

UNIVERSIDAD SAN FRANCISCO DE QUITO USFQ

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**An Interpersonal Neurobiology Program to Enhance
Emotional Regulation in Children**

Proyecto de Investigación

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RESUMEN

La regulación emocional se compone de varias habilidades para identificar y manejar las emociones propias y ajenas (Gross, 2002). En los últimos años, se han implementado en los colegios varios programas que desarrollan la regulación emocional en niños obteniendo beneficios como el aumento en rendimiento académico y una mayor sensación de bienestar general (Diekstra and Gravesteyjn, 2008). En Latinoamérica, la aplicación de dichos programas es reducida y aún no se ha desarrollado un modelo de regulación emocional de acuerdo a la realidad de Suramérica. La investigación utiliza la neurobiología interpersonal para aplicar un programa que aumenta la regulación emocional en niños entre 10 y 12 años de edad. El diseño cuasi-experimental contó con muestras asimétricas. Participaron 95 niños, 73 en el grupo experimental y 22 en el grupo control. Se utilizó el ERQ-CA para medir las estrategias de regulación emocional antes y después de la aplicación del programa. Los datos anticipados señalaron un aumento de la regulación emocional en la muestra experimental, mientras que la muestra control no mostró mejoramiento. Se puede deducir que el programa tuvo efecto significativo en la regulación emocional.

Palabras clave: *Regulación emocional, aumento, neurobiología interpersonal, diseño cuasi-experimental, programa.*

ABSTRACT

Emotional regulation entails numerous abilities to identify and control one's and other's emotions (Gross, 2002). In recent years, many schools have implemented programs that develop emotional regulation in children obtaining benefits as a higher level of academic achievement and increasing general wellbeing (Diekstra and Gravesteyn, 2008). In Latin America, application of such programs are still very limited and a South American model for emotional regulation has not been developed. The current investigation uses the interpersonal neurobiology theory to enhance emotional regulation in children between 10 and 12 years old. The quasi-experimental design had nonequivalent samples. 95 children participated, 73 of the experimental group and 22 of the control group. To measure emotional regulation strategies the ERQ-CA was applied prior to and after the program took place. The experimental sample showed a significant enhancement while the control sample showed no improvement. It is assumed that the program had a significant effect on the emotional regulation.

Key words: *Emotional regulation, enhancement, interpersonal neurobiology, quasi-experimental design, program.*

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INTRODUCTION

Emotions are a primitive bodily and cognitive mechanism designed to enable quick reactions in response to unknown circumstances. They can emerge either by recalling a memory or by analyses of meaningful situations. The process by which an emotion is triggered implies a coordinated set of experiential, psychological and behavioral responses. Therefore, a person's response to a certain circumstance depends on the current emotional state (Gross, 2002).

Intervening in one's emotional response is a process called emotional regulation, which entails affecting the emotion, its emergence and the level of experience and expression (Gross, 2002). Emotional regulation is acquired by learning and it can be shaped by interactions with caregivers and peers. There is also an individual difference that can affect the regulation children are able to apply over their emotions; for instance, temperament (Tobin, Sansosti & McIntyre, 2007). Research suggests that temperament is inherited (Feldman, 2009); hence part of the emotional regulation a child is able to develop is determined by the parents' temperament.

Since, the acquisition and development of regulation strategies for emotions is related to the care and experiences provided by parents or other care figures, it is important to establish that Latin American children grow in a distinct environment. The socio-emotional development of children in Latin America has differences compared to the North American or European model due to the socioeconomic circumstances and the culture of Latin American countries. For instance, Latin American children are relatively more exposed to violence in family environments and their social surrounding. Also, the economical and educational level of Latin-American countries is lower in comparison to North American and European statistics. Latin American countries have lower levels of education and high percentages of persons not able to

finish their secondary studies (Bass, Santo & Saldarriaga, 2015). Another important feature of Latin American reality lies in the family institution. For Latin countries family has historically been a vital piece of their lives and socio-economic structure (Kuznesof, 2005).

In Latin America, violence has a high incidence and it is promoted by the great socio-economic differences of social inequality. Latin American countries are characterized by a mixture of extreme poverty and great wealth (Imbush, Misse & Carrión, 2011). As a result of the existing socio-economic gap, Latin children have a very different emotional and social growth. Janus and colleagues (2014) investigated the socio-emotional development of Peruvian and Brazilian children in order to establish significant early experiences that might affect their development. Results show that poverty and maternal education had a negative impact on social development. Peru and Brazil can be seen as examples of the Latin American reality, which includes high rates of poverty and low levels of education. In Ecuador between 1990 and 2001, as the result of an economic crisis and the currency substitution for dollar, poverty levels raised approximately 40% (Paramo, 2005). According to government statistics, the poverty rate of 2013 ranged between 15 % and 16%. Additionally, 4% of the Ecuadorian population is considered to be extremely poor, having less than \$ 2 for their daily survival (INEC, 2013). Regarding the educational level in Ecuador, data from the National Statistics and Census Institute (INEC) indicates that 4.4% of children and adolescents between 5 and 17 years old are not currently studying in school and work instead (PREAL, 2010). Taking into consideration that maternal poverty and the level of education has a great impact in the children's life, families in Latin America have a different configuration and therefore they contribute in a distinct way to the development of emotional and social aspects. Especially, in families with lower

incomes, the mother plays a very important role as an emotional and, often, financial support for the children (Kuznesof, 2005). Exposure to adverse circumstances like poverty, violence, father abandonment and etc. influence the children's reaction towards their emotions and others.

Given the conditions in which Latin American children grow, the emotional aspect of their development has a different evolution compared to other continents and countries. Therefore, new programs are still being developed to enhance emotional regulation according to the Latin American children's reality. Latest tendencies in the field of psychology as mindfulness or interpersonal neurobiology have not yet been researched with Latin American populations. For that reason, the present investigation takes the principles of interpersonal neurobiology to enhance emotional regulation in children based on the idea that the mind and its underlying brain structure can be modified through experiences and interactions with others.

The changing environment that surrounds the human being compels the brain to adapt to the emerging experience. Taking that into consideration, the interpersonal neurobiology integrates a variety of fields (neurology, biology, anthropology and psychology) to explain the functioning of the mind through plasticity, integration and interaction with others. According to Siegel (2012), the mind is a complex system between energy flowing as information and establishment of neurologic connections that shape the perception of the world. It is important to empower people to take control of their interactions with others and the effect they have on their brain wiring. For Siegel, this ultimately leads to integration, which can be understood as a definition of mental health.

This investigation aims to reflect a small portion of Ecuadorian children's reality in private schools, where the lack of emotional regulation is clearly seen in the

interactions with teachers and classmates. Moreover, it is expected that the study can provide useful tools to educators and help them to contribute in the children's socio- and emotional development.

The Ecuadorian society entrusts the family to be a safe place for development and to give a meaningful structure for children to understand their inner and outer world. However, the reality is that in many cases families provide negative learning experiences for the children. In school, it is evident, that children lacking emotional and social skills have a hard time coping with everyday life experiences. Moreover, it is probable that these adaptations will continue to be expressed in their future adult life. Therefore, it is proposed that teachers can provide some life tools. Among these tools are emotional regulation skills that can be protector factors. Developing emotional regulation strategies leads to a better social functioning, academic achievement and overcome difficult situations (Hammond, Westhues and Schmidt, 2009). For that reason, the main focus of the interpersonal biology program approaches the enhancement of emotions regulation. The interdisciplinary field of interpersonal neurobiology concentrates on the functioning of the brain as a key knowledge to modified neuronal patterns. Also, it states that relationships are a field for testing and forming new neuronal connections. Taking those two points into consideration, the program focuses on emotional regulation that teaches children three important spheres of emotion: basic knowledge about the brain functioning and emotional activation, recognizing emotions (emotional awareness) and emotional expression (emotional expressiveness). In a nutshell, the purpose of the program is to help children to be more connected with their emotions and empowering them to handle their emotional states as they arouse.

Research Question

Taking into consideration that emotional regulation can be developed, the investigation goal is to enhance emotional regulation in children between 10 and 12 years old through an interpersonal neurobiology program.

LITERATURE REVIEW

The present investigation is based on four components. As mentioned in the introduction the program is designed with the theory of interpersonal neurobiology and it focuses on enhancing the emotional regulation abilities of children. The investigation is also based on the statement that teachers can contribute to the psychological development of the children. Finally, to be able to measure any difference in the emotional regulation skills, the Emotion Regulation Questionnaire will be administrated as a psychometric tool.

Interpersonal Neurobiology

Interpersonal neurobiology is rooted in various fields: psychology, anthropology, biology, psychiatry, neurology, etc., because it tries to explain the human nature in broader and more comprehensive way. Three of the main features of this theory are the mind, achieving mental wellbeing through integration and interpersonal relationships as a space to correct maladaptive patterns (Siegel, 2006).

The mind acts as a regulatory process of the energy flow (information). Its emergence occurs through the neurobiological and interpersonal interactions. Hence, the environment plays an important role influencing how the mind processes information. The manner in which regulation works is related to mental health. One of the most important activities of the mind lies in the awareness, which is developed through attention. In psychotherapy, redirecting attention in various domains interpersonal, psychological and physical can improve and create new neuronal connections that disable previous maladaptive behavioral patterns (Siegel, 2006).

Subsequently, the mind acts like a programming language for the neuronal wiring. It is characterized by its attribute of plasticity and constant adaptation. Nonetheless, the programming language of the mind cannot always be understood as an

integrated set of commands. The process by which the mind is able to connect the information and assemble it to generate a meaningful experience is called integration.

The integration involves the connection of the physical (bodily) experience with the mental (mind) experience. Any situation that a human being experiences activates neuronal firing and therefore mental processes like memory, behavioral patterns, affective states, etc. Although these physical and psychological processes occur simultaneously and influence one another, integration of both inner and outer experiences are not always joined together in a coherent understanding (Siegel, 2006). For example, persons with autism have a lower level of emotional perception that is associated with a poor integration of self- and external emotional states of others to the comprehension of the situation (Dapretto et al., 2006). According to Siegel (2014), developing integration through various life domains leads to achievement of mental health.

As mentioned before, relationships are ideal scenarios to test and change behavioral patterns. From the firsts days as a newborn to the adult life, a human being is building neuronal connections via relational experiences with caregivers and peers. Both maladaptive and healthy relationship patterns are developed through interaction with others. Therefore, relationships are a powerful changing agent in the creation of new neuronal wiring configurations. Moreover, integration can also be achieved by exposing a human being to meaningful and healthy relationships (Siegel, 2014).

Although the interpersonal neurobiology field is a new trend still under investigation, many researches have found its approach useful in psychotherapy. Badenoch & Cox (2010) discuss the use the interpersonal neurobiology (IPNB) integrated with group psychotherapy as a way to enhance treatment by focusing on relationships to improve wellbeing and increase relational capacity. Through

establishing a moderate emotional arousal environment, the neuroplasticity of the brain can be activated in a supportive group to allow patients to explore the understanding of their one inner world and the inner world of others. Both authors propose to use the IPNB principles of the knowledge of how the brain functions to have a more integrated understanding of the mind, which would cause a decrease in the internal and behavioral reactivity.

Neurobiology principles have been also implemented to other types of therapy. For instance, Levy (2011) has explored the therapeutic approach of linking psychoanalytic play therapy for children and neurobiology. The main focus of the investigation was to explore how, the use of the knowledge of neurobiology and relationships interconnected with psychoanalytic play therapy, help foster integration and promote therapeutic change. Play involves a set of conditions both internal and external; as a consequence it involves the functioning of different brain parts. Since playing implicates integration between emotional and bodily activation, it can promote long lasting changes. Also, playing is an extensive field to interact with others and, consistent with the neurobiology of relationships, new interactions can destabilize preexisting patterns of relating behaviors. To sustain the hypothesis, the author presented a case study of a seven-year-old boy referred from a domestic abuse program. At the beginning of the interventions the boy's play style was aggressive and without thematic coherence. Through different play-strategies, the therapist managed to reorganize cognitive and affective arousal allowing the patient to be aware of his own internal states (improving the reflective functioning) and developing the play interaction to a more complex and integrated state. Consequently, this process increased the creation of meaning.

Emotional Regulation

Emotional regulation is a process through which a person can shape their emotions, the experience and the degree of affective expression (Gross, 1998). Such process depends on three main features: goal activation, processes to alter the emotion and the impact on the emotions dynamic (Gross, 2014).

The first core feature of emotional regulation is mediated by the activation of a goal that enables the modification of an emotion. Goals are powered by motivation, which can be provided by the environment (extrinsic) or it can arouse from oneself (intrinsic). If the environment provides positive or negative reinforcement regarding the expression of an emotion, it is highly probable that the emotion will occur with more or less frequency (Reeve, 2010). Parents, for example, offer rewards to behaviors they find acceptable and desirable. Likewise, parents punish behaviors catalogued as unacceptable. Therefore, extrinsic emotional regulation is shaped by socialization both with caregivers and peers (Fox & Calkins, 2003). On the other hand, intrinsic emotional regulation originates in ones internal desire to achieve a self formulated cognitive goal. This process rests on exercising attention, for a constant vigilance state allows the child to react and inhibit an emerging emotion (Fox & Calkins, 2003).

The second core trait of emotional regulation refers to the process by which a person is able to alter the trajectory of the emotion (Gross, 2014). The strategies a person uses can be distinguished between antecedent- and response focused. The first category of strategies involves any action that is taken before an emotion response is completely activated. It also implies that the behavior that was about to be produced by the emotion is modified (Gross, 2002). For example, a child that reacts negatively towards a low grade changes its behavior and perception to understand the situation as a learning opportunity. On the other side, response-focused strategies entail any action

that is performed once an emotional response has taken place (Gross, 2002). To illustrate, a student, who is nervous about an exam, acts deliberately calm and confident.

An example of a response-focused strategy is expressive suppression, which involves the inhibition of an emotion or the ability to hide the emotion, restraining any external signal that shows the affective state (Gross, 2002). Research suggests that the inhibition of emotions, especially of the expression of negative emotions, can lead to a diminished affective communication that does not provide appropriate emotion regulation learning experiences. Additionally, an inability to express one's feelings may lead to development of helplessness feelings (Keenan et al., 2009). It has been reported that girls tend to inhibit more the expression of negative emotions in comparison to boys. Suppression of negative affective states has been associated with depression mainly in female participants (Chaplin, 2006).

On the other hand, an example of an antecedent-focused strategy is cognitive reappraisal. Studies show that cognitive reappraisal strategies decrease the experience of negative emotions and increase general wellbeing (Mairean, 2015). Moreover, Bardeen and Fergus (2014) found that persons that use more cognitive reappraisal strategies report less anxiety compared to individuals that tend to use more expressive suppression strategies.

The last core feature of emotional regulation, impact on emotions dynamics, depends on the goals a person is pursuing. Goals are able to modify emotional behavior by decreasing or increasing magnitude, duration, latency and the offset of the emotional response (Gross, 2014). For instance, a person trying to achieve recognition by executing a task that has some level of difficulty can reduce frustration external signs, show a modest behavior, and concentrate on positive and reassuring emotions.

There has been a lot of research regarding the development and enhancement of emotional regulation. Although there is not sufficient investigation done with the interpersonal neurobiology approach. Therefore the emotional regulation enhance aimed on the program is based on former studies with different programs for children. For instance, a study conducted by Hammond, Westhues and Schmidt (2009) intended to find a significant difference in the development of emotional regulation skills between a group of children exposed to a booster program and a comparison group that was not exposed to the program. Even though the sample for this study was small (24 students), the results show there was a significant improvement in the emotional regulation skills, especially in emotional awareness and emotional expressiveness, for the children exposed to the booster program in comparison to the group that was not exposed to the content. Filella-Guiu et al. (2014) applied an emotional education program to an experimental group of 651 lower school (between 6 and 12 years old) children in Spain. The program consisted in various activities that enhanced emotional consciousness, emotional regulation, emotional independence, social skills and general well being. Emotional consciousness increased at the post-test measurement as well as emotional regulation scores. The experimental sample also showed increased emotional independence and a higher level of general well being. Overall the experimental sample showed an increase on the global scores for all the variables measured while the control group showed no significant improvement. According to Diekstra and Gravesteyn (2008), who reviewed the efficiency several of emotional education programs, programs to enhance emotional and social skills have a positive impact on the development of children and promoted academic achievement.

Emotional regulation skills are developed by interaction with others. The first examples that a child has access to are caregivers. Parents might be role models for

emotional regulation strategies, which the children acquire or internalize. Using the Emotion Regulation Questionnaire (Children and Adolescents version and Adults version) Bariola, Hughes and Gullone (2012) tested the influence of parents separately on the emotional regulation strategies their children use. The ERQuestionnaire focuses on two main domains of emotional regulation: Cognitive Reappraisal, which is described as redefining an emotion-causing situation to change its affective impact, and Emotional Suppression, which is defined as the inhibition of affective expression. The longitudinal study was conducted with a large sample of 846 Australian infants and the results showed that mothers had an influence on their children suppressive strategies, but fathers didn't play a significant role in the same subject. Neither parents had an influence in the reappraisal strategies use of their children.

Teacher's influence in the development of emotional regulation

Not only parents can be role models for emotional regulation strategies. Growing up, children tend to spend more time in school than they do at home. Therefore, teachers can become important examples and provide learning experiences for emotional regulation skills. Al-Yagon & Mikulincer (2006) address this idea by explaining that teachers can also be attachment figures. The teacher-child relationship is linked to emotional and social functioning. Therefore, it can be a good basis to instruct and change insecure patterns of attachment. The study focused on loneliness and a sense of coherence. The concept of loneliness is linked to dissatisfaction in social relationships and a lack of social skills (emotional regulation is vital for social skills). On the other hand, the sense of coherence involves the ability to endure when faced to stressful situations and be able to make sense of the world. Among two other goals, the study investigated the positive correlation between children's perception of the teacher as a secure base and their social, academic and emotional functioning. With data

collected from a large sample, the researchers concluded that the teacher plays an important role as a secure base, even in middle childhood, and can influence the socio-emotional adjustment of the children.

Attachment is fundamental to develop emotional regulation (Bergin & Bergin, 2009). An insecure attachment pattern arises as a result of a lack of successful emotional regulation experiences. Caregivers of insecure children tend to have insensitive behaviors towards the necessities of the child or ignore intensive emotional states. On the other hand, caregivers of secure children have sensitive responses towards children's emotions, help them recover from distress and construct coping strategies. Both patterns of attachment settle different neuronal patterns that are activated during affective states (Bowlby, 1988). Following the interpersonal neurobiology view, interaction with caregivers shapes the brain structure for emotional responses. Similarly teachers as attachment figures during primary school can provide meaningful interactions to model neuronal connections or change previous neuronal patterns (Bergin & Bergin, 2009).

METHODOLOGY

Participants

Access to participants for this study was provided by a local private school. Recruitment e-mails in lower school were sent in grades 4th, 5th and 6th (appendix A). The e-mail entailed the purpose of the study, a sample of the activities to be developed, a brochure with information about the positive effects of enhancing emotional regulation for the children (Appendix A), an option to either participate in the collection of data with the ERQ-CA or participate in the collection of data and the emotional regulation enhance program and contact number and email to provide more information or to answer any questions regarding the study.

Positive responses were collected from 5th and 6th grade parents. Correspondingly, an informed consent was sent for parents and children explaining the general structure of the program, the anonymity of the recollected data, the possibility to drop off the study at any moment and contact information for any doubt or complaint (Appendix B). The principal and core teachers of the different grades were also informed of all the procedures and were given an informed consent as well. Parents and students were informed that around December they would receive a survey to identify the general level of satisfaction with the program.

The total sample for the quasi-experiment was 95 students. For both experimental and control samples, it was assumed that the participants had a mid-high socioeconomic level due to the expense of the private school where the program was applied. The experimental sample consisted of 73 children between 10 and 12 years old. The majority of children were 5th graders with Latin American descent. Of the 73 children, 32 were boys and 41 were girls. The control sample involved 22 children

whose parents agreed to let them take the ERQ-CA but did not approve the participation in the program. Of the 22 children the majority were Latin American 6th graders.

Table 1

Socio-demographic data from the experimental and control samples

Demographic Information		Experimental sample	Percentage	Control Sample	Percentage
Gender	Female	41	66%	8	36%
	Male	32	44%	14	64%
Age	10 years old	29	40%	5	23%
	11 years old	28	38%	11	50%
	12 years old	16	22%	6	27%
Grade	5 th grade	46	63%	6	27%
	6 th grade	27	37%	16	73%
Ethnicity	European descent	16	22%	3	14%
	Latin American descent	43	59%	17	77%
	Other descent	14	19%	2	9%

Population

The sample was obtained from mid-high socioeconomic population that has access to private education. Therefore, the sample only represents a small percentage of the children's population in Ecuador.

Opportunities for academic development are higher among this population. There is also a high rate of persons with foreign descent. The age of the population ranges between 9 and 12 years old.

Materials

The program was designed with three main approaches: anatomy, awareness and development of strategies. The program will be taught using a guide that contains all the activities and worksheets needed for the sessions. For the first part students will learn about the basic brain structures and brain functioning (appendix C). This knowledge will be connected to different life situations, for example learning, emotions, relationship interactions, etc. For the second approach, students will learn to identify emotions, thoughts and behaviors (appendix C). For instance, they will identify the situations, bodily sensations and behaviors that are a response to an emotional state. For this purpose, students will develop a personal journal that helps them identify their own responses (appendix C). Finally, during the third phase, students will start to develop personal strategies to regulate their emotions positively through role-playing activities, games and continuation of their personal journals. All students will receive a personal journal, a 12 x 15 cm notebook with 50 lined paper pages.

With the principal and teacher's agreement, it was established that the emotional regulation program would take place once a week, on a Wednesday, during extracurricular activities (from 3 pm to 4:30 pm). The program was approved to take place from October to April. A classroom was provided by the school as well as use of any technological tools needed (computer, projector, radio, etc.). Also, for the control sample pre-test and post-test a classroom was provided to administrate the psychometric tool during the extracurricular activities period (3:00 pm to 3:30 pm) for both testing days in October and April. Therefore, to measure any change on the emotional regulation strategies used by the students, the ERQ-CA will be administrated before and after the program. Copies of the questionnaire will be provided for all the participants.

A total of 25 sessions, 37 hours, will be offered to the children. Of the 37 hours, six will be spent for the anatomy approach part, 12 for the awareness activities and the remaining 19 hours will be dedicated to the development of personal emotional regulation strategies.

Emotion Regulation Questionnaire

The emotion regulation questionnaire (ERQ) was developed in 2003 by J. Gross and O. John as a psychometric tool to assess individual differences in two particular aspects of emotion regulation: cognitive reappraisal and expressive suppression. The first feature is related to an antecedent focused emotional regulation strategy. In other words, the cognitive reappraisal entails any strategy used by a person before the emotion response is fully formed and expressed. On the other hand, the second feature refers to a response focused emotion regulation strategy that involves inhibiting the emotion once it is already active. Moreover, the ERQ is rooted on Gross work with emotion regulation strategies. According to Gross investigations (1998, 2002), expressive suppression has been linked with lower psychological well being, deteriorated memory, decreased positive affect and it also provokes negative social consequences. On the other hand, cognitive reappraisal strategies show almost no negative cognitive or social consequences.

The Emotion Regulation Questionnaire consists in 10 items; six related to cognitive reappraisal and four related to expressive suppression. All 10 items are evaluated in a 7-point Likert scale. Higher scores on each scale indicate a greater use of the two corresponding emotional regulation strategies.

Through various populations, the ERQ has been adapted for children and adolescents (Gullone & Taffe, 2011). This version is called ERQ-CA. The Children and Adolescents version uses a simplified vocabulary and a 5-point Likert scale for the 10

items (appendix C). The study performed by Gullone and Taffe to validate the psychometric tool was conducted with a sample of 827 Australian participants between 10 and 18 years old. Reliability measures for the items on the Cognitive Reappraisal scale range from 0.80 to 0.86 and between 0.69 and 0.75 for the Expressive Suppression scale. Results showed internal consistency and stability over a 12-month period. The questionnaire has also been validated with other ethnic populations. For instance, Teixeira et al. (2015) applied it to a sample of 809 Portuguese adolescents and their results suggest ERQ-CA is a valid and reliable tool to evaluate emotional regulation strategies. Regarding the reliability, the Cognitive Reappraisal scale showed an alpha of 0.70 and the Expression Suppression scale results indicate an alpha of 0.65. They also found positive associations between cognitive reappraisal strategies and positive psychological functioning.

Study design

The study design chosen for this investigation follows a quasi-experimental model with pre-test and post-test nonequivalent groups. Since the sample for both treatment and control groups were not randomly chosen due to lack of access and approval by various schools, this investigation has a quasi-experiment model (Green, 2010). A pre-test and post-test with the ERQ-CA will be used to compare the experimental and the control scores. The aim of using the same tool for previous and subsequent evaluation is to analyze any possibilities of enhancement that might be a result of the Emotional Regulation Program.

Although the results of quasi-experimental design are not as generalizable to the target population as the results obtained by a real experimental-design, they can also provide useful information where it is not possible to randomly assign participants to

different samples. It is also important to mention that a quasi-experimental design cannot provide unequivocal causal inference (Green, 2010).

The pre-test and post-test administration of the same tool has both advantages and disadvantage. For instance, the use of the same tool for both tests can show an increase or decrease for the specific feature that the investigation is aiming for, though the results of the post-evaluation can be influenced by maturation. In other words, participants might improve their scores because of the familiarity with the psychometric tool (Glass, 1965). Since the children in this investigation will be re-evaluated after a period of seven months it is expected that the influence of maturation on the post-test will be minimal.

The nonequivalent grouping of the control and experimental sample are a result of the parent's approval to perform the investigation. For the control sample, caregivers only authorized the testing with the ERQ-CA. Therefore the groups are not similar in number, gender or ethnicity. Since the groups are nonequivalent, a two-sample t test will be used to analyze the data obtained from the ERQ-CA pre-test and post-test.

A two-sample t test estimates the treatment's effect by analyzing the data of the follow-up test, though it does not give any information about the data of the baseline that could be useful to improve efficiency if there is a correlation between the baseline and treatment results. The two-sample t test has proven to be more efficient when baseline and post-test responses are not correlated (Yand & Tsiatis, 2001). Since the children are tested with the ERQ-CA with no previous knowledge or administration of a program for emotional regulation it is suggested that the post-test result will reflect to some extent the effect of the program without taking any other variables into consideration. If the t test does not show any significant results, it will be assumed that the outcomes were influenced by other variables that were not taken into account.

Ethics

Parents, children, teachers and the principal were informed about the anonymity of the data collected during the investigation. All personal information about the students and parents will be stored in a safety box at the school and will be properly discarded (burned) after the investigation is completed. Informed consents will be kept for a period of two years in the school's safety box until the investigations results are approved.

All participants and parents were provided with a number and an e-mail address in case of any questions and to obtain information about the progress and results of the study. Parents and children were informed about the possibility to withdraw at any time from the investigation.

Results of the study will be sent to the school and parents in a brochure for a more interactive and comprehensive understanding, though any parent, teacher, or child wishing to access the complete investigation will receive it as hard copy through mail.

Since the program will be administrated to children (vulnerable population) a counselor will be available for any participant or parent that wishes to receive emotional and psychological assistance. The counselor's contact number will be provided at the beginning of the investigation. Also the counselor will stay in constant communication with the school's psychologist and learning specialist.

ANTICIPATED RESULTS

During the program it is anticipated that between 2 and 8 students will withdraw from the investigation, so pre-test result for those participant will be discarded before comparison with the post-test has taken place. Since the experimental sample has more participants it is likely that the majority of withdrawn participants will be of this sample.

It is expected that the pre-test will show a greater use of expressive suppression strategies among girls in comparison to boys in both control and experimental samples. Presumably there will be a difference of at least 5% higher scores from girls regarding the Expressive Suppression scale. It is mostly probable that all of the participants will score lower in the Cognitive Reappraisal scale regardless of gender.

During the program sessions, it is presumed that the children will be able to identify their emotions and will learn to recognize the contexts under which the emotions take place. It is also expected that some participants will have difficulties developing the activities due to their emotional arousing characteristics. Therefore assistance of the counselor will be available during deep-work activities and sessions.

After the program has taken place and participants in the experimental sample have completed the sessions and developed their own personal journals for emotional regulation strategies, it is expected that the post-test will show a difference compared to the pre-test. It is anticipated that girls will decrease scores in a 10 to 20% regarding the Expressive Suppression scale. It will be also probable that boys will decrease their scores for the same scale. Additionally, it is presumable that both genres in the experimental sample will show an increase in the use of cognitive reappraisal strategies and the results will be mirrored in the scores for the Cognitive Reappraisal scale. An increase of at least 15% on the use of these strategies is anticipated.

On the other hand, the results of both pre-test and post-test of the control sample are expected to show no significant difference in the use of expressive suppression and cognitive reappraisal strategies. It is most likely that the scores for both scales will show little increase or decrease because no intervention was made in this group. It is also anticipated that girls will continue to score higher in the Expressive Suppression scale in the post-test and both genres will score lower on the Cognitive Reappraisal scale in both pre- and post-test.

DISCUSSION

For both samples, on the pre-test, the results from the Expressive Suppression scale show that boys and girls tend to use response-focused strategies that inhibit the emotion that they experience. Previous investigations have shown a greater use inhibition of negative emotions especially in girls (Chaplin, 2006). Therefore the scores for the Expressive Suppression scale are consistent with these findings.

The investigation anticipated an increase on the scores for the Cognitive Reappraisal scale which is consistent with findings of Hammond, Westhues and Schmidt (2009) since the children exposed to the program show a significant improvement in their emotional regulation skills that is reflected on the increase of the Cognitive Reappraisal scale scores. In contrast, the control sample scores show no important increase or decrease in both scales, which suggest that the lack of intervention did not improve their emotional regulation skills. Similarly, the study conducted by Filella-Guiu et al. (2014) showed a significant improvement in emotional regulation and emotional consciousness of the experimental sample, where as the control sample scores indicated no increase in both variables. The results of the control group in this investigation are also consistent with the previous investigation of Hammond, Westhues and Schmidt, who did not find a significant improvement in the control sample for they were not part of the booster program.

Since the children showed enhancement on their emotional skills it can be also stated that the teacher figure was able to successfully coach emotional regulation skills, which agrees with the study of Al-Yagon and Mikulincer (2006). According to both authors the teacher can also provide a security sense as attachment figure that allows the child to explore the environment in school both academic and social. Additionally this study reinforces Siegel's (2010) proposal that relationships are powerful changing

agents for neuronal structures and subsequent behavioral expressions. The relationships that students develop among each other and with the teacher figure during the program allowed them to test and interact in new forms also consistent with an enhancement of their emotional regulation skills. Moreover it can be suggested that the knowledge of the brain and emotional functioning provides an additional tool for the children to enhance emotional regulation.

It is important to mention that the present study was conducted with an interpersonal neurobiology approach and the research on this field is very limited. Therefore results from this investigation can only be linked to programs with other approaches like the study of a booster program for emotional regulation conducted by Hammond, Westhues and Schmidt (2009) or the investigation of Filella-Guiu et al. (2014) where the emotions education program produced a significant improvement on the experimental sample. Nevertheless the present proposal opens a door to investigate different psychological phenomena using the interpersonal neurobiology approach.

Additionally, the present investigation is based on Latin American children of a high socioeconomic status; therefore, it provides information about the emotion regulation development of a portion of Ecuadorian population and it can help to establish a Latin American model where the influence of the environment creates a different pattern. As mentioned, the Latin American children experience a distinctive cultural and socioeconomic situation, which affects their growth. Hence a European or American model cannot describe properly the development of emotional regulation in a Latin American reality.

LIMITATIONS

The quasi-experiment design for this investigation entails various limitations. For instance, both samples were not randomly assigned to a condition and it implicates that the results can be a product of the participants on the samples and not of the program itself. Thus data obtained cannot be generalized to the population. Moreover, both samples were unequally distributed due to the approval of parents and differences on number of participants in both samples can have an effect on the results obtained with the ERQ-CA. Finally the samples provided for this investigation do not represent Ecuadorian children's population because all participants were of higher socioeconomic status and attended a private school in the area of Quito.

The program was created based on the interpersonal neurobiology theory, but has not been tested previously for reliability, validity or replicability. Therefore results might not be attributed to the program itself for other variables could have influenced the enhancement of emotional regulation on the experimental sample. Also, the psychometric tool used in this investigation measures antecedent- and response-focused responses in a limited span since its 10 questions are not sufficient to evaluate emotional regulation in a broader range.

FUTURE RESEARCH

Since the interpersonal neurobiology field still has not been fully investigated it allows a great range of research. The theory can be linked to many psychology fields as the present investigation joined interpersonal neurobiology and emotional regulation; therefore future research has wide variety of options. It is also important to mention that investigations conducted with Latin American populations are fewer and that a large amount of models of psychology phenomena have been developed using data from European and American populations. Hence investigation in Latin America still needs to emerge. To finish, future investigations could replicate the program to establish validity, reliability and replicability.

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APPENDIX A: ADVERTISEMENTS

Annex 1.

Email to parents

Subject Line: Seeking participants for an emotional regulation program

Dear parents,

My name is Samantha Steiner and I'm a 4th year Psychology student at Universidad San Francisco de Quito. Currently, I'm conducting my undergraduate thesis on emotional regulation. For that reason I'm seeking participants between 10 and 12 years old to take part on a program that enhances emotional regulation.

To regulate ones emotion is the ability to identify, shape, change or control an emotion. The results of this investigation are beneficial for your children because enhancing emotional regulation promotes academic achievement, increases attention, decreases stress and stimulates healthy relationships. The program consists in games, activities with classmates and personal reflections to help the children handle their emotions in a positive way.

Participation on this study would entail either, completing a short 15 minutes questionnaire at the beginning and end of the program (October and April) and attending weekly sessions at the school during extracurricular activities (day to be defined), or only take the questionnaire to help collect data for future research and comparison. Prior to the application of the questionnaire and the program you will be provided an informed consent with the rights and ethics procedures to assure anonymity and security.

Following the conclusion of this investigation, result will be made in a brochure format by e-mail or as hard copy trough e-mail with previous request.

If you have any further questions, please do not hesitate to contact me through e-mail: ssteiner@erprogram.edu.ec or by phone: 0912345678.

Thank you for your time,

Samantha Steiner

Fourth Year, Undergraduate Psychology Student
Universidad San Francisco de Quito.

Annex 2.
Information Brochure attached to parent's e-mail



Interpersonal
Neurobiology Program
to Enhance
*Emotional
Regulation*



October 2015 to
April 2016

Sign up to participate!

 happy	 afraid
 guilty	 excited

**What is emotional regulation?
How can it be beneficial?**

Emotional regulation is the ability to recognize, modified and express emotions in various situations. Being able to control your emotions can benefit your child by:

- Improving academic achievement
- Enhancing general well-being
- Healthy social interactions
- Better solving problems strategies
- More caring behaviors towards others
- Lower levels of stress
- Improving attention

Questions or information?

We are available through phone or e-mail.

Contact Information:

Samantha Steiner
(psychology student),
0912345678, e-mail:
ssteiner@erprogram.edu.ec

Laura Solis (counselor),
0987654321,
e-mail:
lsolis@erprogram.edu.ec

“The greatest natural resource is the minds of our children.”

-Walt Disney

More
information
available

APPENDIX B: Ethics



Comité de Bioética, Universidad San Francisco de Quito
El Comité de Revisión Institucional de la USFQ
The Institutional Review Board of the USFQ

SOLICITUD PARA APROBACION DE UN ESTUDIO DE INVESTIGACION

INSTRUCCIONES:

1. Antes de remitir este formulario al CBE, se debe solicitar vía electrónica un código para incluirlo, a comitebioetica@usfq.edu.ec
2. Enviar solo archivos digitales. Esta solicitud será firmada en su versión final, sea de manera presencial o enviando un documento escaneado.
3. Este documento debe completarse con la información del protocolo del estudio que debe servir al investigador como respaldo.
4. Favor leer cada uno de los parámetros verificando que se ha completado toda la información que se solicita antes de enviarla.

DATOS DE IDENTIFICACIÓN	
Título de la Investigación	An interpersonal Neurobiology Program to Enhance Emotional Regulation
Investigador Principal <i>Nombre completo, afiliación institucional y dirección electrónica</i>	Samantha Jutine Steiner Pino, Universidad San Francisco de Quito, ssteiner@erprogram.edu.ec
Persona de contacto	Samantha Steiner, 0912345678, ssteiner@erprogram.edu.ec
Nombre de director de tesis y correo electrónico	Sonja Embree, sembree@usfq.edu.ec
Fecha de inicio de la investigación <i>Octubre 2015</i>	
Fecha de término de la investigación <i>Abril 2016</i>	
Financiamiento <i>personal</i>	

DESCRIPCIÓN DEL ESTUDIO	
Objetivo General	El objetivo de la investigación es aumentar la regulación emocional en niños de entre 10 a 12 años a través de una intervención con un programa basado en neurobiología interpersonal. El incremento de la regulación emocional permite a los niños tener mejores relaciones con sus profesores y compañeros, aumenta el rendimiento académico y reduce los niveles de estrés.
Objetivos Específicos	Aumenta el uso de estrategias de regulación emocional centradas en la respuesta afectiva. Disminuir el uso de estrategias de inhibición emocional.
Diseño y Metodología del estudio	Estudio cuantitativo con enfoque cuasi-experimental con muestras inequivalentes. Se obtendrá la muestra de un colegio privado en Quito, Ecuador. La muestra consiste en 95 niños de entre 10 y 12 años de edad distribuidos en dos grupos: 73 niños en la muestra experimental y 22 niños en la muestra control. Los datos

serán recabados con el uso del Emotional Regulation Questionnaire- Children and Adolescents en una pre- y post-evaluación. El cuestionario mide el uso de estrategias antecedentes o centradas en la emoción. Los resultados se analizarán con un t-test el cual indicara si hubo un aumento o una disminución de las estrategias de regulación emocional.

Procedimientos

Los participantes serán reclutados del colegio que haya aprobado su reclutamiento. Un e-mail será enviado al director de primaria, profesores y padres para establecer el primer contacto, el cual incluye información sobre la investigación y datos del contacto par mayor información. Si los padres acceden, un consentimiento informado será enviado a padres e hijos con detallas del programa y aspectos éticos de la investigación. Una vez aprboda la participación tanto por padres como por hijos/as, se aplicará un cuestionario corto (ERQ-CA) que mide dos tipos de estrategias de regulación emocional: reevaluación afectiva e inhibición afectiva. Se aplicará el programa con sesiones semanales por un período de siete meses y posteriormente se reevaluará las estrategias de regulación emocional con el mismo cuestionario.

Recolección y almacenamiento de los datos

El cuestionario se mantendrá anónimo, aunque recolectará datos demográficos de los niños como género, edad y ascendencia. Los consentimientos informados y los cuestionarios serán almacenados en una caja de seguridad en la institución educativa. Al finalizar la investigación los cuestionarios serán quemados. Los consentimientos informados serán mantenidos en la caja de seguridad de la institución por un periodo de dos años después del cual serán igualmente quemados. La única persona con acceso a los datos será el director y Samantha Steiner

Herramientas y equipos *Incluyendo cuestionarios y bases de datos, descripción de equipos*

Emotionar Regulation Questionnaire – Children and Adolescents
Pro-quest Database
J-Stor Database

JUSTIFICACIÓN CIENTÍFICA DEL ESTUDIO

El presente estudio es pionero en utilizar la neurobiología interpersonal para el aumento de la regulación emocional en niños. Aporta tanto al conocimiento sobre el modelo lationamericano de la regulación emocional en niños como al campo emergente de la neurobiología interpersonal. Muchos estudios han demostrado que los programas de regulación emocional tienen un impacto positivo y aumentan el rendimiento académico en los niños (Diekstra, 2008). En consecuencia, el presente programa busca beneficiar a niños de un colegio privado del área de Quito, aumentando su regulación emocional a través de desarrollar estrategias personales para manejar sus emociones.

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DESCRIPCIÓN DE LOS ASPECTOS ÉTICOS DEL ESTUDIO	
Criterios para la selección de los participantes	Se escogieron participantes entre 10 y 12 años debido a la naturaleza, lenguaje y actividades desarrolladas en el programa para el aumento de regulación emocional.
Riesgos	Debido a que ciertas actividades incluyen juegos donde los participantes se mueven dentro del aula, existe un riesgo físico mínimo. Se minimizará el riesgo de lesiones o golpes realizando las actividades únicamente dentro del aula en un espacio seguro y controlado por la investigadora. En cuanto al riesgo emocional, las actividades del programa tienen un fuerte efecto emocional por lo que una psicóloga estará supervisando el proceso y también podrá ser contactada para apoyo psicológico y emocional tanto para padres como para los participantes. La investigadora se mantendrá en constante contacto con la psicóloga del área de primaria y la psicopedagoga para monitorear cualquier incidente o progreso de los participantes.
Beneficios para los participantes	Los participantes obtendrán varios beneficios del aumento de la regulación emocional como: mayor capacidad de concentración, disminución del grado de estrés, aumento de interacciones sociales positivas, mejoramiento del rendimiento académico y un aumento en la sensación de bienestar general. Si enviará los resultados de la investigación a través de correo electrónico en formato de brochure. Bajo pedido también se podrá obtener la copia física por correo.
Ventajas potenciales a la sociedad	Ayuda a generar un modelo latinoamericano sobre la regulación emocional. Puede replicarse el estudio en otras instituciones para aumentar la regulación emocional.
Derechos y opciones de los participantes del estudio	Los participantes serán informados sobre su derecho de retirarse en cualquier momento de la investigación tanto si los niños así lo desean como si los padres desean retirar a sus hijos del programa.
Seguridad y Confidencialidad de los datos	Los datos recabados por el cuestionario serán únicamente demográficos con el fin de mantener el anonimato de los participantes. Una vez terminada la investigación serán quemados. Por otro lado, los consentimientos informados serán almacenados en una caja de seguridad dentro de la misma institución educativa y después de dos años serán quemados de igual manera para proteger a los participantes.
Consentimiento informado	El consentimiento informado será entregado a estudiantes que hayan aceptado participar y será enviada una copia para los padres de los participantes. A los estudiantes se les explicará sus derechos y la posibilidad de retirarse de la investigación en cualquier momento.
Responsabilidades del investigador y co-investigadores dentro de este estudio.	La investigadora es responsable del bienestar físico y emocional de los participantes durante las sesiones semanales del programa y pondrá a disposición una persona para asistir el bienestar psicológico tanto de los participantes como de sus padres.

Documentos que se adjuntan a esta solicitud			
Nombre del documento	Adjunto	Idioma	
		Inglés	Español
PARA TODO ESTUDIO			
1. Formulario de Consentimiento Informado (FCI) y/o Solicitud de no aplicación o modificación del FCI *			x
2. Formulario de Asentimiento (FAI) <i>(si aplica y se va a incluir menores de 17 años)</i>			
3. Herramientas a utilizar: Emotional Regulation Questionnaire – Children and Adolescents			x
4. Hoja de vida (CV) del investigador principal (IP)			
SOLO PARA ESTUDIOS DE ENSAYO CLÍNICO			
5. Manual del investigador			
6. Brochures			
7. Seguros			
8. Información sobre el patrocinador			
9. Acuerdos de confidencialidad			
10. Otra información relevante al estudio (especificar)			

(*) La solicitud de no aplicación o modificación del FCI por escrito debe estar bien justificada.

2015 -
2016**CRONOGRAMA DE ACTIVIDADES**

Descripción de la Actividad	Fechas	Septiembre 2015	Octubre 2015	Noviembre 2015	Diciembre 2015	Enero 2016	Febrero 2016	Marzo 2016	Abril 2016
		1	2	3	4	5	6	7	8
Contacto inicial: reclutamiento		X							
Consentimiento informado y formulario de asentimiento		X							
Pre-test con ERQ-CA			X						
Sesiones semanales del programa de neurobiología interpersonal			X	X	X	X	X	X	X
Post-test con ERQ-CA									X
Análisis de datos									X
Publicación: Agosto 2016									

CERTIFICACIÓN:

1. Certifico no haber recolectado ningún dato ni haber realizado ninguna intervención con sujetos humanos, muestras o datos. Sí () No ()
2. Certifico que los documentos adjuntos a esta solicitud han sido revisados y aprobados por mi director de tesis. Sí () No ()
No Aplica ()

Firma del investigador: _____ (con tinta azul)

Fecha de envío al Comité de Bioética de la USFQ: _____



Comité de Bioética, Universidad San Francisco de Quito
 El Comité de Revisión Institucional de la USFQ
 The Institutional Review Board of the USFQ

Formulario Consentimiento Informado

Título de la investigación: An Interpersonal Neurobiology Program to Enhance Emotional Regulation

Organización del investigador Universidad San Francisco de Quito

Nombre del investigador principal Samantha Justine Steiner Pino

Datos de localización del investigador principal cel.: 0912345678 e-mail: ssteiner@erprogram.edu.ec

DESCRIPCIÓN DEL ESTUDIO

Introducción

Este formulario incluye un resumen del propósito de este estudio. Usted puede hacer todas las preguntas que quiera para entender claramente su participación y despejar sus dudas. Para permitir la participación de su hijo/a puede tomarse el tiempo que necesite para consultar con su familia y/o amigos. Su hijo/a ha sido invitado/a a participar en un investigación sobre regulación emocional porque se busca dar una herramienta útil de vida a niños y niñas entre 10 y 12 años.

Propósito del estudio

El propósito del estudio es aumentar la regulación emocional (habilidad para reconocer y manejar las propias emociones) en niños para ayudarles tanto en su vida académica como social. Se espera la participación de 50 niños y niñas en promedio. El programa aporta positivamente a su hijo/a ayudándole a identificar las distintas emociones y desarrollando estrategias personales.

Descripción de los procedimientos

El primer paso implica la aplicación de un cuestionario corto de 15 minutos que mide dos tipos de estrategias de regulación emocional. Posteriormente se iniciarían las sesiones semanales del programa que se van a dividir en tres temas principales: conocimiento general de estructuras cerebrales que participan en las emociones, identificación de emociones y desarrollo de estrategias personales de regulación emocional. Aproximadamente el programa se compondrá de 25 sesiones (una por semana) durante el tiempo de extracurriculares (3:00 a 4:20) en un aula asignada por el colegio. Al final del programa se volverá a evaluar las estrategias de regulación emocional con el mismo cuestionario corto.

Riesgos y beneficios

Debido a que ciertas actividades incluyen juegos donde los participantes se mueven dentro del aula, existe un riesgo físico mínimo. Se minimizará el riesgo de lesiones o golpes realizando las actividades únicamente dentro del aula en un espacio seguro y controlado por la investigadora. En cuanto al riesgo emocional, las actividades del programa tienen un efecto emocional por lo que una psicóloga estará supervisando el proceso y también podrá ser contactada para apoyo psicológico y emocional, tanto para padres como para los participantes. La investigadora se mantendrá en constante contacto con la psicóloga del área de primaria y la psicopedagoga para monitorear cualquier progreso de los participantes.

Los beneficios de esta investigación se anticipa que podrán observarse a partir de la 9 sesión del programa. La participación en todas las sesiones del programa acentuara los beneficios obtenidos. Entre los efectos positivos que su hijo/a obtendrá por su participación están: una mejora de las habilidades sociales e interacciones con los demás, aumento de la atención y el rendimiento académico, una mayor sensación de bien estar y una reducción de estrés.

Confidencialidad de los datos
<p>Para nosotros es muy importante mantener su privacidad y la de su hijo/a, por lo cual aplicaremos las medidas necesarias para que nadie conozca su identidad ni tenga acceso a sus datos personales:</p> <p>1) La información que nos proporcione será únicamente de datos demográficos anónimos como edad, género y ascendencia. Únicamente la investigadora, Samantha Steiner, tendrá acceso a dicha información.</p> <p>2) Su nombre no será mencionado en los reportes o publicaciones.</p> <p>3) Los cuestionarios e información recolectada será almacenada en una caja de seguridad dentro de las instalaciones del colegio.</p> <p>4) El Comité de Bioética de la USFQ podrá tener acceso a sus datos en caso de que surgieran problemas en cuando a la seguridad y confidencialidad de la información o de la ética en el estudio.</p>
Derechos y opciones del participante
<p>Usted puede decidir no aprobar la participación de su hijo/a y si decide no continuar participando solo debe decírselo al investigador principal o a la persona que le explica este documento. Además aunque decida aprobar la participación, su hijo/a puede retirarse del estudio cuando lo desee, sin que ello afecte los beneficios de los que goza en este momento.</p> <p>Usted no recibirá ningún pago ni tendrá que pagar absolutamente nada por participar en este estudio.</p>
Información de contacto
<p>Si usted tiene alguna pregunta sobre el estudio por favor llame al siguiente teléfono 0912345678 que pertenece a Samantha Steiner, o envíe un correo electrónico a ssteiner@erprogram.edu.ec</p> <p>Si usted tiene preguntas sobre este formulario puede contactar al Dr. William F. Waters, Presidente del Comité de Bioética de la USFQ, al siguiente correo electrónico: comitebioetica@usfq.edu.ec</p>

Consentimiento informado	
<p>Comprendo la participación de mi hijo/a en este estudio. Me han explicado los riesgos y beneficios de la participación en un lenguaje claro y sencillo. Todas mis preguntas fueron contestadas. Me permitieron contar con tiempo suficiente para tomar la decisión de participar y me entregaron una copia de este formulario de consentimiento informado. Acepto voluntariamente participar en esta investigación.</p>	
Firma del participante	Fecha
<p>Nombre del investigador que obtiene el consentimiento informado</p> <p>Samantha Justine Steiner Pino</p>	
Firma de la investigadora	Fecha

APPENDIX C: INSTRUMENTS

Annex 3.

Sample Items of the Emotional Regulation Questionnaire – Children and Adolescents

	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly agree 5
When I want to feel happier, I think about something different.					
When I want to feel less bad (e.g. sad, angry or worried), I think about something different.					
I control my feelings about things by changing the way I think about them.					
I keep my feelings to my self.					
When I'm feeling happy I'm careful not to show it.					
I control my feelings by not showing them.					

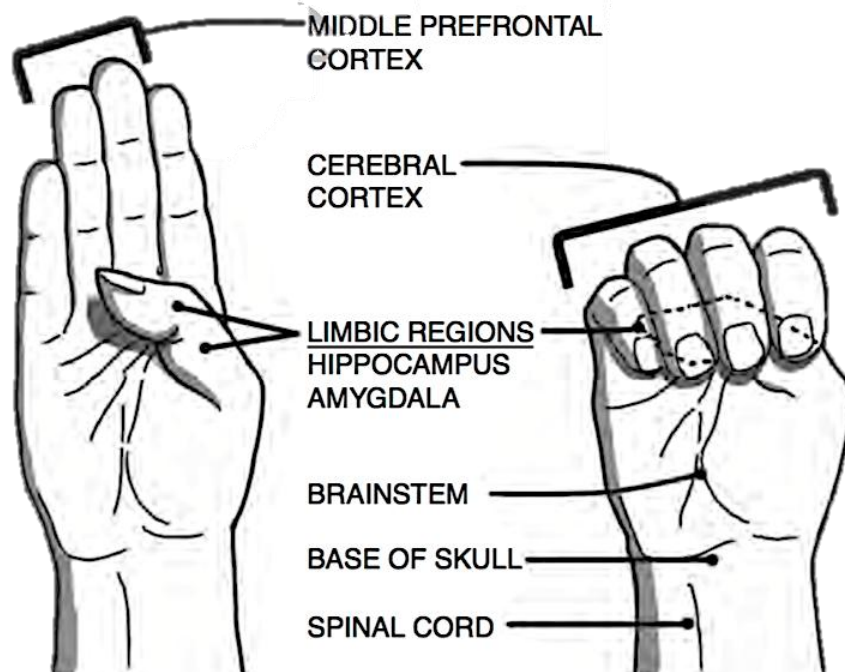
Annex 4.**Sample activities of the program to enhance emotional regulation**

Name: _____

Date: _____

HAND MODEL OF THE BRAIN

- Using the hand model of the brain (Siegel, 2012) build a modeling clay hand with different colors to differentiate the brain parts and explain the functioning of each part



Materials	Brain parts
Green clay	Cerebral cortex
Yellow clay	Hippocampus
Blue clay	Amygdala
Red clay	Brainstem
Black clay	Base of skull
Pink clay	Spinal Cord
Brown clay	

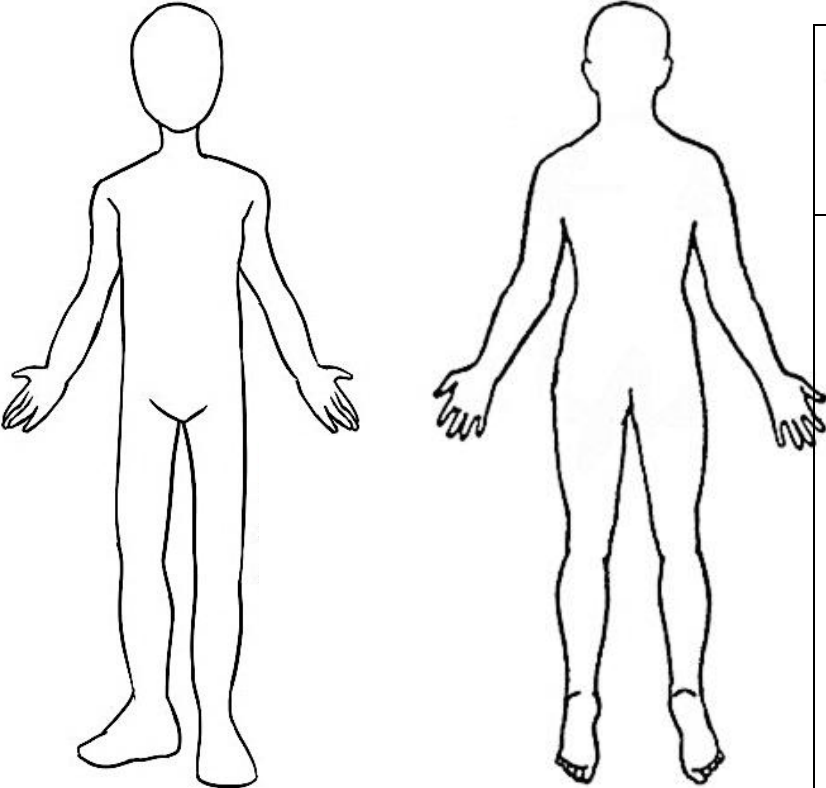
Copyright © 2012 by Mind Your Brain, Inc. Siegel, D. (2012). *The Developing Mind: How Relationships and the Brain Interact to Shape Who We Are*. USA: Guilford Press.

Name: _____

Date: _____

EMOTION: _____

- Draw arrows to show where you feel the emotion
- Explain your answers in the table



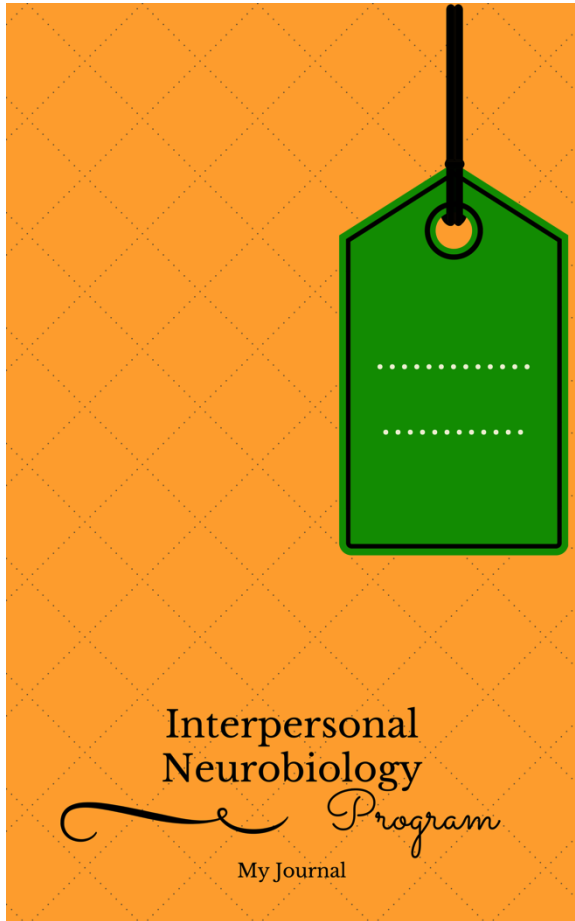
Name the parts of your body where you feel _____	Explain how you feel when you are _____: sensations in your body, mood, behaviors, etc.	Under which situation do you feel _____:

Name: _____

Date: _____

MY JOURNAL

- Set up your journal: put your name in the front cover.
- In the first page: write down what you find difficult/easy about emotions and what you think you could learn about your own emotions.



Your name

