



The IGGT-Concept of GardenTherapy

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AG Concept Group, Alfred Vollmer (Group Coordinator)

(Translation: Lina Vollmer, Thomas Jacoby)

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List of Abbreviations

To be continued

A. Preamble

Man and garden have been closely linked since early human history. Paradise is often associated with the image of a garden in the minds of people, and many seek their personal Garden of Eden. Gardens move us, they raise hopes and memories and at the same time, they fulfill our most basic needs. The garden is a place of security and comfort, of remembrance and enjoyment of the plants' beauty, but also a growth facility for herbs, fruits and vegetables.

Gardens are closely linked to the settling down of mankind. The design and use of gardens reflects the evolution of different cultures. Due to their complexity, gardens address the existential, individual, and social needs of us human beings. These needs can be met for people from different cultural, social and linguistic backgrounds through activities or stays in a garden.

Working with plants and nature offers a wide range of activities that have positive effects on physical and mental health. Gardening activities offer the possibility of a resource-oriented exercise.

The constant change of plants in their life cycle and their care are symbols for many areas of human life. For people of all ages, observing and interacting with these natural processes is an important part of life.

However, sick, dependent and socially disadvantaged people often have restricted access to plants and nature. But this contact is particularly important for their health care, quality of life and recovery.

Every bit of green and nature - regardless of its size – therefore has the potential to be used therapeutically and socially, thus contributing to the health and well being of the individual. However, it is important to adapt well.

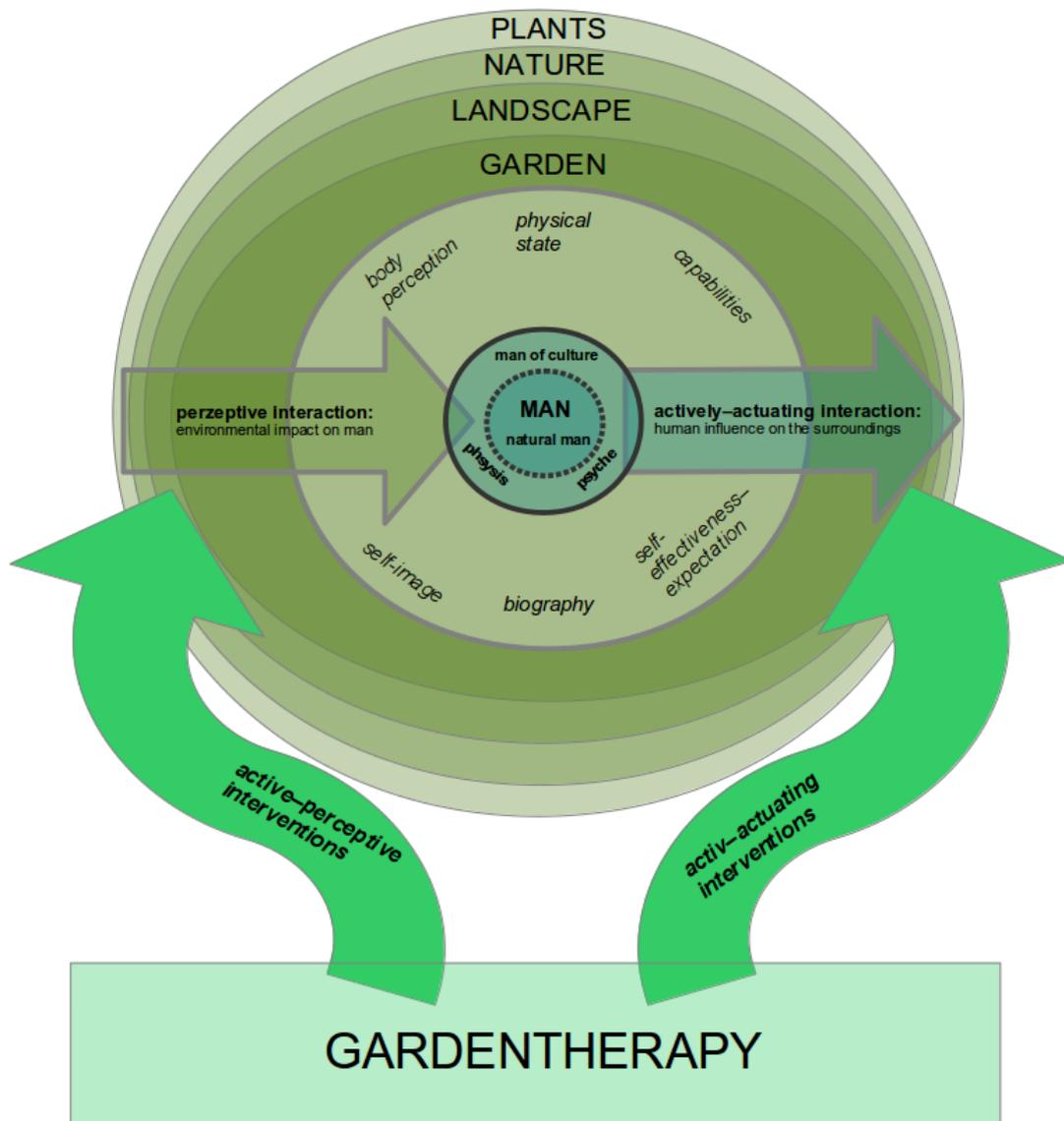
Gardening activities can take place indoors and outdoors, daily in the immediate vicinity and integrated into everyday life. In order to make the best possible use of these positive effects for selected target groups, guidelines for garden therapy are given in the following concept by the "Internationale Gesellschaft Garten und Therapie", the IGGT concept.

B. The human – nature interactions

The theoretical basis of the garden therapy is the bio-psycho-social model, which is also the foundation of the ICF by the WHO¹. Accordingly, chapter "E. Goals of garden therapy" also is based on this concept.

However, in extension, the IGGT also sees humans as an ecologically integrated human being. His interactions with the non-human environment are therefore also important for the description of the state of health.

The present graphic is intended to outline this interaction and some areas of its impact.



Graphic 1: Bio-psycho-social model by the IGGT

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The area "environment" here is divided into the categories "plants", "nature", "landscape" and "garden".

Plants are thereby the most important element of the environment for garden therapy. However, at this level of interaction, other elements are important as well, such as animals, which are of particular importance in other nature-based interactions. The IGGT emphasizes the special importance of plants for the health status of human beings.

Nature, which consists of these individual elements, is understood as the "wild" uncultivated nature. The importance of natural impressions for the state of human health has meanwhile been proven.

Landscape is understood here as the experienced, designed nature. This shapes humans in particular over their biographical life experiences. The garden-therapeutical practice shows that in the evaluation of landscape impressions, the biographical familiarity with different situations is of particular importance.

Gardens, after all, as the eponymous element of garden therapy represent those places that are a direct result of human-environment interactions. In gardens, all the above-mentioned environmental elements occur and are taken into account.

Humans in this model are represented as being embedded in the environment, but they also have clear boundaries, so that a subject-object relationship can be seen. Humans, therefore, are understood both as a natural being and as a cultural being.

Garden therapy sees humans in this interaction relationship both as a recipient and as a giver. These two forms of interaction are hereafter referred to as "actively perceptive" as well as "active".

Both forms of interaction have a direct influence on the state of the human being. This affects physical characteristics and abilities, such as body awareness.

But it also affects the mental state. So has the perceptively active perception of

one's own person within a larger natural context, which may go beyond one's own existence, an influence on mental health. And, of course, the self-effective experience as an active agent in the human-environment system also has such an influence.

Garden therapy therefore deliberately intervenes with both forms of interaction.

B.1 On the topic of human image

Since the IGGT views garden therapy as precisely grounded in the described pattern of interactions between the environment and human beings, the study of human images² forms the basis for therapeutic action. If therapeutic action is to satisfy high ethical standards, ethical-philosophical reflections is not insignificant, because the basic starting points of therapeutic action without a (medical) philosophical and (medical) theoretical consideration of key concepts are difficult to describe and to put into words. And one of these central concepts is that of the human image.

It is part of humans' essential characteristic to be able to take pictures of themselves and their environment and to be able to adjust their actions accordingly. This applies in particular to therapeutic actions whose goals are inherently oriented towards a human image. Human images therefore have an important/central function for human action because they make their goals and structures communicable. The same applies to garden therapy: In order to be able to describe and determine the goals of garden therapy, a reflection of the underlying human image is also sensible and necessary.

B.1.1 Types of human images

The medical theorist and medical philosopher Wolfgang Wieland (1933–2015) assumes that before determining content-related aspects, it is first of all important to distinguish different basic types of human images (2006/2015). He names two different types of human images: religious beliefs and model representations.

According to this religious beliefs are "[...] ideologically based human images. They refer with their content to the essential contents of a religious belief (for example, Christian image of humankind, Buddhist image of humankind, materialistic image of humankind). They share a universal claim: they want to grasp the human being in its entirety and in all its references, and therefore often cover areas that are no longer accessible to human cognition, provided it is based on rational justification. It is part of the function of such human images that they not only want to convey to people what they are and what they can be, but also what they should be and how they should live."³

In contrast to that, model representations are "artificial formations" that arise through "deliberate abstraction" and "mental experiments"⁴. It also includes certain "roles that a person assumes and plays, but which he can also relinquish." An example is the "Homo oeconomicus", undoubtedly a very successful economic model, but which cannot depict or describe the full range of human behaviors and "roles".

Ultimately, medical and therapeutic action is always oriented towards a practice, which means that "for them [the therapeutic practice] other principles [apply] than for the theoretical subjects [e.g. Theoretical Physics, Mathematics] [...]. Their representatives, unlike theoreticians, can not assume the position of an uninvolved observer. [...] Seen in this way, medicine is a science of action in the sense that it not only makes actions an object, but it

2 Dahrendorf describes human images as follows: "Human images can be defined by the entirety of assumptions about human nature and human action" (Dahrendorf, Periodical 1968, What is the purpose of human images)

3 Wieland, 2015, p. 27

4 Wieland, 2015, p. 27f

also acts itself. "And an action" is realized or it is not realized. "[...] There is no hypothetical action [in medicine].

This means that the moment we act therapeutically, we do so with a perspective of changing a state of health. We always make an assessment about what should and what should not change in this state of health. However, thereby we make an assessment that cannot be value-free, but always consciously or subconsciously makes a judgment. Thus, it is subject to morals and ethics of therapeutic action.

Human ethics comes into play as a discipline, insofar as its purpose is to formulate what should be "good" or "not good" for humankind. Ultimately, these statements are based on the moral capacity of human beings, with the help of which we are able to formulate ethical and moral ideals or goals and make them the basis of therapeutic action.

In this respect, the IGGT also sees it as its goal and its task to deliberate about the basics of garden therapy and to make them accessible for discussion. The member institutions of the IGGT each have their own human image as the basis for their work. These can be displayed and viewed in corresponding publications of the member institutions.

B.1.2 The bio-psycho-social model of the World Health Organization

The bio-psycho-social human image by the World Health Organization (WHO) is now an internationally recognized scientific model. It extends the earlier biomedical viewpoint, which conceived humans as complex machines to system-theoretical aspects, with the help of which humans can be understood and conceptualized as holistic physlcommon ground regarding the acceptance of this anthropological assumption of a bio-psycho-social anthropology.

B.1.3 The International Classification of Functioning, Disability and Health (ICF)

The "International Classification of Functioning, Disability and Health" (ICF) is a system developed and published by the WHO in order to classify and code components of health, consequences of disease and their individual impact on the person's daily life as well as the factors that influence it. It was passed by the WHO in 2002 and is available for the German-speaking countries in the version of 2005⁵. It aims to provide a better understanding of the relationships between various components of health and health-related conditions.

It therefore provides a reference framework for describing health conditions and individual effects of consequences of disease (dysfunctions) in a single, standardized language. The ICF basically consists of two parts: Part 1: "Functioning and Disability" and Part 2: "Contextual Factors", so it has a dual structure. The central term is "Functional Health" (see pages 8 and 11)

5 <https://www.dimdi.de/static/de/klassi/icf/index.htm> , last accessed 08/22/2017

According to the ICF, five areas are central to the development of a person's health and personality:

1. The body with its body structures and functions
2. Activities and their competent experience
3. Life situations and the degree of normalization in these life situations
4. Personal factors
5. Environmental factors

Four central areas according to the bio-psycho-social model will supplement the previous biomedical view of the body, its structures and functions. Their interaction aims to provide a more holistic view of health conditions and their terms by including personal, personalized and environmental factors with their respective resources and barriers.

The agreement on the application of the ICF in the concept of the IGGT as a classification of the components of health results in another element that unites the members. Since human images are not completely static but are subject to historical, social, political and cultural requirements, they have not changed in their fundamental attitudes, but in their effects.

B.1.4 Ecological perspective

According to the suggestion by Prof. H. Petzold (2015), the IGGT has supplemented its bio-psycho-social image of mankind with an ecological perspective. Thereby, the environmental impact of humans is becoming more important than it is the case in the bio-psycho-social model.

Meinberg (1995) is the first to describe Homo Oecologicus. According to Meinberg, humans are natural beings and the orientations towards the natural environment, or the aesthetics of the sensual perception of beautiful nature, are essential elements of being human⁶.

H. Petzold draws attention to the fact that the human image also includes an ecological perspective, since we as living beings are indispensably linked to the nature surrounding us. In short, without "nature", human existence and development are not possible. As early as the 1960s, H. Petzold referred to humans as nature beings and presented appropriate forms of therapy.

This ecological extension paves the way for a systemic image of mankind. I.e. the single person is conceived within the system that surrounds him. This means that it is not the symptom carrier that comes into focus, but the system in which the symptoms developed.

A key feature of the systemic approach is the recognition of capabilities and resources, not the one of defects and deficiencies.

6 cf. Meinberg E., Darmstadt 1995

Without an intact nature, consequently, no healthy human existence is possible. Therefore, the care of nature also plays an important role in terms of a healthy lifestyle of humans and ultimately also with regard to therapeutic interventions, since only a healthy nature can have a healthy effect on humans. This aspect is gaining in importance against the background of climate change and species extinctions.

Thus, the human image of the IGGT is a biological, psychological, social and ecological image. The ecological aspect is an advancement of the previous three-dimensional human image. It emphasizes the ecological approach of the "environmental-relationship-household of humans ". This image of mankind integrates the specific environmental areas in order to better understand the suchness and the existence of humans.

This is where the concept of Functional Health of the ICF comes into play, which makes it possible to grasp and depict both the abilities and limitations of each individual in their specific context/environment and their individual physical and psychological condition.

However, with all the limitations of the ICF as it stands, the IGGT currently sees the instrument of the ICF as the most appropriate tool to classify the phenomenon of functional capability and health in contrast to a classification of disorders and symptoms as used by the ICD.

C. What is garden therapy? – Definition

Garden therapy is a professional measure in which plant and garden-oriented activities and experiences are used purposefully to initiate and support interactions between humans and the environment, with the aim of promoting quality of life and maintaining and restoring functional health.

This includes:

- Cure or alleviation of disorders with disease qualities
- Preservation and promotion of self-determined social participation and activities
- Promotional influence on the personal background

Garden therapy provides settings in which perception and action sequences occur and thus promotes action and perception competence. The garden therapy interventions include active and receptive forms of work.

These professional interventions are carried out professionally by trained and/or further educated persons (for example garden therapist (m/f) according to the guidelines of the IGGT).

Garden therapy is thereby carried out in different institutions, organizations or in private practice, is applicable to different indications, provides different methods and also integrates different methods.

Garden therapy is used as a measure in various therapeutic, nursing or agogic areas.

D. Garden therapist after IGGT-registration

The IGGT indicates in the definition of garden therapy that these professional interventions should be executed by educated and/or trained persons (for example garden therapist (m/f) according to the guidelines of the IGGT).

Therefore, it also offers people to register who are active in the field of garden therapy. For this registration, the qualifications of the candidates must be submitted to the IGGT office using the scorecard.

Upon the initial registration the office of the IGGT decides on the basis of the current specification of the registration table. In case of a positive examination, the applicant will receive a corresponding certificate from the office and will be included in the database of the IGGT according to his/her qualifications.

After successful initial registration, the applicant will be kept in the database for at least 5 years. The same applies to the registration document. After this period, the registration can be renewed for additional 5 years. For this, the applicant must provide proof according to the registration requirements of the IGGT registration table.

E. Goals of garden therapy

E.1 Principles for goal definition in garden therapy

"Garden therapy is a professional activity that utilizes plant and garden-oriented activities and experiences to purposefully support human-environment interactions with the aim of promoting quality of life and preserving and restoring functional health. This includes the cure or alleviation of disorders with disease qualities, the preservation and promotion of self-determined social participation and activities, as well as the beneficial effect on the life background."

E.1.1 Promoting quality of life and maintaining and restoring functional health

The therapeutic understanding of garden therapy is an integrative one and the field on which it finds application is correspondingly wide one. It is used as a measure in rehabilitative therapeutic, pedagogical or nursing situations. Accordingly, the potential goals are far reaching, while of course not all objectives must apply to each area. But what is true is that it is always a goal-oriented measure. Garden therapy differs precisely in that respect from the general positive effects that gardens or plants have in principle on humans – effects that can be found in all kinds of situations, from a green workplace to a shared experience in an allotment garden association.

The IGGT sees all these beneficial effects and supports their promotion, research and dissemination in a sustainable manner. They are an important basis for using gardens and gardening in therapy, as, for example, the special relationship of humans to music is the basis for music therapy. Just as not every enjoyment of music can be automatically described as a music therapy, garden therapy also requires the mentioned targeting. Therapy is understood by IGGT as an adequate and targeted action, with the overriding goal being functional human health.

According to the definition of garden therapy according to IGGT:

"Promoting quality of life and preserving and restoring functional health"

The concept of functional health⁷ states that a person is functionally healthy when:

1. considering his/her whole life background (*concept of context factors*)
2. his/her physical functions and body structures correspond to generally accepted norms (*concepts of bodily functions and structures*),

⁷ Here: inspired by a definition by national association of rehabilitation Germany as well as INSOS – National sector association for humans with disabilities Switzerland

3. which he/she is able to do as it is expected from a person without a health problem (*concept of activities*)
4. that he/she can evolve his/her in all areas of life that are important to him/her, in the manner and extent expected of a person without damage to bodily functions and structures and without activity restrictions. (*concept of participation*)

This concept is related to the ICF (International Classification of Functioning, Disability and Health⁸) by the WHO, which is recognized in all member states of the IGGT. It is thus internationally applicable and a useful basis in the description of garden therapy goals. Correspondingly, this means that garden therapy with its influence can certainly start in different areas of a person's life.

Equally important for garden therapy is the concept of quality of life. A definition of quality of life (WHO) states: "Quality of life is the subjective perception of a person about their place in life in relation to the culture and value systems in which they live and their goals, expectations, standards and concerns⁹." Aside from the abovementioned aspects of functional health, according to IGGT, the subjective assessment of one's own situation by the person concerned is of great importance. Accordingly, for garden therapy offers, these individuals should be included in any goal setting as well as in goal verification. The focus is the self-determination of the affected person and thus the question of which specific effects (activity-related and participation-related) of the respective disorder are of importance to him.

**According to the definition of garden therapy according to IGGT:
"Cure or alleviation of disorders with disease quality"**

Accordingly, in garden therapy, with the participation of the person concerned, more specific individual goals are defined, for which interventions and therapeutic accompaniment are finally planned.

Example: This could look as follows:

<u>ICF Domain</u>	<u>Problem</u>	<u>Personal Goal</u>
b730	Muscle power functions	Person wants to be able to work standing up for a defined period of time
d410	Changing basic body position	
d920 hobby	Recreation and leisure	Person wants to be able to pursue his/her (like gardening) self-determinedly and regularly

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⁹ Quoted from Swiss Confederation, Federal Office for Health BAG

Consequently, garden therapy can also act directly on body structures and functions, for example in the form of functional therapy. Such uses of garden therapy, for example, take place in the field of rehabilitation.

According to the definition of garden therapy according to IGGT:

"Preservation and Promotion of Self-Determined Social Participation and Activities"

Garden therapy, however, also expands the focus on the individual possibilities of activities that can be developed from this. And it also plays a role in terms of social inclusion and opportunities for participation. Such accompaniment or intervention with the included objective of improved functional health may, for example, take place in the field of work with disabled people.

Example: This could look as follows:

ICF Domain	Problem	Personal Goal
d730	Relating with strangers	Person wants to start a paid job in order to pursue independent living
d840	Apprenticeship (work preparation)	

In this case, garden therapy may have less of an impact on body structures and functions than on areas of activity and participation (e.g., interpersonal factors) or even on the individual's personal background.

According to the definition of garden therapy according to IGGT:

"Promoting influence on the personal background"

Garden therapy can affect functional health by intervening with the contextual factors of a person, be it personal or environmental factors. This can in turn be the case in different areas, such as the old people's welfare¹⁰ or psychiatry. This results in a wide field of possible methods of action.

E.1.2. Implementation of goals – General principles

As the definition shows, garden therapy is not only directed towards healing or recovery, but also aims at preservation or relief. This entails that it can be specifically about compensation, about maintaining the status or even slowing down a degenerative process. Garden therapy can strive for the prophylactic avoidance of functional restrictions or rather the aggravation or chronification of such a disorder. Thus, it is also an effective measure when it comes to the goal of primary, secondary or tertiary prevention and health promotion. For

¹⁰ Mooney and Nicell („The importance of exterior environment for Alzheimer residents“, Health Care Management Forum (1992)) could for example show that the number of outbreaks of violence in institutions for people with dementia was lower in the ones equipped with a garden than in those without a garden.

reasons of simplification and readability, however, the following part mostly mentions "improvement".

On this basis, in this part we will describe goals which garden therapy aims at. These represent an additional level below the goal level that has already fundamentally been defined. In the specific practice of garden therapy, a further level then arises on which, finally, individual goals are described in relation to the situation and the client.

Example: goal hierarchy and formulation:

Main goal of garden therapy: Promotion of functional health and life quality

Sub-goal 1. Level: Cure or Relief of disorders with disease-quality

Sub-goal 2. Level: Improvement of activity in the area of mobility/ Improvement of the ability to change body position (d410)

Individual fine-goal: Client/patient wants to be able to stand up independently
→ *Accordingly, garden therapy offers can be planned such as standing work at a raised-bed garden.*

Example: goal hierarchy and formulation:

Main goal of garden therapy: Promotion of functional health and life quality

Sub-goal 1. Level: Maintenance and Promotion of self-determined social participation and activities

Sub-goal 2. Level: Improvement of the possibilities for participation in the area of social life/improvement in the area of recreation and leisure (d920)

Individual fine-goal: Client/patient regularly wants to participate hobby-oriented meetings (d9204)

→ *Accordingly, garden-therapy offers can be planned such as integration into gardening groups.*

The following list of goals of this second level is based on the structure and vocabulary of the ICF, knowing that garden therapy is used as an interdisciplinary method in various areas of therapy and health promotion. Often, systems for formulating goals already exist (such as the "activities of daily life" system) that can also be used in the case of garden therapy.

The following list therefore does not claim to be exhaustive, especially in light of the medical progress and the continuous development of garden therapy. Extensions to other aspects not mentioned here are quite plausible. These could be resulting from the practice of garden therapy, or from new research results as well.

E.2 Descriptions of goals

E.2.1 Goals of garden therapy at the level of body structures and body functions

**From to the definition of garden therapy according to IGGT:
"Cure or alleviation of disorders with disease quality"**

Already with reference to the receptive side of garden therapy, the IGGT sees that every environment affects a person and thus has an influence on the development, expression and status of body structures and functions. Thus, as an example, the mere stay in "green surroundings" has a demonstrable influence on the function of the immune system¹¹. Likewise, in studies, this pure being in the countryside already shows changes in the area of mental functions, for example of the awareness system¹². In addition, within this stay one can of course also influence functions and structures by active activities in the garden, for example, with regards to the muscular system or cardiac functions¹³. Thus, through targeted garden therapy interventions, an improvement in these areas can be achieved, whereby the focus is currently put mainly on the following points:

Functions of the joints and bones

The origins of garden therapy are rooted in the field of work and occupational therapy, and are therefore originally associated with exercise and activity in the countryside¹⁴. Accordingly, objectives associated with enhancement of corresponding functions are originated in garden therapy¹⁵. It is thus possible to influence the following directly by means of special activity offers:

- Mobility of joint functions, stability of joint functions, mobility of bone functions (b710 - b720)
- Muscle power functions, muscle tone functions, muscle endurance functions (b730 -740)

11 Bun Jin Park et al. – Physiological effects of forest recreation in a young conifer forest, *Silvia Fennica* (2009) - could prove that the surroundings, here also during a walk, can have a significant effect on various physiological parameters.

12 Faber Taylor, A. Kuo, F.E., & Sullivan, W.C. (2001). „Coping with ADD: The surprise connection to green play settings“. *Environment and Behavior*, 33(1), 54-77

13 Everyday tasks such as house- or garden work can demonstrably reduce the risk of cardiovascular diseases, study by the Karolinska University Hospital, Stockholm

14 Park, Shoemaker and Haub („Can older gardeners meet the physical activity recommendation through gardening“ (2008)) showed for a group of people between the ages of 63 and 86, that with the help of gardening work the improvement of bodily functions was comparable to the improvement associated with an analogous sports program. Additionally the mental performance increased while also other values such as bone density showed better results compared to sporting activities.

15 Reynolds („The green gym: An evaluation of a pilot project, Report No.“ (Oxford Brookes University)(1999)) was able to show that activity in the garden already leads to a strengthening of the cardiac muscle after only a few months. The cardiac performance improved as well.

- Motor reflex functions, involuntary movement reaction functions and control of voluntary movement functions (b750 - b765)
- Gait pattern functions, Sensations related to muscles and movement functions (b770-b780)

Functions of perception and sensory functions:

Whether directly in the outer space or even indoors: The use of natural materials offers a very wide variety of interrelated and client-integrated perceptual qualities and thus helps to stimulate and train them. Therefore, possible goals of garden therapy are also improvements in the field of:

- Seeing functions (b210)
- Hearing and vestibular functions (b230 and b235)
- Taste functions (b250)
- Smell functions (b255)
- Proprioceptive functions (b260)
- Touch functions (b265)
- Temperature function (b270)
- Sensitivity to a noxious stimulus (b2703)

Global and specific mental functions

Garden- and plant-oriented phenomena and objects are also used in garden therapy in order to influence through the sense of perception the temporal as well as the local orientation of a person. Observations that the natural objects used stimulate previous experience and knowledge from the long-term memory, lead to the fact that the improvement of orientation functions are part of garden therapy interactions. In garden therapy, therefore, not only the pure perception is central, but also the (cognitive and emotional) processing and classification of these impressions. Here is also the area of attention performance must be named, which can be promoted by stays in a natural environment¹⁶. Accordingly, there are garden therapy goals in the areas of:

- Attention (b1400 - b1408)
- Orientation (b1140)

¹⁶ Taylor and Kuo („Children with attention deficit concentrate better after walk in the park“ (2008)) showed in a study with 7-12-year-old kids with ADHS that even a twenty-minute walk could have a significant positive effect on their ability to concentrate. They compared this effect to the effect of their usual medicine.

The frequent connection between garden therapy and the biography of the individuals to be treated is also the basis for goals in the area of those psychosocial skills that a person acquires over their entire life span. In turn, behavior (doing something - the active side of garden therapy) and experience (perceiving something - the passive side of garden therapy) interact here closely. On experiencing and recognizing the consequences of one's own actions, which can show themselves in assuming responsibility for the garden or the plant, and specifically the guided reflection, there are garden therapy goals with regard to:

- Confidence (b1266)
- Trustworthiness (b1267)
- Energy level (b1300)
- Motivation (b1301)
- Impulse control (b1304)
- Emotional functions (b152)

E.2.2 Goals of garden therapy at the level of activities and the participation

According to the definition of garden therapy according to IGGT: Preservation and promotion of self-determined social participation and activity

Only in a small number of cases garden therapy is limited exclusively to the actuating or the passive-perceptive side, but it usually brings both in relation.

Likewise, it does not limit itself to the pure bodily functions, but places them in the life context of a person. The key question is: What does this or that disorder or disability mean, from the point of view of the person concerned, for their individual opportunities for activity and opportunity to participate? Of course, this can refer directly to the garden when it comes to the person (again) wanting to do gardening activities and/or for his/her participation (for example in the allotment garden association). However, the diverse requirements and situations that arise from gardening also ensure that skills acquired there can be transferred to other areas of the person's life¹⁷. In the social field, for example, practicing mutual consideration in common gardening activities may be important for professional integration.

Thus, through selected and targeted garden therapy interventions, an improvement in these areas can be achieved, currently mainly on:

¹⁷ Park, Shoemaker and Haub („Can older gardeners meet the physical activity recommendation through gardening“ (2008)) showed for a group of people between the ages of 63 and 86, that with the help of gardening work the improvement of bodily functions was comparable to the improvement associated with an analogous sports program. Additionally the mental performance increased while also other values such as bone density showed better results compared to sporting activities.

Learning and knowledge application

Also with the topic of activities and participation, the definition of goals begins where the requirement for the person initially appears to be "only" to be there. From the combination of bodily functions of perception, attention and cognitive processing, the activity of learning arises. Therefore, what is often observed merely as "passive participation" is therefore in this sense quite an active form of participation. A suitably manufactured garden setting offers good opportunities at this very level of observant, listening participation, in which knowledge and skills are taught by the garden therapist to suit the abilities of even severely impaired persons. In addition to that, in garden therapy we like to use more sensory stimuli, such as the smell or feel. Goals of garden therapy are therefore improvements in the area of:

- Watching (d110)
- Listening (d115)
- Other purposeful sensing (d120)
- Focusing attention (d160)

But also the subsequent possible application of knowledge through practical implementation is important in garden therapy. First of all, specific situations can be created in which the client can contribute to the presented topics, experiences, opinions or suggestions - even without being physically active. Furthermore, with the help of the garden therapist, instructions, explanations and suggestions can be conveyed, which help the client to achieve improvements in the area of elementary learning¹⁸. This is reflected in the intended abilities of:

- Copying (d130)
- Rehearsing (d135)
- Acquiring basic skills (d1550)
- Acquiring complex skills (d1551)
- Solving problems (d175)
- Making decisions (d177)

General tasks and requirements

If the person is able to carry out simpler tasks in practice, such as planting plants, creating smaller arrangements, etc., the range of possible activities and the associated goals is expanded once again. Thus, in garden therapy, the requirement of tasks can be raised¹⁹. Accordingly, the goal then about improvement in the area of:

- Undertaking a single task and multiple tasks (d210/d220)
- Carrying out daily routine (d230)
- Handling stress and other psychological demands (d240)

18 Raanaas et al. „Benefits of indoor plants on attention capacity in an office setting“, Journal of Environmental Psychology (2011)) studied if the mere existence of flowers can have an influence on the memory capacity of pupils und could show a similar result as Shibata and Szuzuki („Effects of indoor plant on creative task performance and mood“, Scandinavian Journal of Psychology (2004)) who described the same effect for creative performances.

19 Grahn et al. („Outdoors at daycare“, Stad och Land (1997)) were able to show that a day trip in a natural surrounding can already improve the motoric abilities of children, which shows that the setting of garden therapy is very suitable for such tasks.

Communication

The different manifestations of human communication are also content and goal in garden therapy. Be it the understanding of instructions in horticultural tasks, the communication within a garden group about possible procedures or the correct signage of plants and the labeling of seed boxes, in garden therapy there are enough examples for verbal and non-verbal communication requirements. In addition, many garden therapy units have a thematic focus²⁰. For this purpose, a lot of information is exchanged, both verbally expressed, as well as by means of different media (for example garden books), so that goals are definable, like improvement of abilities in the area of:

- Speaking (d330)
- Producing nonverbal messages (d335)
- Communicating with - receiving - spoken/nonverbal messages (d310-315)
- Communicating with - receiving - nonverbal messages (d3150-3159)
- Starting/sustaining/ending a conversation, conversing with one person/with many people (d3500-d3504)
- Discussion (d355)
- Communicating – producing (d330-d349)
- Speaking/nonverbal

Mobility

Almost any kind of garden therapy offer has defined mobility requirements, such as the ability to sit (in a wheelchair). In many situations of garden therapy not only individual plants, but whole gardens, garden parts, greenhouses, complete plant cultures can be the central medium. This again requires special skills in the field of mobility. The greenhouse and therapy garden workplaces, for example, offer activities in a variety of ways that have to be performed while sitting (potting) squatting (planting flowers), kneeling (pulling weeds), bending (care on the raised bed), standing (sorting in the greenhouse) or walking (pouring with a hose). The following motoric requirements, and therefore also target directions, are consequently present in the garden therapy:

- Changing and maintaining body position (d410-d429)
- Maintaining a body position (d415)
- Walking (d420)

Aside from these basic abilities to position the body, finally concrete activities and actions are at the center of many garden therapy offers. In addition, there is the use of tools, such as scissors, shovels or spades, which place particular demands on the lower and upper extremities. Thus, there are opportunities for support in this area and improvements can be made in terms of the following skills:

- Lifting and carrying objects (d430-d449)
- Lifting (d4300)
- Carrying in the hands (d4301)
- Moving objects with lower extremities (d435)
- Fine hand use (d440)
- Picking up/grasping/manipulating/releasing (d4400-d4403)

20 These can be seasonable topics as well as plant-related ones (for example elder)

- Hand and Arm Use (d445)

The activities within garden therapy also require, in a specific way, the ability to move on different surfaces, like pavement, meadow or field. From these requirements, the targeted use of a garden therapist opens up opportunities to achieve improvements in terms of the following abilities:

- Walking and moving (d450-d469)
- Moving around in different locations (d460)

Self-sufficiency

A generally important therapeutic goal is the greatest possible self-sufficiency and thus the transfer of acquired knowledge into the daily life of the client/patient. The garden is a very familiar medium for many people. In garden therapy learned and experienced situations therefore often directly affect their everyday life. But even if this direct connection is not given, they can equally well be transferred to a corresponding everyday situation. Goals are therefore also improved skills in the field of:

- Washing oneself (d510)
- Dressing (d540)
- Drinking (d560)

Domestic life

In addition to the basic areas of self-sufficiency mentioned here, coping with more specific everyday tasks can also be a garden therapy goal. Therefore, activities are in the center of garden therapy offers repeatedly, which are of importance for housekeeping. There are close connections here. Thus, it is also possible to formulate goals that are associated with improvements in the following skills.

- Preparing simple meals (d6300)
- Cleaning cooking area and utensils (d6401)
- Maintaining domestic appliances (d6502)
- Taking care of plants, indoors and outdoors (d6505)

Interpersonal interactions and relationships

But not only in the fulfillment of such activities is the potential of garden therapy, but in communal action itself²¹. As a special feature of the garden therapy being responsible for a plant, a culture, a greenhouse or just a garden has already been presented. This may allow the person to experience some form of involvement and participation through the control of such a complex system. Beyond this human-nature interaction, however, such situations can also be used to learn, train and improve abilities that are of importance for interaction, for example with other group members. In a communal action the garden-therapeutic situation requires and trains general abilities such as:

- Basic interpersonal interactions (d710)

²¹ Jarrot, Kwack and Relf („An observational assessment of a dementia-specific horticultural therapy program“, Hort Technology (2002)) showed, that short horticultural activities could influence people with dementia in a way that „productive activities“ and social behavior increase significantly while negative behavior decreases to the same extent.

- Complex interpersonal interactions (d720)
- Relating with strangers (d730)

Important areas of life

Many gardening therapies are organized in such a way that they largely meet the requirements of a normal paid job or lead towards it. Work in a garden as well as general agricultural activities represent something of a primeval form of work. They require the necessary basic skills²², such as speed of work, quality, perseverance, punctuality, ability to change, etc. It is therefore well suited for an introduction to a work situation as a goal. The aim of garden therapy is accordingly also the:

- Apprenticeship (work preparation) (d840)
- Remunerative employment (d850)

Community life

In addition to the (re-) start of a paid activity, the ability of a meaningful leisure activity is equally important for a garden therapy goal definition. This aspect is, from the point of view of social inclusion, a significant part of the pursuit of functional health. Related to this is in the field of garden therapy, the playful and creative use of the medium of plant, garden and nature. The individual garden themes are therefore processed in garden therapy in a variety of ways, playful (for example, plant memory) artisanal (make arrangements and pictures) or in the implementation of plant care. Thereby, it is important to note that the care of plants and gardens is one of the most important leisure activities in Germany²³ and corresponds to the everyday life of the participating persons. Thus, garden therapy aims the improvement of the client in the following areas of life:

- Recreation and leisure (d920)
- Play (d9200)
- Crafts (d9203)
- Hobbies (d9204)

Note: The objectives of activities and participation mentioned here are a part of the excerpt that, as mentioned above, can be applied to other areas of this chapter.

22 Based on the circle of work ability by C. Haerlin by Cumming & Cumming 1962 – other aspects of this circle, like social skills are situated elsewhere in this model.

23 See BAT- Freizeitmonitor

E.3 Goals of garden therapy at the level of contextual factors

By definition: garden therapy as a stimulating effect on the life background

Garden therapy defines its functioning on the basis of human interactions with their natural environment. The quality of these interactions is accordingly seen as a significant factor for the experienced state of health. Therefore, the environment, or the "context" from the perspective of garden therapy always has a special meaning²⁴. In the ICF too, environmental factors are named as impact factors. These are listed as circumstances that can have both an obstructing and promoting effect on the quality of life and the participation of disabled or sick people. One task of (garden) therapy is therefore to identify where such an environmental factor, disabling or beneficial, exists. However, as a therapeutic intervention, the IGGT can also be seen as an improvement or maintenance of such contextual factors²⁵.

E.3.1 Environmental factors

This, of course, means first of all that barriers have to be reduced, both in the therapy situation and (if possible) in the everyday life of the person. The goal of removing barriers is usually pursued by garden therapy in two ways. First of all, the possibility of active gardening can be supported by means of customized devices and aids. In addition, by means of an adjusted garden and open space design (for example: Raised-bed building) one can respond to that.

Accordingly in the special focus of garden therapy are:

- Products and technology for personal use in daily living/ Products and technology for personal indoor and outdoor mobility and transportation/ Products and technology for culture, recreation and sport (e115 / e120 / e140)
- Design, construction and building products and technology of buildings for public use/ Products and technology of land development (e150/e160)

E.3.2 Personal factors

As contextual factors, however, besides these environmental factors there are also so-called personal factors. These are qualities that a person still brings with him/her aside from the specific disorder or disability and that can also have a beneficial or adverse effect on the state of health. According to the present concept of garden therapy, the IGGT takes the view that already the development and the existence of such personal characteristics

24 Bell et al. „Neighborhood greenness and 2 year changes in body mass index of children and youth“, American Journal of Preventive Medicine (2008)) accompanied thousands of children over the years and showed that there is a direct link between a green environment and the BMI. Maas et al. („Morbidity is related to a green living environment“, Journal of Epidemiology and Community Health (2009)) could show with the help of 400.000 medical records that there is a direct link between a green living environment and several illnesses.

25 Sandra Whitehouse et al. („Evaluating a children's hospital garden environment“, Journal of Environmental Psychology (2011)) for example were able to show that green hospitals a result in fewer signs of fear with the visitors.

are also influenced by the interaction with the natural environment (see the chapter on human image in this concept). Therefore, if a person is also a product of this biographical human-nature interaction, this also means that it can be specifically acted upon by these interactions. While some of the relevant personal factors may be genetically conditioned (gender) otherwise unchangeable (age), others may arise and evolve in the context of daily life, and thus may be influenced.

It is precisely these personal factors that have as personal contextual factors an important influence on the specific self-perceived impairment, which results from a person's disease/disorder within the life practice. Garden therapy is therefore not only aimed at eliminating or compensating for disturbances in the sense of bodily functions, possibilities for activity or greatest possible participation, but may also have an effect on the client's living environment, as well as selectively strengthen personal resources. With the personal factors it is possible to influence the extra-therapeutic area of a person's life. Thereby, mostly properties like the following ones are important²⁶ for a goal definition:

- Lifestyle and habits
- General patterns of behavior
- Coping mechanisms
- Character traits

E.3.3 Lifestyle, habits and general patterns of behavior

In terms of lifestyle, for example, the production of one's own food, direct access to a conscious and healthy diet or even the joy of exercise and activity are of particular importance for dealing with many diseases. Accordingly, garden therapy programs can be used promoting this²⁷ - In addition to the diet, this lifestyle-related activities include areas such as exercise and increased outdoors and sunlight exposure. One goal may also be to recognize one's own patterns of behavior through garden therapy and possibly influence the latter. According to IGGT understanding, active gardening is a role behavior in which the person within the system of nature not only occupies a passive, but an active nurturing and preserving role. To experience and practice this positive role behavior in garden therapy can be one of the goals of garden therapy.

Coping styles and character traits

In addition to the described general patterns of behavior and lifestyle, it may also be that coping styles and character traits are a goal of garden therapy to allow a translation to on the specific challenges of a particular disorder or disability based on these situations. Thus, one goal of garden therapy may be to work out together how one responded to certain situations so far, as well as how to practice new methods. This also applies to the precise emphasis on existing resources. Accordingly, positive characteristics are also described as counter patterns for describing disorders. These should be discovered, introduced and worked out more intensively by the persons involved during their work in garden therapy²⁸.

26 These personal factors are, as mentioned above, an integral part of functional health and therefore of IGGT as well. Even though it is not defined within the concept yet. The garden therapy concept is currently (Summer 2018) oriented towards the current classification of the ICF working group (i. a. assisted by DSGMP (Deutsche Gesellschaft für Sozialmedizin und Prävention), MDK, Deutsche Rentenversicherung (DRV) or Bundesarbeitsgemeinschaft Rehabilitation (BAR))

27 McAleese and Rankin ("Garden based nutrition education affects fruit and vegetable consumption in sixth grade adolescents", Journal of the American Dietetic Association (2010)) could show that a permanent change in lifestyle of children (diet etc.) could not be changed by corresponding teaching content, but by accompanying garden work.

The human-nature interactions in the garden should thus be transferred as a model to the everyday life - and affect functional health while promoting experience.

"If you want to be happy for a lifetime, then become a gardener" states a well-known Chinese saying that is frequently quoted and emphasizes this experience.

28 This consists of the following character traits: Wisdom and knowledge (in this context specifically creativity, originality, ingenuity, curiosity, eagerness to learn), courage (here especially stamina and persistence) love/humanity (here especially bonding capacity and friendliness), justice (especially fairness, team spirit), moderation (especially self control and content) spirituality and transcendence (here sense of beauty, reverence, optimism and gratitude) (Peterson and Seligmann (2004))

F. Methods of garden therapy

The declared basis of garden therapy is the special and as positive recognized influence of human encounter with nature. In this sense, garden therapy is a nature-based interaction and there are close connections to similar approaches, as they are summarized by the term "Green Care".

Accordingly, garden therapy refers to the active interaction of the client with a section of the natural environment suitable for him in his situation, starting from the plant as a central medium.

This section may therefore relate to natural situations (e.g. landscape experience, images of home) or natural phenomena (e.g. weather), as well as specially designed situations (e.g. floral arrangements, flower beds, home gardens). At the same time individual plants may be in the center.

The interaction itself is both receptive, as well as actively acting - always aligned with the goals, abilities and needs of the client. The context in which this can take place is also broadly encompassing pedagogical, rehabilitative or nursing settings.

Garden therapy thus takes place in various health care facilities. Important areas include for now:

- Medical rehabilitation (orthopedic, neurological, cardiac etc.)
- Vocational rehabilitation
- Psychiatry, psychosomatics, addictions
- Institutions for the elderly (inpatient care, day care, ambulatory care, palliative treatments)
- Workshops for disabled people
- Prison
- Pediatrics

F.1 Methods, techniques, means and modes

Methods within this concept are perceived as planned procedures for achieving a goal; they consist of interlinked approaches on theories and human images (appropriate elements from methods of health medicine, nursing and social sciences, extracurricular education, etc.). A method may include its own terminology. In the conceptual foundation of garden therapy, one should build on a profound psychological empirical theory²⁹. The success of contact and relationship is one of the indispensable functions of therapeutic action.

F.1.1 Techniques

For practical implementation certain techniques are used to structure the work. Again, garden therapy uses different approaches. It uses the techniques that promise the best results in terms of personality, diagnosis and goal. They are constantly being supplemented and developed.

Decisive is not the technique itself, but the quality of the application: The type of contact determines the success of garden therapy treatments. Garden therapy is interdisciplinary and multidisciplinary. Garden therapy uses different techniques and methods that can also be combined with each other. Techniques are thereby therapeutic structuring instruments within the methodological framework, e. g.:

- Role reversal
- Identification
- Confrontation, sensitization
- Reflection
- Amplification (enlargement)
- Interpretation

They may be combined with stretching exercises, movement techniques, perceptual exercises, improvisational exercises, mindfulness practice, interaction exercises, breathing techniques, relaxation techniques, etc.

F.1.2 Means

Similarly, garden therapy uses various mediums and means (machines, tools, pictures, plant material, etc.) for implementation and as an information carrier.

²⁹ Grawe extracted on the basis of a meta-analysis of over 800 therapy methods the general ways of acting of therapeutic events. These are: resource activation, assisted problem solving, problem updating, therapeutic explanation, therapeutic relationship. The quality of the relationship between psychotherapist and client adds significantly to the result of therapy (Grawe 1994)

F.1.3 Modes

Different types (modes) of the application can come into play (active, medial, receptive). Basically, the basis of garden therapy is always the interaction between humans and the environment. As already shown, there are two main dimensions:

- Active receptive mode (Being in the Garden)
- Active operative mode (Doing something in the Garden)

F.1.3.1 Active Receptive Mode

The first mode is the one where the environment takes influence on humans. This can happen at different levels. It concerns purely physiological aspects, like air, light and different temperatures. In addition, this action takes place via the most diverse channels of perception; we smell the garden, feel it and also taste its plants. As a result, this effect of the environment causes psychological effects, it evokes memories, and it has a direct influence on factors such as stress, pain or relaxation. Here, the study situation appears very clear. This interaction is called active perception. Within this method, different qualities of plants and gardens, such as their fragrance, their surface structure, etc. are used. The targeted interaction between the client and those qualities initiated by the garden therapist usually achieves basic goals or goals at the level of the body functions. The garden therapist allows this interaction by either bringing the described elements to the client (e. g. bringing equivalent aromatic plants to the bedridden client) or by bringing the client into a suitable situation in the garden. Here, for example, goals such as improving vital signs can be achieved by allowing the client to experience fresh air, sunlight or different temperatures. Similarly, plants, gardens or natural objects are applied in this method to use the existing biographical connection of the client with these defined goals. Often it is about experiences, memories and experiences of the clients, which they can retrieve or contribute with the help of these modes. Likewise, these connections are used to work on these problems and to develop solutions.

F.1.3.2 Active Actuating Mode

The second form of interaction is the one in which humans influence their surroundings. This active work also consists of many-layered influences. Again, there is a physiological component that derives from stress and physical work, but here, too, there is a psychological impact, such as experiencing self-efficacy.

In the case of application there are, of course, overlaps, like in the case of the goal. Just as goals at the level of bodily functions therapy can be aspired to, as well as the level of activities and participation at the same time, no clear boundary can be drawn in the choice of method either.

For example, a purposeful walk into the garden can serve both, the goals of promoting mobility and that of orientation. Likewise, it is therefore possible to speak simultaneously of an active receptive mode, as well as elements of the active operative mode.

In this method, (horticultural) actuation is used as a means of achieving the defined goals. The focus may be on gardening activities themselves, such as the cultivation of plants, while at the same time, garden can be used as a space of therapy, for example, when it comes to ritualized walks to achieve improvements in the field of mobility. The spectrum of activity is correspondingly large. It begins with the simplest floristic work for early mobilization still carried out in the client's room and extends to horticultural group activities in the form of occupational therapy.

F.2 Methods currently accepted by the IGGT

Methodical approaches are currently especially derived from occupational therapy, which has common roots with garden therapy, as well as from conversation therapy, physical and physical therapy, social science findings and other tried-and-tested concepts. This order does not reflect a rating. This section is still in progress and therefore preliminary.

G. Review of the goals planned

You will not find a position here either. This is because the discussion and development of suitable instruments is still in progress. Hence, the development status of this area is not defined yet and not completed as well.

H. Bibliography

You will not find a position here either, because it is currently still in progress. If you would like to add an important literature reference, please contact us.