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'Now, he will be the leader of the house': An equine intervention with at-risk Guatemalan youth

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ABSTRACT

Equine-facilitated interventions have shown promise for facilitating emotional and behavioural changes in diverse groups. The current study evaluated the effectiveness of an equine workshop for vulnerable Guatemalan youth using a mixed-method approach. The 37 participants (M_{age} = 18.22, SD = 2.25, 14 girls) came from difficult circumstances including poverty and other risks. Using a wait-list control group design with random assignment, the effects of a 2-day equine-based workshop were evaluated. Participants completed quantitative measures of leadership, emotion regulation, aggression, and interpersonal response to threat. Mentors completed reports of aggression and prosocial behaviour. Self-reported leadership increased significantly in the group receiving the intervention; mentor reports of aggression revealed significant decreases. Focus groups with participants and family members reported multiple benefits, including improved emotion regulation. Equine-based interventions may provide at-risk Guatemalan youth with tools of leadership, reduced violence and aggression, and better emotion regulation.

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At-risk youth; equine interventions; Guatemala; leadership

Characterized as Latin America's youngest nation due to its high percentage of youth, Guatemala is a country in which issues of young people should be at the forefront (Population Reference Bureau, 2011). Of the country's nearly 15 million people, nearly 60% are aged 25 or younger (Central Intelligence Agency (CIA), 2016). Although they comprise a large percentage of the population, many Guatemalan youth live in difficult circumstances. Poverty represents a significant challenge to their well-being with two-thirds of the country's urban population living in slums (United Nations International Children's Emergency Fund [UNICEF, 2008]). Categorized by the World Bank (2016) as a lower middle-income country, over 50% of the population lives below the poverty line. Many problems like malnutrition (Guatemala has the fourth highest rate in the world) are exacerbated in rural areas and are more severe for women and girls (World Food Programme (WFP), 2016).

Beyond poverty, physical and sexual violence are major risks for Guatemala's young people (UNICEF, 2014b). When asked if they had been robbed in the last month, for example, 36% of Guatemalan sixth graders said yes (UNICEF, 2014a). For victims from birth to 19 years, the country has the second highest homicide rate in the world. Furthermore, homicide is the leading cause of death among the country's adolescent boys (UNICEF, 2014a). In addition, approximately 25% of Guatemalan adolescent

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girls reported that they were physically mistreated prior to age 15 (Instituto Nacional de Estadística, 2014). The rates of sexual violence are also alarming. Nineteen per cent of adolescent girls aged 15–19 reported forced sexual intercourse and/or other involuntary sexual behaviours by their fathers alone (UNICEF, 2014a).

Investments in adolescents can serve to combat the cycle of poverty, reduce levels of violence, promote future societal development, and increase a nation's ability to thrive (UNICEF, 2011; Wuermli, Tubbs, Petersen, & Aber, 2015). Despite attempts to intervene with Guatemalan youth who are at risk, there are few evidence-based programmes that foster their development and reduce their likelihood of being perpetrators or victims of violence (Office of Inspector General, 2014). The purpose of the present study was to empirically investigate the effectiveness of an intervention with at-risk Guatemalan youth, evaluating whether an equine-based programme fostered leadership and positive interpersonal communication and decreased aggressive attitudes among Guatemalan youth.

Programmes that involve interactions with horses are used widely for addressing physical disabilities such as cerebral palsy (Tseng, Chen, & Tam, 2013) and ameliorating psychological and behavioural problems such as substance abuse, schizophrenia, mood and stress disorders, developmental disorders, autism spectrum disorder, insecure attachment, depression, and posttraumatic stress disorder (Beetz, Winkler, Julius, Uvnas-Moberg, & Kotrschal, 2015; Esbjorn, 2006; McConnell, 2010). In addition, equine-based interventions have been proposed to improve leadership skills and foster self-awareness, perceived social support, emotional intelligence, and well-being in individuals without diagnosed psychological disorders (Adams, 2013; Chappell, 2014; Hauge, Kvalem, Berget, Enders-Slegers, & Braastad, 2014; Meola, 2016; Pendry & Roeter, 2013).

Although other animals show benefits for enhancing well-being (McCardle, McCune, Griffin, Maholmes, & Freund, 2011), horses have unique qualities that make them especially well suited for authentic interactions with humans. First, horses are extremely sensitive to human emotion and emotional expression. In a recent study, horses discriminated between photographs of an angry and a happy human face (Smith, Proops, Grounds, Wathan, & McComb, 2016). In another study, individuals who were either leading or riding horses were told that in the next lap, an umbrella would be opened as the pair passed; this was potentially frightening to horses (Keeling, Jonare, & Lanneborn, 2009). Although the umbrella was not opened, the heart rates of both the horses and their human companions increased as they passed the indicated spot. In a third study, the behaviour and heart rate of horses changed in response to stationary humans who were either calm, afraid, or physically stressed by recent exercise (Merkies et al., 2014). Those three studies demonstrate the extraordinary sensitivity of horses to human feelings and emotions. Thus, the horse can serve to mirror feelings of the people surrounding them. Secondly, by nature horses are both herd and prey animals; these qualities predispose them not only to being sensitive to nonverbal behaviour, but to look for and expect leadership from others (Esbjorn, 2006; Roberts, 2002a, 2002b). Third, the size of horses means that they cannot readily be forced to act; humans must use other means to elicit their cooperation and desired behaviours. Learning to direct the behaviour of such a large animal can potentially decrease fearfulness and increase self-confidence.

The authors of the many review articles evaluating the literature on equine-facilitated interventions generally conclude that the programmes show potential, but that additional and better controlled studies are needed (All, Loving, & Crane, 1999; Anestis, Anestis, Zawilinski, Hopkins, & Lilienfeld, 2014; Bachi, 2012; Bates, 2002; Beebe, 2008; Brandt, 2013; Cantin & Marshall-Lucette, 2011; Frewin & Gardiner, 2005; Kendall, Maujean, Pepping, & Wright, 2014; Kruger, Trachtenberg, & Serpell, 2004; Lee, Dakin, & McLure, 2015; Lentini & Knox, 2009, 2015; MacKinnon et al., 1995; May, Seivert, Cano, Casey, & Johnson, 2016; Notgrass, 2011; Notgrass & Petinelli, 2015; Selby & Smith-Osborne, 2013). A critical review published in 2014 summarized the state of the art of equine interventions as lacking empirical support and theoretical basis, with most studies exhibiting multiple threats to validity (Anestis et al., 2014). The authors argued that equine-assisted interventions should not be offered until better research supports their use. Since that time, additional, better controlled studies are available (Lentini & Knox, 2015). Here we focus on the recent and well-controlled research on the effectiveness of equine interventions for children and youth.

Equine-facilitated psychotherapy for children and youth varies in duration, the nature of the activities involved, and reported outcomes (Lentini & Knox, 2015). Of 47 studies published between 2008 and 2014, including a total of 672 treatment participants, the typical intervention was a 1-h session per week for 12 weeks. Only four studies met the rigorous scientific criteria of (1) including more than 10 participants, (2) implementing random-assignment to treatment and control groups, and (3) utilizing standardized outcome measures. Two of those measured behavioural effects of an equine intervention. Bass and colleagues found that 19 children with autism spectrum disorder, compared to a wait-list control group showed more social motivation, as well as cognitive and sensory changes following a therapeutic riding programme (Bass, Duchowny, & Llabre, 2009). Forty-nine typically developing Norwegian adolescents reported significant increases in perceived social support following a 4-month mounted and unmounted equine programme (Hauge et al., 2014). Ten additional studies with fewer participants and/or controls showed positive changes for at-risk adolescents (Bachi, Terkel, & Teichman, 2012; Burgon, 2011; Chaplin, 2010; Dell et al., 2011; Ecken, 2012; Maujean, Kendall, Lillan, Sharp, & Pringle, 2013; Meek, 2012; Trotter, Chandler, Goodwin-Bond, & Casey, 2008). Of those studies, the largest with a sample of 164 child and adolescent participants, demonstrated changes in 17 behaviours, including externalizing, internalizing, maladaptive, and adaptive behaviours (Trotter et al., 2008).

Since the studies reviewed by Lentini and Knox (2015), there has been additional research on equine interventions with youth. A 2015 study (Frederick, Hatz, & Lanning, 2015) randomly assigned 26 at-risk adolescents to a nonmounted treatment group (14 participants) and control group (12 participants). Following the 5-week programme the treatment group showed lower levels of depression and higher levels of hope. In addition, less well-controlled equine interventions have demonstrated more secure attachment (Balluerka, Muela, Amiano, & Caldentey, 2014), less endorsement of aggressive behaviour (Gibbons, Cunningham, Paiz, Poelker, & Montufar Cardenas, 2015), greater serenity and confidence (Hemingway, Meek, & Hill, 2015), more self-determination (Grimm, 2015), and fewer symptoms of PTSD (McCullough, Risley-Curtiss, & Rorke, 2015) among youth.

Leadership abilities have also been fostered by equine interventions. Although the evidence is limited and the research uncontrolled or poorly controlled, there are many accounts of the value of equine-assisted interventions in increasing leadership abilities (Adams, 2013; Chappell, 2014; Dyk et al., 2013; Grootveld, 2015; Meola, 2016; Pohl, 2015; West, 2015). Overall, those researchers argue that through interacting with horses, individuals can gain self-confidence and improve their emotional intelligence, especially emotion regulation. Because those qualities are essential for effective, authentic leadership, the equine-based programmes provide valuable experiences (e.g. Adams, 2013).

All equine-based programmes rely on experiential learning including the assumption that learning is a continuous process grounded in transactions between the person and the environment (Kolb, 2015). Typically, in equine-based programmes, participants must solve problems in real time, such as how to elicit behaviours in horses without the use of touch or force. Beyond those basic principles programmes vary greatly, and can include ground work, riding, and vaulting. Some inventions, especially those aimed at producing empowered leaders use a Join-Up® exercise, developed by Monty Roberts (About Join-Up®, 2016; Roberts, 2002a, 2002b). During the exercise that occurs in a round pen, a horse is encouraged to choose a person as the leader, show signs of respect, and begin to follow that person. Although few researchers use the Join-Up® designation because of its proprietary nature, many make reference to similar exercises in the round pen (e.g. Adams, 2013; Burgon, 2011; Chappell, 2014; Dell et al., 2011; Dyk et al., 2013; Esbjorn, 2006; Kelly, 2014; Meola, 2016; Pohl, 2015).

In a previous community study in Guatemala, the Join-Up® experience served as the centrepiece of a 4-week equine-assisted programme, designed to reduce attitudes towards violence (Gibbons et al., 2015). Not only did the attitudes of the participants change in the expected direction, but their female relatives reported calmer, less aggressive behaviour and their horses were less reactive to the participants' approach. Although 10 of the 18 participants were adolescents, the programme was not aimed specifically at youth. The present study was designed as a follow-up to that study. First, would the workshop be effective if delivered in two whole-day workshops and a feedback session, rather than spread over 4 weeks? Second, would it be useful for at-risk youth who, unlike the previous community

members, had little or no experience with horses? Would the programme improve leadership skills? Was emotion regulation a key mechanism of change? We designed the current study to address those key issues.

Method

Participants

The original sample in the current study included 40 youth; however, because three of the participants did not participate beyond the first pre-test, they were dropped from the study. Thirty-seven adolescents and young adults (M_{age} = 18.22, SD = 2.25, range = 15–23, 14 girls) were included in the analysis. The average household size (including the participant) was 9.24 people (range of 2–20). Of the 32 participants reporting ethnicity, 28 identified as Ladino (mixed Indigenous and European descent) and four identified as Indigenous. Participants were either current students (n = 29) or recent graduates (n = 8) of a school in Jocotenango, Guatemala that serves economically disadvantaged youth. Families must demonstrate severe economic need for enrolment. The school educates children in kindergarten through middle school. The graduates who participated in this study were still given some financial and social support from the school while they completed their secondary education elsewhere. Participants were chosen for this study based on the recommendation of the school psychologist. She selected students who were coming from particularly dire circumstances (e.g. abuse and violence at home).

Materials

Data were collected from three sources: participants, participant mentors at the school, and parents. Participants completed the self-report measures described below at three time points. Some also participated in focus groups at the end of the study once the experimental group and wait-list controls had completed the horse workshops. Mentors completed behavioural reports of their mentees also detailed below. Parents participated in focus groups after the final post-test.

Participant questionnaires

The measures, all originally developed in English, were translated to Spanish by the third author bilingual in Spanish and English. Another native Spanish speaker, also fluent in English, verified the translations and minor discrepancies were reconciled via discussion. Because youth participants may not have had much exposure to Likert-style scales, slight modifications were made by including illustrations with scale points to indicate the magnitude of agreement/disagreement. The range in Cronbach's alpha values for each questionnaire reflects the internal consistency reliability estimates across the three testing administrations.

Youth Leadership Life Skills Development (YLLSD; Ricochet Leadership Skills Survey, n.d.; Smith, Gentry, & Ketrig, 2005; adapted from Seevers, Dormody, & Clason, 1995). The YLLSD is a 30-item self-report measure of leadership ability (see Ricochet Leadership Skills Survey, n.d.; Smith et al., 2005). Participants responded to each item on a 4-point Likert scale ranging from 1 (*no ability*) to 4 (*a lot of ability*). Circles of various sizes were presented along with the scale anchors to illustrate the magnitude of agreement/disagreement. Sample items included 'I feel I can set realistic goals' and 'I feel I can listen effectively'. In the current study, alphas were excellent ranging from .92 to .96.

Transgression-Related Interpersonal Motivations Inventory (TRIM; McCullough et al., 1998). The TRIM is a 12-item scale that assesses reactions to interpersonal transgressions. Responses are rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Response options were illustrated as follows: NO/no/maybe/yes/YES (see Chaplin & John, 2010). Higher scores indicate higher tendency for retaliation and ill will for the transgressor. Before answering the items, participants were

prompted to think of someone who recently hurt them and answered the questions with the person in mind. Sample items included 'I cut off the relationship with him/her' (avoidance) and 'I am going to get even' (revenge). Items are divided into two subscales: Avoidance ($\alpha = .85–.91$) and Revenge ($\alpha = .86–.90$).

Normative Beliefs about Aggression Scale (NBAS; Huesmann & Guerra, 1997). The NBAS is a 20-item measure that addresses approval of physical and verbal aggression in youth. For nine items, the scale ranged from 1 (*it's perfectly okay*) to 4 (*it's really wrong*) and for the remainder, the scale was reversed and lower scores indicated disagreement (i.e. lower acceptance of aggressive responses). For analysis, the 11 items were reversed such that higher scores indicated greater acceptance of aggression. Smiling or frowning faces that varied in size to illustrate magnitude of agreement/disagreement accompanied scale points. Participants were given eight brief scenarios (e.g. 'Suppose a boy says something bad to a girl' and 'Suppose a girl hits another girl, Maria') and answered questions about the acceptability of responses to those situations. A question posed in response to the first example is 'Do you think it's wrong for the girl to scream at home' and in response to the second, 'Do you think it is wrong for Maria to hit her back?' The remaining seven questions addressed more general views on aggression (e.g. 'In general, it is okay to yell at others and say bad things'.) Alphas ranged from .69 to .85.

Emotion Regulation Questionnaire (ERQ; Gross & John, 2003). The ERQ is a 10-item scale of emotion regulation with two subscales. The Reappraisal subscale includes six items (e.g. 'I control my emotions by changing the way I think about the situation I'm in') and the Suppression subscale includes four (e.g. 'I control my emotions by not expressing them'). All items are rated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Participants were presented with these response options: NO/NO/no/maybe/yes/YES/YES (Chaplin & John, 2010). Higher scores indicate greater emotion regulation. Alphas for the Reappraisal subscale ranged from .64 to .81 and from .22 to .60 for the Suppression subscale.

Cognitive Emotion Regulation Questionnaire – Blaming Others (CERQ; Garnefski, Kraaij, & Spinhoven, 2001). Participants also completed the Blaming Others subscale of the CERQ. This subscale consists of four items and participants responded using same 7-item Likert scale that was used for the ERQ (Gross & John, 2003). These items emphasized that others were often responsible when something bad happens. For example, 'When something bad happens to me, I think about the mistakes others have made in this matter'. Cronbach's alphas were good and ranged from .79 to .84.

Mentor evaluations

Mentors rated prosocial and aggressive behaviours of the participants at three time points.

Child Behaviour Checklist (CBS; Ladd & Profilet, 1996). Participant mentors completed the Aggressive (seven items, e.g. 'taunts, teases') and Prosocial behaviours (seven items, e.g. 'cooperative with peers') subscales of the CBS (Ladd & Profilet, 1996). Although originally developed for use with younger children, this measure has been used to evaluate the behaviour of adolescents (see Kataoka & Vandell, 2013). Mentors responded on a 3-point scale ranging from 1 (*doesn't apply – student seldom displays the behaviour*) to 3 (*certainly applies – student often displays the behaviour*). Alphas for the prosocial items ranged from .85 to .92 and from .79 to .90 for the aggressive items.

Demographic questionnaire

In addition to basic demographic information (e.g. age, ethnicity), participants also provided a proxy for socio-economic status by indicating whether or not their household owned or had access to certain objects (e.g. stove, book shelf with books) and amenities (e.g. electricity, hot water).

Participant focus groups

Seventeen of the youth participants attended one of two focus groups 2 weeks after the post-test assessment at Time 3. They were asked to describe what they had learned from the workshop and how they have applied that knowledge to their lives.

Focus groups with family

Eighteen relatives participated in one of two focus groups after the Time 3 post-test. Participants included two fathers, three sisters, and 13 mothers. Family members were asked to describe changes in their relative's behaviour since participating in the workshop. Specifically, they were asked if they had noticed any changes in how the participant was behaving with family, friends and/or classmates.

Coding

Focus groups were audio recorded and later transcribed**.** Responses were coded using thematic analysis (Braun & Clarke, 2006). Each of the authors first read the focus group transcripts independently in Spanish. The team then came together and developed codes related to the youth and family focus groups. Once the codes were created, each team member read through the focus group transcripts again, organizing the responses into the established codes. Any disagreements were resolved through discussion. Then the five team members grouped the lower level codes into higher level themes.

Workshop curriculum

The workshops centred on a Join-Up® exercise developed by natural horsemanship trainer Monty Roberts (About Join-Up®, 2016; Roberts, 2002a, 2002b). The Join-Up® experience is designed to foster trust and leadership between the equine and his human handler (here, the youth participants) through non-violent communication (About Join-Up®, 2016; Roberts, 2002a, 2002b). By utilizing the horse's natural herd instinct and sensitivity to human nonverbal behaviour, the Join-Up® experience fosters trust and respect between the horse and handler. This confidence then allows the handler to effectively handle the horse without the use of violence or physical force and a human–equine partnership is formed. In the end, the equine and the handler form a partnership, with the human emerging as the horse's leader.

The 2-day workshops included PowerPoint and video presentations as well as question-and-answer sessions between the participants and workshop facilitators. After observing a Join-Up®, participants performed a mock-join up with a person substituting for a horse, followed by a Join-Up® with a horse. In addition, youth participants groomed horses and led them around obstacles. Participants also engaged in a breathing exercise; in close contact with a horse, they concentrated on breathing and self-awareness for 20–30 min, recording the horse's heart rate before and after the contact. A short session 2 weeks later included participants' feedback on how the new skills had been applied to their lives and a role-playing exercise.

Procedure

This study utilized a wait-list control design. Participants were randomly assigned to one of two groups: experimental ($n = 18$) or wait-list control ($n = 19$). The experimental group received the 2-day workshop first, followed by the wait-list control group approximately one week later. For each group, there were approximately five days between Day 1 and Day 2 of the workshop. Data were collected at three time points from participants and mentors. Time 1 was the pre-test for both groups. Time 2 was the first post-test for the experimental group and the second pre-test for the wait-list controls. Time 3 served as the second post-test for the experimental group and the sole post-test for the wait-list controls. There were 4 weeks between testing at Time 1 and Testing at Time 2 and 2 weeks between Times 2 and 3. The pre-testing at Time 1 occurred several weeks prior to the experimental group receiving the workshop. The experimental group received the workshop between Time 1 and Time 2, while the wait-list control

received the workshop between Time 2 and Time 3. Focus groups with the family members and with the participants themselves occurred following the post-test at Time 3, and the feedback session.

Prior to the start of data collection, written parental consent was obtained for youth participants under age 18. Adolescent assent was also sought in those cases. For youth participants over age 18, for parents, and for teachers, written consent was obtained at the start of the study. Participants completed their questionnaire packets in a classroom of the school. Each of the focus groups lasted approximately two hours.

Results

The mixed-method approach resulted in quantitative and qualitative data from three sources. We have both types of data from the workshop participants, quantitative data from mentors, and qualitative data from participants' relatives. The quantitative analyses are presented first, followed by the coding analyses of the focus groups.

To assess the effectiveness of the workshop, a series of one-way analyses of covariance (ANCOVAs) with condition (experimental vs. wait-list control group) as the between-subjects independent variable were run to compare experimental group participants with wait-list control participants at Time 2 on the measures described above. Time 1 scores on those same measures served as the covariate. Recall that at Time 2 the experimental group had received the programme while the wait-list control group had not. Adjusted means, after taking the covariate into account, are presented for significant analyses only. When the ANCOVA was significant, follow-up paired-samples *t*-tests compared experimental group participants only at Time 2 and Time 3 to test whether the effects held for approximately two weeks between Time 2 and Time 3 assessments.

Participants' quantitative self-reports

Participants' self-reported leadership ability was significantly higher for the experimental group (M = 103.85) at Time 2 compared to the wait-list control group (M = 94.61), $F(1, 34) = 6.39$, $p = .016$, partial $\eta^2 = .156$. The paired-samples *t*-test indicated that those in the experimental group maintained those advances in leadership from Time 2 to Time 3 because there was no significant difference between the two time points, $t(17) = -.67$, $p > .05$. See Figure 1.

Differences in TRIM scores between the experimental and wait-list control groups were not significant at Time 2, $F(1, 34) = 1.35$, $p > .05$. Self-reported attitudes towards aggression on the NBAS did not reveal a significant between-condition difference at Time 2, $F(1, 34) = .15$, $p > .05$. See Figure 2. With respect to emotion regulation, only the Repression subscale of the ERQ and the Blaming Others CERQ were analysed due to the poor alpha of the ERQ Suppression subscale. Neither measure of emotion

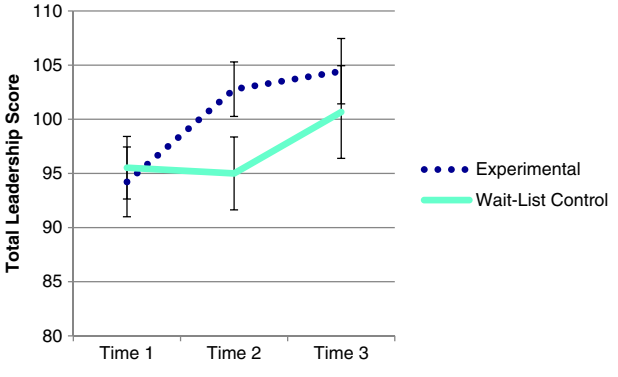


Figure 1. Participants' self-reported leadership ability across time points.

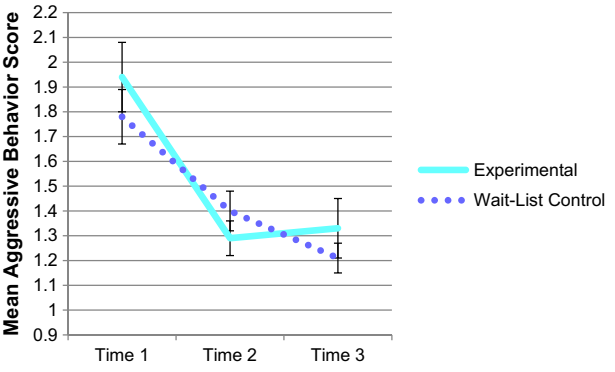


Figure 2. Mentors' reports of participants' aggression across time points.

regulation revealed significant differences between conditions at Time 2, $F(1, 34) = .56$, $p > .05$ (ERQ Repression) and $F(1, 34) = 2.50$, $p > .05$ (CERQ Blaming Others).

Mentors' reports

Mentor reports of aggressive behaviour as measured by the aggression subscale of the ABS indicated that there were significant differences between groups at Time 2 for aggressive behaviour, $F(1, 34) = 4.82$, $p < .035$, partial $\eta^2 = .12$. Means indicated that experimental group participants ($M = 1.26$) were lower on aggression at Time 2 than wait-list control group participants ($M = 1.43$). A paired-samples *t*-test suggested that experimental group participants retained those lower aggression scores from Time 2 to Time 3 as the analysis was not significant, $t(17) = .74$, $p > .05$. The difference between groups on prosocial behaviour at Time 2 was not significant, $F(1, 34) = .92$, $p > .05$

Participant focus groups

Three central themes emerged from participant focus groups: Emotion Regulation, Empowerment, and Positive Emotion. All themes were guided by the overarching idea that participants learned valuable lessons from the workshop. See Figure 3. With respect to Emotion Regulation, participants spoke often about applying the breathing exercises during conflicts or challenges as a tool to remain calm. They also described how participation in the workshop helped them to be less angry and to fight less with others. For example, a boy indicated that, 'Before, I used to beat my brothers because they used to tease me but now I've calmed down a lot and I just ask them not to bother me'.

Participants spoke often of Empowerment that encouraged them to assume leadership roles at home and to share what they learned in the workshop with other family members. When talking about the breathing exercises, one girl offered, '… so, I taught my mother the breathing technique'. Furthermore, this sense of empowerment promoted better interpersonal interactions and encouraged future personal growth. In one case, a boy explained, 'I can grow more as a person. To have confidence in myself is what will help me to succeed'. Similarly, when discussing Positive Emotions, youth mentioned how they were happier and laughing more, while feeling less scared and more confident. One girl shared, 'Now I am calmer and happier'.

Family focus groups

The focus groups with parents and siblings yielded four themes: Emotion Regulation, Better Interpersonal Interactions, Empowered Leaders, and Learning from Horses. Those themes were guided by an overall

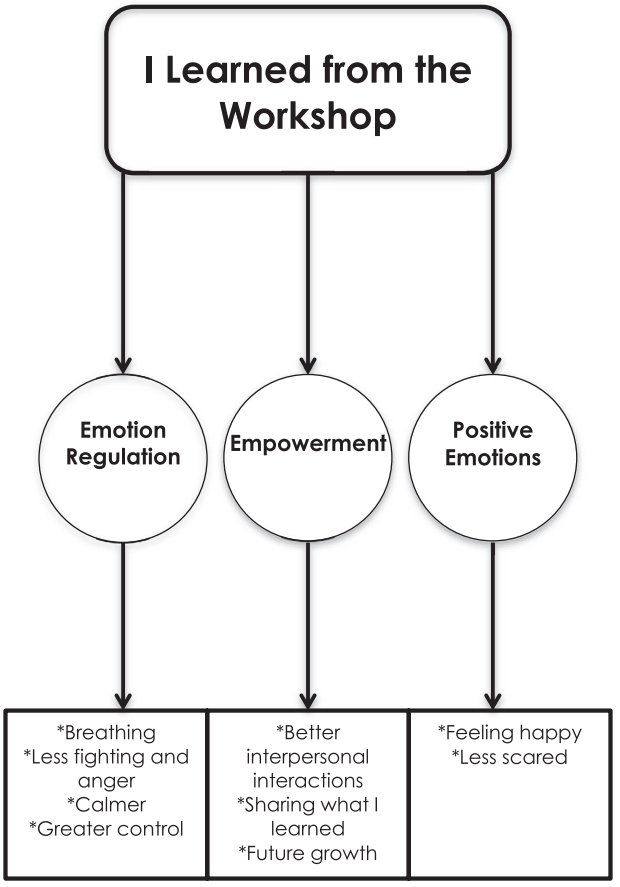


Figure 3. Themes from participants' focus groups.

observation of change in participants following the workshops. Family members often spoke of 'cambió bastante' in Spanish, which means 'he (she) changed a lot'. See Figure 4.

Family members described increased Emotion Regulation much like participants did. They spoke often of participants being calmer and more peaceful (*mas tranquilo/*a) and using less aggression. Describing her brother, a sister explained, 'As my father was aggressive, he learned to behave aggressively, but [after the workshops] he decided to make a change and not be aggressive like my father'. When describing her daughter's improvement in managing conflicts with her sister, one mother recounted, 'She tries to control herself as she was taught and she tells me how it is done'.

Examples and narratives suggested that the workshops allowed participants to become Empowered Leaders. Family members spoke of budding leadership skills and confidence, 'You told him, "you are the leader of the horse", and now he will be the leader of the house'. At home participants were more responsible and also readily shared what they had learned in the workshops with siblings and parents. When commenting on changes she has noticed in her son, one mother said, 'Now he is responsible. Before [the workshop] he was irresponsible'. A mother shared that her daughter, 'is sharing what she learned … exactly'.

Given the positive changes in the participants themselves post-workshop, it is not surprising that family members noticed improved interpersonal interactions. Specifically, family members mentioned better communication skills and greater evidence of compassion with others. A mother shared about her son, 'In his way of communicating he was very timid and distant, he didn't trust people, now he

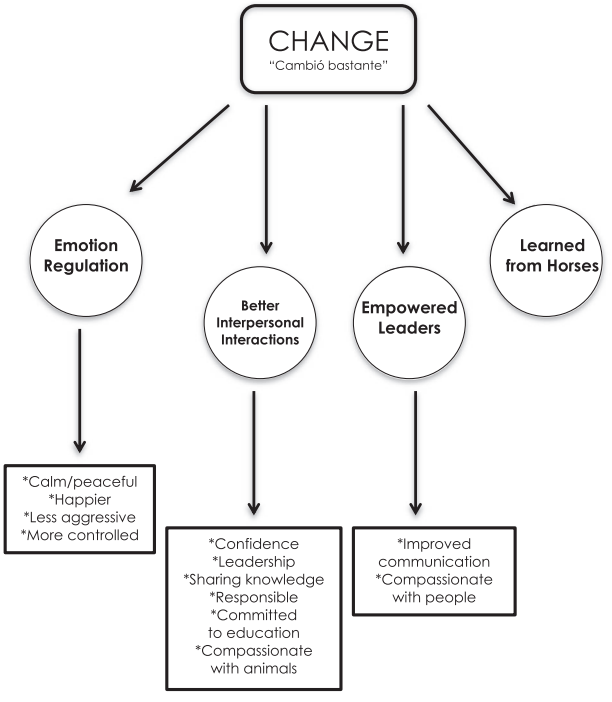


Figure 4. Themes from family members' focus groups.

chats more and comes to tell me personal things'. Finally, family members noted that participants had learned directly from the horses, (e.g. '… then she [the daughter] says to me [the mother] "calm down" and says how beautiful it feels to be with the horses and how much they taught her', suggesting that the opportunity for human–equine interaction was an integral component of the workshop's success.

Discussion

Using random assignment to treatment and control groups, multiple sources of information, and psychometrically sound instruments, we found evidence for the effectiveness of an equine-facilitated workshop in changing the attitudes and behaviour of at-risk Guatemalan adolescents. Compared to a wait-list control group, youth who experienced the programme reported more confidence in their leadership abilities. In addition, their mentors indicated that they showed less aggressive behaviour. During focus groups family members also reported more leadership among the participants, as well as better interpersonal interactions and emotion regulation. Participants themselves reported better emotion regulation, a sense of empowerment, and more positive emotions. That is, we were able to answer the first two guiding questions affirmatively: the equine-facilitated workshop was effective with adolescents who had little or no experience with horses. The answer to the third question – was emotion regulation a key mechanism of change – was less definitive. Although quantitative measures revealed no changes, focus groups with both the participants themselves and family members suggested that emotion regulation was a critical feature. Both the youth participants and family members narrated examples of improved emotion regulation. Participants talked about implementing the breathing exercises when in difficult situations (e.g. when having an argument with a sibling). Family members added that they witnessed less aggression and a sense of calmness among the youth who had received the intervention.

This discrepancy between the quantitative and qualitative results may be attributed to difficulties with the quantitative measures of emotion regulation (i.e. the ERQ, Gross & John, 2013 and the CERQ,

Garnefski et al., 2001). Those measures were developed in the USA and the EQR had relatively poor reliability in this sample of youth. School professionals thought that the participants might have had difficulty understanding the items. Significant instrument adaptation may be necessary to not only ensure that the wording of the items is appropriate for Guatemalan youth, but also to ensure that the breadth and depth of the construct is adequately addressed for this sample (e.g. Ægisdóttir & Einarsdóttir, 2012).

Another implication of the findings from the focus groups is that there may be a ripple effect, the diffusion of the use of nonviolent conflict resolution to other family members. For example, one participant reported, 'I taught [my mother] the breathing exercises and that is helping her a lot; now I want to teach my sister to do the same'. Family members also noted this spread of knowledge as described above. The spread of behaviours to other situations and settings had been reported in a previous study with young prisoners (Hemingway et al., 2015).

Still unknown is the exact mechanism by which the intervention changed youth's attitudes and behaviour. What experiences are essential – the Join-Up® itself, other interactions with the horse, the breathing exercise, the group discussions, or nonspecific aspects such as attention and support? In focus groups, participants often mentioned the breathing exercise – a task based on slow, controlled breathing and awareness of the present moment, a technique very similar to mindfulness exercises (e.g. Bluth et al., 2016; Broderick & Metz, 2009). A 'Learning to BREATHE' mindfulness programme has had good success in relieving depression and stress and increasing calmness and self-acceptance in at-risk adolescents (Bluth et al., 2016; Broderick & Metz, 2009). Identifying the critical elements of the programme is an important next step.

Limitations and future directions

Although this study has many strengths, it is not without limitations. First, the sample size is relatively small and rather homogeneous. Participants were enrolled in school and were from families with very limited economic resources. This was the target group of interest in the current study, but those sample characteristics should be taken into consideration before generalizing these results to all Guatemalan youth or all at-risk youth more broadly.

Second, the participant focus groups were conducted by the programme director, immediately following the feedback session, allowing for the possibility of demand characteristics in the responses. Third, as noted the very low alpha levels of some subscales of the emotion regulation measures indicated the questions might not have been appropriate for our participants. Therefore, the evidence of quantitative non-significant changes in emotion regulation should not yet be interpreted as an inadequacy of the workshops to address this issue, but instead that the measures were not adequately adapted for the sample. The focus group data support this conclusion.

Despite these limitations, the findings strengthen the results of previous research that used less rigorous methods. In the present study, an equine-based intervention, based on the Join-Up® procedure was effective in promoting leadership and emotion regulation and in reducing aggressive behaviour. It successfully fostered empowered leadership among at-risk youth in Guatemala. The programme can provide tools for youth to address the many problems that they face. Those tools may not only promote success for the individual participants, but also for their family members, classmates, and Guatemalan society at large.

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Leslie Paiz is an equine enthusiast and advocate for non-violence. She is a member of the Lead-Up International team. Leslie continues to work with programmes addressing the challenges faced by at-risk youth and communities with high rates of interpersonal violence. In 2015, she was a co-author of an article demonstrating the effectiveness of a non-violent horse training program to reduce violence in a rural Guatemalan community (Gibbons, Cunningham, Paiz, Poelker, & Montufar, 2015).

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