DESIGNING ENVIRONMENTS FOR A STRESSFUL AND TRAUMATIC WORKPLACE CULTURE: A CASE STUDY IN A MENTAL INSTITUTION

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Abstract

The mental and physical working context in which mental health-care providers spend most of their day is an extremely stressful environment, specifically with regards to mental and physical well-being. This environment is shaped by a number of influences such as job demands, patient related stresses and political and economic pressures. All of these factors may eventually result in high levels of staff burnout, decreased work efficacy and increased overall stress. The primary objective of this study was to facilitate wellness enhancement amongst mental health-care providers in a psychiatric hospital by manipulating the visual lived environment through the introduction of colour landscape photographs with an emphasis on physical positioning and content. However, this article interrogates specifically the photographic choices and response to them in the selected environment. A qualitative analysis focussed on positioning with written participant feedback, indicating that 'the photos add new dimension and depth to the ward' and 'loved the photo's in the passage by the entrance of the ward'. A Likert scale survey questionnaire was used to assess feedback with regards content. A quantitative analysis of the survey results indicated an overall improved photographic image and placement perceptual preference within the lived environment. Measured experiences under the headings of 'don't like', 'acceptable' and 'like a lot' have increased between the two installations for the following content categories: 'veldt and trees' +2%, 'autumn' +13% and 'colourful flowers' +4%. A 'waterfalls' category was introduced in the second installation with a 'like' score of 82%. The 'leaves and autumn' category remained the same, with 'trees and desert' scoring lower in the second iteration by 10% and 14% respectively.

Keywords: *stressful workplace, burnout, colour landscape photographs, wellness*

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Introduction

"Nature has been recognized as a source for healing throughout history. In ancient times, healing rituals were conducted in sacred spaces defined by the awe-inspiring nature" (Guenther & Vittori 2008:78). However, the development of anaesthesia, surgical techniques and medical treatment began to separate the late nineteenth-century hospital from its early beginnings as primarily a place to recuperate. Nevertheless, resort spas, tuberculosis sanatoriums and residential psychiatric facilities maintained a focus on the healing aspects of the landscape while the twentieth-century hospital followed the broader quest of mastery over nature (Guenther & Vittori 2008:79). Hospitals concentrated on medical training and education as well as technology whilst the resort spa movement in Europe and the United States continued to focus on nature as a therapeutic procedure. These two approaches worked to manifest the notion that 'healing' is not, as would normally or generally be assumed, only a physical process, but that psychological healing also comes into play as part of the bigger 'healing' idea. This resonates with World Health Organization's definition of health, which states: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." This modality emerged as a way to reconnect stressed individuals to their bodies and their health. During urban epidemics, the wealthy routinely retreated to the refuge of the resort spa (Guenther & Vittori 2008:84).

A body of research became apparent during the 1980's demonstrating that an association with nature encouragingly influences medical outcomes and medical staff performance (Guenther & Vittori 2008:84). Because of that research, the role of the healthcare environment in the healing process was promoted. This was supported by the concern among health care providers, environmental psychologists, consultants and architects (Devlin 1992 and Martin Hunt & Conrad 1990) as a result of the belief that the traditional, institutionally designed health care facility apparently had very little bearing on the wellness of its patients even if the level of care is superb (Ulrich 1992:20-25, 1995:88-104).

The mental and physical working context in which mental health-care providers spend their day is an extremely stressful environment, specifically with regards to mental and physical well-being (Evans et al. 2006:75-80). This environment is shaped by influences such as job demands, patient related stresses, political and economic pressures and potentially life-threatening situations where at times a seeming hopelessness in the treatment effectiveness, all contribute to what much research on the topic of staff burnout has indicated. This coincides with a decrease in work efficacy, an increase in overall stress and many other similar and relevant conditions (Naudé & Rothmann 2006:63-81). These factors may result in high levels of staff burnout, decreased work efficacy and increased overall stress. In South Africa, the medical profession is under severe strain (stress) and newspapers articulate those common concerns. Dr Lucas Ntyintyane (PhD), a South African trained physician, writes in an article in the *Sunday Times Newspaper* (2009), that, amongst many other reasons, it seems that "poor working conditions [working environment] is the main reason for South African doctors wanting to leave the country" (brackets added). Another article in the *Sunday Times Newspaper* (2010), by Zine George about the Tower Psychiatric Hospital in Fort Beaufort in the Eastern Cape, says "this hospital is simply unbearable", citing 64% of nursing posts unfilled and only one full-time doctor in a 400-bed institution for the mentally ill. Stoyanov's (2011) Masters' research in Clinical Psychology reports on South African medical practitioners' mostly negative experience of the current health-care delivery system, by highlighting the mass departure of valuable human resources, medical practitioners becoming progressively more frustrated with governmental policy, wage negotiations, work-place disenchantment, lack of service delivery, expressions of corruptions, and lack of resources. This confirms the notion that "the lived, work environment" of medical practitioners is paramount for the optimal functioning of the health care professionals as well as for the optimal administering of health care as a whole.

The primary objective of this study was to facilitate wellness amongst mental health-care providers in a psychiatric hospital by manipulating the visual lived environment through the introduction of colour landscape photographs with an emphasis on the physical positioning and content of the photographs.

Kellert and Heerwagen (2008:85) are of the opinion that:

> "Nature nurtures. There is no longer any doubt about the therapeutic value of contact with the natural environment, whether it is through window views, gardening, walking through the woods, or watching the sun set over the ocean. Positive benefits occur even through simulations of nature such as in posters and photographs."

Research in a variety of fields and applications has indicated that contact with nature produces emotional, physiological, social and cognitive benefits in a wide array of contexts. The most undeviating findings across studies, regardless of whether they are controlled experiments or field applications, are mood improvement

and stress reduction related to contact with nature. The contact can be multisensory active engagement or purely visual and passive such as viewing only. A further research project was conducted where 125 staff and 125 inpatients of physical medicine and rehabilitation units viewed 64 photographs that depicted similar such units from 11 hospitals. The mostly favoured photographs were of trees and lawn. Furthermore, in research undertaken by Ulrich, open-heart surgery patients were postoperatively exposed to different scenes: a nature scene of water or trees, or no scene at all. Those who viewed the nature scene of water reported less anxiety than did those exposed to the other types of scene or no scene at all.

Ornstein and Sobel, (1990) "Flooding our brains with rich natural visual stimulation helps us recover from surgery, tolerate pain, manage stress, and attain well-being." They also state that, "Pictures of ponds, streams, trees and other vegetation produce lower levels of arousal and higher alpha brain waves, a brain state associated with wakeful relaxation." Literature thus suggests that colour photographs that show nature do seem to have a positive effect with regards to the well being of the people that are viewing those visuals. This research sets out to interrogate "How one can establish an enhanced sense/state of wellbeing and efficacy amongst mental health-care providers in a psychiatric hospital by manipulating the visual lived environment through the introduction of colour landscape photographs?"

Methods

Short Introduction
This research followed an Action Research model. A situational analysis was undertaken to explore the state of wellbeing of the health-care workers and the lived environment (the psychiatric ward). An informal evaluation of the physical ambiance in the Psychiatric unit by the researcher indicated that the partially bare walls throughout the unit might be an important contributory factor in the staff members' burnout experiences.

This was followed by the creation, development and installation of an enhanced lived environment. The researcher developed the first intervention model, using his tacit knowledge as photographer, relying on his training as commercial photographer and his background as an academic. He also integrated knowledge from his Masters degree (…….., 2004), where he researched the prevalence of aesthetic and serenity characteristics in certain types of landscape-, seascape- or cityscape photography.

After a period of 3 months, the reactions to the enhanced lived environment were assessed. These assessments lead to a redesign of the lived environment, according to the results of the assessment. After a period of 3 months, again, the reactions to the differently enhanced lived environment were assessed.

A mixed method approach was utilised whereby firstly, qualitative, semi-structured face-to-face interviews were used to present the situation analysis by exploring the lived experiences of the mental health-care workers by means of open-ended questions. A phenomenological approach was used to provide and establish a base-line, pre-intervention context. Secondly, most of the creative intervention work was based on the tacit knowledge and expertise of the researcher. Thirdly, the quantitative component involved the use of one self-developed questionnaire and two standard questionnaires. The two standard questionnaires were the *Profile of Mood States* survey (POMS) (Morfeld et al 2007:1-9) and the *Work Environment Scale* survey (WES) by Moos & Insel (www.mindgarden.com/products/wes.htm), while the *Wellness Questionnaire* was self-developed. The POMS and WES questionnaires were used to establish overall responses towards the workers' lived work environment, whilst interviews were used to establish base-line pre-intervention context, exploring the lived experience of the staff working in Ward 1 of the selected hospital. The *Wellness Questionnaire* was developed to provide written feedback with regards the photographic interventions that were introduced into the ward.

Leedy and Ormrod (2001:4) state: "Research is the systematic process of collecting and analyzing information (data) in order to increase our understanding of the phenomenon about which we are concerned or interested." In this instance, the focus is on formal research where the intentional aim is to enhance the understanding of a phenomenon (Leedy & Ormrod 2001:4). Quantitative and Qualitative research approaches are seen as the two recognised forms, in the broader sense, and within the medical environment, the quantitative approach has been applied quite extensively. "Quantitative research" is the procedure whereby questions are answered about "relationships among measured variables with the purpose of explaining, predicting, and controlling phenomena" (Leedy & Ormrod 2001:101). In this study the use of the POMS and WES questionnaires and the statistical analysis that followed constitute the quantitative research component. A Likert scale survey questionnaire was used to assess feedback with regards the content.

Qualitative research, in contrast, deals with answering questions "about the complex nature of phenomena, often with the purpose of describing and understanding the phenomena from the participant's point of view" (Leedy & Ormrod 2001:101). The qualitative research paradigm, in its broadest application, refers to "research that elicits participant accounts of meaning, experience or perceptions" (Fouché & Delport 2004:79). Fouché and Delport (2004:79) add that in essence, the qualitative researcher is concerned with "understanding (*verstehen*) rather than explanation; naturalistic observation rather than controlled measurement"; and the subjective investigation of reality from the perception of an insider rather than an outsider perspective that is principally experienced in the quantitative paradigm. All qualitative approaches have two things in common: firstly, the focus is on phenomena that occur in natural settings, that is, in the "real world," and secondly, the research involves studying those phenomena in all their complexity (Leedy & Ormrod 2001:147). Fouché and Delport (2004:79) also state that it is "holistic in nature and aims to mainly understand social life and the meaning people attach to everyday life." Qualitative researchers seldom try to simplify what is observed but rather try to portray the issue in its multi-faceted form (Leedy & Ormrod 2001:147). Such a multi-faceted approach relies on a 'thick description' of the lived environment to facilitate and support the transferability of the findings of the research. A qualitative analysis focussed on the positioning of the photographs within the ward, supported with written participant feedback.

Results

The first discussion point is 'Content' and the feedback was obtained by means of a Likert scale survey questionnaire. The scale ranged from one (1) to ten (10), and the three headings to choose from were 'dislike', 'acceptable' and 'strong preference'. The two values shown within each Likert heading in the Tables below, as assigned to *colourful flowers,* for example, indicate the first and second iteration responses respectively. Figure 1 shows two examples of what some of the photographs of colourful flowers looked like: the photographs shown are only two of a number of images in the respective categories and resemble the spectrum of images that were displayed. Table 1 shows the first and second iterative results. The quantitative analysis of the survey results indicate the following:

Figure 1

	DISLIKE		ACCEPTABLE		STRONG PREFERENCE	
EXPERIENCE OF CONTENT	1-4		5-6		7-10	
COLOURFUL FLOWERS	16%	6%	21%	28%	63%	67%

Table 1

The first iteration responses indicate that 16% of the respondents disliked the 'colourful flowers' photographs, 21% found them to be acceptable and 63% of the respondents experienced a strong preference towards the photographs that displayed colourful flowers. The second iteration responses differed slightly and only 6% of the respondents disliked the photographs. Under 'acceptable', 28% of the respondents found favour and 67% of the respondents experienced a 'strong preference', indicating a +4% increase.

Figure 2

	DISLIKE		ACCEPTABLE		STRONG PREFERENCE	
EXPERIENCE OF CONTENT	1-4		5-6		7-10	
LEAVES/AUTUMN	18%	12%	24%	29%	59%	59%

Table 2

Table 2 indicates 6% fewer respondents disliking the 'leaves/autumn' photographs (figure 2) in the second iteration, with 5% more of the respondents deciding on 'acceptable' during the second iteration. A 59% 'strong preference' for both of the iterations was shown.

Figure 3

	DISLIKE		ACCEPTABLE		STRONG PREFERENCE	
EXPERIENCE OF CONTENT	1-4		5-6		7-10	
WATER	-	6%	18%	12%	82%	82%

Table 3

With regards to the 'water' photographs (figure 3), 6% of the respondents reacted with a 'dislike' in the second iteration. The result of that response is seen in the 18% versus 12% in the 'acceptable' headings. Eighty two percent (82%) of the respondents reacted quite favourably for both of the iterations in the 'strong preference' heading (Table 3).
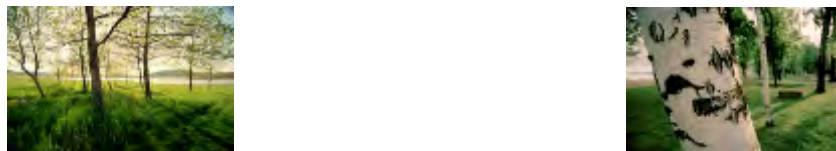

Figure 4

	DISLIKE		ACCEPTABLE		STRONG PREFERENCE	
EXPERIENCE OF CONTENT	1-4		5-6		7-10	
VELD and TREES	13%	11%	6%	6%	81%	83%

Table 4

The 'dislike' heading showed minimal change in the veldt and trees category (Figure 4), with 'acceptable' remaining the same. A 2% increase was experienced under the 'strong preference' heading in the second iteration, as shown in Table 4.

Figure 5

	DISLIKE		ACCEPTABLE		STRONG PREFERENCE	
EXPERIENCE OF CONTENT	1-4		5-6		7-10	
TREES	6%	-	6%	22%	88%	78%

Table 5

During the second iteration, 16% more respondents found the 'trees' (Figure 5) to be 'acceptable', but the 'strong preference' group scored lower by 10% (Table 5).

Figure 6

	DISLIKE		ACCEPTABLE		STRONG PREFERENCE	
EXPERIENCE OF CONTENT	1-4		5-6		7-10	
DESERT	29%	33%	24%	55%	47%	33%

Table 6

In the 'desert' category (Figure 6), the scores were quite evenly spread amongst all three headings, with a 14% decline during the second iteration under the 'strong preference' heading' (Table 6).
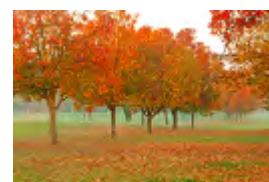

Figure 7

	DISLIKE		ACCEPTABLE		STRONG PREFERENCE	
EXPERIENCE OF CONTENT	1-4		5-6		7-10	
AUTUMN	24%	6%	18%	22%	59%	72%

Table 7

The 'autumn' category (Figure 7) shows an 18% decrease under the 'dislike' heading with the second iteration and a 13% increase under the 'strong preference' heading, as shown in Table 7.
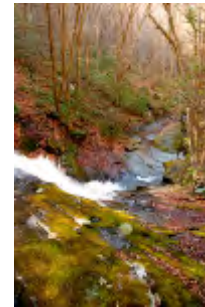

Figure 8

	DISLIKE		ACCEPTABLE		STRONG PREFERENCE	
EXPERIENCE OF CONTENT	1-4		5-6		7-10	
WATERFALLS	-	-	-	18%	-	82%

Table 8

A 'waterfalls' category (Figure 8) was introduced in the second iteration with a 'strong preference' score of 82% (Table 8).

The next combined table (Table 9) shows all the categories, with the highest scoring content at the top (veldt and trees) and the lowest scoring content at the bottom (desert). The first and second iteration scores are listed again in order to compare all the categories and scores.

Experience of content	DISLIKE		ACCEPTABLE		STRONG PREFERENCE	
	1-4		5-6		7-10	
VELDT & TREES	13%	11%	6%	6%	81%	83%
WATER	-	6%	18%	12%	82%	82%
WATERFALLS	-	-	-	18%	-	82%
TREES	6%	-	6%	22%	88%	78%
AUTUMN	24%	6%	18%	22%	59%	72%
COLOURFUL FLOWERS	16%	6%	21%	28%	63%	67%
LEAVES/AUTUMN	18%	12%	24%	29%	59%	59%
DESERT	29%	33%	24%	33%	47%	33%

Table 9

In conclusion it can be argued that the results of the research are consistent with what the literature suggests. Verderber (1986:450-466) argues the "the mostly favoured photographs were of trees and lawn". The results show an 83% and 78% *strong preference* towards trees. Ulrich, quoted by (Blumberg & Devlin (2006)), states that a nature scene of trees or water, viewed by open-heart surgery patients, reported less anxiety than did those exposed to the other types of scene or no scene at all. The results show an 83%, 82% and 78% *strong preference* towards trees and water. Sobel, quoted by (Huelat 2003:164), states that, "Pictures of ponds, streams, trees and other vegetation produce lower levels of arousal and higher alpha brain waves, a brain state associated with wakeful relaxation." 'Trees' score an 83% *strong preference* whilst the water and waterfalls category also scored quite high.

The second discussion point is 'Positioning'. Factors such as the physical size of the photographs, the content (subject matter) and presentation mode (wall paper, block mounts, box mounts, stretched canvasses and laminated photographs), availability to available light and artificial light, the ambulatory patterns of the staff and the purpose of the venues, all played a role in terms of the decision-making surrounding the positioning of the photographs. Three questions were posed: a) Are you happy with the physical positioning of the photographs in the ward? b) Which ones would you liked moved, and to where and c) which ones are placed 'just right' and why do you think so? The written responses formed part of the qualitative analysis. The following two images (Figures 9 and 10) articulate the responses and refer to a specific image that was situated in the 'wrong' position. The respondents also referred to the impact that the photograph has on their morale.
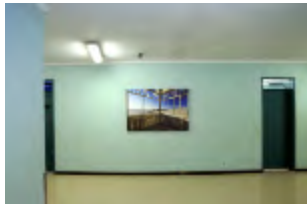

Figures 9 & 10

The following comments are verbatim extracts from the respondents:

'Some at the back areas of the ward may be moved to the front'. This comment refers, as mentioned, to the photograph in Figure 9, which was then moved to the reception area. *'This image gives structure to waiting area – offers "safety" feeling'* and *'Just fits perfectly there, gives idea of open spaces'* and *'because when you enter the ward they uplift your mood'.*

The next photograph (Figure 12) received a fair number of comments as well.
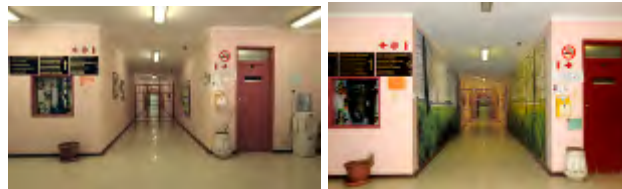
Figures 11 & 12

Figure 11 shows what the passage area looked like before the intervention. The passage was sparsely decorated with two tapestries on the left and a framed picture on the right (Figure 11). The following comments are verbatim extracts from the respondents:

'The one at entrance passage. They give a ward a lively appearance, you will feel you are entering a park, not a ward' and *'Especially the wall papers, gives the entrance a nice view'* and *'Resembles walking into the ward through forest of trees – welcoming effect'*.

The next photograph of the sunflowers was placed in the boardroom. The entire staff congregates here every Monday morning and a number of scheduled meetings take place with the treatment staff and patients, during the week. Figure 13 shows the venue before the intervention and Figure 14, after.

Figures 13 & 14

This comment is a verbatim extract from one respondent: *'It was placed right because it shows life, love and keeps the place bright.'*

The following random comments were also made: *'The photos add new dimension and depth to ward!'*, *'Personally I really like all the photo's, especially the sunflowers. I would really like to move it to my office'*, *'Shape of photograph/frame suits wall and provides good focal points'*, *'Photo's excellently placed – add depth and extra dimension and   colour to ward'* and *Colourful, highlights … 'happy colourful atmosphere'*.

In the *Journal of Alternative and Complementary Medicine*, Schweitzer, Gilpin and Frampton (2004) share the opinion that the "ambiance" of a space has an effect on the people that use the space. They elaborate on the idea that the physical environment, while being a dimension of healing in its own right, is intertwined with many of the other dimensions of a healing environment. The healing environment may make an "impact on health by influencing the behaviours, actions and interactions of patients and their families as well as the staff members who provide the care."

Conclusion

As mentioned earlier on, the primary objective of this study, in short, was to facilitate wellness amongst mental health-care providers by the introduction of colour landscape photographs. In conclusion it can be argued that the *content* of the colour landscape photographs do play a role in fostering a like or dislike of the photographs within these specific circumstances. Table 9 is a clear indication of the specific type of content that resonates, or not, with the specific group of people that were tested here. The *positioning* of these specific photographs, with *inter alia* also the factors such as the physical size of the photographs, the content and presentation mode, availability to available light and artificial light, the ambulatory patters of the staff and the purpose of the venues, all played a role in terms of the successful functioning of the colour landscape photographs. The comments reflect that a certain amount of success has been achieved in attaining the correct positioning of the photographs within the ward. Both the quantitative scores and the qualitative feedback respectively for *content* and *positioning* are supported by various studies that found that the physical ambiance in hospital settings contribute significantly to the mood state (wellness) of staff members and/or patients (brackets added) (Schweitzer, Gilpin and Frampton 2004). To this end, forty-five colour landscape photographs were donated to the psychiatric ward, with the hope for a continued enhanced sense/state of wellbeing and efficacy.

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