

e-Natureza: Affective Validation of Nature Images as a
Complementary Resource for Promoting Well-being in Hospital
Environment

PROTOCOL

Sao Paulo, Brazil

Approved in the first version in 01/31/2017

Human subjects protection review board number:
Hospital Israelita Albert Einstein Research Ethics Committee
64096816.9.0000.0071.

1. Summary

Of all the animals that inhabit the earth, man is the only one that has a differentiated relationship with nature. Besides belonging to it, like other species, it has established, throughout its trajectory, other relations in search of understanding it, dominating it, exploiting it, whether for the purpose of survival, recreation, financial enrichment or even conservation

The establishment of power relations in relation to the surrounding nature without the necessary awareness of the inevitable consequences has led to the critical thresholds that have been widely discussed, today, on the aegis of environmental sustainability. Sustainability is understood here as the maintenance of the functions and components of the ecosystem, in a sustainable manner and can also be referred to as the ability of the natural environment to maintain living conditions for people and other species and the quality of life for humans, taking into account habitability, the beauty of the environment and its role as a source of renewable energy. This dynamic environment has as main objective to stimulate the best in individuals and in the environment for the present and an unknown future. Although an evolving concept, it seeks to ensure that future generations have access to natural resources (Our Common Future, 1998), many of which are currently under threat.

This is a relevant aspect and the most addressed in the literature, but there is another one of fundamental importance that is characterized by the interrelationship between nature and human health conditions.

From the very beginnings of existence the idea that contact with nature provides harmony and balance to human beings is quite common. It is also clear that this relationship can also cause suffering, for example in situations involving animal accidents or natural disasters.

It is a fact that, over time, man by adopting new lifestyles (not always so healthy) has been moving away from the contemplative moments with nature and, consequently, of its possible benefits on physical, mental, emotional and spiritual. The contemporary lifestyle has generated stressful living conditions,

which is reflected in physical and psychic illness, which includes cardiovascular disease, obesity or burnout. Such an impact on health has led to the need to understand and prevent the deleterious effects associated with modern life in societies (Joye, Pals, et al, 2013).

On the other hand, especially in large metropolises, there is little room for discussion on this theme, since this distance tends to suppress the need for a more accurate look at the human-nature dyad in the perspective of health.

A review of the literature that included 57 studies revealed that this topic has been little investigated by the health sciences, with social and environmental sciences being the subjects responsible for the greatest scientific production in this area. It is also worth noting that North America and Europe have the highest number of surveys (79%), and no studies are found from South America or Africa (Keniger, Gaston, et al. 2013.), Although both have a rich biodiversity.

The hypothesis that humans have an inherent inclination to contact with nature has been termed biophilia. The relationship between man and nature is represented in some way in all cultures. In the first European hospitals, gardens were considered an essential part of the environment to aid in the therapeutic processes (Grinde, Patil; 2009).

Interactions with nature can occur in three ways: a) Indirect interaction, which does not require the person to be physically present in nature and may include activities such as observing nature in a photograph or picture or seeing nature through a window; 2) incidental interaction, in which the individual is physically present, but comes in contact with some element of nature in an unintentional way, it is the result of another activity (example: contacting a plant pot in a working environment); and 3) intentional interaction in which the individual intentionally seeks contact with nature, such as observing wildlife, gardening, or visiting a park (Keniger, Gaston, et al; 2013).

Many people seek nature when they feel stressed. Nature-based coping strategies appear to be effective and there are an increasing number of studies demonstrating that contact with nature may have health benefits (Berg, Mass, et al., 2010). These benefits include positive effects on mental processes

(increase of self-esteem, improvement of mood, reduction of negative moods, reduction of anxiety and promotion of psychological well-being); positive effects on cognitive abilities (reduction of mental fatigue, restoration of attention) and positive effects on physical function and health (reduction of stress, blood pressure, cortisol levels, headaches, among others) (Keniger, Gaston, et al. al; 2013). The contact with natural elements, according to some theorists, produces a type of fascination that is characterized by a moderate intensity and, generally, centered in aesthetically pleasing stimuli that allow the opportunity of reflection promoting in a more efficient way the restoration of the attention (Gressler, Gunther, 2013).

These studies have sought to identify the influence of natural environments on health, but it is not always possible to be in touch with nature to enjoy its potential benefits. Particular situation is constituted by the processes of illness, in which the individual, even if he wanted, is unable (sometimes for long periods) to interact with natural environments.

In nursing, since Florence Nightingale, there is a strong concern to make hospital environments in restorative environments. Florence already stressed the importance of the patient getting up or turning in bed and see through a window, the sky and the sunlight, at least if it cannot be shown anything else, claiming to be such a measure of prime importance for the recovery, or something very close to it (Nightingale, 1898).

Have, in the hospitalization unit, a window overlooking a natural landscape has been shown to be an adjuvant potential in the recovery of surgical patients, by reducing the consumption of analgesics and a shorter hospital stay (Ulrich, 1984).

But the hospital buildings, in the urban context, do not always provide a "window with a view." When we think of health institutions, especially those that do not have green areas, which patients could benefit from, it has directed researchers to other forms of contact that may bring some degree of well-being to patients during the hospitalization, among them the use of photographs and videos (accompanied or not by music), in the perspective of an indirect interaction.

Therefore, audiovisual resources are beginning to be investigated, as well as commercial devices that create "virtual windows" are also being developed. However, access to these resources is very restricted in our environment, either due to lack of knowledge or due to economic and financial constraints.

The randomized clinical trials conducted with patients using natural-based audiovisual interventions are also incipient. Eighty patients submitted to bronchoscopy were exposed to static scenes and sounds of nature before, during and after the procedure and presented significant reduction of pain during the procedure. The mural was purchased commercially from a specialist company and consisted of a quality (42; 52-inch) photograph of a mountain and a stream crossing the field lying next to the patient's bed during the procedure, accompanied by sounds of birds and of water, ears with earphones (Diette, Lechtzin, et al; 2003). Thirty-seven patients were also submitted to audiovisual stimulation and presented reduction of abdominal discomfort during sigmoidoscopy (Lembo, Fitzgerald, et al., 1998). Reduction of pain and anxiety was also observed during dressing in a small sample of patients with burns when submitted to video programs with nature scenes and music (Miller, Hickman, Lemasters, 1992). However, in addition to the small sample participants, methodological failures related to randomization and blinding were found, as well as criteria for selection of poorly established images (Drahota, Ward, et al., 2012).

If on the one hand the potential of the images of nature in the production of well-being has already been discussed and demonstrating its therapeutic potential and on the production of emotions, on the other hand, there is a difficulty, in clinical practice, in selecting which images can assist in diverse clinical situations, because there is no bank of images that are validated and intended for this purpose.

The studies have not clearly indicated the selection criteria of the images used. They are usually thematic and landscape images, such as beaches, mountains, forests, which represent natural environments of the countries in which they are developed. This leads us to some reflections on the constituent elements of these images. Would the contribution of each natural element be

similar in the same landscape? Observe, for example, photographs of birds, would be different to observe flowers? Which of these, among other visual reasons of nature, would have greater potential to trigger benefits? What kind of emotions do they trigger in the observer? It is necessary, therefore, to have some indicator to mark the selection of images for studies that aim their application in clinical practice.

In this sense, another motivating aspect for the development of this study is the fact that the largest bank of images with validated emotions can not be published or divulged, much less make it available for clinical use, since its access is restricted to researchers. The International Affective Picture System (IAPS) is a library of images with hundreds of color photographs that represent various aspects of real life (sports, fashion, landscapes, violence, etc.) with the aim of evoking emotional states that can be easily presented in the experimental context of the laboratory, thus allowing accurate control over the timing and duration of exposure (Bradley, Lang, 1999; Lang, Bradley and Cuthbert, 2005). In Brazil, IAPS normative scores were evaluated with 707 images of Brazilian university students, with the purpose of using them in the investigation of cognitive processes in normal individuals and in populations with neurological and affective dysfunctions (Ribeiro, Pompéia, Bueno, 2004).

Another four sets of images are described in the literature: Geneva Affective Picture Database (GAPED), EmoPics, Nencki Affective Picture System (NAPS) and Open Affective Images (OPAFI).

It is common to all these bases: formal access required, exclusive to researchers, for use restricted to scientific studies, without commercial use. The images can not be published and all the banks are asymmetrical, formed more by negative than positive images. These banks, therefore, are unique to research and can not be used in clinical practice, the main reason for the realization of the present study. In the hospital context, our interest also falls on images that have the potential to promote states of well-being and comfort.

Besides knowing, the emotional responses, another relevant aspect to be questioned is if individuals more related to nature evaluate more positively the images of nature. On the other hand, exposure to images of nature can

increase the feeling of connection with nature? Knowing this relationship is of particular importance not only for the use of images of nature as a potential resource of balance for human health, but also for uncovering ways to improve the man-nature relationship, in order to preserve it as well, thus expanding the relevance of the production and dissemination of validated images.

There are clinical situations for which we believe that interventions based on nature may be particularly useful, among them, when patients undergo chemotherapy.

Chemotherapy can cause a crisis in the patient's life, with physical and psychic impacts. In clinical use it is generally well tolerated by patients and moderate side effects are well controlled with appropriate dosages and judicious use of other drugs such as antiemetic's (Sawada, 2009).

On the other hand, emotional aspects can be ignored and more difficult to control. Some emotional reactions such as anxiety, depression and emotional distress can be observed during chemotherapy (Baker-Glenn, et al., 2010). Infusion time can be very distressing, but it can also be seen and experienced as a period of seclusion and rest. For many patients it is distressing because it can mean imprisonment or incapacitation to perform the tasks. He also appeals to discourse of boredom, lack of what to do (Sette, Gradwohl, 2014). Some researchers concluded that levels of emotional distress during chemotherapy are high, suggesting a clinical need for interventions to provide support to patients during chemotherapy (Decat et al., 2010).

Helping patients find effective strategies for dealing with chemotherapy is an important task for nurses. Complementary interventions to pharmacological treatment aim to reduce suffering at different stages of treatment.

Based on these scenario, we seek therefore produce and study an image database and validate them scientifically, aiming initially the care settings, in order to produce well-being for patients undergoing chemotherapy, as well as deepen our knowledge of man-nature connection, from the perspective of care, self-care and preservation.

2. Objectives

Verify the therapeutic potential of the validated images in the reduction of negative mood states and increase of positive states of patients undergoing the chemotherapy session.

Verify the therapeutic potential of the validated images in the treatment-related symptoms during the chemotherapy session.

Verify if the rate of connection with nature influences the impact in the study outcomes.

3. Design and methods

The previously validated e-Natureza image bank consists of licensed images by nature photographers who volunteered to contribute to the development of the project. They are photos with predominance of flowers, colorful birds, white birds, landscapes, photos with predominance of trees, predominating the element water, with predominance of sky, photos related to the sea, totaling 480 images.

The final image bank consists of the validated images that reached the low alert and high valence scores, that is, photos that were concentrated in the lower right quadrant of the figure below, with a view to promoting well-being and tranquility.

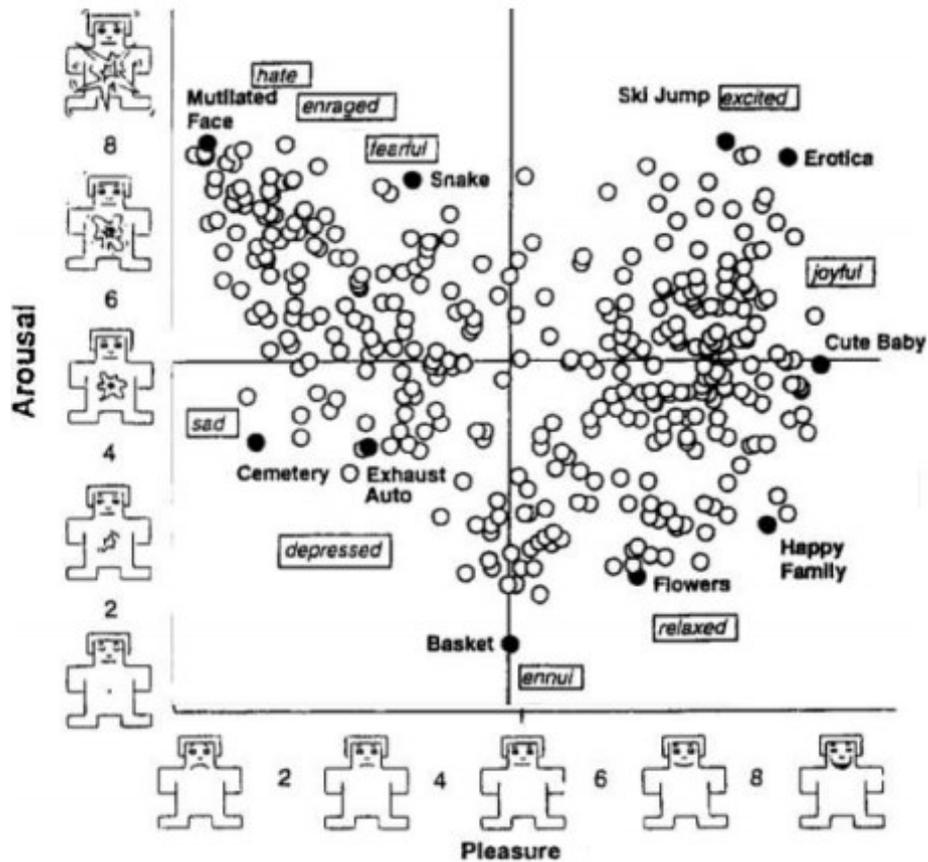


Figure 1 - Distribution of 360 images of International Affective Picture System (IAPS).

The randomized clinical trial will be conducted at the same institution, Albert Einstein Hospital, that the nature images were validated. The date collection of the clinical trial will be done in a period of 12 months, together with a convenience sample of patients, of both sexes, who is over 18 (eighteen), with clinical conditions and communication systems preserved, in other words, lucid, that allows the participation in the study and who are undergoing the first session of the chemotherapy treatment (most patients in the first session, have an altered emotional state, be it for fear, anxiety) independently of the type of oncological disease.

The patients, after understood and signed the Informed Consent Form will respond to a questionnaire with sociodemographic and clinics variables (gender, age, marital status, schooling, profession, relationship with nature,

diagnosis, treatment time, protocol type) for characterization of the sample (Appendix I).

The patients will be allocated randomly into two groups: 1) control and 2) intervention group through Randomizer® software.

After thirty minutes of the start of the chemotherapy session, the patient you will receive a notebook (specific to the study and blocked for other functions) that he can watch a presentation of nature images. It will be four videos with fifteen minutes each one.

At the beginning and at the end of the chemotherapy session, each patient will make an assessment of the positive and negative affects and the physical and psychological symptoms related to that chemotherapy session.

According to Paschoal and Tamayo (2008), measures of affection reflect how much the person feels enthusiastic, alert and active. The negative affect reflects how much the person feels displeasure and distress. According to these authors, one of the main affective measures used in study of general well-being is the Positive Affect/Negative Affect Scale, which through 20 words that describe feelings that should be answered on a five-point scale: "very little or nothing", "a little", "moderately", "too much", and "excessively", allowing use as a measure of state or trace. In Brazil, PANAS (Annex I) was adapted for the adult population by Giacomoni and Hutz and for adolescents by Segabinaz et al (2013), already validated elderly people in a virtual environment.

The evaluation of symptoms during the chemotherapy session also will be evaluated by - Edmonton Symptom Assessment Scale – ESASBr - (Annex II).

The Edmonton Symptom Assessment System (ESAS) is a widely used multi-symptom assessment tool, developed for the first time in 1991 by Bruera et al. to audit the symptoms of patients receiving palliative care. The ESAS is a viable, valid and reliable multi-symptom assessment tool for use in Brazil (Paiva, et al, 2015).

The participants will also respond pre intervention to the Nature Connection Scale and Nature Relatedness Scale (Annex III and IV) because it is a variable that can interfere in the study's outcomes of interest.

The control group will undergo the same evaluations as the intervention group and at the same time interval during the chemotherapy session.

All evaluations will be performed in only one chemotherapy session.

4. Statistical analysis plan

Descriptive statistics will be applied to sociodemographic and clinical data of the study, with calculation of means and standard deviation.

By means of inferential statistics, a comparison will be made between the states subsequently presented by the patients in the clinical trial, using SPSS statistical software. For analysis correlation will be used the Spearman and Pearson tests; for averages comparison if the sample is normal, the paired t-test will be used; for nonparametric sample the Wilcoxon test, and the Fisher and chi-square tests for compare proportions. The tests will be considered significant when $p < 0.05$.

5. History of changes

- Research Project- Version 1- submitted to Research Ethics Committee of the Hospital Israelita Albert Einstein in December 23, 2016;
- Informed Consent Form Patient- Version 1- submitted to Research Ethics Committee of the Hospital Israelita Albert Einstein in December 23, 2016;
- Documentation approved by the Research Ethics Committee of the Hospital Israelita Albert Einstein in the first version at a meeting held in 01/31/2017.
- Documentation disapproved by ClinicalTrials.gov in the first version in 03/16/2017;
- Documentation disapproved by ClinicalTrials.gov in the second version in 03/28/2018;
- Documentation disapproved by ClinicalTrials.gov in the third version in 04/16/2018.

6. Research ethics committee original report translated to English*

*The original one is in Portuguese

HOSPITAL ISRAELITA ALBERT EINSTEIN- SP

CONSUBSTANTIATED TECHNICAL ADVICE OF RESEARCH ETHICS COMMITTEE

RESEARCH PROJECT DATA

Research title: e-Natureza: Affective Validation of Nature Images as a Complementary Resource for Promoting Well-being in Hospital Environment

Researcher: Eliseth Ribeiro Leão

Thematic area:

Version: 1

CAAE: 64096816.9.0000.0071.

Proponent institution: Hospital Israelita Albert Einstein- SP

Principal Sponsor: Hospital Israelita Albert Einstein- SP

TECHNICAL ADVICE DATA

Technical advice number: 1.906.315

Project presentation: In recent decades there has been a growing interest of researchers in understanding how the adoption of natural elements of daily life, including in hospital institutions, can characterize restorative environments and reflect in better health conditions for patients. Contact with nature can be done through photographs. However, there is no database of validated nature for clinical use (only for restricted use in research). This study aims to validate images of nature and verify its therapeutic potential in the care of cancer patients undergoing chemotherapy. Therefore, the research is divided into two phases. First we will build a web tool that allows the validation of nature photographs in accordance with international validation method. This phase will be conducted with students and health professionals as well as individuals from

the general population. The validated photographs will compose a database of images of which low activity and positive valence images will be used in the randomized clinical trial with patients on chemotherapy treatment. Anchored with assumptions from the theory of biophilia, from Florence Nightingale's environmental theory, our hypothesis of study is that this intervention promotes subjective well-being and favors more positive moods, in addition to reducing symptoms.

Research Objectives:

Contribute to the validation of images of nature for clinical use in health institutions

Specific:

1-Develop a tool that allows the application, in a web environment, of the affective classification of images of nature, according to the Self-Assessment Manikin method (SAM).

2-Validate the images of nature with students and health professionals and individuals of the general population.

3-Compare the scores obtained with similar photos that compose the IAPS image bank.

4-Verify if the factor related to nature and kinship with nature influence the affective validation of images.

5-Create an audiovisual nature image resource (e-nature) for clinical use in patients undergoing chemotherapy treatment.

6-Verify the therapeutic potential of the validated images in the reduction of negative mood states and increase of positive states of patients undergoing chemotherapy.

7-Verify the therapeutic potential of validated images in the reduction of treatment-related symptoms during the chemotherapy session.

8-Know the patient's perception about the intervention based on nature.

Assessment of risks and benefits:

According to the researcher:

Risks:

The participation in this research presents minimal risks, perhaps, just, some embarrassment (shame) that some people feel when they are providing information about themselves.

Benefits:

If the patient is drawn to the intervention group, the video may bring some sense of well-being to the patient during chemotherapy. If the patient is randomized to the control group, we do not expect immediate and direct benefits to him from his participation, but the results will contribute to develop a new form of intervention that will benefit other patients in the hospitals if it is effective.

Comments and Contributions to the Research:

-

Consideration about the Terms of mandatory presentation:

Informed Consent Form is written in clear and accessible language, using the strategies most appropriate to the culture, age group, socioeconomic condition and autonomy of the invited to participate in the research.

Recommendations:

It is the responsibility of the Research Ethics Committee to "monitor the development of the projects, through semi-annual reports of the researchers and other monitoring strategies, according to the risk inherent to the research." Therefore, the researcher in charge must send the Partial Reports to the Einstein Research Ethics Committee every six months and the Final Report of his project, up to 30 days after its completion.

Conclusions or Issues and List of Inadequacies:

Following evaluation, the following documents were approved:

- 1- Research Project- Version 1- December 23, 2016;
- 2- Informed Consent Form Web- Version 1- December 23, 2016;
- 3- Informed Consent Form Patient- Version 1- December 23, 2016.

Final Considerations at the discretion of the Research Ethics Committee:

Documentation approved by the Research Ethics Committee of the Hospital Israelita Albert Einstein at a meeting held in 01/31/2017.

This technical advice was prepared based on the documents listed below:

Document Type	File	Posting	Author	Situation
Project Basic Information	Project_Basic_Information_830509.pdf	12/23/2016 10:21:23		Accepted
Informed Consent Form/ Terms of Agreement/ Absence Justification	Informed_Consent_Form_nature_patient_versao1.pdf	12/23/2016 10:21:04	Eliseth Ribeiro Leão	Accepted
Informed Consent Form/ Terms of Agreement/ Absence Justification	Informed_Consent_Form_WEB_version1.pdf	12/23/2016 10:20:34	Eliseth Ribeiro Leão	Accepted
Detailed Project/ Investigator Brochure	e_Natureza_23Dez2016.pdf	12/23/2016 10:20:13	Eliseth Ribeiro Leão	Accepted
Others	Responsability.pdf	12/05/2016	Eliseth Ribeiro	Accepted

		16:46:05	Leão	
Others	Reasercher_Term.pdf	12/05/2016 16:40:26	Eliseth Ribeiro Leão	Accepted
Others	Participants_Term.pdf	12/05/2016 16:40:01	Eliseth Ribeiro Leão	Accepted
Others	Managers_Term.pdf	12/05/2016 16:39:34	Eliseth Ribeiro Leão	Accepted
Cover Sheet	Cover_Sheet	12/05/2016 16:37:00	Eliseth Ribeiro Leão	Accepted

Technical Advice Situation:

Approved.

Is the CONEP appreciation required?

No.

SAO PAULO, February 03, 2017

Signed by:

Fabio Pires de Souza Santos

(Coordinator)

Adress: Av. Albert Einstein 627- 2ss

Neighborhood: Morumbi

CEP: 05.652-000

Federative Unit: SP

County: Sao Paulo

Phone: (55 11) 2151- 3729 Fax: (55 11) 2151-0273 E-mail: cep@einstein.br

Appendix I

QUESTIONNAIRES OF THE SOCIO- DEMOGRAPHIC AND CLINICAL DATA OF THE RESEARCH PARTICIPANTS

Search title: “e-Natureza: Affective Validation of Nature Images as a Complementary Resource for Promoting Well-being in Hospital Environment”

Researchers: Eliseth Ribeiro Leão, PhD

Age: _____ Gender: () male () female

Status: () single (a) () married / partner (a) () divorced (a) () widow(er)

Highest educational level:

() fundamental incomplete / () complete fundamental

() incomplete high school / () high school complete

() incomplete superior / () superior complete

() post-graduation lato sensu / () post-graduation stricto sensu

Occupation: _____

Born in area: () urban () rural

Lived in area: () urban () rural

How often do you relate to nature?

() never () rarely () often () very often

Diagnosis: _____

How long are you treating this cancer (in months)? _____

Protocol type: _____

*Original in Portuguese

Annex I

Positive Affect / Negative Affect Scale (PANAS)

This scale consists in words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to each word. State how much you are feeling AT THIS TIME.

	1	2	3	4	5
	Nothing or very slightly	A little	Moderately	Enough	Extremely
Alert					
Attentive					
Determined					
Excited					
Excited					
Inspired					
Interested					
Strong					
Afraid					
Ashamed					
Afflicted					
Guilty					
Hostile					
Uneasy					
Nervous					
Terrified					
Upset					
Proudly					

*Translated and validated to Portuguese

Annex II

Edmonton Symptom Assessment Scale – ESASBr

This is a symptom assessment scale. You will respond to 10 items with responses ranging from 0 (minimum intensity) to 10 (maximum intensity). Please circle the number that best describes your symptoms AT THIS TIME.

No pain	0	1	2	3	4	5	6	7	8	9	10	Worst possible pain
<hr/>												
Not tired	0	1	2	3	4	5	6	7	8	9	10	Worst possible tiredness
<hr/>												
Not nauseated	0	1	2	3	4	5	6	7	8	9	10	Worst possible nausea
<hr/>												
Not depressed	0	1	2	3	4	5	6	7	8	9	10	Worst possible depression
<hr/>												
Not anxious	0	1	2	3	4	5	6	7	8	9	10	Worst possible anxiety
<hr/>												
Not drowsy	0	1	2	3	4	5	6	7	8	9	10	Worst possible drowsiness
<hr/>												
Best appetite	0	1	2	3	4	5	6	7	8	9	10	Worst possible appetite
<hr/>												
Best feeling of wellbeing	0	1	2	3	4	5	6	7	8	9	10	Worst possible feeling of wellbeing
<hr/>												
No shortness of breath	0	1	2	3	4	5	6	7	8	9	10	Worst possible shortness of breath
<hr/>												

*Translated and validated to Portuguese

Annex III

Connectedness to nature scale*- Mayer and Frantz, 2004

Please answer each of these questions in terms of *the way you generally feel*. There are no right or wrong answers. Using the following scale, in the space provided next to each question simply state as honestly and candidly as you can what you are presently experiencing.

- | 1 | 2 | 3 | 4 | 5 |
|-------------------|---|---------|---|----------------|
| Strongly disagree | | Neutral | | Strongly agree |
| ___ 1. | | | | |
| ___ 2. | | | | |
| ___ 3. | | | | |
| ___ 4. | | | | |
| ___ 5. | | | | |
| ___ 6. | | | | |
| ___ 7. | | | | |
| ___ 8. | | | | |
| ___ 9. | | | | |
| ___ 10. | | | | |
| ___ 11. | | | | |
| ___ 12. | | | | |
| ___ 13. | | | | |
| ___ 14. | | | | |

*Translated and validated to Portuguese

Annex IV

Nature Relatedness Questionnaire* – NRQ - Nisbet, Zelenski & Murphy, 2009

Instructions: For each of the following, please rate the extent to which you agree with each statement, using the scale from 1 to 5 as shown below. Please respond as you really feel, rather than how you think “most people” feel.

1 Disagree strongly	2 Disagree a little	3 Neither Agree or disagree	4 Agree a little	5 Agree strongly
---------------------------	------------------------	-----------------------------------	---------------------	------------------------

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. I enjoy being outdoors, even in unpleasant weather. _____</p> <p>2. Some species are just meant to die out or become extinct. _____</p> <p>3. Humans have the right to use natural resources any way we want. _____</p> <p>4. My ideal vacation spot would be a remote, wilderness area. _____</p> <p>5. I always think about how my actions affect the environment. _____</p> <p>6. I enjoy digging in the earth and getting dirt on my hands. _____</p> <p>7. My connection to nature and the environment is a part of my spirituality. _____</p> <p>8. I am very aware of environmental issues. _____</p> <p>9. I take notice of wildlife wherever I am. _____</p> <p>10. I don't often go out in nature. _____</p> <p>11. Nothing I do will change problems in other places on the planet. _____</p> | <p>12. I am not separate from nature, but a part of nature. _____</p> <p>13. The thought of being deep in the woods, away from civilization, is frightening. _____</p> <p>14. My feelings about nature do not affect how I live my life. _____</p> <p>15. Animals, birds and plants should have fewer rights than humans. _____</p> <p>16. Even in the middle of the city, I notice nature around me. _____</p> <p>17. My relationship to nature is an important part of who I am. _____</p> <p>18. Conservation is unnecessary because nature is strong enough to recover from any human impact. _____</p> <p>19. The state of non-human species is an indicator of the future for humans. _____</p> <p>20. I think a lot about the suffering of animals. _____</p> <p>21. I feel very connected to all living things and the earth. _____</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

*Translated and validated to Portuguese