fresno County MHSA, 2013; Brown, 2013). This lack of confidence has contributed the inability to expand horticultural therapeutic community center services, specifically garden services. The future of Fresno County gardens and their funding are in peril due to their inability to demonstrate effectiveness. The availability of these gardens is important to the large immigrant and refugee populations within Fresno County, primarily due to the lack of sufficient mental health services for individuals within these communities.

Outcomes have only been collected and measured for effectiveness through survey questionnaires. These surveys ask close-ended questions regarding the perceived psychological benefit of being involved in the garden that relate to participant’s lives, including scales concerning the participant’s self-rating of the garden and its logistics.

 While there has been a substantial amount of research to quantify horticulture therapy for stress reduction and restoration, little research has focused on understanding the phenomenon from a client’s perspective. This research sought to understand, from a client’s perspective, the experience of participating in a horticultural therapeutic community center garden. The research questions for this study asked:

* How do clients describe their lived experience as a participant in a horticultural therapeutic community center garden?
* In what ways do clients believe their participation has affected them?

 ***Literature Review***

*Theoretical Framework*

Two theoretical frameworks were used to understand and explore the lived experiences of garden clients within Fresno County: Attention Restoration Theory (Kaplan & Kaplan, 1989; Kaplan, 1995) and Psych-Physiological Stress Reduction Theory (Ulrich, 1983). These frameworks are based on the Biophilia theory developed by Edward O. Wilson, which states that human beings have an innate need to affiliate with nature due to a genetic predisposition developed evolutionarily through the interactions, and needs provided by nature (Wilson, 1984).

Attention Restoration Theory (1989) suggests that individuals who spend more time in nature will have better cognitive functioning. This is due to the intensive or prolonged use of directed attention, the kind that requires effort, and leads to the fatigue of the mechanisms that serve it. Consequences of being in a state of mental fatigue can include: inaccuracy, irritability, incivility, and impulsivity. Restorative experiences can include the clearing up of mental noise, replenishment of directed attention capacity, and enhanced ability to reflect on issues of importance. Natural environments are believed to be especially effective as rich restorative settings (Kaplan, Kaplan, & Ryan, 1998; (Kuo, Bacaicoa, and Sullivan, 1998; Taylor, Wiley, Kuo, and Sullivan, 1998; Korpela, Hartig, Kaiser, and Fuhrer, 2001; Kaplan, 2001; Kuo and Sullivan, 2001).

 Stress Reduction theory (1983), developed by Roger Ulrich suggests that nature has a significant effect on emotional and physiological functioning. Ulrich suggests that individuals are predisposed to find non-threatening interactions with nature stimuli relaxing and that exposure has a substantial impact upon the parasympathetic nervous system, which is responsible for feelings of relaxation and contribute to enhanced wellbeing. Ulrich’s work was foundational because it showed a connection to the restorative ability of nature, even when individuals are not in direct contact with the environment. In their research, Berman, Jonides, & Kaplan (2008) demonstrated that nature has an effect on restoration and cognition through both direct and indirect interactions with natural stimuli as well.

 The primary assumption that these theories offer is that nature has an important impact on wellness and health. The Fresno County gardens operate as holistic centers providing additional opportunities, which have been researched to be effective for contributing to wellness including social interactions (Kweon, Sullivan & Wiley, 1998; Perrins-Margalis, Rugletic, Schepis, Stepanski, & Walsh 2000); community involvement (Perrins-Margalis, Rugletic, Schepis, Stepanski, & Walsh 2000); peer support, skill development, health education, and physical exercise (Ulrich & Parsons, 1992; Kweon, Sullivan & Wiley, 1998; Rodiek, 2002) .

Many individuals who utilize horticultural therapeutic community center gardens have experienced many hardships such as war, trauma, separation, and isolation. In addition, many individuals participating in these gardens have found themselves overwhelmed with the stress of adjusting to living in a new country. Everyday stress can have a significant impact on wellbeing (Charles et al., 2013). Prolonged exposure to daily stressors, “wear and tear” can decrease emotional wellbeing.

Research by Hartig et al. (2003) investigated psycho-physiological stress recovery and directed attention restoration in natural and urban field settings. Individuals who completed a walk in a nature reserve had a greater stress reduction than those who walked in an urban environment, as measured by a change in blood pressure. Performance on an attention test improved slightly after walking in a nature reserve, while scores declined for those participants who walked in an urban environment. This research demonstrated the effect of interactions with nature on cognition, stress, and emotional levels.

Clatworthy (2012) explored the relationship between suburban allotment (an amount of land allocated to a particular person) gardening and wellbeing by utilizing a qualitative method known as Interpretative Phenomenological Analysis (IPA) with six gardeners from England. Seven main themes emerged from her interviews and analysis: fundamental importance of food; protection and safety; feeling connected; esteem; pleasure of being in nature; development and personal values. Interestingly, Clatworthy drew parallels between these themes and Maslow’s hierarchy of needs. This research suggests that allotment gardens offer a flexible environment that is able to meet a wide-range of needs for individuals, specifically wellbeing.

In research by Fieldhouse (2003), a qualitative approach was utilized to explore the subjective experience of meaning by nine members of an allotment group, a plot of land made available for individual, non-commercial gardening or growing food plants. Through in-depth, semi-structured interviews participants described the restorative value of their allotment setting, a resurgent de-stigmatized identity and attachment to a highly valued social network. This research is insightful because it identified the various forces that individuals attribute to their experience within a garden setting.

The benefits of interacting with nature have been heavily researched and documented. It is important to point out that there is a plethora of other studies that have found similar results, which contribute to the understanding of how gardening and how the interactions with nature can affect wellness. This research is focused on examining the lived experiences of garden clients, an area of the research that has few documented studies.

***Methodology***

The investigator used a qualitative method using face-to-face structured interviews with participants to collect data for analysis. An interpreter, designated by the coordinator of the participant’s garden, was utilized for non-English speaking participant interviews. The interview instrument was developed by the researcher and influenced by the work of Clatworthy (2012). The interview instrument was comprised of twenty-five open-ended questions that explored the various aspects of participant experiences within the garden.

***Results***

A total of 8 individuals were interviewed. Pseudo names have been used to protect the confidentiality of participants.

Table 1. Garden Participant Involvement Information

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Time Involved in Garden | Average Weekly Garden Participation  | Has Access To Another Garden? |
| Pa | x | x | No |
| Mai | 1 Year | 50 minutes daily | No |
| Sheng | 2 Years | 3-4x a week | No |
| Aatma | About 2 Years | 4-5x a week | No |
| Sandeep | 3 Months | About everyday | No |
| May | 3 Years | 2-3x per day | No |
| Zoua \* | 3 Years | About everyday | No |
| Tong \* | 3 Years | About everyday | No |

\*Participants interviewed together, as a married couple

Each participant was asked to tell some information about themselves and their background. Some participants reflected on their mental and physical health, while others on their country of origin, family, and life circumstances. Most participants reported that adapting to life in America as difficult and plagued by physical and mental issues and financial instability.

A total of 105 statements and key phrases were extracted systematically using phenomenological data analysis methods. The identified themes, characteristic of multiple statements, sentences, and quotes from each participant that the researcher felt best-represented participants’ were socialization, purpose, and wellness. Three themes, socialization, purpose and wellness, have been identified as key in understanding the lived experiences of participation in a therapeutic horticultural community garden.

Socialization

 Opportunities to socialize are important to health and wellbeing (VanKim & Nelson, 2013). Most of us have opportunities to socialize, develop friendships, and connect with others through multiple avenues such as places of employment, religious organizations, school, or within our community. Those new to a very different country can find their opportunities less abundant. For the participants interviewed and populations served, gardening has been one of only a few, if any, opportunities for individuals to socialize and connect with others.

When I have my son still living with me I have someone, even though he isn’t a good son, we still have time to chat and verbally idea here and there, make the day go by quick. After he left I’m just by myself I watch the clock not even tick, it take a day, a day longer than a month, a month longer than a year. And I feel really empty, I want to go outside and socialize with someone, have no one to turn it. I want to go shopping, I have no money, I want to do something I don’t have enough money. Even though I have a car, I have no money to put gas in it. So all these made me feel really sad and I just home alone, I have no one to be with and just staring at the clock, the window, the wall I feel really isolated from anyone else. (Sheng)

There are fewer services and therapists available for the greater need of immigrant and refugee clients within Fresno County, an issue found all over the nation primarily due to the lack of appropriate mental health services. (Fresno County Department of Behavioral Health, 2012) Findings suggest that opportunities to socialize, and process life circumstances, past events, and current hurdles appear important for participants, as well as the peer support they receive in the gardens.

Purpose

Purpose, as to the reason or meaning to exist, was recognized as another common theme amongst statements from participants. The needs of the garden to weed, plant, and maintain appear to have an important role in instilling participants with a sense of purpose and meaning. Participants described their life prior to becoming involved in the garden as lonely, boring, and meaningless. The shortest amount of time involved in the garden by any participant was three months while the longest was three years. Participants’ derived purpose and meaning from working in the garden. It is apparent that all participants are in a state of transition, either finding their place in a new country and/or transitioning into their older years of life. On average, participants stated that they are in the garden working almost daily. It is important to consider in terms of services and programs the unique quality of these therapeutic horticultural community gardens, which allows independent utilization of services rather than dictated by staff availability or operating hours.

It’s a self-help process for me. In the morning I wake up I have purpose what I need to do today If I plant something it looks like they’re calling me, the plant is calling me to come today, I have to go. (Sheng)

The gardening it help me not be a lazy. In my age I stay home I have to take a nap, nap after nap I can’t get up. So garden it motivates me, made me working hard, keeps me moving. That is something that is helping me… So it keep me thinking and to make my garden much better, the time fly’s so fast when I have day I don’t need to do anything I walk around to see how my plants are doings and I feel great. (Sheng)

Participants’ reported that the opportunity to work in the garden and contribute to the community important to their feelings of self-worth. Participants’ believe that gardening positively affects the community and we can infer this has an effect on how well they feel connected to the community, their allotment is their stake and responsibility. Having responsibility and feeling connected to a purpose was demonstrated in many statements regarding feeling connected with not only others, but also the natural world and community.

Wellness

Of all the themes that were identified, none other was as apparent as wellness amongst participant statements. Many recounted during their interviews significant symptoms of depression, alongside adverse physical conditions that have limited their abilities. It is also important to consider the circumstances of participant life experiences both currently and in the past. Many have experienced warfare, trauma, illness, and separation and have ultimately faced the hardship of acculturation.

The garden is an important part of participants’ wellness both physically and mentally. The garden allows individuals an outlet to focus on something other than their physical and mental health issues. Almost all participants’ became involved in the gardens due to being at-risk or having a mental health issue or concern. Throughout statements by participants in this section there exists the essence of the attention restoration theory, that individuals who spend more time in nature have better cognitive functioning. The garden provides participants with a restorative setting to replenish directed attention. Participants have self-reported that their interactions in the garden have improved their cognition and functioning.

At the garden I just focus on the thing that I’m going grow, the plants and crops that I’m going to plant so my mind is not thinking on any other things just how I got to get it done. (Pa)

It’s very valuable for me because when I’m tending the garden I’m working hard I forget about my distress and depression... I know that someone like me who is over 50 it’s difficult to find a job and tending the garden it’s the only way to release my stress and frustration, irritation… It contributes to my emotional, I feel like my emotional is stable now (Mai)

Growing green things keeps my mind green and growing. (Aatma)

It means health to me and nutrition... Happiness. Keeps my body working, my hands, my whole body keeps active. (Sandeep)

Participant responses suggest a strong correlation between gardening, the opportunities within the garden and its ability to alleviate stress. This is important in counteracting the development of a severe mental illness (American Psychological Association, 2012, p. 36). The framework and theory of Ulrich’s psych-physiological stress reduction theory (1983), which suggests that green landscapes can lower stress levels is seemingly present in statements by participants.

During the interviews, about half of the participants became very emotional to the point of crying. Almost all participants stated that the garden is of great importance to them. Some of this was conveyed by feelings of hopefulness, crying less, and learning lessons from their experiences in the garden which has reshaped their outlook on life and the future.

If I keep on working the gardening, my body moves I think if I stop doing this I will be still I won’t able to move at all, my life. (Sandeep)

I have my garden to work on, and I’m so happy, because of my garden, it saved my life, the place I go to everyday. (Zoua)

 Of all of the statements collected during the interviews, a statement by Mai struck a note with this researcher. Mai was asked ‘How do you imagine your life without the garden?’ Mai’s response was confirmed by the interpreter for its conveyed message, a direct translation. Based on her statement, it’s appropriate to state that the garden has saved her life.

 If I do not have the garden to hang myself to the garden, I might hang myself already. (Mai)

*Feedback for Decision Makers*

All of the participants in this study were asked to share some feedback and opinions on their garden. This researcher, as a social worker, felt it was important to capture this information and provide an avenue for their comments, concerns, and suggestions to be heard.

 A key theme amongst responses reflected participant opinions that their garden is underfunded, which has affected the amount of clients the garden can sustain and the concern of the program continuously being funded.

There should be more funding so we can have bigger and more people should be able to come here. (Sandeep)

I will tell the elected officials if possible that the programs and the gardening is really beneficial to someone like me both mental and physical. I has friends who really want to be a part of it but its really limited so they don’t have the chance but please help those individual who want help who don’t have a chance. (Pa)

I would let them know that I come from a country that very struggle throughout my life and that this is a way for me to cope and to acculture myself to the new system and new world. This should continue funding for someone like me who is very depressed and emotional daily. That will help me live another day. (Mai)

*Discussion*

 Three major themes were found through the analysis of interview data: socialization, purpose, and wellness. These themes are presented as a means to the reader of interpreting the lived experience of a client in a therapeutic horticultural community garden. These findings suggest that gardening and the opportunities associated with the garden are important, lasting, and profound. All participants stated that their therapeutic horticultural community center garden is their only opportunity to garden due to restrictions in access of adequate land primarily due to living in an apartment. On average participants reported being in the garden daily to look after their plants, socialize, or just to visit for their own wellness after a stressful or painful day. The findings of this research are very similar to those of Fieldhouse (2003), a strong belief that the garden has given participants an opportunity to socialize, instilled them with purpose, and that participation has positively affected their wellbeing.

 The garden has given participants the opportunity to socialize and connect with others, which they reported to have helped reduce stress and improve their quality of life. The ability to process their emotions with others was found to be of great importance to many participants. Additionally, the garden provides participants with opportunities to connect with individuals from similar, but also different backgrounds and whose life experiences many times mirror their own. This fosters cohesion and the development of an identity within the garden. Participants continuously used “we” statements when describing their activities in the garden, which this researcher identified as the development of a social construct of belonging.

Being involved in the garden has also helped participants in their private at home life as well. The ability to grow fruits and vegetables allows participants the opportunity to support interaction with their family and friends. Many reported feeling happy that they are able to provide gifts to their friends in the form of fruits and vegetables that they labor in the garden. Food appears to be an important aspect for family communication, which the garden provides to participants.

Participants consider gardening one of the only activities they have. Most are unable to work, are currently entering a later stage of their life, or feel less safe venturing out, which is appropriate considering the recurrent violent, xenophobic crimes that are committed against immigrants and refugees within the community (Stone & Jacbo, 2013; “History of Hate: Crimes Against Sikhs Since 9/11”, 2012). Participants believe the garden is welcoming and comfortable, where they have purpose and believe that they are giving back to the community through their work and involvement.

For participants the garden plays an important role in their wellness both physically and mentally. Physically, many have adverse health conditions, which have inhibited their ability to perform many tasks. The garden provides an opportunity for exercise, reflection, and relief from stress. All participants stated believing that the garden has contributed to improvements in their physical and mental wellbeing. One participant stated that gardening has been better than traditional means of therapy and medicine in their condition and symptoms. These gardens also offer many opportunities outside of merely just gardening such as the ability to socialize, the availability of fresh fruits and vegetables, and the opportunity for clients to visit their garden for leisure time.

 This study is limited by its small sample size of participants and the need for translators. The use of translators can be considered a ‘double edge sword’ in retrospect. Translators were paid employees of the agency the garden was administered by and held various roles as case managers, therapists, and garden coordinators. Though the translators and the participants were not provided the interview questionnaire instrument prior to the interviews to avoid any “grooming” of participant responses, ultimately the participants might have felt pressure to answer questions in a specific way due to the influence of having a staff person present during the interview. On the other hand, the use of translators from the agency might have helped mine more information from participants because they might have felt more comfortable with the person translating than someone they were not familiar with. Staff members acting as a translator may have an effect on the comfort level of participants to divulge personal information and opinions.

 Some translators expressed the difficulty in translating terms that do not exist in the participants’ native language, such as one specific question regarding the negative and positive aspects of the garden. Some cultures, different from Western influenced beliefs and language, are less restricted to absolutes such as good/bad, positive/negative; there exists variance rather than polar opposites. The availability of more time to adequately develop questions, with a member of the community, who is familiar with the culture and language, might enhance the ability to capture information.

***Policy Implications/Recommendations***

 In a time where programs and funders expect and prefer more quantitative outcome means of data to assess efficiency and effect, it is important that social workers continuously advocate for the voices of clients to have their stories heard in a sound and humanistic manner. As previously discussed, regarding the doubt of therapeutic horticultural community gardens amongst funders and decision makers, social workers have a duty to advocate and collect data that captures the essence of experiences. While numbers and statistics can give us a cold, hard examination of effectiveness, qualitative means of data collection help portray clients as the humans they are, to understand their experiences, and the importance of services such as these. It is additionally important that we empower our clients to voice their concerns to decision makers about the importance of these services, that they have an opportunity and an outlet for their voices to be heard.

 All of the participants in this study come from very diverse backgrounds. It is critical that as social workers, we remember the unique story that each of our clients has, and the complexity of their experiences. Situations can be experienced very differently and it is our duty to take the time to listen, without bias to clients’ voices and feelings.

 For the populations who utilize these gardens, many barriers to services exist. One is the lack of linguistically appropriate therapists to meet the mental needs of refugee and immigrant populations. Therapeutic horticultural community gardens are some of the only opportunities for these populations to become engaged in the community and receive services. Social workers have a professional duty to advocate on behalf of those underserved to ensure access to services.

References

American Horticultural Therapy Association. (2012). Definitions and Positions. Retrieved from <http://ahta.org/sites/default/files/attached_documents/DefinitionsandPositions.pdf>

American Psychological Association (2012). The beginnings of mental illness. Monitor on Psychology, 43(2), 36.

Berman, M. G., Jonides, J., & Kaplan, S. (2008). The cognitive benefits of interacting with nature. *Psychol Sci, 19*(12), 1207-1212. Doi: 10.1111/j.1467-9280.2008.02225.x

Berto, R. (2005). Exposure to restorative environments helps restore attentional capacity. *Journal of Environmental Psychology, 25*(3), 249-259. Doi: 10.1016/j.jenvp.2005.07.001

Behavioral Health, Fresno County MHSA. (2013). Recommendations Regarding Fresno County MHSA FY 2012 Community Gardens. Retrieved from <http://www.co.fresno.ca.us/uploadedFiles/Departments/Behavioral_Health/MHSA/Recommendations%20Regarding%20Fresno%20County%20MHSA%20FY%20%202012Garden.pdf>

Bivibach, F. R. (1997). The efficacy of physical activities, interventions within mental health services, anxiety and depressive disorders. *Journal of Mental Health, 6*(6), 243 – 267.

Brown, B. L. (2013). Seeking Serenity in a Patch of California Land. Retrieved from <http://www.nytimes.com/2013/05/26/us/in-california-gardening-for-mental-health.html?pagewanted=1&_r=0>

Charles, S.T., Piazza, J.R., Mogle, J., Sliwinski. M.J., & Almeida, D.M. (2013). The Wear and Tear of Daily Stressors on Mental Health. *Psychological Science, 24*(5) 733–741*.*

Clatworthy, J. (2012). Exploring the relationship between suburban allotment gardening and wellbeing: An interpretative phenomenological analysis. Canterbury Christ Church University.

Creswell, J.W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Fieldhouse, J. (2003). The Impact of an Allotment Group on Mental Health Clients’ Health, Wellbeing and Social Networking. *The British Journal of Occupational Therapy, 66,* (7), pp. 286-29.

Fresno County Department of Behavioral Health (2012). Criterion 2: County Mental Health System Updated Assessment of Service Needs. Retrieved from <http://www.co.fresno.ca.us/uploadedFiles/Departments/Behavioral_Health/MHSA/CC%20Chapter%202.pdf>

Glendinning, C. (1995) Technology, trauma and the wild. In Roszak, T., Gomes, M. E. and Kanner, A. D. (eds) Ecopsychology: Restoring the Earth, Healing the Mind. Sierra Club Books, San Francisco.

Gill, A. (2014, March 26). Personal interview.

Gonzalez MT, Hartig T, Patil GG, Martinsen EW, Kirkevold M. (2011). A prospective study of existential issues in therapeutic horticulture for clinical depression. *Issues in Mental Health Nursing*, 32, 73-81.

Gullone, E. (2000) The biophilia hypothesis and life in the 21st century: increasing mental health or increasing pathology? Journal of Happiness Studies, 1, 293–321.

Hartig, T., Evans, G. W., Jamner, L. D., Davis, D. S., & Gärling, T. (2003). Tracking restoration in natural and urban field settings. *Journal of Environmental Psychology, 23*(2), 109-123. Doi: 10.1016/s0272-4944(02)00109-3

History of Hate: Crimes Against Sikhs Since 9/11. (2012, August 7). Retrieved from <http://www.huffingtonpost.com/2012/08/07/history-of-hate-crimes-against-sikhs-since-911_n_1751841.html>

Jacobson, N., & Greenley, D. (2001). What Is Recovery? A Conceptual Model and Explication. *Psychiatric Services, 52*, 482-485.

Jellicoe, G. & Jellicoe, S.(1995). Landscape of man (2nd ed.). London: Thames and Hudson, 1995.

Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. New York: Cambridge University Press.

Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology, 16*, 169-182.

Kaplan, R., Kaplan, S., & Ryan, R. L. (1998). With people in mind: Design and management of everyday nature. Washington, DC: Island Press.

Kaplan, S. (2001). Meditation, restoration, and the management of mental fatigue. Environment and Behavior, 33, 480–506.

Kaplan, S., & Berman, M. G. (2010). Directed attention as a common resource for executive functioning and self-regulation. *Perspectives on Psychological Science, 5*, 43-57.

Korpela, K. M., Hartig, T., Kaiser, F. G., & Fuhrer, U. (2001). Restorative experience and self-regulation in favorite places. Environment and Behavior, 33, 572–589.

Kuo, F. E., Bacaicoa, M., & Sullivan, W. C. (1998,). Transforming inner-city landscapes: Trees, sense of safety, and preference. Environment and Behavior, 30, 28–59.

Kuo, F. E., & Sullivan, W. C. (2001). Environment and crime in the inner city: Does vegetation reduce crime? Environment and Behavior, 33, 343–367.

Kweon, B.S., Sullivan, W.C. & Wiley, A.R. (1998). Green common spaces and the social integration of inner-city older adults. Environment and Behavior 30(6), 832-858.

Parker, S. (2004). Grass roots healing. *Mental Health Practice, 7*(8), 20-22.

PEI Project Community Gardens. (2009). 5 Horticultural Therapeutic Community Centers as Neighborhood Resource Center and Community Site for Peer Support. Retrieved from <http://www.co.fresno.ca.us/uploadedFiles/Departments/Behavioral_Health/MHSA/PEI%20Project-5%20Community%20Gardens.pdf>

Perrins-Margalis, N., Rugletic, J., Schepis, N., Stepanski, H., & Walsh, M. (2000). The immediate effects of group-based horticulture on the quality of life of persons with chronic mental illness. Occupational Therapy in Mental Health 16(1), 15-30.

Rodiek, S. 2002. Influence of an outdoor garden on mood and stress in older persons. Journal of Therapeutic Horticulture. 13: 13-21.

Roszak, T., Gomes, M. E. and Kanner, A. D. (1995*) Ecopsychology: Restoring the Earth, Healing the Mind*. Sierra Club Books, San Francisco.

Rubin, A., & Babbie, E. (2011). *Research methods for social work* (7th ed.). Belmont, CA: Brooks/Cole.

Rush, B. (1812). Medical inquiries and observations upon diseases of the mind. Philadelphia: Kimber & Richardson. Retrieved September 22, 2013 from http://deila.dickinson.edu/theirownwords/title/0034.htm

Stone, S., & Jacob, M. (2013, May 7). Sikh man beaten with steel pipe in Fresno | abc30.com. Retrieved from <http://abclocal.go.com/kfsn/story?id=9094041>

Suzuki, D. (1997) *The Sacred Balance: Rediscovering Our Place in Nature*. Allen and Unwin, St Leonards.

Taylor, A. F., Wiley, A., Kuo, F. E., & Sullivan, W. C. (1998). Growing up in the inner city: Green spaces as places to grow. *Environment and Behavior*, 30, 3–27.

Ulrich, R. S. (1983). Aesthetic and affective response to natural environment. In I. Altman & J. F. Wohlwill (Eds.), *Human behavour and environment: Behaviour and the natural environment*. New York: Plenum Press.

Ulrich, R. S. (1984). View through a window may influence recovery from surgery. Science and Children, 224(224), 420-421.

Ulrich, R. (1979). Visual landscapes and psychological wellbeing. Landscape Research, 4, 17-23. Ulrich, R. (1981 Sept). Natural versus urban scenes: some psycho-physiological effects. Environment & Behavior, 13(5), 523-556.

Ulrich, R., Simons, R., & Losito, B. (1991 Sept). Stress recovery during exposure to natural and urban environment. Journal of Environmental Psychology, 11(3), 201-230.

Ulrich, R.S. & Parsons, R. (1992). Influences of passive experiences with plants on individual wellbeing and health. In D. Relf (Ed.), The role of horticulture in human wellbeing and social development (pp.93-105). Portland, OR: Timber Press.

Wilson, E. O. (1984). *Biophilia*. Cambridge: Harvard University Press.

VanKim N.A. & Nelson, T.F. (2013). Vigorous physical activity, mental health, perceived stress, and socializing among college students. A J Health Promotion. 2013; (28) 7-15.