University of Essex

The Psychological Health Benefits of Building a Natural Activity Area

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Report for East Hertfordshire Council

Contents

1. Introduction

1.1 Nature and Psychological Well-being

The psychological value of green space has been recognised for many years, with regular exposure to nature being associated with an improved level of psychological well-being (Pretty et al., 2005, Pretty et al., 2007). Evidence in adults suggests that both self esteem and mood can be directly improved as a result of exposure to nature (Pretty et al., 2005, Pretty et al., 2007), whether the individual is in the presence of nature or simply viewing it from a distance (Hartig et al., 2003). Natural views in settings such as hospitals and prisons are effective in facilitating recovery from illness and reducing health care service costs (Kaplan, 2001). Individuals with natural views are thought to be more satisfied with their lives and have an increased capacity to cope with stress (Maller et al., 2005). Just a small amount of green space amongst an array of urban buildings may be enough to have an effect on psychological well-being (Pretty et al., 2007).

Although there is a large amount of evidence suggesting that exposure to nature can be beneficial for the psychological well-being of adults, evidence in children and adolescents is much less common (Wells and Evans, 2003). The natural environment is of great importance to children and adolescents, with approximately 96% of 9 to 12 year olds reporting that their favourite place is an outdoor environment (Wells and Evans, 2003, Thomas and Thompson, 2004). Regular exposure to nature may increase levels of cognitive functioning and reduce the symptoms of behavioural and attention disorders (Wells and Evans, 2003). Green play areas near to the home are of particular importance as they afford children and adolescents regular exposure to the natural environment. Natural surroundings are expected to influence children and adolescents more significantly than adults, yet it is an area of research that has not been widely studied (Wells and Evans, 2003).

1.2 Contact with nature in a local park

Recent evidence suggests that local parks can play a vital role in human health and well-being (Maller et al., 2009). When parks were first designed in the 19th century it was hoped that they would reduce crime and social unrest whilst fostering psychological well-being (Maller et al., 2009). Parks are important in facilitating community engagement and reducing the stresses of urban society. They can increase community cohesion, reduce incidences of graffiti and violence and also enhance the self image of residents (Maller et al., 2009). Residents who are actively involved in the design and maintenance of the park or use it to participate in nature-related activities have greater satisfaction and overall well-being. Contact with nature in a local park can help residents to feel at peace (Maller et al., 2009). Natural surroundings in a local area are incredibly important, particularly to children and adolescents to whom nature offers vast opportunities for social interaction and community engagement (Maller et al., 2009, Wells and Evans, 2003).

1.3 The consequences of separation from nature

In recent years an increasing number of people have found themselves living in wholly urban settings, which by definition present reduced opportunities to engage with nature (Pretty et al., 2007). In fact contact with nature has reached an all time low. Humans now spend very little time engaging with plants, animals and open countryside (Maller et al., 2005). Whilst modern 'westernisation' has almost doubled life expectancy it has also led to significant changes in lifestyles, which have paved the way for the emergence of some serious health challenges (Maller et al., 2005). Psychological, behavioural and social health problems are now an increasing health burden in all parts of the world (Maller et al., 2005). The natural environment provides important opportunities, particularly for children and young people. Yet as the human connection with nature is lost, so too is the link between the natural environment and psychological well-being (Thomas and Thompson, 2004).

1.4 Project Aims

The aims of this project were:

1. To determine whether building a natural activity area in a local park can improve the mood and self-esteem of children and adolescents;
2. To determine whether children and adolescents are more connected to nature as a result of participating in the natural build.

2. Methodology

The natural activity build was carried out during October and November, 2009. Adolescents who regularly used their local park were invited to assist in the building of natural structures. The build was carried out over four weeks, attendance to the build was not compulsory but participants were invited to attend as often as possible. Parental consent was obtained from each adolescent wishing to participate in the study. A total of 12 adolescents returned their consent, including 10 males and 2 females. The average age of the participants was 12.46.

Throughout the study the psychological benefits of participating in the natural build were assessed. Participants completed questionnaires to assess mood and self esteem immediately before and after engaging in each building session. Connectedness to nature was also analysed using a questionnaire which was completed before and after participation in both the first and final sessions. Participants were asked to complete the questionnaires individually, based upon how they felt at that precise moment in time. If a participant required help with the completion of the questionnaire they were free to ask one of the researchers involved in the project. The self esteem, mood and connectedness to nature questionnaires are

internationally recognised and standardised well-being tools. Completed questionnaires were collated and statistically analysed by the University of Essex.

2.1 Self Esteem

Self esteem was measured using Rosenberg's Self Esteem Scale (Rosenberg, 1965). The self esteem scale consists of ten statements which address how an individual perceives themselves and requires the respondent to indicate whether they either strongly agree, agree, disagree or strongly disagree with the statement (Rosenberg, 1965). The scoring method utilised in this study provided a single self esteem score ranging from 10 to 40. The lower the score obtained from the questionnaire, the higher the level of self esteem (Rosenberg, 1965). Rosenberg's Self Esteem scale is the most widely used self esteem measure in adults and adolescents.

2.2 Mood

Mood was assessed using the Profile of Mood State Adolescents questionnaire (POMS-A) (Terry et al., 1999). The POMS-A questionnaire is specifically designed for use in adolescents and is the most widely used measure of mood in this population. The POMS –A questionnaire consists of 24 words representing six different sub-scale mood components, including tension, anger, depression, fatigue, vigour and confusion (Terry et al., 1999). The participant is required to respond to each word with either 'not at all', 'a little', 'moderately', 'quite a bit' or 'extremely' depending on the degree to which they are experiencing that particular feeling (Terry et al., 1999). The scoring method utilised in this study provided a Total Mood Disturbance score (TMD). TMD was calculated by firstly converting the raw score for each mood sub-scale into a T-Score. The T-scores were obtained from a table of normative data. The T-Scores for the sub-scale mood components of tension, depression, anger, fatigue and confusion were then summed and the vigour score subtracted. Scores for TMD range from 138 to 437, with a lower score representing a better mood.

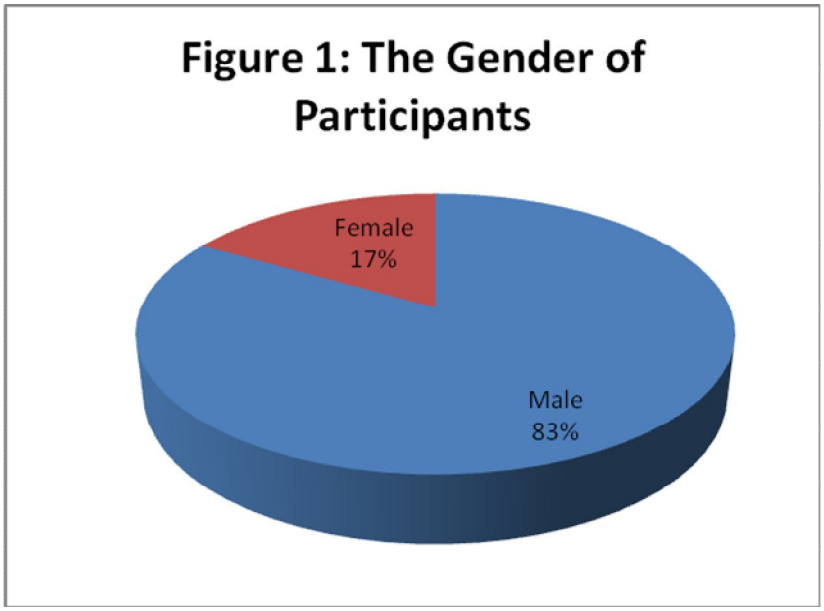
2.3 Connectedness to Nature

The Connectedness to Nature Scale is used to measure the degree to which individuals feel emotionally connected to the natural world (Mayer and McPherson, 2004). A simplified version of the scale was used in this project to assess whether participants felt a greater connection to nature after being involved in a natural building session. The scale consisted of seven questions and required respondents to either strongly agree, agree, neutral, disagree or strongly disagree with each statement (Mayer and McPherson, 2004). Each question was scored on a scale of 1 to 5, with five representing a greater connection to nature. The mean score was then calculated to give an overall connectedness to nature score. This score was between one and five, with five representing the greatest connection to nature.

3. Results

3.1 General Information

- The natural build took place over four weeks during October and November in 2009.
- A total of 12 adolescents took part in the natural build, with an age range of 9-15 years and a mean age of 12.46
- 83% of the participants were male (Figure 1).
- Participants completed a maximum of two questionnaire sets, one at their first and one at their final session.



3.2 Changes in Self Esteem

- The average self esteem at the start of the first session of the natural build was 21.63 ± 4.48, with scores ranging from 14 to 29.
- The average self esteem after the first session of the natural build was 19.89 ± 4.51, with scores ranging from 12 to 27. This shows an overall improvement in self esteem of 1.74. 75% of the participants experienced increases in self esteem as a result of participating in the first session of the natural activity build (Figure 2).
- The average self esteem at the start of the final session of the natural build was 19.50 ± 3.59. The self esteem scores ranged from 12 to 23.

- The average self esteem at the end of the final session was 18.36 $\pm$ 3.17, with scores ranging from 12 to 25. This shows an overall improvement in self esteem of 1.14. 71% of the participants saw increases in self esteem due to the final session of the natural activity build (Figure 2).

- Self esteem significantly improved from the start of the first session to the end of the final session. 80% of participants increased their self esteem over the duration of the project (Figure 3).

Figure 2: The Changes in the Mean Self Esteem Score Over the Course of the Natural Activity Sessions

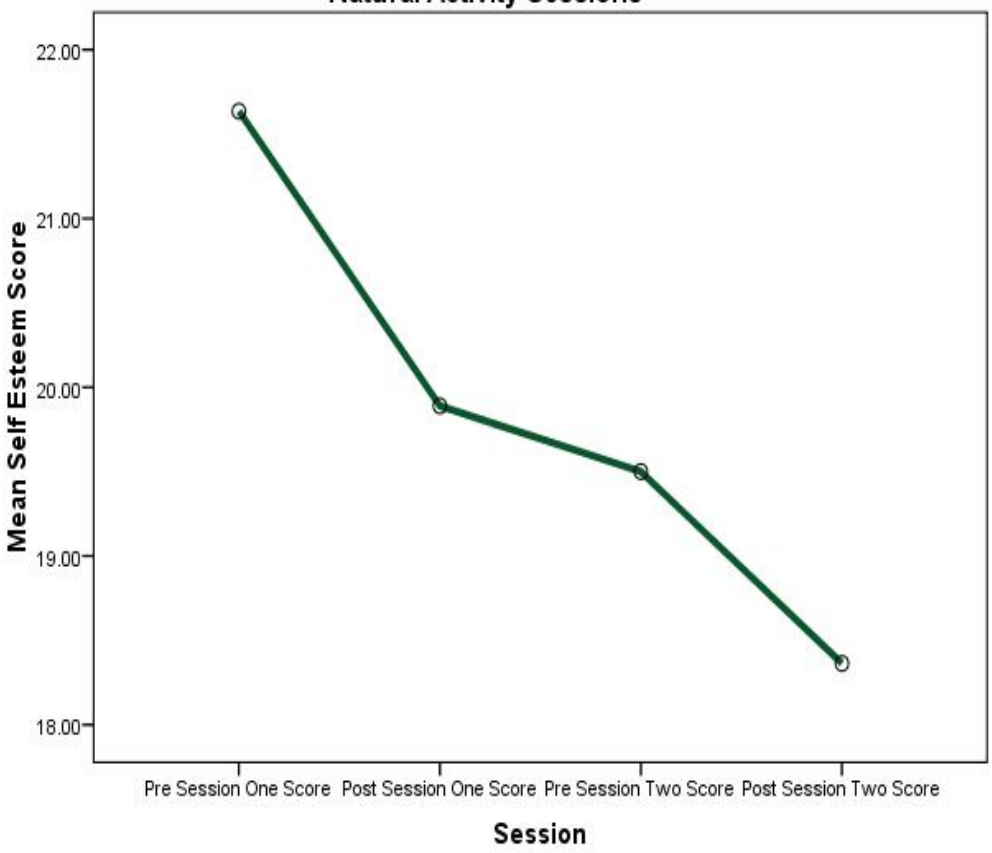
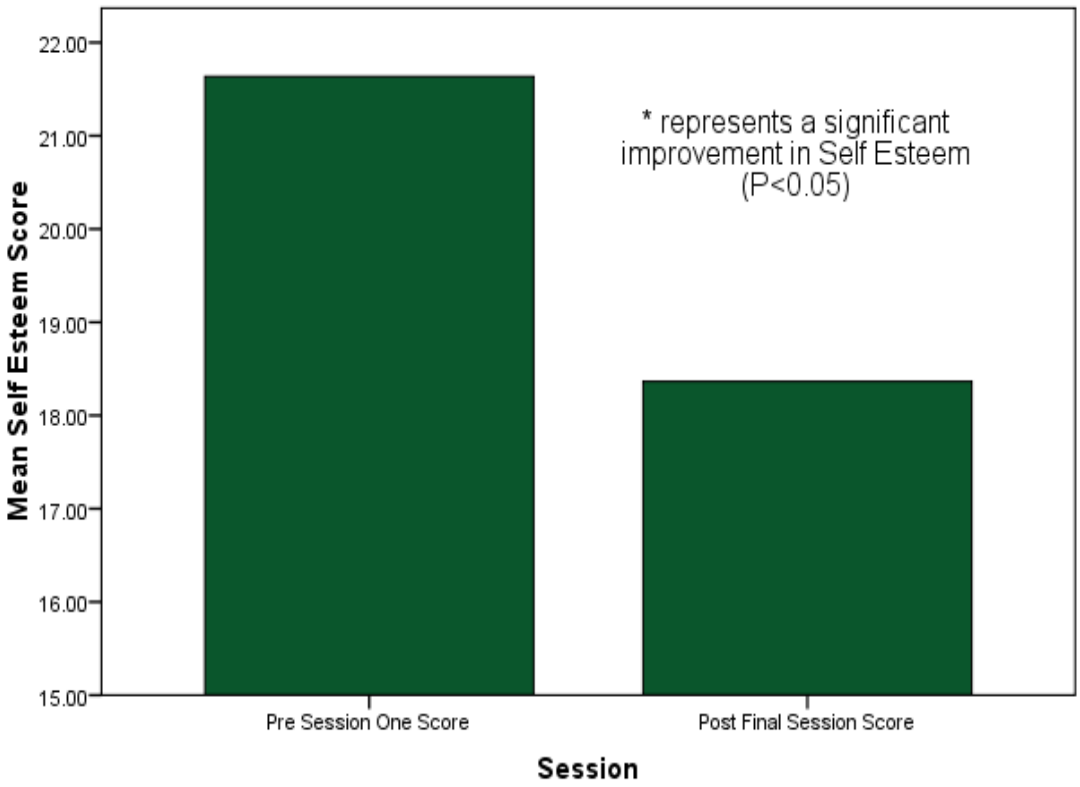


Figure 3: The Mean Self Esteem Score at the Start and End of the Natural Activity Build



3.3 Changes in Total Mood Disturbance

- The average TMD at the start of the first session was 180.00 $\pm$ 24.58. The scores ranged from 138 to 224.
- The average TMD at the end of the first session was 166.20 $\pm$ 25.34, with scores ranging from 128 to 211. 70% of participants improved their TMD as a result of attending the first natural building session (Figure 4).
- The average TMD at the start of the final session was 185.44 $\pm$ 37.88. The scores ranged from 147 to 273.
- The average TMD at the end of the final session was 155.50 $\pm$ 10.15., with scores ranging from 138 to 177. 90% of participants improved their mood as a result of attending the final natural building session (Figure 4)
- TMD significantly improved from the start of the first session of the build to the end of the final session. 83% of participants improved their mood over the course of the project (Figure 5).

Figure 4: The Changes in the Mean Total Mood Disturbance Score Over the Course of the Natural Activity Sessions

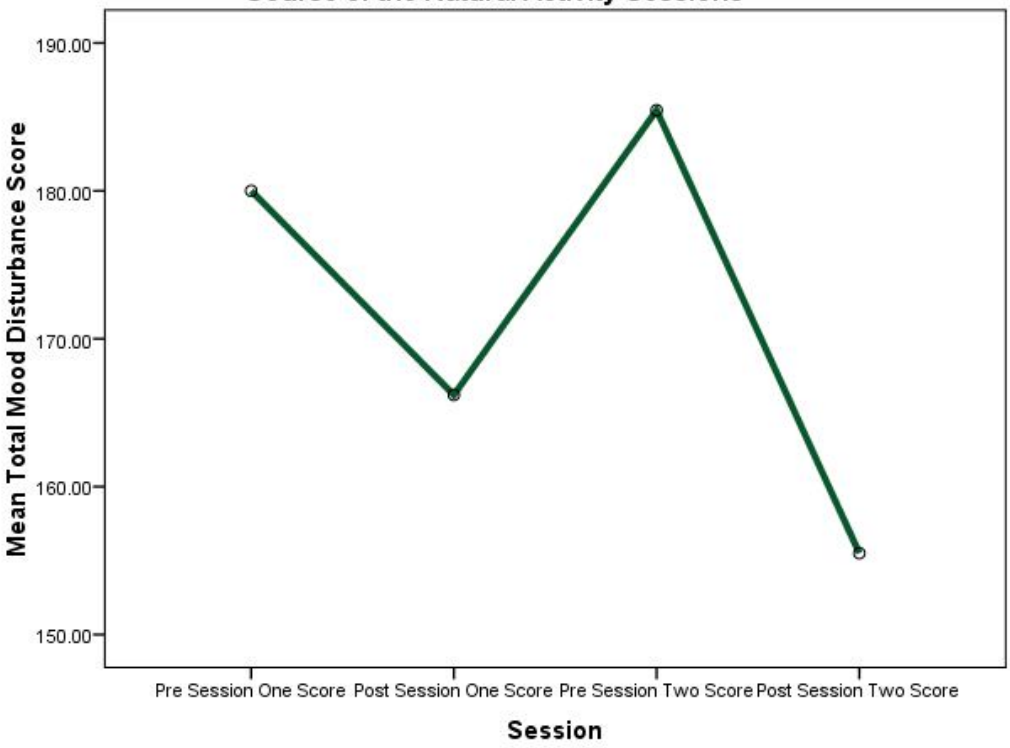
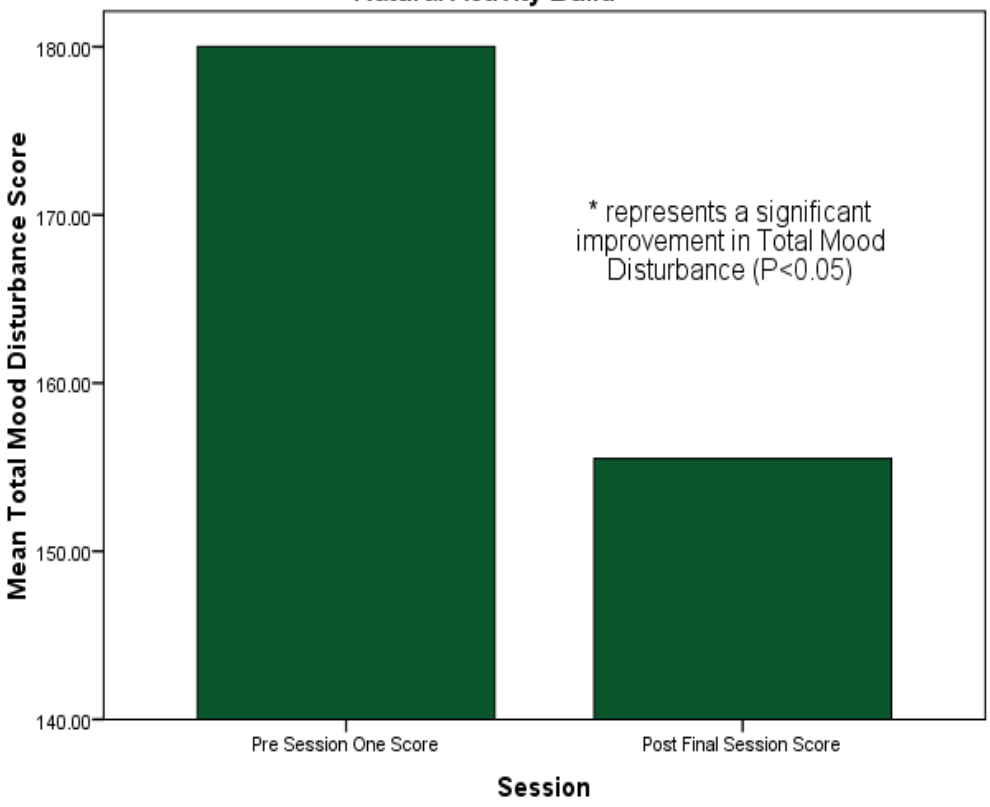


Figure 5: The Mean Total Mood Disturbance Score at the Start and End of the Natural Activity Build



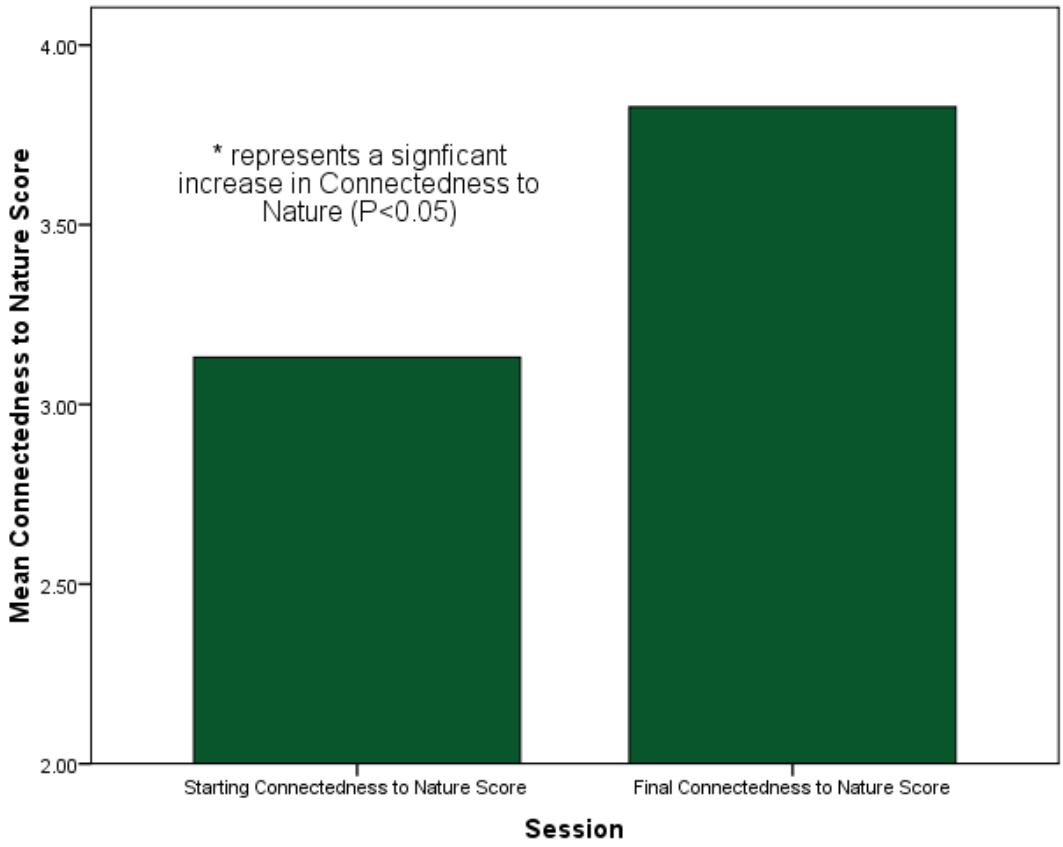
3.4 Changes in Connectedness to Nature

- Participants' connectedness to nature was significantly increased due to participation in the natural build.

- The average Connectedness to Nature Score at the start of the project was 3.14 $\pm$ 0.80. This increased to 3.83 $\pm$ 0.21 at the end of the project.

- 90% of participants felt more connected to nature as a result of their involvement in the natural activity build (Figure 6).

Figure 6: The Mean Connectedness to Nature Score at the Start and End of the Natural Activity Area Build



4. Key Findings

- The majority of participants experienced a significant increase in Self Esteem, Mood and Connectedness to Nature over the four week project.

- These findings are consistent with the literature which suggests that regular exposure to nature can significantly improve psychological well-being and increase the

connection that humans feel to the natural world (Hartig et al., 2003, Maller et al., 2009).

- Self Esteem and Mood also increased as a result of attending one natural activity building session. This suggests that even short term exposure to nature can be beneficial for the psychological well-being of adolescents.

- Factors such as participation in physical activity (Biddle et al., 2004), being part of a social group and the empowerment of project participation may have also contributed to the changes in psychological well-being (Maller et al., 2009, Zimmerman and Rappaport, 1988).

- Contact with nature in a local park can have important benefits for psychological well-being. Adolescents should be encouraged to utilise the facilities within the park to allow continued contact with nature and further improvements in psychological well-being.

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