

Person-Nature Therapeutics in Crisis Shelters for Victims of Domestic Violence: A Review

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Abstract

Domestic violence is a serious public health problem with numerous negative health consequences for women and children. The exterior natural environment affords counseling and safe accommodation and can function to help survivors start a new life without the ongoing threat of future violence. Based on an in-depth literature review, a theoretical framework is presented. The findings suggest that appropriately designed green outdoor environments that provide person-nature therapeutic activities indeed meaningfully support the health of women and children residents. This literature analysis yielded key patterns in terms of shelter residents' needs and preferences concerning design in relation to potential health affordances. Priorities for planners and designers are reported, although empirically based health outcomes linked directly to building typology and/or person-nature variables remain somewhat inconclusive at this time. Regardless, substantive interconnections between this theoretical framework and its attendant themes and sub-themes are directly applicable as focus points for professional practice, for shelter administrators and staff, and as a basis for future research.

Introduction

The World Health Organization defines violence against women as a major public health problem that exacts enormous personal, social, and economic costs (Garcia-Moreno & Watts, 2011). In the U.S., one woman in four has experienced domestic violence at some point in her life (Tjaden & Thoennes, 2000), and this statistic is nearly identical in Europe (Council of Europe, Committee of Ministers, 2002). Moreover, children are also frequent victims of domestic violence. It is estimated that 275 million children worldwide are exposed each year to domestic violence (UNICEF,

2006). It is a global phenomenon, yet one that unfortunately remains shrouded from full public discourse; it is an ongoing personal and public health problem that few countries, communities, or families dare openly confront. Domestic violence has long-term negative health consequences for women and children survivors. Serious mental health consequences such as depression and post-traumatic stress disorder, or even death, may develop. Children exposed to domestic violence or physical abuse often develop behavioral and psychological problems or may exhibit problems with language development, psychosocial cognitive development, psychosomatic illnesses, depression, even suicidal tendencies (*ibid.*).

Crisis shelters offer counseling and safe accommodation for victims of domestic violence in times of emergency, where the primary function is to provide residents acute respite from the extremely stressful situation they came from and to help them start a new life without violence. The crisis shelter requires a high level of security and compassionate architectural design to be a place of privacy and community, work, and recreation (Verderber, 2001). "Green outdoor environments" which include varied outdoor landscape settings that feature a substantial amount of vegetation, and opportunities for person-nature engagement, is an equally important part of a crisis shelter, and an essential resource for therapeutic activities with nature in a central role. Based on a thorough review of the recent literature, an attempt is made to extend this hypothesis.

An important aspect in understanding the theoretical relationship between people and their environment is how human emotional states affect perception. Evidence indicates that people are most likely to focus on stimuli in the built environment that match one's present emotional state (Cooper, Marcus & Barnes, 1999). Survivors of domestic violence are typically emotionally distressed and therefore, hypothetically, in need of environments designed to address emotional health status. According to prospect-refuge theory, environments which provide the necessities for survival by satisfying biological needs are preferred over those which do not (Appleton, 1975). Furthermore, humans exhibit a general adaptive need for restoration from deleterious levels of stress (Ulrich et al., 1991). Survivors of domestic violence may have a preference for green outdoor environments which are designed to offer both prospect and refuge. Because these individuals experience high levels of stress, a non-threatening natural environment can foster immediately positive emotional responses.

Attention-restoration theory postulates that en-

vironments which possess four key components—‘fascination’, ‘being away’, ‘extent’, and ‘compatibility’—can be of significant restorative value (Kaplan, 1995). Green outdoor shelter environs which express all four components can have a restorative effect on victims’ cognitive functioning. This focus is also reflected in occupational therapy theories centered on sensory integration, which is the process of organizing person-environment information, thereby making it possible for the brain to generate and synthesize restorative body responses, perceptions, emotions, and thoughts (Ayres, 2008). Such cognitive processes are the underlying basis for academic learning and social behavior. For children with sensory learning challenges, a playful, non-threatening shelter environment in which the children feel driven to play without recrimination is critically important. Adults, for their part, also need to feel rewarded when engaging in pleasurable and meaningful activities in the built and natural environment (Kielhofner, 1997). This has been described as the “flow experience”, whereby the demands of the activity correspond to the person’s capacity to engage in, and hence, accrue its full therapeutic affordances (Csikszentmihalyi, 1990). The design of green outdoor environments at crisis shelters and the person-nature therapeutic activities which can take place in these settings play an important part in supporting the health and well-being of women and children. The aim of this discussion is to review the peer reviewed literature concerning landscape architectural design and person-nature therapeutic activities in relation to green outdoor environments at crisis shelters for women and children survivors of domestic violence. It remains a relatively new field of research. The analysis attempts to bundle together prior findings and focus on their key implications for shelter settings. The core research questions are: (1) What is the relationship between shelter building typology (BT) attributes and person-nature therapeutic (PNT) attributes as a function of the green outdoor environment? (2) What are the preferences of shelter occupants and associated users concerning the design of green outdoor environments, and additionally, what are the health benefits of meaningful engagement with nature in the shelter milieu?

Methodology— Literature Search

Keywords in the literature review centered on BT and PNT attributes and the work of Danner, a Danish think tank, in this emerging area of research (Stigsdotter et al., 2011). Keyword sequencing included “domestic violence”, “family violence”, “intimate partner violence”, “inter-personal violence”, abuse, battered, homelessness, incest, rape, neglect, shelter, “crisis cen-

ter”, and in addition, “horticultural therapy”, “gardening therapy”, “therapeutic gardening”, “conservation therapy”, “ecological psychotherapy” and “people-plant relationships.” English language sources were perused, including online publications, yet excluding student projects and non-peer reviewed published reports from public authorities. Keyword search terms were divided further into two sub-headings: user/occupant preferences and health benefits. Examples of crossover BT/PNT sources were identified. The analysis yielded key themes, reported below.

Results

The literature research uncovered 18 sources published between 1986 and 2008; 14 of them have a focus on BT attributes and four on PNT attributes and associated activities. Sources with a focus on building typology centered on the shelter setting itself; two such sources specifically addressed design variables in relation to children’s needs. Most such settings were in the United States, although Canada, Ireland, and Korea are also represented. Seventeen of 18 sources addressed issues centered on occupant/user preferences, and five sources specifically addressed issues centered on health. Among the building typology literature, nine described case study design projects, three centered on research based guidelines, and two were empirical studies. An overview of these empirical studies is presented in Table 1. In the two quantitative research sources, data were collected via multiple methods, i.e., survey questionnaire, interviews, observation, drawings, photographs, and literature review. The research-based design guidelines, together with design implications drawn from the empirical studies, are reported in Table 2. These focus on the specific needs and preferences of victims of domestic violence concerning the design of green outdoor environments at crisis shelters. This analysis yielded five key themes.

Theme 1: Security Against Intruders: Seven studies emphasized the importance of a shelter setting that blends in seamlessly with its surroundings and is otherwise unrecognizable as a “shelter” or any related “institutional” setting. Landscaping can establish and preserve a shelter’s anonymity, particularly if this is part of the shelter’s core philosophy. Twelve design projects featured fully surrounded courtyards, enclosed yards, or both. These forms of green outdoor environments were cited as a means of creating a secure outdoor realm.

Theme 2: A Sense of Safety: Seclusion away from the reach of unwanted intruders and a sustainable sense of personal safety on a 24/7 basis are two factors at the core of residents’ stated preference for a non-

Author(s) Publication Year	Journal Title	Objective / Research Questions	Site	Type of Study	Methods
Brown (2005)	Landscape Architecture	Description of Estelle's Garden at a crisis shelter	Boston, MA, USA	Case description and study	
Irish Architect (2002)	Irish architect	Description of a design of children's play spaces at Cuanlee Refuge	Cork, Ireland	Case description and study	
Verderber (2001)	Loyola Law Review	Description of a research based design of 2 crisis shelters-including green outdoor environments	1 in Washington DC, MD, USA; 1 in Jefferson Parish, LA, USA	Case study	Research-based design study of the shelter
Kapusta (1999)	Canadian Architect	Description of Robertson House including the green outdoor environment	Toronto, ON, Canada	Case description and study	
MacDougall (1999)	Canadian Interiors	Description of Robertson House-including a green outdoor environment	Toronto, ON, Canada	Case description and study	
Urban Land (1998)	Urban Land	Description of a design of a crisis shelter- including a green outdoor environment	Trvine, CA, USA	Case description and study	
Canadian Architect (1995)	Canadian Architect	Description of a design of a crisis shelter- including a green outdoor environment	Toronto, ON, Canada	Case description and study	
Refuerzo & Verderber (1993)	Journal of Architectural and Planning Research	Perceptions of women's shelter as an architectural building type and staff-resident responses to their immediate shelter environment	4 in Los Angeles, CA, USA; 2 in New Orleans, LA, USA	Empirical studies on the building typology and immediate exterior environs	Questionnaire survey; Case study of each crisis shelter; N=101 (51 female residents, 50 female staff)
Refuerzo & Verderber (1990)	Journal of Architectural and Planning Research	What are the occupant's responses to the architectural environment in shelters fore victims of domestic violence?			
Refuerzo & Verderber (1989)	Environment and Behavior	Description of a research based design of Charles County Crisis and Referral Center and the green outdoor environment	Washington DC, MD, USA	Case study	Research-based design study of the shelter
Peters (1989)	Cite: The Architecture and Design Review of Houston	Description of a design of a crisis shelter including a green outdoor environment	Houston, TX, USA	Case description and study	
Refuerzo & Verderber (1988)	EDRA 19 Proceedings	General description of research based guidelines for the design of outdoor environments at crisis shelters	-	General description of guidelines	Research-based design study of the shelter/Site planning and design guidelines
Popkin (1987)	Cite: a publication of the Rice Design Alliance	Description of a playground for children at a crisis shelter	Houston, TX, USA	Case description and study	
Women & Environment (1986)	Women & Environment	Description of a crisis shelter including a green outdoor environment	St. Paul, MN, USA	Case description and study	

Table 1: Empirical Studies on Building Typology/Immediate Exterior Environs (BT Attributes)

threatening shelter environment (Ayres, 2008; Ulrich et al., 1991). These preferences are not dissimilar from those expressed in prospect-refuge settings that assist in facilitating restorative behaviors and can yield health promoting benefits (Ulrich et al., 1991). In seven sources, residential imagery is extolled as a means of providing a sense of personal safety, as this eschews any references to institution or to a "walled fortress." Mother-child sustained visual and auditory contact is seen as an essential attribute in outdoor play areas for children.

Theme 3: Spatial Hierarchies: This pattern centers on built environments that help people restore their capacities for more complex interpersonal social relations (Grahn et al., 2010). The shelter design case studies revealed varied user needs in the green outdoor environment. A flexible play area for use of different age groups of children is a core dimension. In seven design projects, a green outdoor environment includes varied spaces for social interaction. Private rooms are

highly preferred, as are more secluded spaces for prayer, spiritual reflection, and counseling.

Theme 4: Indoor/Outdoor Connections: The importance of a sustained visual and physical connection between indoor and outdoor realms was cited as a key attribute. This mainly focused on the provision of direct access between interior communal spaces such as dining areas, residents' lounges, and child care areas, with adjoining outdoor spaces for passive and active engagement with nature. Transitional space and zones, i.e., a covered porch or a patio, were cited as important amenities.

Theme 5: Visual and Acoustical Amenity: The judicious selection of plantings contributes to at once activating and softening adjoining green outdoor spaces. Plants, trees, and flowers are frequently used to create an inviting residential ambiance. Plantings function as effective visual buffers, screening direct views from the outside to within the shelter. Plantings are also used to control sound as they effectively muffle unwanted noise.

Publication Year		Author(s)	Themes										Women & Environment	Popkin
			2005	2002	2001	1999	1998	1995	1993	1990	1989	1988	1987	1986
Theme 1: Security against Intrusion	Irish Architect Brown	Neighborhood compatibility							X	X	X			X
		Landscaping											X	
		Courtyards				X	X	X	X	X				
		Enclosed yards	X	X	X					X		X	X	
		Form of design											X	
	Kapustia Mac-Dougall	Fire safety												X
		Homelike qualities				X		X		X				X
		Avoid fortress appearance											X	
		Good visibility between mother and child	X	X	X					X		X		X
		Play ground allow mother's surveillance									X			
Theme 2: A Sense of Safety	Urban Land Architect Verderber	Children safety in play areas	X							X			X	X
		Outdoor play area for children		X	X	X	X	X	X		X		X	X
		Design for varying age profile		X	X					X	X		X	X
		Space for social encounters	X			X			X	X			X	X
		Space for religious activities							X					
	Canadian Architect Verderber	Private room for young residents												X
		Direct access from shared space to outdoors		X	X	X	X			X				X
		Easy access from shared space to outdoors											X	
		Transition areas				X				X				
		Views from windows to outdoors		X	X				X			X		X
Theme 3: Space for Different Needs	Different Needs	Create a softer residential ambiance			X									
		Visual buffer	X								X			
		Sound control/Noise muffling		X						X				
		Screen from the neighbourhood									X		X	
Theme 4: Indoor/Outdoor Connections	Outdoor Connections of Plantings													

Table 2: Literature Timeline-BT Attributes

Author(s) Publication Year	Journal/Book Title	Objective/Research Questions	Site	Type of Study/Study Population	Method
Lee, Kim & Suh (2008)	Acta horticulturae	Can a group horticultural therapy program improve self-esteem and lower depression of battered women at a shelter?	Korea	Case study/Experimental group (N=12) and control group (N =12), (women living at a shelter)	Experiment with the use of pre-and post-tests/ Descriptive statistics
Seals & Pierce (2007)	Journal of Extension	-	Palm Beach, FL, USA	Case study	Case description
Stuart (2005)	Urban Place – Reconnecting with the Natural World	Can gardens and healthy food enrich the lives of both residents and staff of grassroots domestic violence shelters?	9 shelters for battered women and children in California, USA	N=126 (60 women, 21 children, 45 staff)	Survey and in-depth structured interviews/ Descriptive statistics
Keeley & Leigh (1999)	Journal of Therapeutic Horticulture	To create a culturally sensitive, nurturing, and productive children's garden, to elevate self-esteem; To enhance social skills of child residents; To maintain both short- and long-term activities in the garden	2 shelters in San Leandro, CA	N=20 (children living at a shelter)	Participant observation

Table 3: Empirical Studies on Person-Nature Therapeutics (PNT Attributes)

Publication Year			2008	2007	2005	1999
Themes		Author(s)	Lee, Kim & Suh	Seals & Pierce	Stuart	Keeley & Leigh
Occupants / User Preference	Theme 1: Safety	Safe enclosure for children and good visual connection with mother and staff				×
		Safe selection of plants	×			×
		Positioning of raised beds			×	×
		Design with users scale, view point and age groups				×
Health Benefits	Theme 2: Accessibility	Horticultural therapy program can increase the level of self-esteem	×	×	×	×
		Horticultural therapy can decrease the level of depression and be life enhancing	×		×	
		Gardening Activities can mitigate the psychological trauma		×		
	Theme 3: Social Relations	Garden programs help act better in their social roles				
		Garden programs help create a stronger community to the neighborhood			×	
		Horticultural therapy can achieve a goal of elevating children's social skills				×

Table 4: Literature Timeline-PNT Attributes and Activities

Health Benefits

With respect to BT attributes in shelter settings, health-related factors were found to have an influence on occupants' satisfaction with the architectural environment (Refuerzo & Verderber, 1989). Residents' satisfaction with their shelter was predicted by the psycho-emotional condition of the mother and the health status and overall well-being of one's children. Second, one's personal health status was found to be a more useful indicator of overall satisfaction than the resident's actual use (or non-use) or engagement with the shelter's architectural setting.

Descriptions of PNT attributes and associated activities are reported in Table 3. This literature yielded two discernible themes:

Theme 1: Safety: Personal safety centers on a need for playful and non-threatening environments. This is a prerequisite for direct engagement in such activities (Ayres, 2008). Safe enclosures provide children a space to engage in horticultural activities while preserving a sense of personal privacy, while at the same time mothers and staffs are able to maintain sustained visual contact with the children.

Theme 2: Accessibility: This denotes the need for meaningful activities attuned to one's personal capabilities. This, in turn, makes it possible to experience personal enjoyment and thereby achieve a positive experience in a shelter outdoor environment (Csikszentmihalyi, 1990; Kielhofner, 1997). Key aspects on handicap accessibility were emphasized, i.e.. the value of raised vegetable gardening beds, the needs of children of varying ages in relation to their engagement in garden

settings, and of those persons bound to wheelchairs.

Health Benefits: The literature analyzed yielded the central importance of personal health factors in the total shelter experience, and specifically, on how green outdoor environments support the health of women and children residents (Table 4). This yielded three discernible themes:

Theme 1: Self-esteem: This is defined as any meaningful and appropriate activities that subsequently result in a sense of heightened self-image (Csikszentmihalyi, 1990; Kielhofner, 1997). A horticultural therapy case study resulted in a significant increase in the level of self-esteem among adult shelter residents. Engagement in horticultural activities in the shelter outdoor milieu yields in residents and their children a sense of self-achievement.

Theme 2: Mood and Stress: In terms of one's involvement with nature, these factors are grounded in one's emotional state, one's perception of nature, and its perceived therapeutic value in the eyes of an individual (Cooper Marcus & Barnes, 1999; Kaplan, 1995). It was found that PNT attribute and activities are linked to residents' well-being. In Lee's study, a shelter's horticultural therapy program contributed to a discernible decrease in the level of depression reported among women shelter residents. In Stuart's study, through interviews and surveys, female shelter residents who spent more significant time in the shelter's garden were more likely to report positive feelings. Children also expressed positive feelings when asked how they felt in the garden and the children's interest in the gardens had a positive effect on their mothers' attitudes and

emotional outlook. Seals' study indicates that gardening activities play an integral role in helping shelter residents mitigate their psychological trauma.

Theme 3: Social Relations: This discernible pattern in the shelter literature is connected with the view that secure and stable natural environments can help people restore their capacities for more complex interpersonal social relations (Grahn et al., 2010). Gardening programs helped mothers who engaged in this activity to strive to relate more effectively with their children. This was found to especially be the case when their children also engaged in gardening activities at the shelter. Both residents and staff participants in this case study agreed that gardening functioned as a bridge, as a cultural unifier, within the shelter milieu. Staff also mentioned that gardens and gardening helped to build and sustain a stronger shelter community and contributed to stronger bonds among residents and between residents and shelter staff. In Keeley & Leigh's study, they concluded that a primary goal/outcome of a horticultural therapy program in the shelter milieu can be to elevate the social skills of children and adolescent residents.

Conclusion

The interdisciplinary nature of this topic called for a literature search across multiple databases and the utilization of numerous search keywords and combinations thereof. The main focus of the 18 sources was on architecture and landscape architecture as pertaining to occupants' predilections and preferences. The literature review indicated that research on design variables and health factors within the shelter milieu remains somewhat inconclusive due to the limited number of published empirical studies to date, thus making it difficult to conclusively draw linkages between BT attributes, PNT attributes and activities, and demonstrable human



Figure 1: Exterior View of Shelter, Copenhagen, Denmark

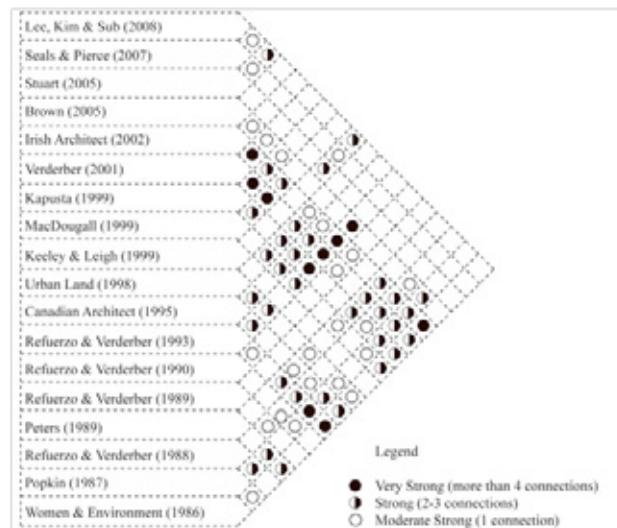


Table 5: Degree of BT/PNT Interconnections
Within the Shelter Literature

health outcomes. Therefore, with respect to the two hypotheses postulated, the first was firmly upheld while the second hypothesis was only partially upheld. However, numerous substantive interconnections within this interdisciplinary literature are diagrammable (Table 5). This measure attempts to capture the strengths of these interconnections and the fact that the most sensitively designed shelter environments expressively feature many of the concepts discussed above (Figures 1-3).

Future Research/Implications for Professional Practice

Research on health status and related healthful outcomes associated with shelter building typology factors and person-nature therapeutics in crisis shelters for victims of domestic violence remains at an early stage.



Figure 2: Immediate Environs of Denmark Shelter



Figure 3: Play Space of Denmark Shelter

Future research is called for regarding architectural and landscape design related to such therapeutic health benefits. The further examination of connections between building design and person-nature therapeutics and their individual and/or mutual impact on health outcomes is feasible via case studies carried out in day to day shelter settings. It is hoped this discussion will function as a point of departure for the further advancement of research while at the same time adding to the existing professional practice knowledge base on the health benefits of green outdoor environments at crisis shelters for victims of domestic violence globally.

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