The Red Lotus Health Promotion Model: a new model for holistic, ecological, salutogenic health promotion practice

Jane Gregg and Lily O’Hara

Introduction

Health promotion models commonly used in modern health promotion practice provide guidance on the stages of health promotion activity from needs assessment through to evaluation.1-4 Although many health promotion models used to design, implement and evaluate health promotion programs place an emphasis on principles such as empowerment and participation, they do not overtly focus on ways to put the values and principles into action. There is little guidance within these models that would assist the practitioner to put the broad principles into practice. For example, well-used models such as the Hawe, Degeling and Hall Needs Assessment and Planning Model,1 PRECEDE/PROCEED,2 and the Program Management Guidelines from New South Wales Health3 are more technical in orientation and include useful descriptions of what to actually do, rather than the values and principles that underpin action. Despite the plethora of literature that describes the range of ways to practice health promotion, the authors could find no evidence of existing health promotion models that explicitly use values and principles in a systematic way. Many of the values and principles purported to be central to the science of health promotion practice are therefore limited to rhetoric. A key challenge is the overt use and subsequent realisation of values and principles across the phases of a health promotion process.

In this paper we describe a new holistic, ecological, salutogenic model of health promotion. It is called the Red Lotus Health Promotion Model. The key feature of the Red Lotus Health Promotion Model is the explicit application of a values and principles system to all aspects of modern health promotion including determining the health paradigm, needs assessment, planning, implementation and evaluation.

Research process

Grounded theory methodology was used to guide this interpretive research.13-15 Document analysis was the method used to identify and analyse a range of health promotion literature.

Abstract

Issue addressed: There is a need for a system of values and principles consistent with modern health promotion that enables practitioners to use these values and principles to understand health and in their needs assessment, planning, implementation and evaluation practice.

Method: Grounded theory, document analysis and the authors’ own practice experience were used to systematically collect and analyse data from key health promotion literature and to develop the Red Lotus Health Promotion Model.

Results: The Red Lotus Health Promotion Model is a new model for holistic, ecological, salutogenic health promotion practice. It is distinct from other health promotion models in that it incorporates a system of values and principles that is applied across the phases of health promotion, including determining the health paradigm, needs assessment, planning, implementation and evaluation.

Conclusion: The Red Lotus Health Promotion Model enables practitioners to proactively and purposefully put into action a connected system of values and principles across the phases of a health promotion process.

Key words: Red Lotus Health Promotion Model, health promotion models, values and principles, holistic, ecological, salutogenic.

So what?

The Red Lotus Health Promotion Model fills a gap in the suite of health promotion models available to practitioners. It supports practitioners in their efforts to enhance the quality of modern health promotion practice.

Health Promotion Journal of Australia 2007;18:12-19

So what?

The Red Lotus Health Promotion Model fills a gap in the suite of health promotion models available to practitioners. It supports practitioners in their efforts to enhance the quality of modern health promotion practice.
used to systematically collect and analyse data from key health promotion literature.\textsuperscript{5,16} This involved undertaking a four-stage process: identification of relevant documents; collection of data; data analysis; and interpretation of findings.\textsuperscript{16} A five-step data analysis process involved: familiarisation with the data; identification of a thematic framework; application of the thematic framework to the data via thematic referencing; rearranging data from the original context to the appropriate thematic reference; and reviewing themes for connection and patterns and seeking explanations for these.\textsuperscript{5} In this research process, the authors also drew on their own extensive experience as health promotion practitioners and academics.

**Research output**

The document analysis process produced a model of health promotion that is holistic, ecological and salutogenic, which is represented graphically by the Red Lotus plant (\textit{Nelumbo nucifera}).\textsuperscript{17} The Red Lotus Health Promotion Model builds on existing health promotion models and responds to the need for models to help practitioners understand and respond to complex health issues that have multiple interrelated determinants. It is distinct from other health promotion models in that it incorporates a system of values and principles, which is applied across the phases of health promotion including determining the health paradigm, needs assessment, planning, implementation and evaluation.

The Red Lotus plant was chosen as the symbol for this health promotion model because its qualities and structure are characteristic of modern health promotion. The plant system graphically represents the key components of the Red Lotus Health Promotion Model.

The holistic health paradigm recognises that health includes the interrelated dimensions of spiritual, mental, social and physical health and well-being, and that health and ill-health are not mutually exclusive and do co-exist. This is distinct from the biomedical and behavioural health paradigms, in which health is regarded as the absence of disease or ‘unhealthy’ behaviours.\textsuperscript{7,18}

The science of ecology recognises that people live, work and play in multiple nested ecosystems, from the individual level, to the family, group, community and population level.\textsuperscript{7,19,20} Health and well-being are determined by complex interactions between multiple determinants, including the biological and behavioural characteristics of people, their social, economic and political environments, and the natural and built physical environments.\textsuperscript{19} All parts of an ecosystem have an impact on each other, and the whole of the ecosystem is greater than the sum of the parts.\textsuperscript{19} Ecological science also incorporates the quantum physics tenets of connectedness, complementarity, uncertainty and non-locality.\textsuperscript{18} Ecological science is distinct from reductionist or positivist science where understanding the whole is derived from understanding each individual part.\textsuperscript{18}

Salutogenic health promotion refers to the creation of health for a sustainable future and places emphasis on factors that create and support good health, well-being, happiness and meaning in life through the processes of needs assessment, planning, implementation and evaluation.\textsuperscript{18,21,22} This is distinct from conventional health promotion, which focuses on disease prevention and the behavioural risk factors for disease.\textsuperscript{5,18} The next section of the paper describes the qualities of the Red Lotus plant, followed by a description of their structural representation in the Red Lotus Health Promotion Model.

**Red Lotus plant**

The Red Lotus plant holds great significance for many societies and is found in Russia, the Middle East, Asia, India, Sri Lanka, and northern Australia.\textsuperscript{23-27} The perennial aquatic herb is highly regarded for its culinary, medicinal and spiritual dimensions.

**Physical qualities of the Red Lotus**

It stands 50 centimetres to 150 centimetres above the water and has round, bluish-green leaves measuring between 30 and 75 centimetres across\textsuperscript{24,25,28,30} that do not float, but rather stand

---

**Figure 1: Red Lotus Health Promotion Model.**

---
erect and cupped above the water. This feature distinguishes the Red Lotus from a water lily, for which it is often mistaken.

The Red Lotus flowers from spring to mid-autumn and remains dormant throughout winter. The fragrant flowers are 15 to 25 centimetres in diameter with deep pink, white or yellow petals attached to a yellow centre, in which the fruit of the plant develop. After the petals die and fall off, the centre of the flower changes colour from yellow to dark grey and becomes a cone-like woody pod bearing nut-like, single-seeded fruit about two centimetres long. The fruit rest in up to 12 cavities on the surface of the receptacle. As the fruit mature, the flower stalk dries, shrivels and weakens, turning the pod downwards, allowing the fruit to fall into the water for the seeds to germinate.

The seeds of the Red Lotus are extremely long-lived. One plant grown from seed found in ancient tombs in Manchuria, China, has been radiocarbon dated at 1,288±271 years old. The plant begins growth in the muddy, black clay shallows on the edge of ponds, lagoons, swamps, marshes, billabongs or flooded fields. It grows vigorously and has a spreading rhizome, developing an extensive root system that allows the plant to spread out into deeper water.

### Culinary qualities of the Red Lotus

The root tubers and seeds of the Red Lotus are edible. They are consumed raw, steamed, roasted, sliced and fried as chips, used in soups, sweet and sour dishes, salads, stir fries, dipped in batter or tempura and fried, made into pickles or other condiments, ground into flour for bread, or made into a cooling drink. The seeds of the Red Lotus are eaten raw, dried or sugared, crushed to a paste, popped like popcorn, ground into flour for bread, or roasted for use as a hot drink. Young leaves and leaf stems are used fresh in salads, steamed or as wraps for parcels of food. Older leaves are used as disposable cups and plates. Red Lotus flower petals are used fresh or dried in many dishes or as a garnish. The stamens are used to flavour tea.

### Medicinal qualities of the Red Lotus

The Red Lotus is highly valued for its many medicinal qualities. It provides vitamins A, B and C and the minerals calcium, iron, phosphorous and postassium. The essence of the Red Lotus flower is used as a detoxifier, tonic, calming, astrigent, diuretic, anti-spasmodic, anti-inflammatory and a tonic for the major organs. Stamens of the flowers are used to strengthen the kidneys. The flower stalk is used to treat gastric ulcers, excessive menstruation, and post-partum haemorrhage. The Red Lotus pod is taken for anxiety and nervous conditions.

<table>
<thead>
<tr>
<th>Table 1: Values and principles in the philosophical domain.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value</strong></td>
</tr>
<tr>
<td>Organic worldview</td>
</tr>
<tr>
<td>Constructionist epistemology</td>
</tr>
<tr>
<td>Ecological science</td>
</tr>
<tr>
<td>Holistic health paradigm</td>
</tr>
<tr>
<td>Salutogenic focus</td>
</tr>
<tr>
<td>Health is purposeful</td>
</tr>
<tr>
<td>Assumption of positive intentions</td>
</tr>
<tr>
<td>Empowering health promotion strategies</td>
</tr>
</tbody>
</table>
hypertension, pain in the eyes, blurred vision, and insomnia.\textsuperscript{25,27} The juice from the Red Lotus leaf stem is used to treat diarrhoea, sunstroke, fever, irritability, excessive sweating, to strengthen the liver, spleen and heart, and for haemorrhoids and leprosy.\textsuperscript{24-29,31} Arrowroot flour made from the rhizomes of the Red Lotus is applied as a paste to treat ringworm and other skin ailments and taken internally to treat nosebleeds.\textsuperscript{26,31} Lotus roots are also used to aid blood circulation, remove toxins, boost energy and increase longevity.\textsuperscript{25}

**Spiritual qualities of the Red Lotus**

The Red Lotus has spiritual significance in many cultures around the world. The flower is a strong symbol of purity and inspiration: it rises from the mud, yet is undefiled, symbolising the raising of spiritual consciousness.\textsuperscript{23,26,28} Indian mythology is rich with references to the Red Lotus. The symbol of eternity, plenty and good fortune, the lotus has appeared in art and architecture throughout India's history.\textsuperscript{27,33} Other cultures also appreciate the beauty and spirituality inherent in the Red Lotus. Carvings from ancient Egypt depict the Red Lotus and when Pharaoh Tutankhamen’s tomb was opened, foremost among the contents were artefacts celebrating the lotus motif.\textsuperscript{27} Chinese scholars have written extensively about the spiritual significance of the Red Lotus.\textsuperscript{28}

**Red Lotus Health Promotion Model**

"In the beginning were the waters. Matter readied itself. The sun glowed. And a lotus slowly opened, holding the universe on its golden pericarp."\textsuperscript{17} The Indian myth of creation and the "birth of her most majestic flower abounding in supreme beauty, sublime grace and the aura of transcendence"\textsuperscript{17} is symbolic of the Red Lotus Health Promotion Model. This section describes how the structural components of the Red Lotus plant are represented in the Red Lotus Health Promotion Model (see Figure 1).

**Stern and roots: Values and principles system**

The stem of the Red Lotus plant represents three domains of health promotion principles in the values and principles system of the Red Lotus Health Promotion Model. A system is a set of connected and interdependent material or immaterial parts that are collectively organised into a whole dynamic entity.\textsuperscript{34} A value is an idea or concept that is regarded as worthy, desirable or useful.\textsuperscript{34} For each value there is a principle that describes the code of conduct for enacting that value.\textsuperscript{34} The values and principles system is organised into three categories: philosophical, ethical and technical domains. The values and principles in the three domains are interdependent parts that are connected to and collectively make up the whole dynamic values and principles system.

The stem of the Red Lotus Health Promotion Model houses the philosophical, ethical and technical principles, holds them collectively as one supporting structure and acts as a conduit for enacting the values. Each domain includes a bundle of related principles. The roots of the Red Lotus Health Promotion Model represent the values in the values and principles system. Each principle in the stem is connected to a value in the roots. For example, the ‘holistic health paradigm’ is included as a value in the system as it describes a way of viewing health that is regarded as the most useful health paradigm for modern

| Table 2: Values and principles in the ethical domain. |
|---------------------------------|------------------|---------------------------------|
| **Value**                        | **Principle**    | **Explanation**                 |
| Equitable distribution of power\textsuperscript{5,7,9} | Power is distributed equitably between stakeholders. | Facilitating participatory and egalitarian processes that assist with the redistribution of power. |
| Ethical change processes\textsuperscript{18,36} | Change processes enable active participation of people affected by the issue. | Ensuring that the people most affected by an issue are an integral part of all components of a health promotion change process that addresses the issue, as distinct from being targeted as recipients of decisions made external to them. |
| Processes do not impinge on people's personal autonomy | Ensuring that all relevant parties consent to health promotion change processes and acknowledging and respecting that not all people will choose the same actions. | |
| Beneficence is a priority consideration. | Actively considering what the benefits of any health promotion change process may be and who may be the beneficiaries. | |
| Non-maleficence is a priority consideration. | Actively considering what the potential harms of any health promotion change process may be, who may be harmed by the change processes and in what way. Taking steps to minimise or avoid this harm. Communicating risks involved in a truthful and open manner. | |
| Evidence-based practice\textsuperscript{1-3} | Practice is based on evidence of need and effectiveness, and sound theoretical foundations. | Ensuring that needs assessment processes incorporate the perspectives of all stakeholders, and that health promotion practice is based on sound evidence of need, evidence of effectiveness, and appropriate theoretical foundations. |
health promotion to work in. The principle that enacts the value of ‘holistic health paradigm’ is that health encompasses interrelated dimensions of spiritual, mental, social and physical health and well-being.

**Philosophical domain:** Values and principles in the philosophical domain include the things that are valued and believed to be important to modern health promotion (see Table 1). For example, the use of ‘constructionist epistemology’ is a philosophical value and the principle that enacts this value is the construction of knowledge through interactions within and between health promotion practitioners and communities.

**Ethical domain:** The values and principles in the ethical domain provide guidance on the humane or ethical thing to do (see Table 2). For example, using ‘evidence-based practice’ is an ethical value that is enacted by the principle of practice being based on evidence of need and effectiveness, and sound theoretical foundations.

**Technical domain:** Values and principles in the technical domain provide guidance on the humane way to practice health promotion (see Table 3). This is often referred to as best practice or good practice. For example, the value of ‘practitioner is a resource’ is enacted by working with communities as an ally and being on tap as a resource for the community.

**Enacting the values and principles system**

The values and principles system is proactively and purposefully integrated into the health paradigm and the needs assessment, planning, implementation and evaluation stages of health promotion through a process of ongoing, conscious, deliberative, critical reflection on practice. Using the Red Lotus Health Promotion Model, practitioners individually or collectively apply the values and principles system as a reflective and strategic tool. This involves critically reflecting on each value and its principle by assessing the degree of congruency between that value and principle and the health promotion practice that is being undertaken at that time. Based on this assessment, practitioners strategically plan to advocate for, mediate or enable future action that is consistent with the values and principles of the Red Lotus Health Promotion Model. Three examples – one from each domain - are provided to demonstrate the application of the values and principles system in the Red Lotus Health Promotion Model to various components of health promotion practice.

**Example from the philosophical domain:** When health promotion practitioners consider the health paradigm for a particular program, the philosophical domain of the Red Lotus Health Promotion Model guides the practitioner towards using the value of ‘holistic health paradigm’ and its principle that the concept of health includes interrelated dimensions of spiritual, mental, social and physical health and well-being. When working with the Red Lotus Health Promotion Model, the practitioner critically reflects on the existing health paradigm and makes a determination about whether that health paradigm is highly, somewhat or not consistent with the holistic health paradigm. If inconsistencies between the existing health paradigm and the holistic health paradigm are identified, practitioners strategically plan to advocate for, mediate or enable the reorientation of the health paradigm.

**Example from the ethical domain:** When health promotion practitioners consider where their efforts should be focused, the ethical domain of the Red Lotus Health Promotion Model guides the practitioners towards the value of ‘equity-based priority communities’ and its principle of prioritising action with the most vulnerable or disadvantaged communities. This means prioritising work with communities that are most marginalised, vulnerable, disadvantaged and often regarded as ‘hard to reach’ based on considerations of equity. This is important because health promotion has been criticised for choosing to work with the more empowered and easy-to-reach sections of the community and thereby contributing to widening the disparities in health status. Therefore, not to use equity issues as a basis for prioritising communities is considered to be unethical or inhumane practice. When working with the Red Lotus Health Promotion Model, the practitioner critically reflects on the existing or proposed priority communities and makes a determination about whether those communities are or are not equity-based priorities. If the priority communities are not equity-based priorities, practitioners strategically plan to advocate for,

<table>
<thead>
<tr>
<th>Table 3: Values and principles in the technical domain.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value</strong></td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Comprehensive actions</td>
</tr>
<tr>
<td>Democratic governance</td>
</tr>
<tr>
<td>Practitioner is a resource</td>
</tr>
<tr>
<td>System-level evaluation</td>
</tr>
</tbody>
</table>
mediate or enable the reorientation of the focus towards equity-based priority communities.

**Example from the technical domain:** When health promotion practitioners consider the strategies that will be used in a health promotion program, the technical domain of the Red Lotus Health Promotion Model guides the practitioners towards using the value of ‘comprehensive actions’ and its principle that a portfolio of strategies is used to address complex issues. When working with the Red Lotus Health Promotion Model, the practitioner critically reflects on the existing or proposed portfolio of strategies and assesses the mix of strategies. If the mix of strategies does not include all of the Ottawa Charter for Health Promotion action areas, practitioners strategically plan to advocate for, mediate or enable the expansion of the strategy portfolio.

This first part of this section on the Red Lotus Health Promotion Model has described the values and principles system. The remainder of this section describes the other structural components of the Red Lotus plant, their representation in the Red Lotus Health Promotion Model, and the values from the values and principles system that are most relevant to each component.

**Pod: People**
The pod of the Red Lotus plant represents people at individual, family and community levels. Each seed represents an individual, and each pod contains multiple individuals that exist with others in different types of collectives, such as families, workplaces, schools, or other communities. The health and well-being of people and communities includes interrelated dimensions of spiritual, mental, social and physical health and well-being. The pod’s life cycle is symbolic of the various life stages of people, including the notion of life-death-life inherent in the spiritual beliefs of many cultures.

Related values: organic worldview; constructionist epistemology; ecological science; holistic health paradigm; salutogenic focus; and health is purposeful.

**Stamens: Biological status, socio-economic status, behaviours**
The stamens represent the characteristics of people that interact with environmental conditions to determine health outcomes, including biological status such as age, gender and genetics, state of health and well-being, socio-economic status, and their attitudes, values, beliefs and behaviours.

Related values: organic worldview; constructionist epistemology; ecological science; salutogenic focus; assumption of positive intentions; and empowering health promotion strategies.

**Petal layer 1: Environmental determinants of health**
The five petals in the first layer of the Red Lotus flower represent the environmental conditions that interact with the characteristics of people to determine health outcomes. There are five petals that represent the social, economic, political, built and natural environments. Related values: organic worldview and ecological science.

**Petal layer 2: Needs assessment**
The three petals in layer two represent the components of the needs assessment process. The first petal represents the types of need that should be assessed, including people’s felt, expressed, comparative and normative health needs. The second petal represents the data (existing and new) for needs assessment that are collected in reference to people’s characteristics and the environmental determinants of health. The third petal represents the range of processes used for needs assessment that enable all people directly or indirectly affected by the issues to contribute to decision making.

Related values: constructionist epistemology; ecological science; holistic health paradigm; salutogenic focus; empowering health promotion strategies; equity-based priority communities; equitable distribution of power; evidence-based practice; democratic governance; and practitioner is a resource.

**Petal layer 3: Planning**
The seven petals in layer three represent the components of health promotion planning. One petal represents the people identified as primary and secondary co-activists. People directly affected by the priority health issues have primary stakeholding in making planning decisions and are therefore identified as primary co-activists. These are the people who live with the health issue and with whom health promotion practitioners need to work with (not on). People who are indirectly affected by the priority health issues are identified as secondary co-activists. This could include service providers and people with resources available to address the issues. The second petal in this layer represents the partnerships that are formed between the practitioner and the primary and secondary co-activists and other relevant stakeholders. The third petal represents the priority health issues that are analysed by co-activists and other stakeholders to identify the range of immediate and contributing determinants for each issue. The fourth petal represents the evidence for the health issue analysis that is compiled from existing literature and new research with people affected by the issues. The fifth petal represents the goals and objectives that are developed by co-activists and other stakeholders from the health issue analysis, and that identify desired changes in the health issue (goals) and the immediate and contributing determinants of the issue (objectives).

The sixth petal is represented by the strategy portfolio that is designed by co-activists and other stakeholders to achieve the goals and objectives. The strategy portfolio includes a
complementary mix of health promotion strategies from across the Ottawa Charter for Health Promotion. Strategies are designed based on evidence of effectiveness in the literature and existing theories and models of change, such as organisational change theory, policy-making models, community change theory, and behaviour change theory.

The seventh petal represents the evaluation plans (process, impact and outcome) that are developed through active engagement with the full range of stakeholders including primary and secondary co-activists, funders, policy makers and practitioners. Evaluation plans incorporate the range of stakeholder perspectives regarding the evaluation questions, evaluation criteria or indicators, evaluation research methods (data type, collection and analysis) and communication of evaluation outcomes. Process evaluation plans are designed to assess program implementation, co-activist involvement and satisfaction, and program quality. Outcome and impact evaluation plans are designed to assess changes in the health issue (outcome) and the immediate and contributing determinants (impact) of the issue.

Related values: constructionist epistemology; ecological science; holistic health paradigm; salutogenic focus; empowering health promotion strategies; equity-based priority communities; equitable distribution of power; ethical change processes; evidence-based practice; comprehensive actions; democratic governance; practitioner is a resource; and system-level evaluation.

**Petal layer 4: Implementation**

The four petals in layer four represent the components of health promotion implementation. The first petal represents the necessary support provided to the primary and secondary co-activists to implement the strategy portfolio. This support includes securing, mobilising and maintaining the necessary financial, human and other resources, and facilitating partnerships with other relevant stakeholders. The second petal represents the response to the unanticipated opportunities to enhance the effectiveness of the program. The third petal represents the collection of process evaluation data throughout the implementation of the strategy portfolio. The fourth petal represents the communication to relevant stakeholders of progress on the implementation of the strategy portfolio.

Related values: constructionist epistemology; empowering health promotion strategies; equitable distribution of power; ethical change processes; evidence-based practice; comprehensive actions; democratic governance; and practitioner is a resource.

**Petal layer 5: Evaluation**

The four petals in layer five represent the components of health promotion evaluation. The first petal represents the conduct of an evaluability assessment, which is based on process evaluation data. This assessment determines if the program is ready for impact and outcome evaluation. The second petal represents the implementation of the impact evaluation plan and the third petal represents the implementation of the outcome evaluation plan. Impact and outcome data are collected and analysed. The fourth petal represents the dissemination of evaluation findings to all those with an interest in the program. Findings are also communicated via a range of media to those with the capacity to respond, for example potential funders, practitioners and policy makers.

Related values: constructionist epistemology; empowering health promotion strategies; ethical change processes; evidence-based practice; democratic governance; practitioner is a resource; and system-level evaluation.

**Leaves: Sustainability**

The leaves of the Red Lotus plant represent the concept of sustainability. The longevity of the plant is ensured by the presence of healthy, vibrant leaves. Sustainability is considered through assessment of the future viability of the program, based on evaluation outcomes in conjunction with potential for future impact.

Related values: organic worldview; constructionist epistemology; ecological science; evidence-based practice; democratic governance; practitioner is a resource; and system-level evaluation.

**Conclusion**

None of the existing health promotion models commonly used in modern health promotion practice explicitly incorporates values and principles in a systematic way. Values and principles are discussed in the literature at a broad level, but not with specific reference to their explicit and purposeful application across the phases of a health promotion process. There is no evidence of a system of philosophical, ethical and technical values and principles being articulated, mobilised, and evaluated across the life of a health promotion program.

A key challenge for health promotion practitioners is to proactively and purposefully enact a connected set of values and principles across the phases of a health promotion process: determining the health paradigm, needs assessment, planning, implementation and evaluation. This paper has described the Red Lotus Health Promotion Model, a new holistic, ecological, salutogenic health promotion model that incorporates a system of values and principles. The key feature of the Red Lotus Health Promotion Model is the explicit application of the values and principles system to all aspects of holistic, ecological, salutogenic health promotion including determining the health paradigm, needs assessment, planning, implementation and evaluation.
Acknowledgement

The authors acknowledge the assistance of Psaltis Cauley, who conducted background research on the Red Lotus plant and contributed the original graphic design of the model, and Karen Carter, who undertook the next phase of graphic design of the model.

References


Authors

Jane Gregg and Lily O’Hara, Centre for Healthy Activities, Sport and Exercise, University of the Sunshine Coast, Queensland

Correspondence

Ms Jane Gregg, Centre for Healthy Activities, Sport and Exercise, University of the Sunshine Coast, Sippy Downs, Queensland 4556. Tel: (07) 5459 4639; fax: (07) 5430 2881; e-mail: jgregg@usc.edu.au