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Emotion Regulation – A Pre-Post-Analysis“

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Anna Grossmann, BSc

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Giorgia Silani, PhD

„Surfing takes the focus off all the negativity and problems and turns it to the horizon.“

(Surftherapy participant, Jamaica)

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Abstract

Surfing has gained recognition in use of psychological treatments in the past few years due to popularity of the sport in general, the demand of alternative treatment methods to relieve the medical system and its comparatively cost-efficiency. However, there is a lack of knowledge about the actual impact of Surf-therapy on the well-being and psychological health of its beneficiaries. Surf-therapy is commonly used in trauma treatment for PTSD patients. Emotion regulation is a crucial part of trauma therapy and therefore it is necessary to verify whether Surf-therapy can improve emotion regulation in trauma patients. The study examined the impact of Waves for Change Surf-therapy on participants' emotion regulation with a pre-post analysis using an English version of the emotion regulation questionnaire: Fragebogen zur Erfassung der Emotionsregulation bei Kindern und Jugendlichen (FEEL-KJ). Results show that after five-months attendance in the W4C Program, maladaptive emotion-regulation strategies for anxiety decreased significantly. Furthermore, a significant usage decrease of the specific maladaptive strategy "perseveration" could be measured. However, results do not allow a clear statement about a general effect of the therapy on Emotion Regulation. The author finally stresses the importance of a carefully considered combination of regular surfing lessons, psychological treatment and skills training over a timespan of at least two years to ensure measurable improvements of participants. Future investigations should evaluate the long-term effects for participants that continue the program for more than two years.

Keywords. Surf-therapy, Trauma-therapy, PTSD, complex PTSD, Emotion Regulation, FEEL-KJ

Zusammenfassung

Wellenreiten erlangte in den vergangenen Jahren zunehmend an Anerkennung im Bereich psychologischer Behandlungen. Ursache dafür sind sowohl die steigende allgemeine Popularität des Sports weltweit als auch der dringende Bedarf an alternativen Behandlungsmethoden, um das Gesundheitssystem zu entlasten. Zudem bietet Surftherapie eine vergleichsweise kostengünstige Behandlungsalternative zu klassischen psychotherapeutischen Verfahren. Gegenwärtig mangelt es jedoch noch an wissenschaftlich fundierten Untersuchungen zu den Auswirkungen von Surftherapie auf die psychische Gesundheit und das Wohlbefinden der Teilnehmer. Surftherapie findet weltweit häufig Anwendung in der Therapie von PTBS Patienten. Emotionsregulation ist ein wesentlicher Teil der Traumatherapie. Daher ist es notwendig zu untersuchen, ob Surftherapie die Emotionsregulation von Traumapatienten verbessern kann. Die vorliegende Studie untersucht den Einfluss der „Waves for Change Surftherapie“ auf die Emotionsregulation ihrer Teilnehmer anhand einer Prä-Post-Analyse. Verwendet wurde hierzu eine englische Version des Fragebogens zur Erfassung der Emotionsregulation bei Kindern und Jugendlichen (FEEL-KJ). Die Ergebnisse zeigen eine signifikante Senkung der maladaptiven Emotionsregulationsstrategien bei Angst, nach einer fünfmonatigen Teilnahme an dem W4C Surftherapie Programm. Außerdem konnte eine signifikante Senkung der Anwendung der maladaptiven Strategie „Perseveration“ gemessen werden. Die Autorin betont die Notwendigkeit einer Kombination aus regelmäßig abgehaltenen Surfstunden, psychologischer Behandlung und Fähigkeitstraining über eine Zeitspanne von mindestens zwei Jahren, um eine messbare Verbesserung der gesamten Emotionsregulation der Teilnehmer feststellen zu können. Zukünftige Studien sollten Langzeiteffekte auf die Emotionsregulation von Teilnehmern untersuchen, welche länger als zwei Jahre an dem Programm teilnehmen.

Schlagworte. Surftherapie, Traumatherapie, PTBS, komplexe PTBS, Emotionsregulation, FEEL-KJ

1 Introduction

1.1 South Africa's Townships

1.1.1 History

South Africa's History is traversed by various sources of community disruption for centuries. First, Slavery and colonization characterized the country. Later, South Africa was reconstructed by apartheid in such a way that communities of various skin colour had to remain strictly separated. The expanded time of displacement due to legislation like the Group Areas Act (Act No. 36, 1966), where non-whites were forced to unsavoury areas, disrupted community life in many ways that are irrefutably present until today. Many communities were discriminatorily excluded from receiving fundamental services to ensure safety and security. Even today, over 20 years after the end of apartheid, gangs, substance abuse, unemployment, school dropout, disease, and an enormous lack of resources are typical for these communities. (Ward et al., 2013). The following paragraph outlines the ongoing problem of violence in these areas and how this leads to a development of maladaptive emotion regulation strategies and ongoing antisocial behaviour.

1.1.2 Violence

Violence, especially violence committed by and directed at children and adolescents is a big problem in those excluded communities. Khayelitsha, in Cape Town, is one of those neighbourhoods with an extremely high ratio of youth violence. It has been found that 56% of Khayelitsha's children between the age of 10 and 16 had been victims of violence and 45% had witnessed somebody being killed in their own neighbourhood (Ensink, Robertson, Zissis, & Leger, 1997). Representative school-based surveys in South Africa's communities show that 68% of adolescents had witnessed violence aimed to harm somebody. 70% of primary school students already experienced violence in their schools (Burton & Leoschut, 2013; Burton, 2008). A representative study of child maltreatment concluded that in South Africa 23% of teenagers between 15 and 17 years experienced violence in their own household,

directed at themselves, at one of their siblings or another adult (UBS Optimus Foundation, 2015).

Bronfenbrenner (1979) developed a multilevel model of risk factors for antisocial behaviour which was revived by Ward et al. in 2013 and illustrates the influence of this environment by placing South African children and adolescents, taking their individual characteristics into account, within a set of nested contexts: “Cultural, economic, social and political contexts; Community context; Everyday context for children’s interaction with others (family, school, peer group, out-of-school settings)” (Ward et al. 2013, p. 2). These different levels of contexts interact with each other and with the children’s and adolescent’s individual characteristics and represent a complex interaction between risk factors and protective factors. Together these factors are suggested to determine a child’s risk to develop enduring antisocial behaviour which in the long run leads to social exclusion (Hawakins et al., 2000; Moffitt, 1993).

Ward et al. (2013) defined individual predictors of serious antisocial behaviour as impulsive behaviour, gender, age, victimisation of the child, substance abuse, and inability to feel guilt. The establishment of impulsive behaviour often takes place before birth or in early childhood, in consequence of the neurological mark of malnutrition, alcohol abuse, abuse of drugs or antenatal anxiety (Parry, Myer, & Pluddeman, 2004; Rutter, Kim-Cohen, & Maughan, 2006;).

Later in life gender socialisation is regarded to predict whether a child internalises or externalises emotions and in this way, predicts whether there is a higher chance for them to experience for instance anxiety and withdrawal or react on problematic situations by being aggressive or fighting (Anderson & Bushman, 2002).

Together, these early socialisation events and prenatal events can influence whether individuals later set foot in surroundings where they use substances or even experience abuse (Ward et al., 2013). The Use of antisocial behaviours can become a strategy for solving

problems and express feelings due to a cycle of abuse and modelling this antisocial behaviour. Childhood and early adolescence is the time in life when individuals may start engaging with antisocial behaviours and therefore have a high risk to develop enduring antisocial behaviour and continue the vicious circle of violence and community disruption (Hawkins et al., 2000).

1.1.3 Trauma & chronic Trauma in South African's Townships

For people living in excluded communities in South Africa, experiences of violence are mostly no isolated cases. A lifetime of experiencing criminal violence is often regarded as normal in certain regions in South Africa. The term “Continuous Trauma” is used by Benjamin and Crawford-Browne (2010) to term a mental condition occurring from living in a neighbourhood with extreme levels of violence and where this criminal, gang or community violence has been experienced or observed many times from an early age on. In these cases, the person tries to recover within this context of continuing threat. They suggest to acknowledge this experience of “Continuous Trauma” as a sub-category of Post-Traumatic Stress Disorder (PTSD), because of their mutual and associated symptoms, and at the same time different patterns of impact, presentation and recovery. The South African Stress and Health Survey (SASH) by Williams, Williams, Stein, Seedat, Jackson and Moorman (2007) concluded that 56.1% percent of South Africans had experienced more than one traumatic event, and 25% of the population had experienced four or more traumatic events during their lifetimes.

Being repeatedly exposed to traumatic events can lead to an adaption to the harmful circumstances which later not only changes the perception but also the personality of the affected person (Cillien & Ziegler, 2013).

The Criteria of PTSD within the DSM-V diagnosis cannot adequately describe the enormous psychological impact of continuous violence on people within some areas in South Africa. Despite PTSD criteria in DSM-V already show refinement compared to DSM-IV by including symptoms of emotion regulation and interpersonal regulation it is still not sufficient

to explain all phenomena of continuous trauma. The symptoms of DESNOS (diagnosis as disorders of extreme stress, not otherwise specified), already included in DSM-IV, bring a wider spectrum of symptoms to the fore and describe the pattern of presentation of Complex Trauma. These symptoms include: “dysregulation of a) affect and impulses, b) attention or consciousness, c) self-perception, d) perception of the perpetrator, e) relations with others, f) somatisation, and g) systems of meaning” (Benjamin and Crawford-Browne, 2010, p. 9; Herman, 1994).

The American Psychological Association (APA) and the World Health Organization (WHO) are both working on refining the diagnosis of PTSD by including complex PTSD in their diagnostic manuals.

1.2 Trauma, PTSD & complex PTSD

What follows is the attempt to give an overview about concepts, diagnoses and models about the understanding of traumatic events.

1.2.1 Definition

The World Health Organization (WHO) and its International Statistical Classification of Diseases and Related Health Problems (ICD-10) defines trauma as a short or long lasting event of extraordinary threat or “catastrophic nature which is likely to cause pervasive distress in almost anyone.” (World Health Organization 2018).

The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) describes trauma as “an event where a person is exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence in one of the following ways:

- 1) Directly experiencing the traumatic event(s).
- 2) Witnessing, in person, the event(s) as it occurred the others.
- 3) Learning that the traumatic event(s) occurred to a close family member or close friend. In case of actual or threatened death of a family member or friend the event(s) must have been violent or accidental.

- 4) Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders, collecting body parts; professionals repeatedly exposed to details of child abuse). This does not include indirect non-professional exposure through electronic media, television, movies or pictures” (Diagnostic and Statistical Manual of Mental Disorders – ASM-5, 2013, p. 271).

Hecker & Maercker (2015) categorize trauma into human-induced trauma and coincidental trauma and in short or long lasting trauma (Typ I vs. Typ II) (Table 1). Typ I traumata are often characterized by acute mortal danger, abruptness and surprise and mostly result in classic PTSD symptoms like intrusion, avoidance, numbing, and hyperarousal. Typ II traumata distinguish by series of different traumatizing events and low predictability of future traumatic events and often lead to especially intense symptomatic reaction, the so called Complex Traumatic Stress Disorder (CPTSD) (Table 2). Hecker & Maercker (2015) describe the conditional probability to develop CPTSD by 8.15% which means that out of 100 traumatized individuals 8 to 15 are diagnosed with CPTSD.

Table 1

Schematic categorization of traumatic events (adapted from Maercker, 2013, S. 16)

	Typ 1-Trauma (one-time/short-time)	Typ 2-Trauma (multiple/long-term)
Accidental Trauma	Heavy traffic accident, catastrophe (e.g. Fire, tornado) Occupationally trauma (e.g. police, rescue forces, fire brigade)	Lasting catastrophe (e.g. flooding)
Interpersonal Trauma	Civil violence (e.g. bank robbery) Sexual assault (e.g. rape)	War experience Sexual abuse during childhood or adulthood Captivity Political internment, torture

Hermann (1992) first used the term complex PTSD to describe the symptoms of victims of enduring and repeated traumatic events and suggested diagnostic criteria like alterations in emotion regulation, of the conscious mind (e.g. dissociative symptoms), in interpersonal relationships, in self-perception, and in the system of values.

The World Health Organization (WHO) is working on a new version of the International Statistical Classification of Diseases and Related Health Problems (ICD-11) which will introduce the Complex Posttraumatic Stress Disorder as a distinct diagnosis and therefore, for the first time will take account to the duration of exposure to traumatic events (First, Reed, Hyman, & Saxena, 2015; Keeley et al., 2015). Besides all symptoms of classic PTSD, complex PTSD includes symptoms like emotion regulation difficulties, negative self-perception and disturbance of interpersonal relationships (Hecker & Maercker, 2015). Complex PTSD is characterized by “severe and persistent 1) problems in affect regulation; 2)

beliefs about oneself as diminished, defeated or worthless, accompanied by feelings of shame, guilt or failure related to the traumatic event; and 3) difficulties in sustaining relationships and in feeling close to others.” These symptoms cause significant impairment in personal, family, social, educational, occupational or other important areas of functioning (World Health Organization 2018).

The DSM-V chose to include symptoms of complex PTSD as a part of the main symptoms of PTSD. Enduring negative cognitive and emotional changes were introduced as the new criteria D. In detail these criteria include dysfunctional changes of cognitive schemata especially shame, guilt, toad particularly after sexual abuse, the feeling of continuous threat, distrust, increased risk assessment and lower tolerance of risk. However, PTSD AND CPTSD are distinct categories of the so called Traumatic Stress Disorders in DSM-5 (American Psychiatric Association, 2013).

Table 2

Complex Post Traumatic Stress Disorder Symptoms (modified after Maecker, 2013, S. 25)

Criterion/Symptoms	Explanatory note
Trauma criteria	Typically, after Man-made-Typ-II-Trauma, e.g. sexual violence, torture.
PTSD key symptoms	Re-experiencing (e.g. Flashbacks, nightmares); avoidance behaviour; hyperarousal.
Other impaired domains:	
Emotion regulation problems	No fine control of feelings; emotional instability in interpersonal situations and communication; anger and fury are dominating; self-damaging behaviour.
Alteration of self-concept	Impaired self-identity: Strong belief about living an impaired life, which is not repairable or about having made mistakes and feeling inferior; feeling of guilt and shame.
Impaired relationship competencies	Inability of equally interacting within relationships; tendency to extreme opinions; inability to trust.
Dissociative symptomatic	Lasting attention deficit; repeated psychogenic clouding of consciousness; repeated intense amnesias; temporary experiences of depersonalisation.

1.2.2 Impact of Chronical Traumatization in childhood and adolescents

Chronical trauma in childhood and adolescents has lasting impact on various levels of perception and experience. It impairs the feeling of control of life, emotions, and self-efficacy. Hüther (2001) describes the reaction to traumatic events as uncontrollable stress reaction (“unkontrollierbare Stressreaktion”) which is characterized by an enduring activation of 1) cortical and limbic structures 2) central and peripheral noradrenergic system. These reactions escalate each other in a way until they activate the HPA-System and result in a long lasting severe release of cortisol.

Krausz and Schäfer (2006) classify childhood trauma in Typ 1 and Typ 2 traumata and distinguish distinct symptoms for the two types of disorders, caused by the different types of trauma (Table 3).

Table 3

Characteristics of Childhood Trauma-Types after Krausz and Schäfer (2006)

Typ 1-Trauma characteristics	Typ 2-Trauma characteristics
Shock trauma, unpredictable	Chronic, enduring or repeated trauma
PTSD symptoms	complex PTSD symptoms, high comorbidity
Detailed memories, distorted perception	Denial, emotional anaesthesia, alienation, depersonalization, dissociation
In children often accompanied by magical thinking, blaming oneself	May cause personality disorder or dissociative identity disorder

1.2.3 Trauma Therapy

Literature shows divergent concepts when it comes to Trauma therapy. These concepts show great variety regarding the focus of the treatment. Most common Therapy concepts in clinical practice are:

- 1) Dialectic-behavioural therapy (Linehan, 1996)

- 2) Psychodynamic imaginative trauma therapy after Luise Reddemann
- 3) EMDR (Saphiro, 1989)
- 4) somatic therapy concepts (e.g. somatic experiencing) (Levine, 1997)

Trauma focused treatments primarily try to reduce PTSD-symptoms. One of these treatments is called „prolonged exposure “. The trauma is re-narrated and relived by using the patient’s feelings. This exposure in sensu results in a, so called, habituation by repeatedly retelling the traumatic experience and leads to a weakened reaction to the confrontation with traumatic memories (Foa et al., 2014).

Cognitive therapies are another type of trauma focused treatments. These treatments are working with a modification of evaluation- and perception processes. The so called cognitive restructuring leads to a modified somatic reaction (Ehlers and Clark 2000).

EMDR (Eye Movement Desensitization and Reprocessing) is a trauma focused treatment as well. Pictures, sensations, cognitions and emotions associated with the trauma are treated by bilateral sensory stimulation (visually, auditive or tactile) until the stress reaction is reduced (Shapiro 1989).

The abovementioned approaches behavioural therapy, cognitive therapy and EMDR show the highest effect size for the treatment of PTSD (Bisson et al. 2013). All these treatments work with exposure to the traumatic experience which needs to be well prepared by psychoeducation and can be complemented by cognitive restructuring and exposure in vivo. This can lead to reduced PTSD-symptoms after a few weeks. A healthy integration of the trauma into the patient’s life and a more profound healing than the symptoms only often requires way longer therapeutic treatment.

Trauma therapy distinguishes between acute traumatised and chronical traumatised patients. There is no profound evidence yet, whether therapy for multiple traumatised patients can be established the same way like for onetime traumatised patients (Hecker & Maercker,

2015). Wöller (2006) describes a commonly used phase model for the treatment of traumatised patients. It includes 4 phases:

- 1) Stabilisation
- 2) Activating recourses and skills training
- 3) Treatment of trauma
- 4) Integration

Most therapy concept combine resource strengthening interventions with trauma treatment (Krommer, 2017). Literature shows controversial discussion about the need and way of stabilisation before trauma treatment. Guidelines on treatment of trauma recommend the following 3 steps of treatment for trauma therapy (Flatten et al. 2011):

- 1) Safety: Stabilisation and emotion regulation
- 2) Trauma exposure (in various ways)
- 3) Integration and reorientation

Most individuals affected by trauma disorders in South Africa live in neighbourhoods where violence has been witnessed or experienced frequently from an early age on and where they need to overcome their trauma within this setting of ongoing danger. The author of this study therefore stresses the importance of activating recourses and skills training, mentioned above (page 13, step 2, Wöller, 2006), and a safe space to recover from traumatic experiences and regulate negative emotions.

1.3 Emotion Regulation

Gross (1998) defined Emotion-regulation as various processes that influence the type of emotion a person experiences, the point in time this emotion arises, as well as how this emotion is experienced and expressed. Friedlmeier (1999) discriminates between emotion regulation and coping. Emotion regulation, as a reaction to less strong affects, occurs more often in daily-life and can be unconscious or reflexive. Coping, on the other hand, he describes as reaction to stressful situations that appear less often. Coping always proceeds by

consciously using strategies to regulate strong affects. Therefore, Emotion-regulation can be described as the conscious and unconscious effort to influence the likelihood, intensity and duration of any emotion (Gross, 1998).

Various researchers conclude that Emotion-regulation is crucial for the psychological functionality of a person, including social competence (e.g. Chang, Shelleby, Cheong, & Shaw, 2012; Dollar, & Stifter, 2012). Emotions initiate important behavioural responses. They also play a key role in decision making, enhance the memory for important events and facilitate interpersonal relationships. Nevertheless, there is no doubt emotions can also be harmful especially if they appear in the wrong moment or with inappropriate intensity (Gross & Thompson, 2007), for example as consequence of a traumatic experience.

1.3.1 Effects of PTSD & complex PTSD on Emotion Regulation

Current research shows a strong connection between traumatic experiences during childhood and various psychological disorders during adolescence or adulthood. Besides PTSD and Complex PTSD, traumatic experiences also correlate with Affective Disorders, anxiety disorder and borderline personality disorder. These psychological disorders are, among other things, characterized by dysfunctional emotion-regulation strategies (Cloitre, Garvert, Weiss, Carlson, & Bryant, 2014; Etkin & Wager, 2007; Fernando et al., 2014). Traumatic experiences can change basic mechanisms of prioritizing and processing emotional information (Marusak, Martin, Etkin, & Thomason, 2015; Rosenthal et al., 2008). Traumatic experiences can also cause extreme emotional reactions and distress, which are especially hard to regulate. In the longer term, PTSD can cause emotional numbing which makes it harder to appropriately experience not only negative, but also positive emotions (Seligowski, Lee, Bardeen, & Orcutt, 2015). It is also known that PTSD-symptoms are positively correlated with problems in emotion regulation and symptoms of depression. Adolescents that report experiences of traumatic events use less effective emotion-regulation strategies to modulate emotional processes which moreover leads to depressive symptoms (Espil, Viana,

& Dixon, 2016). Dissociative disorders, anxiety disorders and personality disorders are also connected with emotional regulation problems (Cillien & Ziegler, 2013; Powers, Cross, Fani, & Bradley, 2015; Sack, 2004). Research concerning the relation between PTSD and emotion regulation shows that people affected by PTSD have difficulties in performing target-orientated behaviour while feeling stressed. They also show reduced use of functional emotion regulation strategies and little clarity and acceptance about their own emotions (Ehring & Quack, 2010). Patients with complex PTSD often show overreactions with a high level of emotions and difficulties in calming down. They struggle with enduring burdening and uncomfortable affects and impulse control. Therefore, they often show excessive risk behaviour, auto aggressive behaviour and suicidality to distract themselves from these affects (Sack, 2004). Traumatic life events can hinder the development of adaptive emotion regulation strategies which are known as being important for normative development and functionality of a person. Exposure to violence is beyond a child's or adolescent's regulatory capability so they often rely on maladaptive strategies to reduce emotional stress in the short term. These strategies nevertheless are harmful in the long term. Children who have experienced abuse in various forms often undergo that their negative emotions are ignored, punished or trivialized. Such an invalidating surrounding can lead to persisting patterns of denial, suppressing and maladaptive strategies to regulate one's emotions. These children therefore never learn to regulate their feelings appropriately and these difficulties persist until adulthood (Stevens et al., 2013). Various studies, including a meta-analysis, show not only a general emotional dysregulation of PTSD-patients but also significant correlations between PTSD-symptoms and increased use of maladaptive emotion regulation strategies like rumination, suppression of thoughts, denying and excessive worrying as well as a reduced use of adaptive strategies like reappraisal and acceptance (Dixon, Leen- Feldner, Ham, Feldner, & Lewis, 2009; Seligowski, Lee, Bardeen, & Orcutt, 2015; Ehring & Quack, 2010).

Sack (2004) points out that complex PTSD especially correlates with traumatic experiences in young age. Difficulties in emotion regulation especially appear within patients who are involved in chronic interpersonal trauma since young age (Ehring & Quack, 2010). Taken together existing literature, there is no doubt about the connection between (complex) PTSD and difficulties in emotion regulation.

1.3.2 Emotion Regulation Skills Training

Berking (2017) defines seven competences that are necessary for a successful emotion regulation:

1. Being able to apperceive ones' emotions.
2. Being able to perceive and specify ones' emotion.
3. Being able to detect the reason for ones' current emotion.
4. Being able to support oneself emotionally in demanding situations.
5. Being able to actively influence ones' emotions in a positive way.
6. Being able to accept and tolerate negative emotions when necessary.
7. Being able to be confronted with emotionally demanding situations.

Individuals need to gain constructive strategies to overcome dysfunctional high levels of arousal. Negative emotions should not be perceived as only aversive and threatening but as challenge that can be accepted and managed. It is important to gain self-efficacy self-reliance when it comes to handling emotions. Instead of avoiding emotional situations it is important to sometimes expose oneself to a critical emotion to train competences and experience achievements. Individuals need to learn to apperceive and actively influence emotions in a positive way without any harmful side-effects, or to accept immutable emotions, instead of supressing them. Emotion regulation skills training can be part of various types of therapies, for example sport therapy.

1.4 Sport Therapy

Research shows that moderate-intensity exercise programs result in improved behavioural, affective, mood and anxiety response (Portugal et al., 2013; Gastpar, Kasper, & Linden, 2013; Knölker, Mattejat, & Schulte-Markwort, 1997; Wöller, 2006; Zschucke, Gaudlitz & Ströhle, 2013; Alderman, Olson, Brush, & Shors, 2017).

Positive effects of movement as a part of treatment for psychological disorders are well-known for a long time. Greco-Roman antiquity and traditional Asian culture already acknowledged movement therapeutic methods to achieve mental stability and improved general mood. Also, Hindu-medicine uses Yoga-Meditation as psychotherapeutic method to clean body and mind (Camacho, Roberts, Lazarus, Kaplan, & Cohen, 1991). Movement therapy's actual mechanism of action is not yet sufficiently investigated but it is however used in stationary psychosomatics and psychotherapy as a standard therapy for psychiatric disorders.

Movement Therapy is sub-divided into different procedures: 1) Training-oriented movement 2) Insight-oriented movement 3) Detecting movement.

Training-oriented movement (1) is a method generally used for activating with a wide range of indications. Insight-oriented movement (2) and detecting movement (3) procedures offer a linkage between movement and psychotherapeutic interventions. Additionally, insight-oriented movement procedures can enhance compliance with other psychotherapeutic interventions.

In the field of psychiatric and psychosomatic treatment there is a broad spectrum of movement therapy treatments in use. The variety reaches from physiotherapeutic methods over Sport-therapy until psychotherapeutic body therapy (Kleinagel u. Deimel 2007). The rising number of patients suffering from psychological disorders stresses the importance of alternative treatments that are applicable to a great number of people, independent from

financial and infrastructural resources. Sports therapy appears as a great possibility to relief the health care system in the maintenance of psychiatric patients.

The effects of sports therapy are based on structural, morphological, and functional adaption of the biological system, induced by appropriate activities (Schüle & Huber, 2004). The alteration of hormones and transmitters constitute the effects on a physiological and biochemical level. Regular stamina training for example leads to a lower sympathetic tone and higher vagal tone already after a few weeks, which makes the vegetative nerve system less prone to arousal. Also, in times of stress the release of cortisol and endogenous opiates is influenced and there is evidence for alteration of the dopaminergic and serotonergic system (Broocks et al. 2003, Charney et al. 1987, Martinsen 1990). At the endocrinological level, regular sportive activity increases the release of adrenaline, noradrenaline, dopamine and endogenous endorphins. It also causes bio-physiological long-term effects by altering central serotonergic mechanisms. Many psychological disorders are characterised by a malfunction of the endocrinological system and neurotransmitter release and are treated with psychotropic drugs to recreate a healthy balance of hormones (Broocks, 2000). In healthy individuals training-oriented movement procedures lead to improved general state in terms of mood, stress management, self-confidence and sense of self-worth, regardless of age and gender (Gastpar et al., 2013).

Portugal et al. (2013) explain neurobiological mechanisms of exercise and the relationship between exercise and mental health on a neuroscientific level. They postulate an association between exercise and increased synthesis and release of neurotransmitter and neurotrophic factors. These increases may be associated with neurogenesis, angiogenesis and neuroplasticity. More concretely, the authors discovered that physical exercise encourages certain changes in the human brain caused by increases in metabolism, oxygenation and blood flow in the brain. Evidence, predominantly from animal studies, show that physical exercise modulates norepinephrine, dopamine and serotonin which are the major CNS

neurotransmitters and associated with the state of alertness, the pleasure and reward system, and the level of anxiety of animals. Exercise may also lead to release of opioids and endocannabinoids which encourage a feeling well-being and euphoria, anxiolytic effects, sedation and decreased sensitivity to pain in humans. Exercises modulates trophic factors that appear to act as survival, proliferation and maturation factors in specific cells in the brain. These trophic factors can activate proteins which are associated with transcription. They can act as modulators as well as be modulated by neurotransmitters, which may play a fundamental role in determining an individual's level of cognition and behaviour. Despite physical exercise is known to be an acute stressor, routinely exercise can have neuroprotective effects instead. This includes lower levels of cortisol at rest and in response to a stressor which might be initiated by biological changes of the activity in the HPA axis and result in an efficient negative feedback mechanism. Furthermore, Portugal et al. (2013) assume that moderate-intensity exercise programs result in improved behavioural, affective, mood and anxiety response.

On a cognitive level, motoric activity can help to reduce negative emotions and depressive symptoms like rumination and anxiety. The psychosocial outcome of movement therapy is not yet well investigated but it can be assumed that sportive activities in groups help establishing social contacts and enhance social competences. Movement therapy is well applicable for patients that cannot or do not want to make use of classical psychotherapy, due to limited verbal abilities or other reasons (Gastpar et al., 2013).

Insight-oriented movement and detecting movement therapy provides a connection between emotions, provoked by certain body movements, and cognitions. Additionally, it can unveil suppressed biographical material. Patients are asked to pay attention to their sensations while performing certain body movements. This harmonizes the vegetative-functional nerve system and has relaxing effects on the whole organism. Moreover, this leads to improved impulse control and affect regulation. It can also help building a new body image by

restructuring a realistic cognitive picture of the body and therefore influence sense of self-worth and self-consciousness in a positive way. Furthermore, the patient is encouraged to take over resource orientated self-care and personal responsibility. As non-verbal method, movement therapy offers a way to communicate experiences without language, increases the perceived ability to act and reduces the patient's feeling of impuissance (Knölker, Mattejat, & Schulte-Markwort, 1997; Wöller, 2006).

Zschucke, Gaudlitz and Ströhle (2013) summarized studies that explored the use of exercise interventions to treat patients suffering from dementia, schizophrenia or various other mental disorders including anxiety, affective, eating, and substance use disorders. The authors concluded that studies using equal contact control groups show smaller effects than studies comparing physical activity with no intervention. They assume that unspecific effects such as therapeutic contact, social support, and distraction may cause some of the effects. Studies that followed public health recommendations regarding intensity and duration of exercise in their interventions were more likely to find significant clinical improvements (Pate et al., 1995). It turned out that actual fitness gains were not as relevant for treatment success as compliance of participants during the exercise program and maintenance after program completion. Other important factors for the positive effect of exercise were social support, time structure, therapeutic contact, and positive reinforcement. Mindful exercise interventions such as yoga seem to be effective as adjunct treatment in depression, anxiety schizophrenia, eating disorders and smoking cessation. Martial arts were found to be acute effective in depression therapy.

Alderman, Olson, Brush, and Shors (2017) concluded that the combination of aerobic exercise and meditation may be particularly effective in increasing cognitive control processes and decreasing ruminative thoughts in depressive patients. MAP (mental and physical) training was translated from neuroscientific studies indicating that it increases

neurogenesis in the adult brain, shows no profound side effects and can be practiced across the lifespan.

Despite the common implementation of movement and sport therapy, there is no clear valuation of the therapy's effects. There are no exact guidelines for the indicated use of body orientated therapy and its significance within the treatment of various psychological disorders is not clear yet (Neumann & Frasch 2007). Haltenhof and Brack (2014) claim that sport therapy is endorsed more because of financial than because of evidence based reasons. The integration of sport therapy into a multimodal therapy concept provides a cost-efficient low-risk potential which should be used more commonly. The following paragraphs give deeper understanding about how sport and movement can be used to deliver psychological treatment.

1.4.1 Sport-for-Development

Sport-for-development or sport-plus-interventions aim to use sport as a tool to deliver a service that is not sport-related (Coalter, 2009). To support engagement of children and adolescence in a sport-for-development programme, evidence suggest that participation in the programme needs to be voluntary (Haudenhuyse, Theeboom, & Coalter, 2012). The sport itself should be challenging. Sports that take only a short time to be mastered quickly lose participants' interest (Lubans, Plotnikoff, & Lubans, 2012). Another important characteristic of a sport-for-development programme is positive engagement with role models who connect with participants. Haudenhuyse et al. (2012) explain that such role models allow participants to experience pleasant social interaction rather than antisocial, violent, and autocratic interaction. Furthermore, the sport should enhance participants to leave their comfort zone and their usual environment (Haudenhuyse et al. 2012; Lubans, et al., 2012). In South Africa, the communities in which children and adolescents live, represent their comfort-zone on the one hand, but on the other hand it is a source of distress. To ensure a safe environment for an intervention, participants sometimes need to get out of their communities. A safe space is required for positive learning experiences to occur. This applies especially in groups

(Haudenhuyse et al. 2012). However, safety is not always or only depending on the physical location but is an individual experience including social factors. An emancipatory authority relationship with Coaches and programmes that encourage participants to look out for each other's well-being produce an experience that is consistent, structured and supportive (Haudenhuyse et al. 2012). To produce psychological benefits like higher self-esteem, better social skills, fewer symptoms of depression, and greater confidence (Eime, Young, Harvey, Charity, & Payne, 2013) participants should attend the sport-for-development programme a minimum of two times per week or for three to six hours per week (Sanders, Field, Diego, & Kaplan, 2000; Steptoe, & Butler, 1996). Recent literature shows that the benefit accrued by sport-for-development programs is largely dependent on the type of sport that participants are engaged in (Ali, Fang, & Rizzo, 2010; Masten, 2007).

The range of types of sport-for-development programs reaches from outdoor adventure programmes over organised sport programmes to physical fitness programmes. Outdoor adventure programmes focus on experiential learning and the belief that direct experiences cause learning and behavioural changes. These programmes can include several types of physical activities like for example orienteering, rock climbing, sailing, or canoeing, as well as traditional therapeutic techniques, mastery of challenging tasks, self-reflection or journal writing (West & Crompton, 2001). Organised sport programmes facilitate the participation of their attendees in competitions. Physical fitness programmes involve for example resistance training or aerobic training and provide the biopsychological benefits of exercise (Lubans et al., 2012). Research suggests that those three program types (outdoor adventure programmes, organised sport programmes and physical fitness programmes) are all valuable for at-risk children and adolescents. All three programs turned out to foster their emotional wellbeing, especially when they include some sort of life-skill development. Outdoor adventure programmes seem to be superior to the other types because of their positive effect on self-concept, self-esteem and resilience (Ali et al., 2010; Masten, 2007).

Sport-for-development programmes often deliver youth-care services and therefore require to provide motivational climate for the program. Motivational climate can either focus on performance or mastery and differs in the point of reference. In a performance climate, participants take fellow attendees as points of reference for their own performance. In a mastery climate, participants take themselves as a point of reference to rate their own performance. Ntoumanis, Vazou, Duda, Jowett and Lavallee (2007) observed that a mastery climate is supporting the success of a Sport-for-development programme. Commonly children and adolescents enjoy the programme activities more. They even execute programme activities to a higher standard and enjoy themselves and fellow participants more. A mastery climate also seems to foster higher levels of motivation to remain in the program and to learn how to handle failure in a healthy way.

1.4.2 Sport as Trauma Therapy

Nick Caddick and Brett Smith (2014) investigated the potential impact of sport and physical activity upon the subjective and psychological well-being of combat veterans with physical or psychological trauma. They discriminate between sport as a “competitive, rule-bound, structured activity and a physical activity as a broad term for many different forms of energy-expenditure, including exercise and recreation” (Caddick & Smith, 2014, p. 2). Specifically, they differentiate between 1) sport 2) physical activity 3) recreation 4) exercise 5) challenge events, and emphasize the different ways in which these activities might influence well-being. They stress the high need for treatment and support among combat veterans. Sport is now routinely used in the rehabilitation of disabled combat veterans in the US (Messinger, 2010). Research shows that higher levels of physical activity are associated with lower chance of PTSD symptoms (Leardmann et al., 2011) and indicates that sport and physical activity can both influence psycho-social health and well-being among disabled individuals and people diagnosed with mental illness (Caddick & Smith, 2014). Caddick and Smith (2014) concluded that veterans’ subjective well-being can be enhanced by sport and

physical activity through “active coping and doing things again, PTSD symptom reduction, positive affective experience, ecotherapy (activity in nature), sense of achievement/accomplishment, and social well-being” (Caddick & Smith, 2014, p. 1).

Furthermore, the participation in sport and/or physical activity can enhance motivation for living. Therefore, the study gives evidence for the value of sport and physical activity for supporting the well-being and rehabilitation of individuals diagnosed with PTSD. To explain the findings more detailed they described how each level of subjective and psychological well-being might be affected by different kind of sports and activities:

Subjective well-being (SWB) involves the balance of positive and negative emotions over time and general satisfaction with life. SWB might be increased by physical activity sport or adventurous training in a way that participants proactively take responsibility for doing something to enhance their own well-being. This kind of activity contrasts notably with the typical extreme inactivity of individuals suffering from PTSD and motivates participants to actively cope with their emotions.

Various activities, especially outdoor activities and therapeutic recreation allow a greater engagement with the here and now, give opportunities to experience the healing effect of nature, and achieve a sense of peace and relaxation. This lowers the symptoms of “hyper-arousal, relieving of trauma through less nightmares and flashbacks, and relief from the usual numbing of emotional responsiveness” (Caddick & Smith, 2014, p. 8). On a regular basis, physical activity can make individuals suffering from PTSD feel more in control and less dependent on medication to manage symptoms. Otter and Currie (2004) point out that supervised exercise classes help participants to ease adrenaline levels that keep them locked in a state of tension and high-anxiety and thus allow them to relax.

Engaging in various sports or physical activities can lead to positive affective experiences. Negative Emotions can be replaced by fun, enjoyment, and relaxation. Reed & Buck (2009) distinguish low positive state of activation (e.g. fishing) in a relaxing sense, and

high positive state of activation (e.g. exercise) perceived as energizing. Both types of activity are supposed to have stimulating effects and enhance positive affect. Brittain and Green (2012) discussed the restorative power of sport and stress-free enjoyment as a key component for participation of PTSD patients in sport. A positive shift in the hedonic balance of affect leads to increased subjective well-being in PTSD patients.

Physical activity or sports in the natural environment is perceived to have therapeutic qualities (Dustin et al., 2011; Hyer et al., 1996; Mowatt & Bennett, 2011). Dustin et al. (2011) explains the healing power of nature and calls the impact on psychological health and well-being “ecotherapeutic”. He points out “ecotherapy” as a more appealing alternative to clinical or medical treatment settings.

Lundberg, Bennett, & Smith, (2011) observed a reduction in mood disturbance within participants of a 5-day adaptive sports programme (including water-skiing, snowboarding, fishing, ice-skating and kayaking) and suggested that improved mood may over time lead to changes in Quality of life. Hawkins, Cory, & Crowe, (2011) found that participants felt their engagement in sportive activities as a catalyst for improving also other areas of their lifestyle.

Psychological well-being (PWB) relates to growth and development of an individual. PWB of people suffering from PTSD seems to be influenced by sport and physical activity in various ways. Burke and Utley (2013) explored that physical activities like hiking provides veterans with a valued goal to strive for and therefore facilitate the experience of determination and inner strength. Through sport and physical activities they draw upon personal resources to reach their goals (Burke & Utley 2013) and focus on ability and (re-) construct a positive self-image (Brittain & Green, 2012; Hawkins et al., 2011; Sporer et al., 2009). Carless, Peacock, McKenna, & Cooke (2013) assume that participation in new activities offers individuals new possibilities and psychological resources that can help them to move forward in meaningful ways.

Various studies found that participation in different sportive activities were helpful in cultivating a positive sense of self-identity in veterans and provided them with a renewed sense of direction in life (Brittain & Green, 2012; Burke & Utley, 2013; Carless et al., 2013).

Dustin et al. (2011) indicates that PTSD patients could relativize their own problems and see their lives from another perspective after interacting with the “bigness of nature”. It encourages people to see themselves as a part of a bigger whole. In this way, individuals may develop a “spiritual awareness” of their connection to the natural world. Immersion in nature provides a space for introspection and quiet reflection and can have positive influence on meaning and purpose in life as well as promoting a positive relation to the world. Dustin et al. (2011) as well as Mowatt and Bennett (2011) reported that veterans diagnosed with PTSD perceived this natural space as “therapeutic”.

Brittain and Green (2012), Hawkins et al. (2011), Dustin et al. (2011), and Hyer et al. (1996) found out that involvement in sport or physical activity also provides a sense of achievement or accomplishment for disabled veterans and veterans diagnosed with PTSD. Engaging in recreational outdoor activities and learning new skills (e.g. river running or outdoor adventure) is perceived as a sense of accomplishment and refers thematically to increased self-confidence and self-efficacy in PTSD patients.

Caddick and Smith (2014) concluded that eight of the 11 studies investigated indicate that sport and physical activity provide a context for the enhancement of social well-being. Engagement in such activities helps to overcome the feeling of social isolation associated with PTSD. Carless and Sparkes (2008) suggest that a feeling of being understood is an important component of recovery from serious mental illness. Shared experiences and the connections forged through sports and physical activity were considered as highly significant in terms of recovery by Burke and Utely (2013), as well as Hawkins et al. (2011).

In addition to subjective and psychological well-being, participation in sport and/or physical activity can serve as a **source of motivation** (Caddick & Smith, 2014). Otther and

Currie (2004) reported that exercise helped veterans diagnosed with PTSD to overcome a pervasive lack of motivation and “injected” energy into their daily lives and thereby provided motivation for living. Furthermore, the authors suggest that social comparison and self-determination are specific motivational processes that sustain the desire to participate in sports and physical activities. Participation in a physical challenge helps to satisfy basic psychological needs for competence, autonomy and relatedness. It can help participants to feel capable of achieving difficult goals and being connected to others (Burke & Utley, 2013; Deci & Ryan, 1985). Therefore, research suggests that involvement in sport and/or physical activity can have mixed implications, depending on a patient’s psychological needs associated with competence, autonomy and relatedness.

1.4.3 Flow in Sport and physical exercise

Mihaly Csikszentmihalyi created the concept of flow. He described flow as a “state in which people are so involved in an activity that nothing else seems to matter” (Csikszentmihalyi, 1990, p. 4). He described various elements of flow experience: “balance between demands and skills (challenge), merging of action and awareness, clear goals and direct feedback, enhanced concentration, sense of control, a distorted sense of time and a loss of self-consciousness” (Csikszentmihalyi, 1990)

Rheinberg, Vollmeyer, and Engeser (2003) described flow as “a mental state in which a person is totally bound in and consolidated with a task. The action is fluent and the person’s attention is not paid wilfully in the task”. Dietrich and Stoll (2010) describe flow as “an autotelic experience”. It is an “intrinsically rewarding experiential involvement in moment-to-moment activity that is accompanied by a positive experience quality” (Dietrich & Stoll, 2010, p. 173)

Ley, Krammer, Lippert, and Barrio (2017) brought together various recent studies about flow in the context of therapy. Chilton (2013) and Riva, Freire, and Bassi (2016) suggest that flow directs the focus away from the patients’ health problems. It fades out

worries about illness for the duration of the activity and contributes to a positive self-concept and subjective control. This can lead to enhanced quality of life (Reynolds & Prior, 2006).

Running on a treadmill can lead to flow experience in people with depression and thus increase their well-being and decrease negative feelings. Therefore, they stress the importance of a flow experience in any sport and exercise therapy for depression. (Reinhardt, Wiener, Heimbeck, Stoll, Lau, & Schliermann, 2008). Dietrich and Stoll (2010) believe that flow experience can increase the motivation for including and maintaining physical activity.

Swann (2016) distinguish three types of factors that seem to determine the occurrence of flow in sports: 1) internal factors 2) external factors 3) behavioural factors. Internal factors mean the level of focus, arousal, motivation, and confidence as well as the kind of thoughts and emotions that a person is dealing with while the activity. External factors include environmental and situational conditions. Behavioural factors can be for example preparation.

The neurocognitive effects of flow during physical exercise might explain the positive therapeutic effects flow experiences can have on symptoms of Depression or PTSD: The transient hypofrontality hypothesis (Dietrich, 2004; Dietrich & Stoll, 2010; Stoll & Pithan, 2016). Depression is characterized by a dysfunction in the frontal lobe and individuals with PTSD have shown hyperactivity in the amygdala that leads to symptoms like hyper-vigilance and hyper-awareness (Carvalho et al., 2015; Dietrich, 2006). Dietrich (2004, 2006) postulates that flow occurs during a transient hypofrontality, when the activation of the prefrontal cortex is down-regulated. Neuronal activation and downregulation of illness-related brain activation during physical exercise might lead to anxiolytic and antidepressant effects.

Ley, Krammer, Lippert, and Barrio (2017) discovered a sense of safety as condition for the occurrence of the other elements of flow experience. Also, concentration is considered as an important element of flow and may distinguish flow experiences from other pleasure-related antidepressant effects. The authors reported an “involvement with full enthusiasm” associated with the flow experiences of participants and argue that this stands in line with

various elements of flow defined by Csikszentmihalyi (1990) such as pleasure, activation and concentration, indicating an immersion or absorption in the task performance. According to Ley, Krammer, Lippert, and Barrio (2017), not all kinds of physical activities are likely to provoke flow experiences. The authors observed flow mainly during sport, game, movement improvisation and dance tasks. One reason might be the focus on the momentary task performance rather than on body awareness or performance of isolated movements. Motivation, activation and pleasure were reported more frequently. Ley, Krammer, Lippert, and Barrio (2017) claim that physical exercise such as mobilisation or strength tasks cannot capture the full attention and concentration of participants dealing with trauma, allowing space to think about other things, like pain sensations and therefore are unlikely to evoke flow experience. According to Ley, Krammer, Lippert, and Barrio (2017) and other authors flow is a source of activation and motivation for people facing mental health challenges. It has autotelic characteristics that can provide an incentive for practising an activity (Reinhardt et al., 2008; Rosenbaum, Vancampfort, Steel, Newby, Ward, & Stubbs, 2015; Dietrich & Stoll, 2010; Rheinberg, 2010). This factor of motivation for a treatment is especially important when it comes to patients dealing with traumatic experiences (Assis, Mello, Scorza, Cadrobbi, Schoedl, Silva, & Arida, 2008; O'Driscoll, Banting, Borkoles, Eime, & Polman, 2013). Ley, Krammer, Lippert, and Barrio (2017) report flow experiences even within war and torture survivors despite their extreme pre-, peri- and post-migratory experiences and mental health problems including PTSD and depression.

Taken together the studies mentioned above, there can be assumed that flow experience is a relevant factor when it comes to trauma therapy. A sport which is well-known for its meditative aspect and flow is surfing.

1.4.4 Surf Therapy

Literature, especially qualitative research, shows that sport-plus surfing programmes can encourage a sort of relief from personal difficulties and psychological challenges. It

assists in building up confidence and enhancing self-management, self-reliance and social skills (Caddick, Smith, & Phoenix, 2015; Godfrey, Devine-Wright, & Taylor, 2015).

Godfrey et al. (2015) evaluated a six-weeks surfing intervention for young people facing mental health issues or social exclusion. They found a significant and sustained increase in wellbeing, a boost in positive attitude and improved communication, as well as better self-management and behaviour at home and in school.

Stuhl and Porter (2015) found a significant improvement in assertion and empathy, responsibility and engagement, positive functioning, emotional wellbeing, resilience, self-esteem, vitality, friendship, social trust, physical health, and enjoyment in the outside environment for children with autism after a six-weeks surfing intervention.

Lopes (2015) suggests that surfing can promote physical wellbeing, combat discrimination, build confidence and plays an important role in the rehabilitation process.

Several surf-program evaluations concluded that surfing may have a positive impact on psychological health. Young people may change from isolated and vulnerable to being engaged, motivated and more resilient through surfing (Devine-Wright, 2015).

Caddick et al. (2015) investigated the effect of surfing as a nature-based activity on the well-being of combat veterans experiencing posttraumatic stress disorder (PTSD). The findings suggest that surfing facilitates a sense of respite from PTSD that was a fully embodied feeling of release from suffering. The authors suggested that this sense of respite arises from keeping them focused on the present and avoid dwelling on traumatic memories hidden in their past. Also, surfing gives the veterans something concrete to look forward to that can prevent them from ruminating. Furthermore, surfing facilitates building relationships with other veterans and fosters a sense of security which enables them to relax and enjoy the activity of surfing.

Together, this evidence suggests that surfing has natural qualities that make it suitable for youth work:

First, surfing is rated among outdoor adventure programmes. It requires participants of a surfing program to get away from their everyday environment and visit the beach. This promotes building a safe setting which is basic for providing positive learning experiences.

Second, surfing takes place in the water and therefore makes participants aware of safety not only for themselves but also for others. In turn this awareness and care for each other produces a greater sense of safety for the group (Haudenhuyse et al., 2012).

Third, surfing is a challenging sport that requires a lot of time and effort to master which is suggested to enhance engagement (Lubans et al., 2012). It also encourages non-competitive individual participation as there is only one person on each board and no one else is on the same part of the wave. Therefore, it fosters a healthy motivational climate and avoids competition, unlike many other types of sport as sport, by its' very nature, is often competitive (Ntoumanis et al., 2007).

Fourth, there is convincing evidence that suggests exposure to natural environment positively influences health and wellbeing (O'Brien & Morris, 2013). Surf therapy, compared to most other types of sport or outdoor therapies, provides one notable factor that is very specific and possibly important for its success: The ocean. Surfing means intense contact with nature through direct tangency with the ocean. Surfing implies feeling the water, salt and wind on the skin, and feeling the consistent motion or flow of the waves with the whole body.

1.4.4.1 The Ocean and its' effects on the mind.

Willy Hellpach (1950) investigated the effects of maritime environment on the human mind. He talks about a relishing and calming effect of the mostly blue colour of the water. Furthermore, the vast horizontal surface seems to have relaxing impact on the observers' eyes. He also observed a nearly hypnotizing effect of the ocean due to the calming sound of the breakers. The monotony of the roaring water seems to cause a dozy state of the mind which Hellpach ranges as hypnoid.

Florian Schmid-Höhne (2005) scientifically explored the perception and impact of the ocean on the human experience and behaviour. In his research, he emerged, among others, three categories of importance that explain effects of the ocean on psychological well-being:

- 1) The sea as a place of peace and recreation
- 2) The sea as source of healing and energy
- 3) The sea as self-awareness and reflection

The “Blue Mind” is defined by Nichols (2014) and describes “a mildly meditative state characterized by calm, peacefulness, unity, and a sense of general happiness and satisfaction with life in the moment. It is inspired by water and elements associated with water, from the blue colour to the words we use to describe the sensations associated with immersion” (Nichols, 2014, p. 6). Kiell (2016) argues that an individual experiences this state while sitting near water gazing out at it. It evokes a mindful state in which the brain is relaxed but focused. Kiell (2016) explains that water holds vast cognitive, emotional, psychological and social benefits like reducing stress and increasing creativity.

Nutsford, Pearson, Kingham, & Reitsma (2016) found out that increased views of blue space are significantly associated with lower levels of psychological distress and contributes to well-being.

Wheeler, White, Stahl-Timmins, & Depledge, (2012) analysed data for the population of England and concluded that good health is more prevalent the closer one lives to the coast.

Taken together these findings there is evidence to assume that the power of the ocean can be useful for the success of psychological treatments.

The oceans and its healing potential was also appreciated by Tim Conibear, Apish Tshetsa and Bongani Ndlovu in South Africa 2011, when they first took a couple of children living in the townships around Cape Town to the beach to surf.

1.5 Waves for Change (W4C)

“Waves for Change” was founded by Tim Conibear, Apish Tshetsa and Bongani Ndlovu in Masiphumelele Township in 2011, at that time under the name “Isiqualo”, as a non-profit organisation (Waves for Change, 2018). It provides community driven psychosocial support services and therapeutic outdoor activities for youth who have experienced emotional trauma. Continued exposure to violence and poverty cause high levels of distress. On average, a Young South African from certain communities will experience between 8 - 15 highly traumatic incidences in a year. This impacts how children and young adults feel about themselves, in turn effecting behaviour, learning outcomes and future life opportunities.

Waves for Change is a program that combines elements of Cognitive Behaviour Therapy, Humanistic Therapy and Surfing to improve well-being and emotional stability of young people affected by violence and abuse. Meanwhile the program expanded from Masiphumelele to several other sites in South Africa: Monwabisi, Lavender Hill, Port Elizabeth, East London. In 2017 they expanded to Harper in Liberia.

An inter-disciplinary team of healthcare professionals, trains and supervises local community members who then deliver the program. Waves for Change has received worldwide acknowledgement and has won various awards. 2015 they received the Beyond Sport Award for Best Sport and Health Programme. Waves for Change programs try to enhance the wellbeing and mental health of vulnerable youth, improve behaviour and learning outcomes, and increase access to social support in some of South Africa's most volatile, instable communities. The therapy focuses on building safety, trust, respect and communication of feelings to increase participants' resilience and coping skills. The program runs in five-month cycles. By connecting youth to caring adults, new peer groups, opportunities to succeed at challenging tasks (like catching waves) and by enabling the development of new coping skills, the program wants to build positive self-identities and

healthy pro-social behaviour patterns. Waves for Change coaches are trained in surf coaching, lifesaving, child and youth care work, job readiness, as well as being mentored by mental-health professionals. They provide direct support to the participating children, who receive two to eight hours of surfing and mentoring per week and a meal. Additionally, coaches conduct weekly home visits and monthly parent workshops. Weekly school visits and teacher trainings twice a year are also part of the program. Teachers refer those kids who they think would most benefit from the therapy. The organization collaborates with local universities to evaluate the impact of the program. In 2015, they conducted two third-party evaluations in partnership with the University of Cape Town (UCT). The evaluators determined that the therapy model is plausible and should have the desired effect if delivered as intended (Waves for Change, 2018). The development of new coping and emotion regulation skills is one of the therapies main goals. Nonetheless, there has been no evaluation done so far focusing the therapy's effects on emotion regulation.

1.5.1 Program description

Waves for Change as an organisation declared three primary goals: 1) Providing Surf Therapy to children and adolescents with a high of social exclusion 2) Reducing social exclusion caused by antisocial behaviour 3) Developing social services by way of community development.

The primary objectives of the Waves for Change Surf Therapy program are: 1) establishing safe spaces, approachable to at-risk children and adolescents in their free time 2) helping at-risk children and adolescents to develop abilities of understanding and coping that are necessary within their communities, considered as high-risk environments. 3) creating systems to help at-risk children and adolescents to develop prosocial principles and ambitions that motivate prosocial choices.

Through their work, Waves for Change targets two primary outcomes for at-risk children and adolescents participating in the program: 1) enhanced psychosocial wellbeing. 2) reduced antisocial behaviour and association with antisocial peers.

Primary beneficiaries of the Therapy programme in Cape Town are at-risk children and adolescents from schools in Masiphumelele, Khayelitsha and Lavender Hill. Secondary beneficiaries are the Coaches who are trained to deliver the Surf Therapy programme, the teachers and principals who refer the children and adolescents to the programme, and the participants' parents or primary caregivers of the kids. They benefit from having more manageable children and adolescents under their care.

Most of the time at-risk children and adolescents are identified and referred to Waves for Change by primary school teachers. Teachers receive some training to be able to identify potential primary beneficiaries, although they usually identify them by significant behavioural and learning problems. Other times, some of the children and adolescents attend the programme by "walking in". They arrive at the beach with friends or visit the programme centre. After referral or "walk in" beneficiaries go through an induction process at their school or at one of the programme sites. Parents must complete a consent form, a document explaining their rights and responsibilities. Demographic information is gathered to get insight about participants' background and parents are contacted for seeking consent for participation. The programme starts after induction and received consent of participation. Kids from the Townships Masiphumelele and Lavender Hill are transported by minibuses to Muizenberg Beach, together with the Coaches, twice per week. Beneficiaries from Khayelitsha are escorted to the beach by Coaches between two and five times per week, since they live in walking distance.

The programme offers a minimum of two surfing sessions per week where the kids learn how to swim, catch waves and stand on the board. It also offers a Psychosocial Curriculum session every second week which is designed by a Child Therapist and draws

from Cognitive Behavioural Therapy and Humanistic Therapy. It consists of three units, each including three topics that are more precisely explained below. The Psychosocial Curriculum is held in the classroom in school or in the Waves for Change centre in Khayelitsha. It is delivered by the Coaches of the program. During the second of the two surfing sessions each a week, participants take part in a “teachable moment”. These exercises are designed to facilitate practicing skills, learned from the Psychosocial Curriculum and are delivered by Coaches, during the surfing session. “Teachable moments” try to use the anxiety and fear, experienced while learning to surf, to teach application of self-management skills. Coaches visit referral-teachers and primary caregivers every month to receive feedback about primary beneficiaries’ performances. This also gives opportunities for Coaches to answer questions and provide information about the programme.

Participation in the programme lasts 32 weeks. Participants are encouraged to complete the programme a second time which makes a total participation of 64 weeks. The main themes of the psychosocial curriculum are separated in three units (Waves for Change, 2015):

“Unit 1 (Week 1-11)

- Respecting ourselves and others
- Protecting ourselves and others
- Communicating with others and listening

Unit 2 (Week 12-24)

- Reconnecting with our feelings and the feelings of others
- Understanding feelings and coping with them
- Understanding who we are, building strengths, and setting goals.

Unit 3 (Week 25-32)

- Empathy, understanding and promoting mental and physical health.
- Understanding healthy and unhealthy spaces in our community

- Helping others and building the community”

(Waves for Change, Curriculum Map, 2015)

2 Research Questions and Aims

The study’s aim was to evaluate the Waves for Change surf therapy’s effect on the participant’s emotion regulation strategies. The goal was to find out whether the Waves for Change surf therapy program influences the use of adaptive and maladaptive emotion regulation strategies for negative emotions like anxiety, sadness or anger in a positive way. Regarding existing literature it can be assumed that the program has a positive effect on emotion regulation. Therefore, one tailored testing is applied.

Main Research Question: Do participants improve their emotion regulation skills after they attend the Waves for Change Surf Therapy for five months?

2.1 Research Question 1

Do participants use more often adaptive emotion regulation strategies after 5 months of Surf Therapy than they did before the therapy?

Main Effect 1:

$H_0(1)$: Participants use adaptive emotion regulation strategies less often than or equally frequent as they did before 5 months of therapy (FEEL-KJ).

$H_1(1)$: Participants use adaptive emotion regulation strategies more often after 5 months of therapy than they did before the therapy (FEEL-KJ).

2.2 Research Question 2

Do participants use less often maladaptive emotion regulation strategies after 5 months of Surf Therapy than they did before the therapy?

Main Effect 2:

$H_0(2)$: Participants use maladaptive emotion regulation strategies more often than or equally frequent as they did before 5 months of therapy (FEEL-KJ).

$H_1(2)$: Participants use maladaptive emotion regulation strategies less often than they did before 5 months of therapy (FEEL-KJ).

2.3 Research Question 3

Do emotion regulation skills still increase after 5 weeks of surf therapy?

Considering the fact that children and adolescents who keep coming to the program after the second five-month cycle are attending the Surf Therapy in bigger groups and less regularly (they can come every Saturday and no-one keeps track whether they are coming regularly or not), the author of this study postulates research question three as a non-directional hypothesis and two-tailed test.

$H_0(3.1)$: There is no difference in participants use of adaptive emotion regulation strategies between subjects of the group “Return Kids” and subjects of the group T2 (FEEL-KJ).

$H_1(3.1)$: There is a difference in participants use of adaptive emotion regulation strategies between subjects of the group “Return Kids” and subjects of the group T2 (FEEL-KJ).

$H_0(3.2)$: There is no difference in participants use of maladaptive emotion regulation strategies between subjects of the group “Return Kids” and subjects of the group T2 (FEEL-KJ).

$H_1(3.2)$: There is a difference in participants use of maladaptive emotion regulation strategies between subjects of the group “Return Kids” and subjects of the group T2 (FEEL-KJ).

3 Method

The study was implemented in a pre-post design, collecting pre- and post-intervention measures of participants’ use of emotion regulation strategies. Additionally, one ad-hoc testing was performed to collect data of an independent reference group of children that

already attended the program for more than one year to answer research question 3 (Is it reasonable that children attend the W4C program longer than 5 months?).

3.1 Participants

Participants attending the Waves for Change program in Cape Town are mostly between 10 and 14 years old. The exact number of participants as well as the demographic data was not known in advance, as the children were recruited only just before the program started. The aim was to include as many program participants as possible in the study.

Kids were recruited from the Township Lavenderhill. Their parents agreed on them attending the surf therapy program, held at Muizenberg Beach.

Finally, the study included 3 groups (Table 4 and 5): T1 (n = 39) was tested before they started with the therapy. T2 (n = 24) was tested after attending the surf therapy program for five months. Another group was tested (n = 61) that the author called “Return Kids”. These Kids already attended the Waves for Change Program for more than one year and came back after their big holidays from school to continue the program. This group did a one-shot testing. No baseline was collected for the group “Return Kids”. The subjects age range stretches between 9 and 20 years with an average age of 12,4 years. Three subjects had to be excluded because of not imputable missing data.

Table 4
Test Subjects divided into Gender and Groups

	Group			
	T1	T2	Return Kids	Total
Girls	9	8	5	22
Boys	30	16	56	102
Total	39	24	61	124

Table 5
Test Subjects Average Age divided into Groups

	Mean Age	N	Std. Deviation
T1	11,03	39	1,328
T2	11,88	24	1,424
Return Kids	13,52	61	2,566
Total	12,42	124	2,327

10 of the subjects of T1 also attended T2 (T1+T2: n = 10). This group of 10 subjects included 8 boys and 2 girls (m = 8; f = 2) with an age range from 10 to 14 years and an average age of 11,8 years.

Considered that 10 of the total cases are counted double as they were tested at T1 and T2 the total number of individuals tested was N = 111 (male: 91; female: 20) with an average age of 12,5 years.

3.2 Procedure

The overall duration of the study was five months as this is the length of the first cycle of the program. The baseline was collected in February, before the participants were attending a therapy session for the first time. After five months of participation in the therapy, there was a second testing just before the first cycle of the therapy ended.

The collection of the data was implemented through a group testing at the site of the program, Muizenberg beach. Limited resources were reason for the testing to be held outdoor on the meadow in front of the beach where the program took place later. The testing was performed by the author herself, a student from University of Cape Town and 4 surf coaches that were trained before.

Data collection of the group “Return Kids” was done at one time for all subjects. The subjects were split into 5 groups of 10 and one group of 11. Each group had one test administrator and was placed on the testing ground separately from the other groups to minimize distractions. To overcome possible reading difficulties the questionnaire was red to

the subjects by the test administrator without showing any emotions or triggers. After completing the questionnaire, the answer sheets were closed and collected by the test administrator in a way that no answers were visible.

Data of T1 was collected at the beginning of February during the time span of one week every day to reach as many kids as possible. Each day, Monday to Friday, there was a different group of about ten kids coming to the program. After the first week of program 39 kids were reached and filled in the questionnaire.

Five months later (end of June) just before the first cycle of the program ended and South Africa's big winter school holidays started, there was another data collection held on Muizenberg beach. During the time span of two weeks (to make sure to reach as many kids as possible again) the data collection was held each day from Monday to Friday before the program started. At the end of the two weeks 24 kids were reached.

3.3 Material

The data collection had to be kept as simple as possible, as the children's attention span is very short and their literacy levels are low. Therefore, only one questionnaire was used. *Fragebogen zur Erfassung der Emotionsregulation bei Kindern und Jugendlichen (FEEL-KJ; Grob & Smolenski, 2005)*: This questionnaire was originally developed and validated in German. It provides a multidimensional elicitation of the emotion regulation strategies available for the emotions anxiety, sadness and anger in Children and adolescents between 10 and 20 years. Apart from the categories „adaptive“ and „maladaptive“ strategies, the test also gathers tendencies concerning the expression of feelings, emotional control and the demand of social support.

The questionnaire consists of 30 different questions edited for each of the three emotions (anxiety, sadness and anger). Each emotion is covered in a separate section. Before each section the relevant emotion is explained by giving various situations in which an emotion might occur within a person to ensure the children can emphasize with the feeling.

This explanation is followed by the words: “Here you find examples of things that children and teenagers might do when they are angry/scared/sad (depending on the section). We are interested in what you do when you feel angry/scared/sad. Please put a cross in the box that fits best.”

The internal consistency of all 15 strategies is between $.69 \leq \alpha \leq .91$ across all three emotions (anxiety, sadness and anger). Adaptive strategies across all three emotions show $\alpha = .93$. Internal consistency of adaptive strategies specific to each emotion shows „sadness“ $\alpha = .88$, „anxiety“ $\alpha = .83$ and „anger“ $\alpha = .83$. Maladaptive strategies show $\alpha = .82$ across all three emotions and specific to each emotion the internal consistency displays „sadness“ $\alpha = .66$, „anxiety“ $\alpha = .59$ and „anger“ $\alpha = .58$. Intercorrelations across all three emotions indicate great discriminant validity for most of the strategies and therefore suggest independence of all 15 scales. An individual raw value of a person accomplishing the test is less than $T = 40$ for adaptive strategies indicates a below-average score and hints at a potential deficiency in adaptive emotion regulation strategies. Regarding raw values for maladaptive strategies of more than $T = 60$ means an above-average score and therefore dysfunctional use of these maladaptive strategies.

An English version of the questionnaire was used, translated by two independent translators and verified according to coherence.

In addition to the English translation, there were two adaptations of the questionnaire conducted to provide a better understanding of the three emotions, subjects were confronted with in the questionnaire, as well as of the Likert-scale on the answer sheet.

3.3.1 Dino Pictures

Kurt Madoerin and Glynis Clacherty developed a manual with participatory evaluation tools for monitoring and measuring the impact of psychosocial support programmes for children aged 6 to 18 (*A manual for practitioners; Madoerin & Clacherty, 2003*).

The authors claim, when measuring the emotional impact of a program for children adolescents it is necessary to talk with them about feelings. Emotions or feelings are an abstract idea that children sometimes find hard to articulate. In many languages, there are only very few words to describe feelings. The authors have found that using a set of pictures helps children to articulate their feelings. Therefore, they developed a set of pictures of a dinosaur in various emotional states.

The author therefore included Kurt Madoerin and Glynis Clacherty findings in the method of this study. Before starting with a new emotion, the test administrator showed a picture of the relevant dinosaur representing the emotion covered in the following section and asked the children: “How does this dinosaur look like?” The administrator waited until the kids gave a right answer and then continues as described in the manual with an explanation of situations in which the relevant emotion might occur within a person and the introductory words for the questions as in the original manual (see above) (*FEEL-KJ*; Grob & Smolenski, 2005). Then the questions were read to the subjects as explained above, keeping the picture of the dinosaur showing the appropriate emotion up so the participants could see it while answering the questions.

3.3.2 Visual support of the Likert-scale

Following the findings of Kurt Madoerin and Glynis Clacherty, children and adolescents addressed with a social program like Waves for Change often have difficulties understanding indications of quantities given by words. Therefore, they developed a pictorial Likert-scale (*A manual for practitioners*; Madoerin & Clacherty, 2003) that was added underneath the usual words of the *FEEL-KJ* questionnaire’s Likert-scale on the answer sheet

(Figure 1). The Likert-scale gave five options: almost never, rarely, sometimes, often, and almost always and each word was supported by the matching graphic.

	almost never	rarely	sometimes	often	almost always
					
1.					
2.					
3.					

Figure 1. *Adapted five-stage Likert-scale of the FEEL-KJ Questionnaire.*

3.4 Statistical Analysis

To test hypotheses for Research question 1 and 2, paired-samples *t*-tests for dependent samples were used. The dependent samples were collected at two different testing points from the same participants (at the beginning of the therapy and after 5 months).

The paired-samples *t*-test assumes that the sampling distribution is normal. Because of the small sample size of sample T1 and T2 ($n = 10$) the normal distribution had to be checked by computing the differences between scores and then checking if this new variable is normally distributed. The normal distribution was tested and can be assumed.

For research question 3 the normal distribution of sample T2 was tested and can be assumed. Normal distribution for sample T1 and sample “Return Kids” can be assumed because both include more than 30 subjects ($n \geq 30$).

The *t*-test for independent samples was used to test if subjects of the sample “Return Kids” show more adaptive and less maladaptive emotion regulation compared to subjects of sample T2.

4 Results

Research Question 1:

Do participants use more often or more adaptive emotion regulation strategies after 5 months of Surf therapy than they did before the therapy? The paired-samples *t*-test (T1: $M =$

161,6; SD = 29,35; T2: M = 156,2; SD = 22,75) shows that participants' scores for adaptive emotion-regulation strategies did not raise significantly after five months of attending the program ($p = .552$) (Table 6).

Table 6

Paired Sample Test for T1 and T2 for Adaptive Strategies and Maladaptive Strategies.

Paired Differences between T1 and T2								
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Adaptive Strategies	5,4	27,65	8,74	- 14,38	25,18	0,618	9	,552
Maladaptive Strategies	5	16,66	5,27	- 6 ,92	16,92	0,949	9	,368

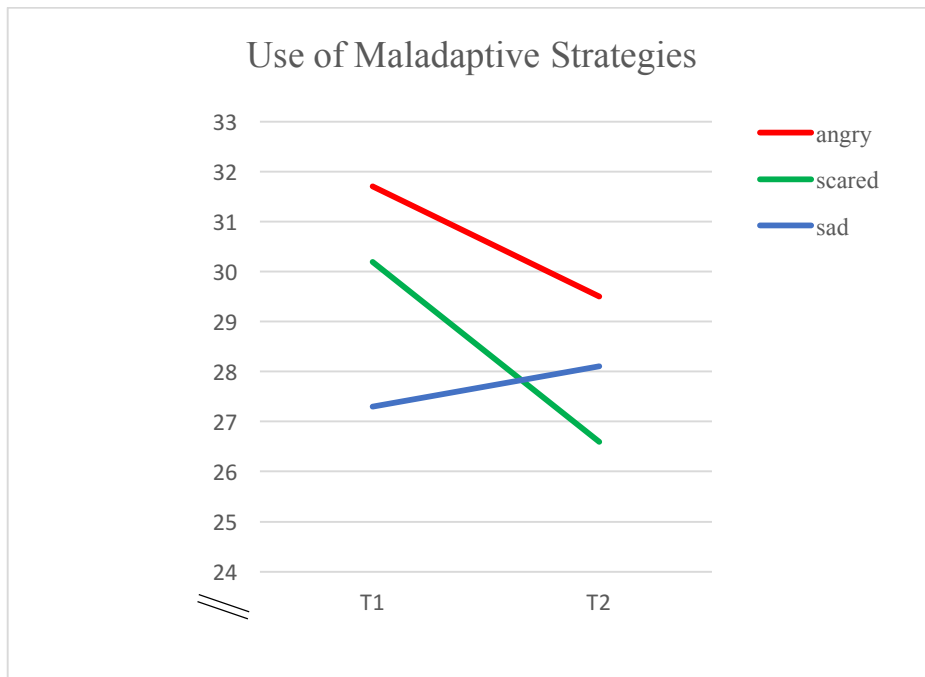
Note. Use of Adaptive Strategies was summed up for all 3 Emotions tested. The same was done for Maladaptive Strategies.

Research Question 2:

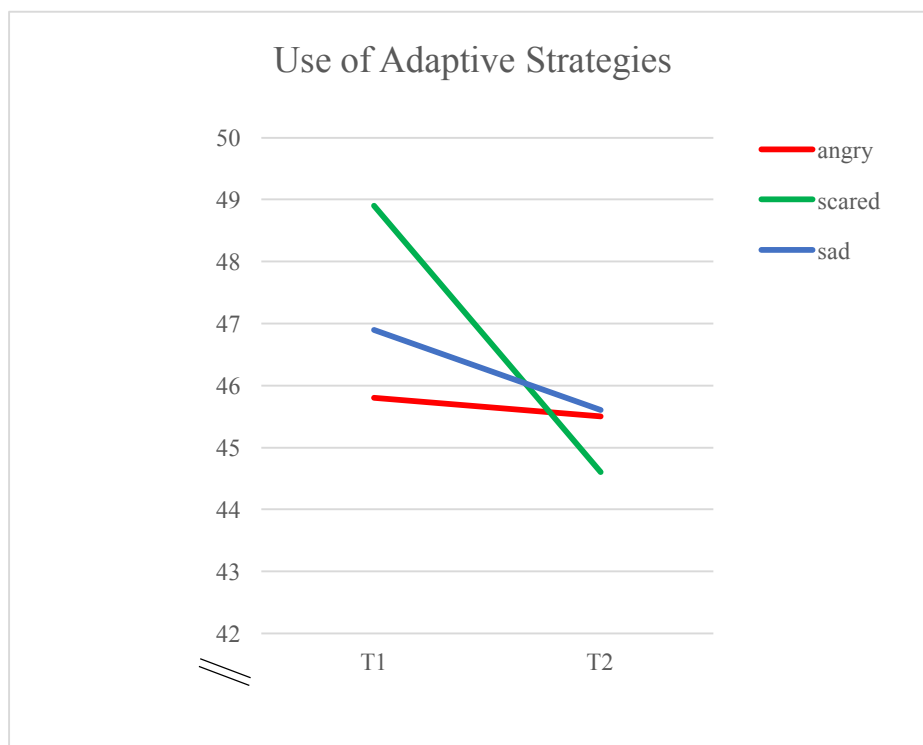
Do participants use less often or less maladaptive emotion regulation strategies after 5 months of Surf therapy than they did before the therapy? The paired-samples *t*-test (T1: M = 89,2; SD =11,8; T2: M = 84,2; SD =14,32) shows that participants' scores of maladaptive emotion-regulation strategies did not decrease significantly after five months of attending the program ($p = .368$) (Table 6).

Looking at the results of the paired sample tests of both, adaptive and maladaptive emotion-regulation strategies for all three examined emotions (anxiety, anger, sadness), there is no evidence that the Waves for Change Surf Therapy Program is improving emotion regulation skills after five months of attending the program.

The questionnaire (*FEEL-KJ*; Grob & Smolenski, 2005) addresses three different emotional states. Therefore, it is reasonable to look at the results for each emotion separately (Graph 1 and Graph 2).



Graph 1. Line chart: Use of Maladaptive Strategies before (T1) and after (T2) five months of Surf Therapy.



Graph 2. Line chart: Use of Adaptive Strategies before (T1) and after (T2) five months of Surf Therapy.

Applying one-tailed paired-samples *t*-test for each emotional state separately shows that maladaptive emotion-regulation strategies for anxiety (being scared) decreased significantly after five-months attendance of W4C Program ($p = .08/2 = .04$) (Table 7 and

Table 8). The two other emotions (sadness and anger) did not show any significant changes (Table 7 and Table 8). Adaptive emotion-regulation strategies did not show any significant changes when analysed separately for each emotional state (Table 9 and Table 10).

Table 7

Paired Sample Statistics between T1 and T2 for Use of Maladaptive Strategies depending on Emotion

Paired Samples Statistics of T1 and T2				
		Mean	Std. Deviation	Std. Error Mean
Angry	T1	31,7	4,11	1,3
	T2	29,5	3,89	1,23
Scared	T1	30,2	4,29	1,36
	T2	26,6	6,76	2,14
Sad	T1	27,3	6,22	1,97
	T2	28,1	5,07	1,6

Note. Use of all Maladaptive Strategies was summed up for each Emotion separately. (n=10)

Table 8

Paired Sample Test for T1 and T2 for Maladaptive Strategies each Emotion separate.

Paired Differences between T1 and T2								
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Angry	2,2	7,3	2,31	- 3,02	7,42	0,95	9	,365
Scared	3,6	5,83	1,85	- 0,57	7,77	1,95	9	,083
Sad	- 0,8	5,41	1,71	- 4,67	3,07	-0,47	9	,651

Note. Use of all Maladaptive Strategies was summed up for each Emotion separately. (n=10)

Table 9

Paired Sample Statistics between T1 and T2 for Use of Adaptive Strategies depending on Emotion

Paired Samples Statistics of T1 and T2				
		Mean	Std. Deviation	Std. Error Mean
Angry	T1	45,8	9,77	3,09
	T2	45,5	5,76	1,82
Scared	T1	48,9	9,83	3,11
	T2	44,6	9,77	3,03
Sad	T1	46,9	7,89	2,5
	T2	45,6	7,12	2,25

Note. Use of all Maladaptive Strategies was summed up for each Emotion separately. (n=10)

Table 10

Paired Sample Test for T1 and T2 for Adaptive Strategies each Emotion separate.

Paired Differences between T1 and T2								
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Angry	0,3	9,41	2,97	- 6,42	7,03	0,1	9	,922
Scared	4,3	11,75	3,72	- 4,11	12,71	1,16	9	,277
Sad	1,3	8,84	2,8	- 5,03	7,63	0,47	9	,653

Note. Use of all Maladaptive Strategies was summed up for each Emotion separately. (n=10)

Looking at the various strategies that are covered in the questionnaire separately, the research shows a significant usage decrease of the specific maladaptive strategy “perseveration” after five months of W4C Surf therapy (Table 11 and Table 12).

Perseveration is covered by item 10 and 24:

Item 10: When I am angry/sad/scared, I keep thinking about why I am angry/sad/scared.

Item 24: When I am angry/sad/scared it just does not get out of my head.

Regarding the other emotion-regulation strategies, maladaptive (Table 11 and Table 12) and adaptive (Table 13 and Table 14) strategies, there are no significant changes shown in the research.

Table 11

Paired Sample Statistics between T1 and T2 for Use of Maladaptive Strategies all Emotions taken together.

Paired Samples Statistics of T1 and T2				
		Mean	Std. Deviation	Std. Error Mean
Giving Up	T1	18,6	3,8	1,2
	T2	17,7	2,7	0,86
Aggressive Behaviour	T1	14	3,53	1,12
	T2	14,3	5,2	1,65
Withdrawal	T1	17,3	4,52	1,43
	T2	16,4	4	1,27
Self-devaluation	T1	17,8	3,49	1,1
	T2	18,3	5,4	1,7
Perseveration	T1	21,5	2,01	0,64
	T2	17,5	2,76	0,87

Note. Use of Maladaptive Strategies was summed up for all Emotions together for each Maladaptive Strategy separately (n=10).

Table 12

Paired Sample Test for T1 and T2 for Maladaptive Strategies, all Emotions together.

Paired Differences between T1 and T2								
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Giving Up	0,9	5,24	1,66	- 2,85	4,65	0,54	9	,600
Aggressive Behaviour	- 0,3	4,64	1,47	- 3,62	3,02	- 0,20	9	,843
Withdrawal	0,9	5,5	1,74	- 3,03	4,84	0,52	9	,618
Self-devaluation	- 0,5	5,87	1,86	- 4,7	3,7	- 0,27	9	,794
Perseveration	4	2,79	0,88	2	6	4,54	9	,001

Note. Use of Maladaptive Strategies was summed up for all Emotions taken together for each Maladaptive Strategy separately (n=10).

Table 13

Group Statistics for T1 and T2 for Use of Adaptive Strategies all Emotions taken together.

Paired Samples Statistics of T1 and T2				
		Mean	Std. Deviation	Std. Error Mean
Problem-orientated	T1	20	4,74	1,5
Acting	T2	20,5	3,75	1,18
Dispersion	T1	21,5	4,67	1,48
	T2	20,6	3,4	1,08
Lifting the Mood	T1	20,2	5,33	1,68
	T2	18,4	2,87	0,91
Accepting	T1	18,4	4,22	1,33
	T2	18,4	3,63	1,15
Forgetting	T1	20,7	4,76	1,5
	T2	19,5	4,22	1,33
Cognitive Problem Solving	T1	21,2	3,7	1,17
	T2	19,3	3,3	1,04
Revaluation	T1	19,6	4,38	1,38
	T2	18	3,5	1,10

Note. Use of Adaptive Strategies was summed up for all Emotions together for each Adaptive Strategy separately (n =10).

Table 14
Independent Sample Test for T1 and T2 for each Adaptive Strategy separately for all Emotions together.

Paired Differences between T1 and T2							
			95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Lower	Upper	t	df	Sig. (2-tailed)
Problem-orientated	- 0,5	1,17	- 2,82	1,8	- 0,43	82	,670
Acting							
Dispersion	0,02	0,88	- 3,17	1,77	0,02	82	,985
Lifting the Mood	1,38	0,99	- 0,59	3,37	1,4	82	,165
Accepting	- 0,46	1,01	- 2,47	1,56	- 0,45	82	,652
Forgetting	- 0,4	0,94	- 2,28	1,48	- 0,42		,673
Cognitive	- 1,5	0,96	- 3,42	0,42	- 1,55		,124
Problem Solving							
Revaluation	- 1,72	1,01	- 3,74	0,29	- 1,7	82	,093

Note. Use of Adaptive Strategies was summed up for all Emotions together, for each Adaptive Strategy separately (n =10).

Research Question 3

Is it reasonable that children attend the W4C program longer than 5 months? The *t*-test for independent samples shows no significant differences between T2 and “Return Kids” regarding maladaptive emotion regulation strategies for the three emotions (anger, anxiety, sadness) observed together (Table 15).

Table 15

Independent Sample Test for T2 (n = 24) and Return Kids (n = 60) for all Maladaptive Strategies and all Emotions.

Independent Sample Test between T2 and Return Kids							
	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
			Lower	Upper			
Use of Maladaptive Strategies T2 vs. Return Kids	- 6,15	4,27	- 14,64	2,34	- 1,44	9	,404

Note. T2 ($M = 81.58$); Return Kids ($M = 87.73$); Levene's Test for Equality of Variances was not significant ($p = .404$) therefore Equality of Variances can be assumed.

Regarding adaptive emotion regulation skills for anxiety, anger and sadness taken together, there are no significant differences between T2 and "Return Kids" shown in the t -test for independent samples (Table 16).

Table 16

Independent Sample Test for T2 (n = 24) and Return Kids (n = 60) for all Adaptive Strategies and all Emotions.

Independent Sample Test between T2 and Return Kids							
	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
			Lower	Upper			
Use of Adaptive Strategies T2 vs. Return Kids	- 3,28	6,4	- 16,02	9,47	- 0,51	83	,610

Note. T2 ($M = 144,46$); Return Kids ($M = 147,73$); Levene's Test for Equality of Variances was not significant ($p = .222$) therefore Equality of Variances can be assumed.

Looking at anxiety, anger and sadness separately, there is no significant change in use of maladaptive (Table 17 and Table 18) or adaptive (Table 19 and Table 20) emotion-regulation skills for any of the three emotions within "Return Kids" compared to T2.

Table 17

Group Statistics for T2 (n = 24) and Return Kids (n = 60) for Use of Maladaptive Strategies depending on Emotion

Paired Samples Statistics of T2 and Return Kids				
		Mean	Std. Deviation	Std. Error Mean
Angry	T2	28	5,88	1,2
	Return Kids	29,38	6,28	0,81
Scared	T2	25,54	6,03	1,23
	Return Kids	28,9	7,63	0,98
Sad	T2	28,08	6,39	1,3
	Return Kids	29,5	7,29	0,94

Note. Use of all Maladaptive Strategies were summed up for each Emotion separately.

Table 18

Independent Sample Test for T2 (n = 24) and Return Kids (n = 60) for Maladaptive Strategies each Emotion separate.

Independent Sample Test between T2 and Return Kids							
			95% Confidence Interval of the Difference				
	Mean Difference	Std. Error Difference	Lower	Upper	t	df	Sig. (2-tailed)
Angry	- 1,43	1,5	- 4,39	1,54	- 0,96	82	,342
Scared	- 3,31	1,74	- 6,78	0,16	- 1,9	82	,061
Sad	- 1,42	1,7	- 4,8	1,97	- 0,83	82	,408

Note. Use of all Maladaptive Strategies was summed up for each Emotion separately. Levene's Test for Equality of Variances was not significant for any of the Emotions therefore, Equality of Variances can be assumed.

Table 19

Group Statistics for T2 (n = 24) and Return Kids (n = 60) for Use of Adaptive Strategies depending on Emotion

Paired Samples Statistics of T2 and Return Kids				
		Mean	Std. Deviation	Std. Error Mean
Angry	T2	42,92	7,59	1,55
	Return Kids	43,48	8,07	1,04
Scared	T2	42,5	10,49	2,14
	Return Kids	43,13	8,29	1,07
Sad	T2	41,38	9,24	1,89
	Return Kids	43,35	8,54	1,1

Note. Use of all Maladaptive Strategies were summed up for each Emotion separately.

Table 20

Independent Sample Test for T2 (n = 24) and Return Kids (n = 60) for Adaptive Strategies each Emotion separate.

Independent Sample Test between T2 and Return Kids							
			95% Confidence Interval of the Difference				
	Mean Difference	Std. Error Difference	Lower	Upper	t	df	Sig. (2-tailed)
Angry	– 0,57	1,9	– 4,38	3,25	– 0,3	82	,768
Scared	– 0,63	2,16	– 4,94	3,67	– 0,29	82	,771
Sad	– 1,98	2,11	– 6,17	2,22	– 0,94	82	,352

Note. Use of all Maladaptive Strategies was summed up for each Emotion separately. Levene's Test for Equality of Variances was not significant for any of the Emotions therefore, Equality of Variances can be assumed.

Analysing each strategy separately but for all three emotions together the results show a significant increase of aggressive behaviour in the group "Return Kids" compared to T2 (Table 21 and Table 22). Results do not show any differences regarding adaptive strategies (Table 23 and Table 24).

Table 21

Group Statistics for T2 (n = 24) and Return Kids (n = 60) for Use of Maladaptive Strategies all Emotions taken together.

Paired Samples Statistics of T2 and Return Kids				
		Mean	Std. Deviation	Std. Error Mean
Giving Up	T2	18,13	4,69	0,96
	Return Kids	17,95	4,23	0,55
Aggressive Behaviour	T2	13,75	5,1	1,04
	Return Kids	17,33	5,89	0,76
Withdrawal	T2	15,75	4,51	0,92
	Return Kids	16,75	4,48	0,58
Self-devaluation	T2	16,33	4,79	0,98
	Return Kids	16,43	4,39	0,57
Perseveration	T2	17,63	3,51	0,72
	Return Kids	18,27	3,8	0,49

Note. Use of Maladaptive Strategies was summed up for all Emotions together for each Maladaptive Strategy separately.

Table 22

Independent Sample Test for T2 (n = 24) and Return Kids (n = 60) for each Maladaptive Strategy separately for all Emotions together.

Paired Differences between T2 and Return Kids							
			95% Confidence Interval of the Difference				
	Mean Difference	Std. Error Difference	Lower	Upper	t	df	Sig. (2-tailed)
Giving Up	0,18	1,05	- 1,92	2,27	0,166	82	,869
Aggressive Behaviour	- 3,58	1,37	- 6,31	- 0,85	- 2,61	82	,011
Withdrawal	- 2	1,08	- 4,16	0,16	- 1,845	82	,069
Self-devaluation	- 0,1	1,09	- 2,26	2,06	- 0,092	82	,927
Perseveration	- 0,64	0,9	- 2,39	1,15	- 0,714	82	,477

Note. Use of Maladaptive Strategies was summed up for all Emotions together, for each Maladaptive Strategy separately.

Table 23

Group Statistics for T2 (n = 24) and Return Kids (n = 60) for Use of Adaptive Strategies for each Adaptive Strategy separately for all Emotions together.

Paired Samples Statistics of T2 and Return Kids				
		Mean	Std. Deviation	Std. Error Mean
Problem-orientated Acting	T2	17,67	5,80	1,19
	Return Kids	18,17	4,4	0,57
Dispersion	T2	19,67	4,14	0,84
	Return Kids	19,65	3,45	0,45
Lifting the Mood	T2	20,13	4,33	0,88
	Return Kids	18,73	4,03	0,52
Accepting	T2	17,29	4,16	0,85
	Return Kids	17,75	4,21	0,54
Forgetting	T2	18,08	3,6	0,73
	Return Kids	18,48	4,03	0,52
Cognitive Problem Solving	T2	17,17	5,11	1,04
	Return Kids	18,67	3,46	0,45
Revaluation	T2	16,79	4,87	0,99
	Return Kids	18,52	3,91	0,51

Note. Use of Adaptive Strategies was summed up for all Emotions together for each Adaptive Strategy separately.

Table 24

Independent Sample Test for T2 (n = 24) and Return Kids (n = 60) for each Adaptive Strategy separately for all Emotions together.

Paired Differences between T2 and Return Kids								
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
Problem-orientated Acting	– 0,5	5,17	1,63	– 4,2	3,2	– 0,306	9	,767
Dispersion	0,9	5,88	1,86	– 3,3	5,1	0,484	9	,640
Lifting the Mood	0,8	5,00	1,58	– 2,78	4,38	0,505	9	,025
Accepting	0,00	3,94	1,25	– 2,82	2,82	0,000	9	1,000
Forgetting	1,2	5,64	1,47	– 2,11	4,52	0,818	9	,434
Cognitive Problem Solving	1,9	3,21	1,01	– 0,4	4,2	1,870	9	,094
Revaluation	1,6	6,64	2,1	– 3,15	6,35	0,762	9	,465

Note. Use of Adaptive Strategies was summed up for all Emotions together, for each Adaptive Strategy separately.

5 Discussion

5.1 Research Question 1

The research's results don't show a significantly increased use of adaptive emotion-regulation skills after participating in the Waves for Change Surf-therapy program for five months. Several reasons could explain why there was no significant improvement found in the study.

First, the size of the observed group (n=10) might have been too small to detect an impact of the program.

Second, according to Kurt Madoerin and Glynis Clacherty a child needs to attend a program for at least two years until a measurable impact on the child's life can take place (*A manual for practitioners; Madoerin & Clacherty, 2003*). The five-months cycle of W4C

might be too short, even though it is repeated in the second semester of the school year which in total makes 10 months of therapy. There might be requirements to extend the 5-month cycle of the program to 10 months and then establish the topics of the program by intensifying and deepening them in the second year. There might also be need for intensifying the emotion regulation skills training and put more focus on training adaptive strategies to cope with negative emotions.

Finally, trust of the children into the coaches and program might have played a factor. According to Lana Rolfe, the head of research of the W4C Program at the time, there has been research about the participants' honesty regarding answering research questions. They found out that previous research about the programs impact did not show any improvements because the children only became honest about their feelings and actions after attending the program for a while. Therefore, pre-post analysis could not show a positive impact because participants embellished their answers at the first testing point and gave sincere and more reflected answers at the second testing. So instead of improvement, the results showed constancy or even changes for the worse. This stands in line with some of the not significant results in this study as shown in the tables above (4. Results). Looking at some of the results, the means show decreases in adaptive strategies (e.g. dispersal, increasing good mood, forgetting, cognitive problem solving, re-evaluation) and increases in maladaptive strategies (e.g. self-devaluation) although the changes were not significant.

5.2 Research Question 2

The results give the impression that Waves for Change Surf therapy has a positive impact on coping with anxiety. Given the fact that most of the children and adolescence in communities like Lavenderhill are facing fear, threat and anxiety regularly in their everyday lives (Benjamin & Crawford-Browne, 2010; Williams, 2007) anxiety might be one of the most important emotions to deal with. Use of maladaptive strategies to regulate fear decreased significantly after attending the program. The author suggests two possible reasons for this

decrease: 1) Children actually learn how to deal with anxiety in other or better ways. 2) Children feel less anxious in general due to the new “safe space” that was facilitated through the program and therefore they need to use these maladaptive strategies less often. In both ways, it can be assumed that W4C Program has a positive impact on the participants regardless of the reason behind the decrease.

Looking at the strategies in detail, results show a significant decrease of perseveration. Surfing might be the reason for children to stop thinking about their fears. This stands in line with research by Chilton (2013) and Riva et al., (2016). They suggested that flow experiences caused by physical activities and sports directs the focus away from the patients’ health problems and symptoms of PTSD. It fades out worries about illness for the duration of the activity and contributes to a positive self-concept and subjective control. Considering the fact, that participants of the W4C Program spend a couple of hours per week playing in the ocean, focusing on the waves that approach the shore constantly without a break, concentrating on their surfboards, stability and movements, one can suggest that there is no time for them to think about problems at home, school or in their communities. At least for these couple of hours a week, that they spend in the ocean, they can rest from rumination and perseveration. The ocean’s natural power might help earning new perspectives on their problems and lives.

All other measured emotion-regulation strategies did not show any significant changes after five months of therapy. Despite that there actually might not have been any other improvements in emotion regulation, these results again could also derive from the small size of the research group ($n = 10$) that might have hindered to detect improvements or from the gained trust mentioned above.

5.3 Research Question 3

For research question 3 the results show no significant differences of neither adaptive nor maladaptive emotion regulation strategies, observing all three emotions together, between

T2 and “Return Kids”. These results don’t show that it is reasonable for kids to stay in the program for longer than five months.

However, there is a significant ($p = .011$) higher usage of the maladaptive strategy “aggressive behaviour” in response to anxiety, anger and sadness in the group “Return Kids” compared to T2. The result was checked for outliers and there were no outliers found. This result can have different reasons. First, the testing took place after the big school holidays (three months). During that time the kids didn’t attend in the program. Not attending in the program for such a long time might cause them to fall back into old behaviour patterns thus raising their aggressive response to negative emotions. This assumption supports the need for children and adolescents to continue attending the program after the second five-months cycle.

Another reason for more aggressive behaviour in response to negative emotions might be a lack of skills training and counselling after the second cycle of the program. Kids are still coming to the program every Saturday if they want to. The curriculum however is scaled down to surfing and breathing exercises for this group of kids. Also, the size of the group is a lot bigger so the individual contact with each kid cannot be detained in the same intensity like in smaller groups. Perseveration might stay low due to the regular time in the water but there is less skills training (only breathing exercises) that empowers and reminds the children of possible reactions to their negative emotions other than aggressive behaviour. These findings suggest to provide more training possibilities for kids that continue coming to the program and to focus on keeping their aggressive behaviour down.

5.4 Additional considerations

Looking at Graph number 1 and 2 it is noticeable that, even though results are not significant, all the lines, except the one that shows use of maladaptive strategies responding to sadness, go down from T1 to T2. This would stand for a decrease in all maladaptive and adaptive emotion-regulation strategies (excluding maladaptive strategies for sadness) after

five months of attending the W4C program. As mentioned above, the decrease of adaptive strategies might derive from gaining trust and therefore being more honest in answering the questions. However, another conclusion could be a response bias. As mentioned briefly above (5.2), due to the surf therapy program kids might feel less anxious, angry or sad and therefore need to use less emotion regulation skills in their everyday lives. There is no reason to exclude the chance that less occurrence of negative emotions effect the answers in the questionnaire and therefore cause lower scores in all the strategies given in the questionnaire. Maybe less occurrence of situations with a negative emotional state also leads to less presence of these situations in memory and therefore makes it harder to judge their response to these emotions in the test situation.

Obviously, the context in which these children live, the challenges they face in their everyday life, and the violence they experience in their communities do not disappear because they attend the surf-therapy program, but maybe the way they face these problems changes due to their new skills and gained self-confidence.

6 Limitations

During the last weeks of the first circle of the surf-therapy programme, Lavenderhill and other Townships were undergoing increased gang-fights. Minibuses were targeted and blown up by criminals. These extreme circumstances impeded participants' transport to the therapy severely because they were normally picked up from school by minibuses and brought to the beach. Attendance in the program dropped a lot during that time and may have reduced success of the therapy. This reduced attendance also caused a high drop out of participants at T2 compared to T1.

Due to a lack of recourses data collection had to be held outside. Therefore, distraction by various factors could not be eliminated completely. Sun, wind and noise as well as fellow participants were a source of disruption and disturbance.

Test coordinators were trained before testing to ensure test administrator independence. However, there cannot be fully assured that personality of coaches that carried out the questioning did not influence participants' responses.

FEEL-KJ Questionnaire is a German measurement developed for Western European children. South African's children and especially children from Townships around Cape Town derive from a distinct culture and live in a different environment than Western European children and adolescents. Therefore, they might have a distinct way of emotional experiences and reactions. Furthermore, it should be considered that languages can differ strongly in terms of emotional expressions and vocabulary. The Sapir-Whorf hypothesis postulates, language helps to structure thoughts. Responses in a test of a bilingual person differ depending on the language the psychological test is constructed in (Abel & Kandel, 1998; Ervin, 1964; Hull, 1987; Matsumoto & Assar, 1992).

Participant's mother tongue is Xhosa and rank among the Niger-Congo language family. Children in South Africa grow up with English as a second language because it is South Africa's' lingua franca, the language of commerce and science and serves as a bridge language to enable communication in a country with 11 official languages. FEEL-KJ (*FEEL-KJ*; Grob & Smolenski, 2005) is originally constructed in German and was translated into English for this research. It was translated by two independent native English speakers and translators. There was no validation done after the translation.

Finally, considering that the target group's attention span is known to be very short it can be suggested to find a way of gathering information using a shorter measuring tool for future research.

7 Conclusion

The present study aimed to find out whether the Waves for Change Surf Therapy Program influences participants Emotion Regulation in a positive way. Results were

ambiguous and do not allow a clear statement about a general effect of the therapy on Emotion Regulation. What can be concluded is that after five-months attendance in the W4C Program, maladaptive emotion-regulation strategies for anxiety decreased significantly (Table 7 and Table 8). Furthermore, a significant usage decrease of the specific maladaptive strategy “perseveration” could be measured (Table 11 and Table 12).

The study also aimed to find out whether it is reasonable that children attend the W4C program longer than 5 months. This Question could not be fully answered by the study. Results show significant higher aggressive behaviour within those kids that completed the second cycle of the program and returned after three months of school brake (“Return Kids”), compared to children that just finished the first cycle (5 months) of the program (Table 21 and Table 22). As clarified above in 5.3 these findings suggest to provide more skills training possibilities for kids that continue coming to the program and to focus on helping to regulate their aggressive behaviour.

Future investigations should evaluate the long-term effects for participants that continue the program for more than two years.

The study’s findings stand in line with the results of many other investigations of sport and especially surf-therapies that support surfing as an economical and effective sports-plus program. The author finally stresses the importance of a carefully considered combination of regular surfing lessons, psychological treatment and skills training over a timespan of at least two years, to ensure improvements for participants.

8 References

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9 List of Figures

Figure 1. Adapted five-stage Likert-scale of the FEEL-KJ Questionnaire.. **Fehler! Textmarke nicht definiert.**

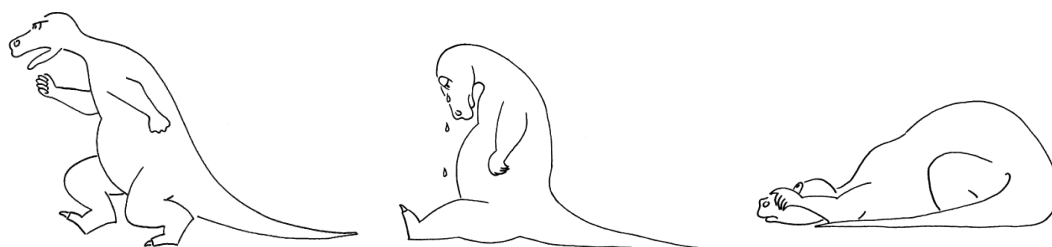
10 List of Graphs

Graph 1. Line chart: Use of Maladaptive Strategies before (T1) and after (T2) five months of Surf Therapy. 52

Graph 2. Line chart: Use of Adaptive Strategies before (T1) and after (T2) five months of Surf Therapy. 52

11 Appendix

A) Dino Pictures: Angry, Sad, Scared



B) Questionnaire red by Test-Instructor

Feel-KJ Questionnaire

All people feel sad, angry or scared sometimes. How do you deal with these feelings?

In this questionnaire we want to ask you, what you think or do when you are sad, angry, or when you are in a situation that makes you feel scared.

What is your name (name and surname)?

What is your birthday (month and year)?

I am... ☐ a girl ☐ a boy

You will hear a list of things that children and teenagers do when they are angry. We are interested in what you do when you feel angry. Please put a cross in the square that suits you most.

Example:

WHEN I AM ANGRY...

	almost never	rarely	sometimes	often	almost always
1. I curse to myself (not out loud)					

Please answer the questions you are going to hear, the way that feels right to you. This is not a test and **there are no right or wrong answers**. Remember to answer all the questions. You can ask questions about anything at all times, if there is something that you do not understand.

It is very important that you answer the questions honestly and the way that feels right to you!

Everyone gets angry from time to time. There are many reasons why you could feel angry. You might get angry about your parents, if they forbid something, or about other children and teenagers, if they are offensive or they hurt you. But you might also get angry at yourself, if you fail at something that seemed easy.

Here you find examples of things that children and teenagers might do when they are angry. We are interested in what YOU do when you feel angry. Please put a cross in the box that fits best.

WHEN I AM ANGRY....

1. I try to change the thing that makes me angry
2. I tell someone, how I feel
3. I think about things that make me happy
4. I do something that I enjoy
5. I keep my feelings to myself
6. I make the best out of it
7. I don't want to see anyone
8. I think that it is my own problem
9. I don't want to do anything anymore
10. I keep thinking about why I am angry
11. I think about what I could do about it
12. I tell myself that the problem is not so bad
13. I start a fight with others
14. I express my anger
15. I try to forget what makes me angry
16. I blame myself for the problem first
17. I remember happy things
18. I try to make the best out of the situation by myself
19. I go to someone that might be able to help me
20. I think that it will pass
21. I accept what is making me angry
22. I show openly that I am angry
23. I let out my feelings on other people
24. It just does not get out of my head
25. I try to be alone
26. I try not to show that I am angry
27. I do something that I enjoy
28. I think about how I could solve the problem
29. I tell myself it is not important
30. I cannot do anything against my anger anyways.

Everyone gets scared sometimes. There are situations that can make anyone feel scared. You can feel scared when you are alone, at night, or of an animal and sometimes even of other people. When you feel scared, you might also feel tensed, nervous, or insecure.

Here you find examples, what children and teenagers might do when they are scared. We are interested in what YOU do when you feel scared.

Please put a cross in the box that fits best.

WHEN I AM SCARED...

1. I try to change the thing that makes me scared
2. I tell someone, how I feel
3. I think about things that make me happy
4. I do something that I enjoy
5. I keep my feelings to myself
6. I make the best out of it
7. I don't want to see anyone
8. I think that it is my own problem
9. I don't want to do anything anymore
10. I keep thinking about why I am scared
11. I think about what I could do about it
12. I tell myself that the problem is not so bad
13. I start a fight with others
14. I express my fear
15. I try to forget what makes me scared
16. I blame myself for the problem first
17. I remember happy things
18. I try to make the best out of the situation by myself
19. I go to someone that might be able to help me
20. I think that it will pass
21. I accept what is making me scared
22. I show openly that I am scared
23. I let out my feelings on other people
24. It just does not get out of my head
25. I try to be alone
26. I try not to show that I am scared
27. I do something that I enjoy
28. I think about how I could solve the problem
29. I tell myself it is not important
30. I cannot do anything against my fear anyways.

Everyone gets sad sometimes. There are situations that can make you feel sad. For example when a pet or another person that was important and loved, dies, or when an exam goes wrong, or when parents and teachers are unfair to you or a friend is mean to you. These are moments in which you might feel sad.

Here you find examples, what children and teenagers might do when they are sad. We are interested in what YOU do when you feel sad. Please put a cross in the box that fits best.

WHEN I AM SAD...

1. I try to change the thing that makes me sad
2. I tell someone, how I feel
3. I think about things that make me happy
4. I do something that I enjoy
5. I keep my feelings to myself
6. I make the best out of it
7. I don't want to see anyone
8. I think that it is my own problem
9. I don't want to do anything anymore
10. I keep thinking about why I am sad
11. I think about what I could do about it
12. I tell myself that the problem is not so bad
13. I start a fight with others
14. I express my sadness
15. I try to forget what makes me sad
16. I blame myself for the problem first
17. I remember happy things
18. I try to make the best out of the situation by myself
19. I go to someone that might be able to help me
20. I think that it will pass
21. I accept what is making me sad
22. I show openly that I am sad
23. I let out my feelings on other people
24. It just does not get out of my head
25. I try to be alone
26. I try not to show that I am sad
27. I do something that I enjoy
28. I think about how I could solve the problem
29. I tell myself it is not important
30. I cannot do anything against my sadness anyways.

You have finished the questionnaire!

Please look through it again one more time to check if you have really answered all the questions!

THANK YOU!

C) Answer sheet

FEEL-KJ QUESTIONNAIRE

Name:

Age:

I am...

☐

a boy

☐

a girl



T1: WHEN I AM ANGRY



NAME:

	almost never	rarely 	sometimes 	often 	almost always 
1.					
2.					
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29.					
30.					

T1: WHEN I AM SAD



NAME:

	almost never	rarely 	sometimes 	often 	almost always 
1.					
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T1: WHEN I AM SCARED



NAME: _____

	almost never	rarely 	sometimes 	often 	almost always 
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