



## **Surf.Art in Portugal: Daring, Accomplishing and Transforming Portuguese Youth and Their Communities**

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Norway). His research results have been presented in international congresses and scientific publications, which can be consulted at [https://www.researchgate.net/profile/Diego\\_Gomez-Baya](https://www.researchgate.net/profile/Diego_Gomez-Baya). *Mary Elizabeth Rauktis*, Assistant Professor of Research in the Child Welfare Research and Training Program. She was the Director of Research and Evaluation at Pressley Ridge, an international nonprofit provider of services to children and families. In 2017 she was a Fulbright Scholar at the University of Porto and additionally a visiting professor at the University of Minho, Institute of Child and Family Studies in Portugal and the University of Lisbon. Her primary research focus in recent years has been in the area of how youth in substitute care form relationships with helping adults. *Grace Provost*, is graduating from the University of Pittsburgh's School of Social Work in April, 2020 with her Bachelor's of Social Work. While finishing her degree, she works part time, has an internship at a child welfare agency, and is involved in various clubs on campus. Her future goals include obtaining a Master's of Social Work with a clinical focus, and continuing to do research. Grace then plans to obtain social work licensure to practice as a mental health professional.

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**Surf.Art in Portugal: Daring, Accomplishing and Transforming Portuguese Youth and Their Communities****Abstract**

This manuscript reports the implementation and the six-year outcomes of the SURF.ART program, a youth development intervention developed by Pressley Ridge Portugal. The program has multiple components including a “life project”, support for crises, psychoeducational workshops, engagement with parents and surfing instruction and practice for youth. Multivariate analyses (MANOVA) were conducted with a sample of 69 participating youth to test for differences between groups and over time. In terms of behaviour and strengths, prosocial behaviour increased significantly and problematic behaviour decreased. Specifically, in the early stages of the intervention, prosocial behaviour increased three points and general difficulties decreased 10 points, in their respective scales. Large effect sizes were observed. Gender and age influences were observed as well as variation in outcomes due to dosage (time in program) and engagement in the program. Despite limitations due to the small sample and non-experimental design, this study provides some interesting findings about the value of surfing interventions for youth at risk of social exclusion related to ethnicity and poverty.

The municipality of Cascais Portugal, situated in the Lisbon metropolitan area is best known for its beautiful beaches, wealth and tourism. However, despite the high cost of living, 10% of the population in Cascais is comprised of individuals from the former Portuguese colonies in Africa and South America as well as from Eastern Europe who have settled in the municipality because of the tourist trade and the employment opportunities that it affords in the service industries (Municipality of Cascais Intercultural Profile, March 2017). Thus Cascais is a municipality with financial assets and opportunities unequally shared. Unfortunately, ingrained attitudes towards ethnic minorities, structural racism and poverty contribute to early school leaving and the consequent limited employment (Artuch-Garde et al., 2017), poverty and social exclusion. Although early-school leaving has been steadily decreasing in Portugal in the past decade, its rate of 12.6% remains higher than the EU average of 10% (Eurochild, 2018). Additionally, there are structural barriers which

increase the challenges that these youth encounter: leaving institutional care without family support (Eurochild, 2018; Silva, Araújo & Taveira, 2011), and racism and discrimination if one is Portuguese-African, or Roma, (Abrantes & Roldão, 2019; Mendes & Magano, 2016). The financial collapse of the mid-2000's also resulted in decreased financial support for families struggling with poverty and little funding for preventative family services (Aguayo, Herráiz, Marques, Machado & Almeida, 2016). The intractable nature of the structural challenges, and the lack of fiscal resources required that creative and strengths-based alternative interventions had to be developed.

*“How can we better help these youth to succeed at home, in school and in society?”* was the question then posed by a group of Portuguese psychologists, social workers, educators and community organizers. Their vision was to move away from the deficit-based language of “problems” typically used to characterize these youth (Aguayo, et al., 2016;

Eurochild, 2018; Mendes & Magano, 2016). Instead they created an intervention based upon the strengths of the youths while using the natural resources of the country. Portugal, the westernmost country in Europe, has thousands of kilometres of coastline, a history of surfing, free and accessible beaches and a large surfing community. Surfing has been used by other countries such as South Africa (Snelling, 2015) as a way of promoting positive youth development. Consequently, the therapeutic surfing program SURF.ART was developed.

SURF.ART in Portuguese stands for "To Dare, To Accomplish and To Transform." Since its inception in January 2013 as a temporary six-month project, it has operated continuously and has worked with 98 youths, ages 7-13 and indirectly with over 300 individuals such as family, teachers and communities in Cascais, Portugal. This paper describes SURF.ART program and explores its success in promoting social competence and reducing problematic behaviour of the youth recruited from several schools in the municipality of Cascais.

### Why Surfing?

Humans are drawn to nature (Godfrey, Devine-Wright & Taylor, 2015; Wheaton, Roy & Olive, 2017) and surfing is a sport that relies on nature; it is dependent on the waves, the timing of the day, and the ebb and flow of the tide. Moreover, available research on sport therapy through surfing places a strong emphasis on the physical and psychological benefits of the highly sensory natural environment (sand, waves, shoreline, buoyancy), which are believed to play a large role (Lopes, 2015). Surfing creates the feeling of something larger than oneself, the power and pull of the ocean, the vastness, and the scenic display, which connects surfers to the earth, and each other. There is a sense of healing that comes from the ocean as well, whether it be the salt water itself, or the

peace one feels while in the vast blue sea (Luhmann, 2016). At the same time, surfing creates a context through the shared experience of the ocean.

As a catalyst for change, research about surfing and the positive physical and mental health for youth participants (Godfrey et al., 2015; Luhmann, 2016; Matos et al., 2017) reports that youth report physical and psychological differences after participating, such as feeling stronger, and more competent in their surfing abilities (Luhmann, 2016). Psychologically, they felt more confident and articulate, were less stressed, had a healthier lifestyle after the program, and generally felt more positive (Godfrey et al., 2015). The ocean is unpredictable and challenging, surfing requires reading the waves, making decisions and tolerating failure. This promotes a greater internal locus of control, coupled with an increased sense of humility and resilience. Upon having acquired the basic skills to surf, youth reported increased self-esteem and better fear-management and emotional regulation (Luhmann, 2016). Surfing can promote social skills as well. In the Surf-Salva camp in Portugal, youth reported improvements in the number of interpersonal relationships and in communication skills. They felt as though their ability to emotionally adapt to some social settings had improved as well (Matos et al., 2017).

The evaluations of sport-for-development programs highlight the importance of coaching and structure with flexibility. Good coaches are able to: self-reflect and be open to expressing emotions (Lopes, 2015), and to creating social capital with the youth by understanding their perspectives and what their "normal" looks like (Rynne, 2016; Snelling, 2015) and to intentionally create a community. Structures and boundaries with support and clear expectations are important as they create a sense of safety although authoritarian approaches were not found to be effective (Snelling, 2015). Fewer

programs have included families, but one surf program working with Aboriginal youth found that providing a time and space for parents to socialize while their children participated in the program created a sense of community. By involving families, it also allowed them to watch their children learn to surf, and be involved in the experience (Rynne, 2016). Finally, graduates of surf programs who stay involved and volunteer with new cohorts can provide continuity to the program as well as a sense of personally contributing to the surfing community (Godfrey et al., 2015).

In summary, SURF.ART falls under the general theoretical umbrellas of youth development theory (Catalano, Berglund, Ryan, Lonczak & Hawkins, 2004) and the principles of Reeducation (Hobbs, 1982) and uses an experiential learning delivery approach (Priest & Gass, 2018). In order to address emotional problems and crises, elements of strengths-based interventions are included such as Life Space Crisis Intervention ([www.lsci.org](http://www.lsci.org)); Response Ability Pathways ([www.starr.org](http://www.starr.org)); and Circle of Courage (Brendtro, Brokenleg & Van Bockern, 1990). Surfing is then the platform for achieving important youth development aims: social bonding, building resilience, asset building, developing social emotional and behavioural competence, self-determination and a sense of the future (Catalano et al., 2004).

#### *Study justification and research questions*

Despite Portugal's prominence as a surfing location, only a few studies have been published in the academic literature about surf therapy in the Iberian Peninsula. SURF.ART was one of the first programs in Portugal to use surfing as a therapeutic tool in order to promote personal skills and thus the social integration of youths living in disadvantaged neighbourhoods in Lisbon. The exploratory research questions were:

1. Does a structured youth development surfing intervention (SURF.ART) associate with reduced levels of emotional symptoms, conduct problems, hyperactivity/inattention and peer relationships problems?
2. Does a structured youth development surfing intervention (SURF.ART) associate with increased pro-social skills?
3. Do gender, age, dosage of intervention (time spent) and engagement in the program (points earned) moderate these association?

#### **Method**

##### *Selection of children/youth for SURF.ART*

The schools involved were from the Municipality of Cascais, the Red Cross neighbourhood and the Carcavelos beach area. These schools serve African-Portuguese and Roma children and youth living at the poverty level. The neighbourhoods that the children come from are stigmatized due to the populace perception of high crime, drug trafficking and violence. In reality, these are neighbourhoods characterized by cultural homogeneity and economic fragility, often located in peripheral areas, adding to social exclusion and fear of the residents.

The SURF.ART team presented at these schools the objectives, vision (all children and youth have potential), mission (to develop the potential and autonomy of children and youth through SURFING and contact with Nature) and values (safety; stability; and wellbeing) of SURF.ART to students, parents and teachers. Participation in SURF.ART is voluntary and parental permission must be obtained. If children and their parents were interested, then an analysis was made of the psychosocial profile of each candidate by a team of individuals from

the school, the Team of the Social Intervention Division of the Municipality of Cascais and the technical team of the project SURF.ART.

### *Program components and curriculum*

The SURF.ART program is based upon the principles of asset-building, and positive youth development (Catalano et al., 2004) It uses surfing as the platform for achieving many of the youth development aims: social bonding, building resilience, developing social-emotional and behavioural competence, self-determination and a sense of the future (Catalano et al., 2004). The intervention was based upon Priest's experiential learning and judgment paradigm and experiential learning cycles (Priest & Gass, 2018) and supported on the Circle of Courage model (Brendtro, et al., 1990) and the principles of Reeducation (Hobbs, 1982).

We use an intervention methodology based on a social- ecological approach and sustained in forming a therapeutic alliance, where teaching and learning are pillars between the SURF.ART team and the children. Based on the Circle of Courage, we try to provide a sense of belonging throughout the project by creating a supportive environment to support children and young people in reaching and developing their sense of competence, providing opportunities to care for each other, and being supportive, thus promoting generosity.

The intervention is designed for three years: the first year we focused on the sense of belonging primarily; the second year we worked on the sense of belonging and mastery; and in the third year, we worked on independence and generosity.

After the third year, the child can continue his involvement as a mentor to youth in the program.

Surfing has manageable risks and challenges, and the curriculum takes

advantage of this "confrontation" with nature. The importance of children's natural competence is highlighted here. Indeed, this principle is present in all the work developed by Nicholas Hobbs in his framework of Re-education (1982). Re-education is an approach based not on psychodynamic principles but educational, psychological and ecological principles. Re-education goals are to help children in natural contexts by strengthening support systems, reducing conflicts between systems and assisting children in learning to make use of normal affective, formative and disciplinary resources. In working with these children, as well as their families, there are often situations of risk and danger and it is necessary to intervene in the crisis. Thus, the methodology was also based on the psychoeducational model of intervention in the crisis of Long, Fecser and Wood (2001) - Life Space Crisis Intervention. This model is aimed at children with a self-destructive behaviour pattern, providing them with individual therapeutic follow-up. The model views stressful problems or incidents as opportunities for learning, growth, and change, using a multidisciplinary approach to behaviour management and problem-solving. This therapeutic approach has been adapted for Portuguese youth and is used within the process of surf instruction and practice. SURF.ART includes the following components:

Experiential Education and Adventure Therapy. Weekly four-hour Surf Sessions are delivered by a technical team consisting of a certificated Surf Coach and a Psychologist and 1 or 2 volunteers selected at the beginning of each project year. The physical space and equipment needed to conduct the sessions are provided by project partners (rooms, changing rooms, boards, wetsuits). We use an experiential methodology to deliver these sessions, a process that actively involves children in experiences, bringing the benefits and consequences. The goal is youth to make discoveries

and experience knowledge for themselves rather than just listening to others' experiences, thus developing new skills, new attitudes and new theories or ways of thinking that they can then transfer to their lives. They can also relate their knowledge and approach to experience to better understand or modify current behaviours.

An essential principle of therapeutic adventure work is to motivate participants to do things that they would not normally do. They must leave the "safe" world to which they are accustomed to engage in a new challenge. In this way unique outcomes are generated, and people grow. This then leads to the empowerment of participants so that they can adapt more successfully to their environment and in so doing become well-adjusted citizens. To surf, the children have to leave the context in which they live, which opens the door to a "new" world, where they have a chance to meet new people with very different experiences than they are used to, integrate new realities, understand or modify concepts and theories and above all have the opportunity to feel what it is like to be part of a positive group.

Many of these children are engaging in risky behaviours in their daily lives and surfing is an adventure that presupposes risk; we can enjoy the "fight" with the force of nature, that by itself removes them from their comfort zone in a controlled environment to allow them to experience risk which later reflecting it, makes it a great learning and / or relearning opportunity. Thus, surfing is not an end in itself, nor a result, but a process, a mean to achieve goals and a tool that allows us to achieve goals, which can provide excellent learning moments. It enables young people to strive for immediate and sustainable involvement with goals and consequences. Experiencing success and failure, the child realizes that in order to have a successful experience, which is

therapeutic in itself (for example, being able to catch a wave, take off and come to the end of the wave), one has to plan, put it into action and in the end reflect, to understand what went well and what has to improve, that is, a process that actively involves children in experience bringing the benefits and consequences.

Contingency behavioural system. The motivation or contingency system is implemented in all groups at the project and aims to motivate youth to participate in the sessions and follow the rules. The points are given for the accomplishment of specific rules of SURF.ART. There are five rules: Be present; Be available to learn; Accept feedback from others; Keep hands and feet to yourself; and Respect colleagues and teachers. The rules are discussed within the group at the start of the year and the purpose of this system is to reward kids not only for participating in activities but also for the effort they apply in learning and practicing new personal and social skills. For this reason, the system only focuses on positive behaviours. Kids can earn between 1 and 5 points per session. The points are awarded at the end of activities, during the reflection, with youth self-evaluations followed by group discussion and psychologist feedback. Points are then translated to "power levels", that is, the more points kids have the higher their responsibility. It is expected that when kids earn more points they also will be able to show more adaptive and appropriate behaviours in other situations besides SURF.ART, namely school, home or in the community context.

Life Project. Each child/youth develops with the help of the psychologist, an individualized intervention plan - life project - focusing on their strengths (there is a sensitivity in technicians to focus not only on needs but on what they are doing well). These strengths will be channelled into situations that promote success, skills developed and fostered positive relationships.

The process follows these steps: involving a group of supportive people (family, friends, school and other key partners) and drafting the role of these members; identifying needs, strengths, and goals as well as the steps to follow, and the method for measuring progress; drafting behavioural contracts; identification of necessary actions, responsibilities, and plan to be used to achieve them; preparation of the schedule; identification of ways of evaluating the progress; formulation of objectives.

Crisis support. Psychoeducational support in crisis situations if needed is provided by the Psychosocial Reeducator (with specialized training for this purpose)

Thematic Workshops. Bi-monthly workshops are held on the following themes: Health and Healthy Living, Environmental Education and Multimedia Production. Each theme has subthemes. For example, in the topic Health and Healthy Living, we have workshops on active lifestyles, classes of cooking, how to prepare a healthy meal. In the Multimedia Production the participants themselves learn to film and photograph surf and moments on the beach. Participants have an active role in the organization of workshops and activities.

Parent and community involvement and psychoeducation. Quarterly sessions are held with parents and community with the goal engaging with supportive partners. Some of the topics discussed are: Health and Welfare, Hygiene, Sexuality, Prevention of Psychoactive Substance Use, dealing with challenging behaviours, among others.

Evaluation. Information about behaviour was collected from youth, parents and teacher in each of the cohorts. The level of psychological symptoms across five domains (emotional, behavioural, hyperactivity-inattention, peer

relationships, and prosocial) was measured using the Portuguese version of the Strengths and Difficulties Questionnaire— teacher version (SDQ; Goodman, 1997; Marzocchi et al. 2004; Fleitlich, Loureiro, Fonseca & Gaspar, 2004) collected by the technical team of SURF.ART. The SDQ was administered at the beginning and at the end of each school year to all the children and young people; those who were continuing in the program for a second or third year were only evaluated at the end of the year rather than at two time points. Also, attendance and points earned in the contingency system, fulfilment of stipulated goals and interaction and quality of reflection were included as short-term outcomes. Informed consent was obtained from all individual participants and their parents, and all procedures performed were in accordance with the ethical standards of Helsinki declaration.

It is important to note that although the data are not included in this paper, at the end of each year's programming, a series of focus groups with parents and teachers were held to share the results of that year's program and to understand the perceptions of significant adults in the life of those children and the impact of SURF.ART at home and in school. This information is used as part of a quality improvement process for SURF.ART.

#### *Data Collection Procedures*

SURF.ART started in 2013 with a cohort of 13 children aged 9-10 year old. The following year the Municipality of Cascais funded SURF.ART to be delivered to a second cohort of two groups of 13 children from the 2<sup>nd</sup> grade. Then in 2017 SURF.ART was extended to two additional schools and the number of groups increased so that there were three groups of 13 children (some children continued from the second cohort).



Data collection commenced in October of 2013, and a second round was carried out in July 2014, and continues as part of the intervention. In addition to the SDQ, data is collected to identify the school and grade level, the age of the child, gender, the number of SURF.ART sessions attended, and points accrued in the behaviour management system. Due to the nature of the program, SURF.ART had 21 participants who at some point in the project did some sessions but were not subject to initial and/or final evaluation. The participation of these youth in the sessions ranged from 2 to 40 %, so we don't have evaluation data.

#### *Instrument and variables*

Strengths and Difficulties Questionnaire (SDQ, Portuguese version). It was used to measure changes behaviours over time. The SDQ has separate versions for various youth ages and informants (parents, teachers, youths). The SDQ is a 25-item measure that assesses the level of psychological symptoms across five domains (emotional symptoms, conduct problems, hyperactivity/inattention, peer relationships problems, and prosocial behaviour). A total score for general difficulties was calculated by adding the four problem scales, without prosocial behaviour. In our study, we used the Portuguese version for teachers (Fleitlich et al., 2004) that was collected by the SURF.ART technical team. Psychometric analyses have shown the SDQ to have good validity and reliability, sensitive to change, and valid for wide range of populations (Bourdon, Goodman, Rae, Simpson & Koretz, 2005). The reliability of the SDQ in our study for the General Difficulties total scale in all the waves was between .82 and .97. For the Prosocial Behaviour scale the internal consistency reliability was between .55 and .94.

Number of sessions (Dosage) and Points accrued (engagement). They were operationalized by the team as "sessions attended" (dosage) and points accrued in

the contingency system (engagement). Dosage was measured as one point per presence at a session and engagement in the program was measured as the points earned in the contingency system during the session in that day - one point for each rule for a maximum of 5 points each session.

#### *Data analysis design*

A total score of SDQ difficulties, i.e., emotional, peer, conduct and hyperactivity subscales were added to calculate a new variable on general difficulties. Prosocial behaviour indicator included in SDQ was examined individually as a positive indicator of psychosocial adjustment. Since the groups of participants completed intervention in different years, a new ordinal level variable was created to control the number of years of participation in the project, encoded as one year, two years and three years or more. Average score of engagement and of participation (attendance) was computed. Additionally, attendance was also calculated by dividing the number of sessions completed between the total of sessions, and an average among the years of participation. Averages in levels of participation and attendance were coded as 50% low and 50% high based on median score in these variables. Repeated measures analysis of variance was performed in order to examine the level of change in general difficulties after the intervention, by comparing scores from the initial assessment with the final one. Gender, age, years of participation, degree of participation, and degree of attendance to sessions, were controlled. As well, moderations of these control variables were studied after including them as inter-subject factors in the repeated-measures variance analyses. F statistic and partial eta squared ( $\eta^2_p$ ) (size effect: small = .01 - .05, medium = .06 - .13, large  $\geq$  .14) were calculated. Finally, Student t-tests and variance analyses were performed to study differences in general difficulties

by levels in these control variables. The same data analyses were carried out changes in prosocial behaviour after intervention. Pearson zero-order correlations were calculated to study the association between prosocial behaviour and general difficulties, before and after the intervention. SPSS version 21.0 was used for data analysis.

## Results

### *Participants*

A total of 69 children and adolescents (59.4% girls), aged 7 to 17 ( $M=8.54$ ,  $SD=1.53$ ) participated in SURF.ART program. Most participants (91.3%) attended the first cycle of basic education (the remaining were attending second cycle of basic education (5.8%), the third cycle of basic education (1.4%), and secondary school (1.4%). A little over half participated in one full year of SURF.ART (56.5%), 15.9% in two years, 7.2% in three, 7.2% in four, and 13% in five consecutive years. The participation of these youth ranged from 21 to 100%, with a mean participation of 77% ( $SD = 1.78$ ). It was a convenience sample including children and adolescents in a situation of vulnerability and/or psychosocial risk. Because Portugal does not collect race or ethnicity data (by legal mandate), race is not reported.

### *Effects by SURF.ART intervention on general difficulties*

Table 1 and Figure 1 present the results of the repeated-measures analysis of variance testing the effect of SURF.ART intervention on general difficulties, in the total sample and by gender, age, years of participation, level of participation (engagement) and level of attendance (dosage). General difficulties decreased after the intervention, in nearly 10 points in the scale, reaching a strong size effect ( $\eta^2_p = 0.74$ ). This effect was significant in both boys and girls, with no gender moderation,  $F(1, 67) = .01$ ,  $p = .958$ . No gender differences were neither

observed in initial scores,  $t(67) = -1.06$ ,  $p = .293$ , nor final ones,  $t(67) = -1.30$ ,  $p = .199$ . Moreover, the decrease in general difficulties was also significant in all age groups, although a greater effect was observed in older participants,  $F(2, 66) = 4.52$ ,  $p = .014$ ,  $\eta^2_p = .12$ . Thus, if the decrease in 7-8 and 9-year-old participants was around nine points, a greater reduction in general problems was observed in the group aged ten or more ( $m.d. = 16.34$ ). However, no age differences were detected in the initial scores,  $F(2, 66) = 2.95$ ,  $p = .059$ , neither in the final ones,  $F(2, 66) = 0.65$ ,  $p = .525$ .

Regarding number of years of participation e.g. dosage, results indicated an interaction with the change in general difficulties,  $F(2, 66) = 5.50$ ,  $p = .006$ ,  $\eta^2_p = .14$ . Although the intervention proved to be effective regardless of years of participation, greater size effect was observed in participants with two years of participation, while participants in three or more years showed less size effect. Participants in two Surf-Art years of SURF.ART presented higher initial difficulties than those with just one year's participation or those with three or more,  $F(2, 66) = 6.00$ ,  $p = .004$ ,  $\eta^2_p = .15$ . However, no differences were observed in final scores,  $F(2, 66) = .98$ ,  $p = .380$ . Furthermore, the level of participation also interacted with the change in general difficulties,  $F(1, 67) = 6.10$ ,  $p = .016$ ,  $\eta^2_p = .08$ , with stronger effect in those children and adolescents with less participation. Children and adolescents with a low level of participation showed more initial problems,  $t(67) = 4.73$ ,  $p < .001$ , and also more final problems,  $t(67) = 3.09$ ,  $p = .003$ , compared to those with higher level of participation. Thus, a greater decrease in general difficulties was observed in those children and adolescents who participated less, who also began the intervention with more general difficulties. Finally, concerning the level of attendance, no moderation was found,  $F(1, 67) = .02$ ,  $p = .891$ , and the intervention was just a bit more effective

in those with high attendance. Children who attended less presented more initial difficulties than those with more attendance,  $t(67) = 3.00, p = .004$ .

Moreover, children with less attendance also presented more final difficulties than those who attended more frequently,  $t(67) = 3.79, p < .001$ .

**Table 1**

Repeated-measures variance analyses of SURF.ART effect on general difficulties, in the total sample, by gender, age, years of participation, level of participation and level of attendance

	<i>F</i>	$\eta^2_p$	Pre		Post	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total (n=69)	189.42***	0.74	19.74	7.71	9.93	6.08
Gender						
Boys (n=28)	70.53***	0.72	20.93	8.22	11.07	6.44
Girls (n=41)	116.81***	0.75	18.93	7.34	9.14	5.78
Age						
7-8 (n=25)	48.13***	0.67	19.72	7.37	10.96	6.19
9 (n=38)	131.52***	0.78	18.66	6.97	9.18	5.80
10 or more (n= 6)	44.14**	0.90	26.67	11.08	10.33	7.76
Years of participation						
One (n=39)	144.30***	0.79	18.46	7.20	9.13	5.76
Two (n=11)	58.74***	0.86	26.64	8.13	11.91	7.94
Three or more (n=19)	29.08***	0.62	18.37	6.64	10.42	5.53
Level of participation						
50% low (n=35)	148.84***	0.81	23.51	6.97	12.03	6.15
50% high (n=34)	64.91***	0.66	15.85	6.48	7.76	5.27
Level of attendance						
50% low (n=34)	81.37***	0.71	22.41	7.80	12.50	6.34
50% high (n=35)	109.12***	0.76	17.14	6.77	7.43	4.69

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$ .

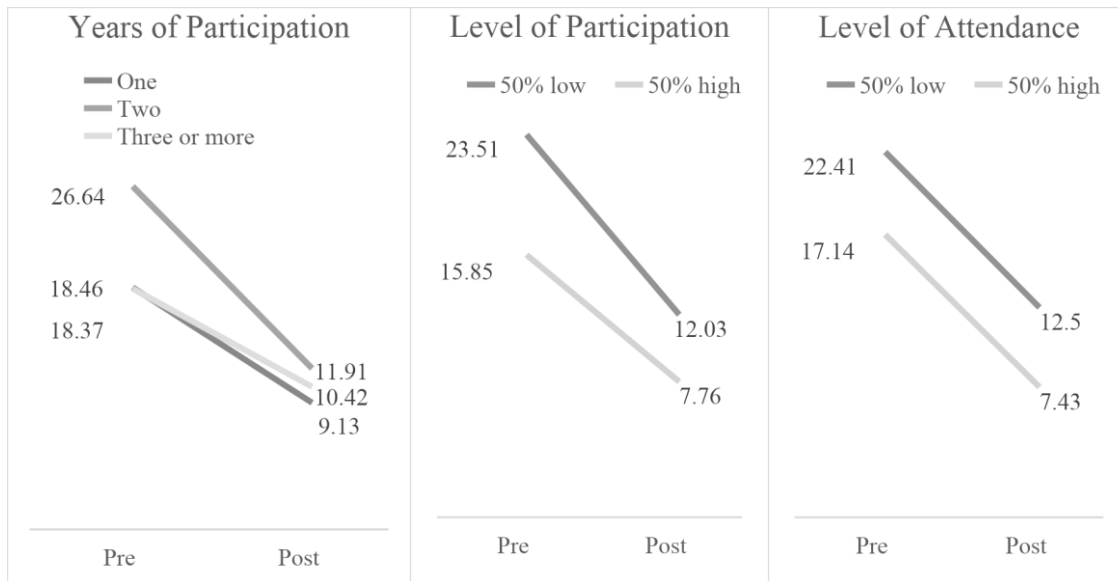


Figure 1. Pre-test and post-test means in general difficulties, by years of participation, level of participation and level of attendance.

#### Effects by SURF.ART intervention on prosocial behaviour

Table 2 and Figure 2 describe the results of the repeated-measures analysis of variance and prosocial behaviour, in the total sample and by gender, age, years of participation, level of participation and level of attendance. A significant increase in prosocial behaviour was observed after SURF.ART intervention, with nearly three points of increase in the mean score and a large effect size ( $\eta^2_p = 0.65$ ). Significant negative associations were observed between initial prosocial behaviour and initial general difficulties,  $r(69) = -.63, p < .001$ , and between final prosocial behaviour and final general difficulties,  $r(69) = -.61, p < .001$ . Although no gender moderation was observed,  $F(1, 67) = 1.40, p = .241$ , a greater size effect was observed in boys. Gender differences were found in prosocial behaviour before,  $t(67) = 3.82, p < .001$ , and after the intervention,  $t(67) = 3.09, p = .003$ , so that girls showed greater initial and final prosocial behaviour than boys. Concerning age, a significant interaction was found,  $F(2, 66) = 5.55, p = .006, \eta^2_p = .14$ . Although the increase in prosocial behaviour was significant in all ages, bigger size effects were observed in the groups aged 9 and

10 or more years old, with increases in 3.21 and 4.67, respectively. In the participants aged 7-8 years old, the prosocial behaviour increased by 1.96 points. No significant differences by age was found in the initial prosocial behaviour,  $F(2, 66) = 2.64, p = .079$ , nor in the final scores,  $F(2, 66) = .37, p = .689$ .

Furthermore, the change in prosocial behaviour after SURF.ART intervention was found to be moderated by the number of years of participation,  $F(2, 66) = 6.91, p = .002, \eta^2_p = .17$ . Although the intervention was effective regardless the number of years, a greater size effect, i.e., a greater increase in prosocial behaviour, was found in children who participated only one year, especially compared to those with three or more participations. Greater initial mean on prosocial behaviour was observed in children with three or more participations,  $F(2, 66) = 8.17, p = .001, \eta^2_p = .20$ , while no differences were detected in the final scores,  $F(2, 66) = .43, p = .656$ . Regarding the level of points for participation, no significant interaction was observed with the change in prosocial behaviour,  $F(1, 67) = 1.88, p = .175$ , although greater size

effect was observed in participants with lower level of participation. Children with lower level of participation presented less initial prosocial behaviour than children with greater level,  $t(67) = -2.47, p = .016$ . No differences were found in final prosocial behaviour,  $t(67) = -1.40, p = .167$ . Finally, no interaction was neither found with level of attendance,  $F(1, 67) = .32, p = .572$ , although bigger

size effect was found in children with high attendance. No differences were observed in initial prosocial behaviour by level of attendance,  $t(67) = -1.49, p = .142$ , while significant differences were found in the final scores,  $t(67) = -2.47, p = .016$ . More prosocial behaviour was observed after the intervention in children with high attendance.

**Table 2**

Repeated-measures variance analyses of SURF.ART effect on prosocial behaviour, in the total sample, by gender, age, years of participation, level of participation and level of attendance

	<i>F</i>	$\eta^2_p$	Pre		Post	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total (n=69)	126.27***	0.65	3.96	2.37	6.84	1.98
Gender						
Boys (n=28)	74.46***	0.73	2.75	1.97	6.00	1.98
Girls (n=41)	58.20***	0.59	4.78	2.29	7.41	1.79
Age						
7-8 (n=25)	13.03**	0.35	4.76	2.62	6.72	2.13
9 (n=38)	206.10***	0.85	3.60	1.95	6.82	1.78
10 or more (n= 6)	37.69**	0.88	2.83	3.13	7.50	2.74
Years of participation						
One (n=39)	247.00***	0.87	3.54	1.92	6.87	1.76
Two (n=11)	19.06**	0.66	2.64	2.98	6.36	2.84
Three or more (n=19)	6.83*	0.28	5.58	2.09	7.05	1.90
Level of participation						
50% low (n=35)	86.04***	0.72	3.29	2.42	6.51	2.13
50% high (n=34)	45.88***	0.58	4.65	2.14	7.18	1.78
Level of attendance						
50% low (n=34)	45.47***	0.58	3.53	2.67	6.26	2.16
50% high (n=35)	88.76***	0.72	4.37	2.00	7.40	1.63

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$ .

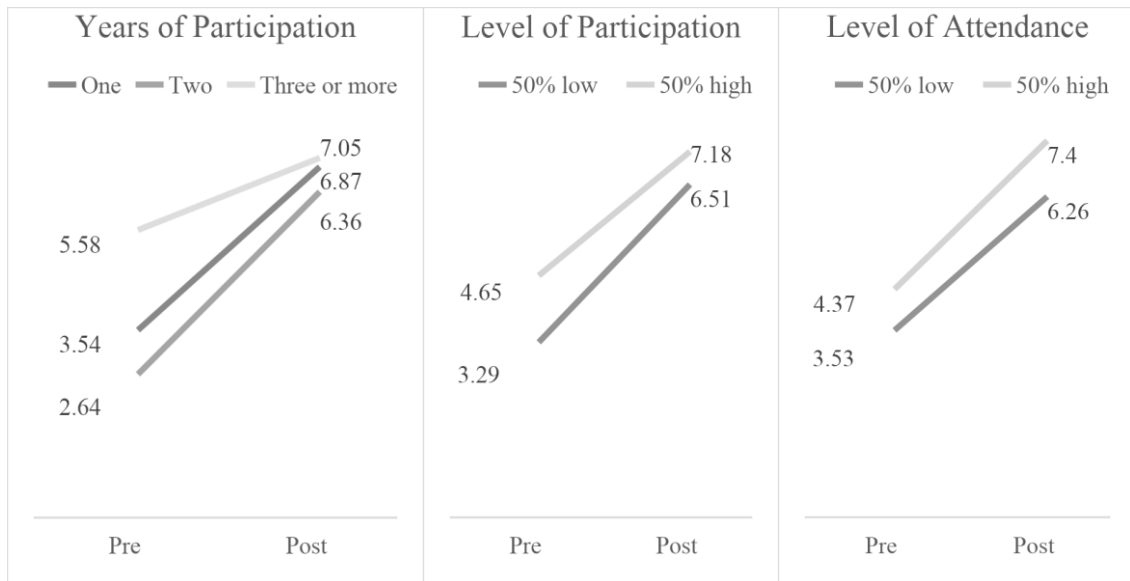


Figure 2. Pre-test and post-test means in prosocial behaviour, by years of participation, level of participation and level of attendance.

### Discussion

The evaluation of SURF.ART aimed to explore the relationship between the practice of experiential education sessions and adventure therapy (using surfing as a sport) and the development of socio-emotional skills, and the reduction of problematic behaviours which can lead to educational discouragement and future exclusion. To address the first two research questions a structured youth development surfing intervention associate with reduced levels of emotional symptoms, conduct problems, hyperactivity/inattention and peer relationships problems and improved social functioning was found to be the case. The total scores of difficulties significantly decreased from pre to post participation, and prosocial capabilities increased. Age, gender, time spent in the program were moderating factors with less time in the program associating with a steeper gain and suggesting that there may be an “optimum” dosage or time in program of 2 years which gives the maximum benefit. Age effects are suggestive of developmental factors in that the curriculum may resonate more with youth of different ages or a period

of sensitivity to the curriculum. For example, youth at the stage of concrete operations of thinking have the capacity to classify and conserve and may be better able to utilize private speech to self-regulate than children in a more primitive cognitive stage (Inhelder & Piaget, 1958).

The findings of this study are in line with the results of other studies (Godfrey et al., 2015; Matos et al., 2017). On the other hand, Snelling (2015) did not find differences at the end of their surfing intervention. Considering that research in this area is still very recent, and generally non-experimental design, additional research is needed to verify the value of this approach for youth development interventions. One aspect that must be considered when implementing such a program is the experience and training of the technical team. Snelling (2015) in his program, had 15 “coaches” working directly with the children and youth and in the other studies referred, those technical teams were substantially smaller. That may imply different approaches and more difficulties in securing high-quality interventions depending upon the

training and supervision of the coaches and the available resources.

The use of experiential learning and adventure-based activities to teach youth new skills is not a new concept. Some of the cornerstones of adventure-based work, such as the use of a contract in a therapeutic outdoor group setting, are also not new. In order to have an adventure experience, participants do not need a rush of adrenalin: they need an environment where they can safely learn new and interesting behaviour or skill, with the help of motivating and caring group members and a well-trained facilitator. In the process of learning this skill, the behaviours can be transferred outside of the experiential setting to home, school and community. Reyneke (2009) says that the focus of adventure empowerment is the identification and mobilization of the inner potential of every person. People are motivated to take control of their lives and realize their potential and power. People experiencing difficult circumstances are encouraged to make choices to direct their lives within a framework of positive values. By using an intervention methodology based on an experiential approach with a focus on alliance and where teaching and learning are the pillars between professional team and the children, we sought to provide a sense of belonging, a supportive space for developing competence in surfing as well as self-regulation. The relationships between the staff and youth, youth and youth and staff and staff demonstrate and provide opportunities for caring for each other and being supportive, thus promoting generosity.

SURF.ART interacted with children's reference elements (referral educators, parents, teachers) throughout the intervention. Several group and individual meetings were held to assess children's intervention and development. As a result, there has been a growing interest in SURF.ART, which is why many children have continued for three or

more years. The results regarding participation revealed a high fidelity of implementation (adherence, dosage and involvement of participants), so it can be inferred that the results obtained regarding its effectiveness are due more to the way the project was designed than to the way it was implemented and as such will be very close to its real impact. There was also a positive association between higher levels of fidelity, namely participation and involvement, where a significant improvement in behavioural problems and prosocial behaviour is evident. At the same time, it was found that some factors, such as the behaviour of the participants during the sessions, the increase of the commitment level, and the fulfilment of the contingency system rules, had a significant influence, i.e. produced positive effect on adherence levels and involvement, which is also positively predicted by the support and commitment of coaches. We emphasize the importance of the methodological care of SURF.ART implementation, in order to control the possible effects of personal and relational characteristics of project implementers. To this end, it was ensured that it was always the same psychologist who implemented the project in all groups that were part of the research and its evaluation.

#### *Study Limitations*

This study has both strengths and limitations. The strengths include the six years implementation of the project in the community setting, a structured theory-informed intervention program with multiple components and the stability and training of the technical team. These factors contribute to ensure the fidelity of intervention delivery and to promote the relationships with the participants, their families, school community and stakeholders. However, given that this is non-experimental design, causal relationships between the intervention and outcomes cannot be verified. Additionally, the children are recruited by the school and then self-

select into project which can be a threat to the internal validity.

In summary, there is positive exploratory evidence regarding the impact of Surf Therapy, specifically SURF.ART. However, the results of the study are limited by the lack of a comparison group which hampers the ability to make causal statements. We plan to continue to evaluate SURF.ART, using data to improve the intervention. A mentoring program is going to be implemented which will give the youth in the program after the 3<sup>rd</sup> year a role to stay involved that is less therapeutic than that of the first two years. It is also critical to understand the transmission of skills from what is learned in the ocean and in the group to what is demonstrated at home, in school and in the community. Future evaluation of SURF.ART will try to better understand what the mechanism for transfer of learning is and how to support it. Finally, although this study used longitudinal data, random assignment to a wait list control and an active program will allow causal statements to be made about the impact of SURF.ART. In conclusion, we believe that at Sea we are all the same, we all have a wetsuit and a board, and the goal is the same, to catch waves and have fun. *Concluindo, acreditamos que, no Mar, somos todos iguais, todos temos um fato de mergulho, uma prancha e o mesmo objetivo: apanhar ondas e divertirmo-nos.*

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#### **Disclosure Statement**

The authors declare that they have no conflict of interest, no financial interest, nor benefit from the direct application of this research.

#### **Compliance with Ethical Standards**

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent: Informed consent was obtained from all individual participants included in the study and their parents.