

The Role of the Eagala Model in Promoting Psychological Wellbeing in Adolescents: A Mixed-Methods Approach

*Nicoleen Coetzee*¹

Department of Psychology, University of Pretoria, Pretoria, South Africa
Corresponding author
nicoleen.coetzee@up.ac.za

*Sharon Boyce*²

Department of Psychology, University of Pretoria, Pretoria, South Africa
shaboyce@gmail.com

*Andries Masenge*³

Department of Statistics, University of Pretoria, Pretoria, South Africa
andries.masenge@up.ac.za

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Abstract

The aim of the study was to determine if the Eagala model, an equine-assisted intervention, would enhance the psychological wellbeing of adolescents living in a township in South Africa. An embedded mixed-methods research design with convenience sampling was used. Participants were randomly assigned to an experimental or control group. The experimental group participated in the Eagala intervention. The Ryff Scale

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- 1 Nicoleen Coetzee obtained her PhD in Psychology in 2006. She is currently a Senior Lecturer in the Department of Psychology at the University of Pretoria. Her research interests include Animal-Assisted Therapy, Adolescent Well-being and the Psychophysiology of Well-being.
 - 2 Sharon Boyce obtained her MA (Counselling Psychology) degree in 2019 from the University of Pretoria. She is currently pursuing a PhD that studies flourishing among South African adolescents living in impoverished townships.
 - 3 Andries Masenge is a statistician with the Department of Statistics at the University of Pretoria. He is also a statistical consultant that assist postgraduate students with their quantitative data analysis.

of Psychological Wellbeing (RSPWB) was used to collect quantitative data while letters to the horses were used as qualitative data. Independent *t*-tests indicated significant differences between the two groups on the overall score of the RSPWB and five of its dimensions. Using thematic analysis, qualitative themes that enhanced understanding of the quantitative findings were identified. The results confirmed the effectiveness of the Eagala intervention. A Kruskal-Wallis test, however, indicated that between four to eight sessions need to be attended in order for the intervention to be effective.

Keywords

Psychological wellbeing – adolescents – Eagala model – mixed-method research design – equine-assisted psychotherapy – townships

One of South Africa's historical legacies is the existence of impoverished communities, often referred to as townships, on the outskirts of cities and towns. An example of such a township is Diepsloot. Diepsloot is situated on the northern outskirts of Johannesburg and is spread over 12 square kilometers with a population estimate of 350 000 (Makwela, 2015). Almost half of the Diepsloot population consists of adolescents (Stats SA, 2012). Adolescents are defined as young people between the ages of 10 and 19 years (World Health Organization, 2014).

According to the life span developmental approach, adolescence refers to the period when the majority of an individual's biological, cognitive, psychological, and social characteristics are changing from what is typically considered childlike to what is considered adult-like (Lerner & Galambos, 1998; Overton, 2010). Blau et al. (2019) noted that in order to facilitate a successful transition into adulthood, adolescents need to have a sense of meaning and fulfilment in life. This implies that adolescents need to obtain eudaimonic wellbeing to manage the transition into adulthood successfully. Eudaimonic wellbeing, which is used interchangeably with psychological wellbeing, is achieved by functioning optimally (Ryff, 1989). Individuals who function optimally display six facets in their daily lives, namely autonomy, environmental mastery, personal growth, purpose in life, positive relations with others, and self-acceptance (Ryff, 1989).

Adolescents from Diepsloot, however, struggle to function optimally and hence experience a lack of psychological wellbeing due to the impoverished conditions they live in (Cluver et al., 2009; Luby et al., 2013; Ratele, 2007). In addition to poverty, Diepsloot has been associated with violent service delivery protests and xenophobic attacks (Mahajan, 2014). Service delivery protests

are a series of public protests and civil disturbances as a means of expressing grievances regarding the ineffective delivery of various social services by government agencies in communities. These protests may involve violence and altercations with police units resulting in death, serious injuries, and potential arrest. In addition, drug abuse is rampant and violence against children, adolescents and women is commonplace (Mahajan, 2014). As a result, adolescents living in Diepsloot often express a sense of disillusionment and discontent with their situation (Cross, 2014).

Furthering the challenge to achieve psychological wellbeing is the lack of psychological services in Diepsloot. The situation has not changed since 2011, when Shamos (2011) reported that the mental health needs of the community are provided for by two general health clinics and counsellors situated at the South African Depression and Anxiety Group (SADAG) facility.

Since quality mental health services cannot be provided in a traditional manner, it seems that there is an urgent need for the presentation of alternative forms of therapeutic interventions that would promote psychological wellbeing among adolescents in Diepsloot. However, when considering new avenues for therapeutic interventions, one needs to keep in mind that adolescents, particularly those who grew up in the face of adversity, need to be approached with great care and sensitivity (Hill, 2007; Reddy et al., 2010).

Chandler (2005), who successfully assisted adolescents from impoverished backgrounds to improve their psychological wellbeing, maintains that Animal-Assisted Therapy (AAT) should be considered as a modality when working with youth from impoverished backgrounds. AAT involves a therapeutic intervention using animals which is delivered by health professionals who practice within their scope of professional expertise (Hoagwood et al., 2016; Kruger & Serpell, 2010). Research has shown that AAT creates an environment where individuals experience empathy, sensitivity, and comfort (Coleman, 1999; Dillman, 1999; Roseberry & Rovin, 1999; Salotto, 1999). The presence of the animal places emphasis on the nonjudgmental nature of the context in which AAT takes place and hence provides a safe, trusting and nonthreatening atmosphere in which psychological wellbeing can be promoted (Chandler, 2005; Coetzee et al., 2013; Coleman, 1999; Lentini & Knox, 2009). Commonly used animals during AAT are dogs, cats, rabbits, horses, and donkeys (Fine, 2015).

One of the Non-Governmental Organizations (NGOs) currently active in Diepsloot is the Shumbashaba Community Trust (SCT). SCT provides counselling and psychosocial support programs that focus on making a positive difference in individuals' lives. Horses form an integral part of their program implementation which is based on the model proposed by the Equine Assisted Growth and Learning Association (Eagala, 2019). The Eagala model

is a distinctive experiential psychological framework that incorporates horses into interventions to solve mental health challenges or restore and promote mental health and wellbeing through the horse-human relationship (Eagala, 2019). Participants are not required to have previous experience with horses as there is no riding; all interactions are deliberately ground-based activities.

Horses as herd and prey animals have a well-developed “fight or flight” instinct and are subsequently very sensitive to changes in the environment, including the intent, body language, and emotional states of participants (Lentini & Knox, 2009; Smith-Osborne & Selby, 2010). The responses and reactions of the horses provide instantaneous feedback to participants, thereby creating a unique therapeutic medium where the horses become agents of change, prompting processes of development, learning and growth that will ultimately enhance psychological wellbeing (Bachi & Parish-Plass, 2017; Selby & Smith-Osborne, 2013).

A mental health professional and an equine specialist comprise the team that facilitates the process of feedback between the horses and participants. This team also assists participants to explore cognitions, affect, and behaviors related to psychological wellbeing whilst interacting with the horses (Eagala, 2019; Fournier et al., 2018).

The Eagala intervention implemented by SCT involves 90-minute group sessions that take place weekly over an eight-week period. Participants are randomly assigned to three smaller subgroups. Each subgroup is allocated a facilitation team and herd of four to six horses. Horses are from various breeds, and they range in age from 10 to 25 years. The horses normally participate in therapeutic riding and Eagala model sessions three to four times per week. They are fed twice daily and groomed when stabled at night. When the horses are not working, they are free to graze as herds in large fields. An outline of the Eagala model intervention is provided in Table 1.

Preliminary studies on equine-assisted therapy, including Eagala Model interventions, indicated that adolescents exposed to it experience improvements in hope for the future, problem solving, and mastery, as well as increases in general levels of functioning and reductions in psychological distress (Burgon, 2011; Kemp et al., 2014; Schultz et al., 2007; Whittlesey-Jerome et al., 2016). It is, however, important to note that studies suggest that the number of sessions attended has an effect on the intervention benefits. Schultz et al. (2007) found a statistically significant correlation between the percentage improvement on the Children’s Global Assessment of Functioning (GAF) Scale scores and number of sessions attended by 63 children, aged 4–16 years, who received a minimum of six and an average of 19 Eagala sessions. Within

TABLE 1 An overview of the Eagala model intervention

Session Number	Theme	Activity
01	Introduction / orientation to the horses and the intervention	Participants observe the horses from a distance and then introduce themselves to the horses.
02	Self-discovery of personal uniqueness	Participants observe the horses and identify the horse that is most like them. They then approach that horse and use groom brushes to discover more about the horse and how they feel while grooming the horse.
03	Building empathic relationships with others	Participant sub-groups choose a horse to work with. All members of sub-groups are blindfolded except for one participant who is leading the horse. The blindfolded participants touch the horse on the neck or body whilst it is being led. Each participant has a turn to remove the blind-fold and lead the horse.
04	Responsibility, Responsibility and Response Ability	Each participant is given a cup of water / sand / stones with the instruction; "This is your responsibility for the session. Whilst looking after your cup, move the horses around the arena."
05	Attitude	Each participant is assigned a secret mission for the session. The missions include activities to do with the horses which may involve other people and are carried out in silence. Examples are: "Build a separate defined safe place for the horses, and get all the horses in this place and do not allow them to escape, Brush all of the horses so they look neat and clean, Choose a horse and take it for a walk around the field."

TABLE 1 An overview of the Eagala model intervention (cont.)

Session Number	Theme	Activity
o6	Choices and consequences	Participants use anything they can find in the arena to build three representations of the things that are “good”, “bad” and “ugly in their lives. Horses are then taken through, round or over what has been created while all participants and participating horses are connected by a length of wool.
o7	Hope for a meaningful future	Participants use objects in the arena to build a road of life; indicating where they are coming from and where they are going to. The road must include all positive and negative aspects experienced in life. The horses are then lead through the road of life by the participants.
o8	Concluding session: Discovering meaning from all that has been learned.	Participant sub-groups must use the horses to creatively demonstrate what they have discovered about meaning in life. Each sub-group is witness to the demonstration of the other sub-groups. Thereafter they write a letter to the horses which is then read to the specific horse and placed in the “post box” in the arena.

the South African context, Boshoff et al. (2015) found that an eight-session equine-assisted therapy program yielded significant improvements in subjective wellbeing of adolescent boys attending a custodial school. Nevertheless, systematic reviews of equine-assisted literature indicate inconsistencies in intervention duration, ranging from one to 119 sessions. Consequentially, the authors highlight the need to establish dosage outcomes for intervention effectiveness (Anestis et al., 2014; Kendall et al., 2015; Selby & Smith-Osborne, 2013).

Although the Eagala model is used by SCT in impoverished communities, little scientific research was thus far conducted to determine the extent to which the intervention promotes psychological wellbeing among the adolescents of

such communities in South Africa. In keeping with Barnes's (2012) guidelines set forth for formulating aims for mixed-methods studies, the present study's aims were hence to 1) determine if adolescent residents of Diepsloot that partook in the Eagala model intervention differed significantly with regards to levels of psychological wellbeing from those who did not participate in the intervention; 2) establish how many sessions are required for changes in psychological wellbeing to be experienced; 3) understand what participants of the Eagala model intervention experienced and learned; and 4) establish if any changes in psychological wellbeing could be related to subjective experiences.

Methods

Participants

A sample of convenience was drawn from adolescents participating in the programmes offered by the SCT. The sample consisted of 40 females and 34 males, between the ages of 13 and 17 years. Participants were randomly assigned to either the control or experimental groups. The participants in the control group were placed on a waitlist to participate in the intervention once the research was completed. The statistics describing the sample are provided in Table 2.

Research Design

An embedded mixed-methods design was used during the study. The quantitative phase consisted of a quasi-experimental between-subjects design with quantitative data collected pre- and post-intervention. The qualitative data was collected right before the post-intervention quantitative data collection took place (Creswell, 2013).

TABLE 2 Descriptive statistics of the sample

	Mean Age	Gender	
		Female	Male
Experimental Group (n = 37)	14yrs 9mnths	20 (54%)	17 (46%)
Control Group (n = 37)	15yrs 0mnths	20 (54%)	17 (46%)

The results of the qualitative data were combined with the quantitative findings to expand and deepen understanding of the quantitative results as well as to establish if any changes in psychological wellbeing could be related to participants' subjective experiences of the intervention. This was achieved by linking the significant quantitative findings to the qualitative themes. The point of integration of these two data strands occurred in the discussion of the results (Creswell, 2013).

Quantitative Measures

Biographical Questionnaire

This questionnaire provided information on the biographical details of the participants indicating their gender, age, and current grade in school.

The Ryff Scale of Psychological Wellbeing (RSPWB)

Fernandes et al. (2010), as well as Gao and McLellan (2018), studied the reliability and construct validity of the RPSWB among Portuguese and Chinese adolescents. They concluded that the measure is suitable for use in multicultural contexts (Fernandes et al., 2010; Gao & McLellan, 2018). The RSPWB is based on Ryff's (1989) interpretation of psychological wellbeing and as mentioned previously, comprises six facets – namely, autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Each facet represents a dimension of psychological wellbeing. For the purposes of this study, the 84-item RPSWB, consisting of 14 items per dimension, was used. Participants had to rate themselves on a 6-point Likert scale (1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = slightly agree, 5 = moderately agree, 6 = strongly agree).

Studies conducted by Ryff (1989; 2014) and Van Dierendonck (2005) reported Cronbach's alpha values for the six dimensions ranging from 0.77 to 0.93. The Cronbach alpha coefficient of the overall RSPWB calculated for the current study was 0.92, with values ranging from 0.51 to 0.74 for the six dimensions.

Qualitative Measure

Letters to the Horse

The qualitative measure consisted of a writing activity in the form of letters to the horses. Participants from the experimental group were asked to write

letters to the horses in which they indicated what they experienced and learned whilst participating in the intervention. Letters ranged from half a page to two pages in length.

Procedure

The research took place at the SCT's premises in Diepsloot which consisted of an outdoor classroom in their stable yard and horse paddocks. The quantitative data were collected pre- and post-intervention for both the experimental and control groups. As mentioned previously, the participants in the experimental group were randomly assigned to three smaller subgroups, each one with their own facilitation team. These subgroups were then allocated a paddock and a horse herd, consisting of four horses that remained the same throughout the intervention. The control group continued with their daily activities and did not participate in the intervention.

As was also mentioned before, the qualitative data were collected right before the quantitative data collection of the post-intervention. During the qualitative data collection phase, 37 letters to the horses were obtained from the participants of the experimental group.

Ethical Considerations

The research was approved by the Ethics Committee of the Faculty of Humanities at the University of Pretoria. The SCT board of trustees gave written permission for the research project to form part of one their outreach projects. Informed consent was obtained from parents whilst the adolescents provided informed assent before the study started.

Participation was voluntary, and privacy as well as confidentiality of the participants was always respected. Confidentiality was ensured by allocating participant numbers to the participants of the study. The facilitation team also signed letters of confidentiality.

The welfare of the horses was monitored by the equine specialist and SCT's stable manager. All horses were selected for suitability of temperaments and were habituated to this type of work. They were not restrained, they were unencumbered and free to interact or not, with the participants. Hence, they could remove themselves from human interaction at any time during the intervention.

Data Analysis

Quantitative Data Analysis

Data were analyzed using SPSS Version 23[®]. An independent *t*-test was conducted before and after the intervention to determine if any significant differences occurred between the experimental and control groups on the scores of the RSPBW.

Due to their challenging living conditions, participants' attendance fluctuated during the course of the intervention. The variance across the number of sessions attended was thus high. In order to control for this, three categories of attendance were identified: zero sessions attended (control condition) ($n = 37$); and two categories from the experimental condition, namely, 1–3 sessions attended ($n = 10$); and 4–8 sessions attended ($n = 27$). A Kruskal-Wallis test was then conducted to determine the number of sessions to ensure achievement of psychological wellbeing (Field, 2013).

Qualitative Data Analysis

Inductive thematic analysis was used to analyze the qualitative data. The thematic analysis was done in accordance with the six steps set out by Joffe (2012) as well as Braun and Clarke (2006). These steps include 1) familiarization with the data through reading and re-reading the letters, 2) generating initial codes, 3) searching for themes, 4) reviewing and refining the themes, 5) defining and naming themes, and 6) conducting a final analysis of the identified themes in relation to the research aim. To ensure the credibility and trustworthiness of the data analysis, two methods were applied, namely, transferability and triangulation. Transferability was achieved by analyzing the data in a systematic fashion, using the six steps of thematic analysis. This ensured that the process can be replicated (Creswell, 2013). Triangulation, on the other hand, occurred through linking the significant quantitative findings to the qualitative themes (Creswell, 2013).

Results

Quantitative Results

The independent *t*-test yielded no significant differences between the experimental and control groups prior to the intervention. Post-intervention results, on the other hand, indicated significant differences ($p < 0.05$) between the groups on 1) the overall RSPWB scores; 2) the purpose in life scores; 3) the positive relations scores; 4) the environmental mastery scores; 5) the personal

growth scores; and 6) the self-acceptance scores. Upon closer inspection of the data, the averages of the experimental group in all the instances were found to be higher than the reported averages of the control groups (Table 3). Effect sizes ranged from medium to large.

As was mentioned previously, a Kruskal-Wallis test was conducted to determine the number of sessions that need to be attended to ensure the success of the intervention. The results are presented in Table 4.

Table 4 indicates that the Kruskal-Wallis yielded significant differences ($p < 0.05$) for the overall scores of the RSPWB, and the dimensions of purpose in life, positive relations, environmental mastery and personal growth. As is recommended by both Field (2013) and Pallant (2016), a follow-up pairwise comparison analysis was conducted to evaluate pairwise differences among the three groups. The results of the pairwise comparison analysis are summarized in Table 5.

Tables 4 and 5 indicate that attending four to eight sessions of the intervention makes a significant difference to the overall score of the RSPWB and to the dimensions of purpose in life, positive relations, environmental mastery, and personal growth. Effect sizes ranged from small to large.

TABLE 3 Independent t-test results on post intervention and subscales scores of RSPWB

Scale & Subscales	Group	Mean	SD	t value	p value	Effect size	95% CI	
							Lower	Upper
Overall RSPWB*	Experimental	3.77	.46	-3.89	.00	.91	-.47	-.15
	Control	3.46	.16					
Purpose in life*	Experimental	3.91	.70	-2.50	.02	.58	-.58	-.06
	Control	3.59	.35					
Positive relations	Experimental	3.64	.61	-2.28	.03	.53	-.52	-.04
	Control	3.36	.43					
Environmental mastery*	Experimental	3.72	.64	-2.94	.01	.68	-.61	-.12
	Control	3.36	.38					
Personal growth*	Experimental	4.01	.67	-4.13	.00	.96	-.77	-.27
	Control	3.49	.37					
Self-acceptance*	Experimental	3.67	.49	-2.50	.02	0.58	-.42	-.05
	Control	3.44	.28					

Note: RSPWB: Ryff Scales of Psychological Well-being; SD: standard deviation; CI: confidence interval; Effect size: Cohen's d; *Equal variance not assumed. Statistically significant values at $p < .05$

TABLE 4 Kruskal-Wallis post-intervention results

Scale and Subscales	Kruskal-Wallis H	df	Asymptotic Significance
Overall RSPWB	14.68	2	.00
Purpose in life	8.87	2	.01
Autonomy	3.64	2	.16
Positive relations	7.23	2	.03
Environmental mastery	9.48	2	.01
Personal growth	22.20	2	.00
Self-acceptance	5.73	2	.06

Note. RSPWB = Ryff's Scale of Psychological Well-Being. Statistically significant values at $p < .05$

TABLE 5 Pairwise comparison analysis to determine effect of number of sessions on RSPWB scores

Scale and Subscales (N = 74)	0 sessions vs 4-8 sessions (n = 64)		1-3 sessions vs 4-8 sessions (n = 37)		0 sessions vs 1-3 sessions (n = 47)		
	H(2)	p value	p value	r	p value	r	p value
Overall RSPWB	14.68	.001*	.000*	-0.30	.015*	-0.61	.920
Purpose in life	8.87	.012*	.016*	-0.35	.117		1.000
Positive relations	7.23	.027*	.024*	-0.18	.431		1.000
Environmental mastery	9.48	.009*	.007*	-0.21	.264		1.000
Personal growth	22.2	.000*	.000*	-0.56	.006*	-0.51	1.000

Note. RSPWB: Ryff's Scale of Psychological Well-Being; r: effect size; *statistically significant values at $p < .05$

Qualitative Results

Thematic analysis of the qualitative data yielded six themes, namely, positive relationships, environmental management, a hopeful and meaningful life, self-worth, personal growth, and horses as agents of change. These themes and their supporting data extracts are displayed in Table 6.

TABLE 6 Identified themes and associating data extracts

Themes	Data Extracts
Positive Relationships	<p><i>“love you and know you love us”</i></p> <p><i>“empathy to others”</i></p> <p><i>“help others and they help you if you are in need”</i></p>
Environmental management	<p><i>“I don’t have to make wrong choices in life and you have to make good choices in life”</i></p> <p><i>“Bad choices have bad consequences”</i></p> <p><i>“I have to choose good choices and know the consequences will also be there”</i></p>
A hopeful and meaningful life	<p><i>“Meaning in my personal life”</i></p> <p><i>“Meaning in my life ...”</i></p> <p><i>“To fulfil my purpose in life”</i></p> <p><i>“Hope for life”</i></p>
Self-worth	<p><i>“I have learned I have to respect myself”</i></p> <p><i>“learned respect”</i></p> <p><i>“Thanks for showing me respect”</i></p> <p><i>“The white one taught me about respect and being different”</i></p>
Personal growth	<p><i>“You are most beautiful and precious because you have changed my life”</i></p> <p><i>“My life has changed”</i></p> <p><i>“I am very different because of you”</i></p> <p><i>“I have learned too many things here”</i></p>
Horses as agents of change	<p><i>“Thank you the horses for teaching me new things I didn’t know”</i></p> <p><i>“The black one taught me not to be afraid easily”</i></p> <p><i>“Learned many things about life, respect, uniqueness, attitude towards others, relationships, empathy”</i></p> <p><i>“When I with the horses learned we are unique”</i></p>

Discussion

Besides the significant differences observed between the experimental and control groups on the overall score of the RSPWB, significant differences were also discovered on the dimension related to purpose in life (see Table 3). Purpose in life can be described as the degree to which an individual has a general sense of purpose, meaning and goal directedness (Ryff, 1989, 1995, 2014). As a result of this depiction of purpose in life, the theme *a hopeful and meaningful life* was associated with this dimension. It appears that, after interacting with the horses, the adolescents from the experimental group found meaning in their lives. This is evident in participants' verbal responses where they observed that the horses assisted them to find "meaning in my personal life," "meaning in my life ... to fulfill my purpose in life," and "hope for life" (see Table 6). Having a purpose in life filled with meaning signals to these adolescents that there is a future awaiting them and that they can be hopeful about this future, regardless of the difficulties they encounter everyday (Frankl, 1988; Yeager & Bundick, 2009). Benesova et al. (2014) furthermore noted that adolescents experiencing hope and meaning often participate in activities that will increase satisfaction with their lives. They especially enjoy participating in team sports and will often engage in community activities (Benesova et al., 2014; Slezackova, 2017). Slezackova (2017) determined that hope and meaning not only play a role in adolescents' psychological wellbeing, but also form an important part of adolescent development.

The significant differences observed between the experimental and control groups with regards to the dimension of positive relations are echoed in the theme *positive relationships*. When adolescents experience their relationships as positive, they not only realize that they are loved, but also discover their ability to love others. Burgon (2011) noted that positive relationships teach adolescents how to form affectionate, nurturing, and empathic relationships with others. This is confirmed by excerpts from the letters where participants specifically mentioned that the horses taught them about "love you and know you love us," "empathy to others," "help others and they help you if you are in need" (see Table 6). Garcia (2014) found that the formation of positive relationships in the presence of horses create profound experiences where adolescents become aware of the existence of unconditional love, thus increasing their psychological wellbeing.

Another factor associated with positive relationships is trust (Pratt & Dirks, 2007). Latella and Abrahams (2015) noted that individuals who interact with horses often mention how the horses enabled them to establish mutual relationships based on trust. In the present study, some of the letters specifically

mention “they trust me and I trust them,” “trust yourself,” and “have trust.” When adolescents trust others, they become comfortable with the idea of talking about their experiences (Ryff, 1989, 1995, 2014), which often result in the lowering of depression levels (Kemp et al., 2014). Although lowered depression levels are commonly associated with heightened levels of wellbeing, Pratt and Dirks (2007) argued that it could also be indicative of the existence of resilience. They reasoned that when faced with adversity, adolescents with positive relationships are more resilient because of the trust and support that individuals in such relationships offer one another.

The third dimension of the RSPWB which yielded significant differences between the experimental and control groups relates to environmental mastery. This dimension appears to be similar to the theme of *environmental management* that came to the fore during the qualitative analysis. Environmental mastery/management refers to adolescents’ awareness of the impact they have on their immediate environments (Ryff, 1989, 1995, 2014). Adolescents who are able to master/manage their environments know that they have the freedom to make choices in accordance with their personal needs and values (Ryff, 1995; Sagone & De Caroli, 2014). They are also fully aware that all choices have consequences and that such consequences will impact their experience of life to a positive or negative extent (Ryff, 1989, 1995, 2014). The adolescents of the present study seemed to be aware of this as they noted that “I don’t have to make wrong choices in life and you have to make good choices in life,” “Bad choices have bad consequences,” and “I have to choose good choices and know the consequences will also be there” (see Table 6). Keyes (2007) and Wong (2012) proposed that adolescents who can take personal responsibility for their actions and subsequent consequences are more open to subjective experiences of optimal living and flourishing. In addition, such adolescents are able to grow and expand as individuals, furthering their psychological wellbeing and ability to function optimally (Sagone & De Caroli, 2014).

The next dimension displaying significant differences between the experimental and control group is that of personal growth. Interestingly, *personal growth* also emerged as a theme when the thematic analysis was conducted. It is important to note that personal growth and growth as a result of mastering one’s environment differ slightly from one another. Growth resulting from mastering the environment is related to adolescents’ ability to make decisions and live with the consequences of those decisions. Personal growth, on the other hand, involves being open to new experiences, realizing personal potential, and displaying the ability to change because of acquired self-knowledge (Ryff, 1989, 1995, 2014). It therefore appears that personal growth can be associated with the ability to adapt and change. Within the context of the present

study, it is evident that the horses facilitated personal growth since the letters mentioned “you are most beautiful and precious because you have changed my life,” “my life has changed,” “I am very different because of you,” and “I have learned too many things here” (see Table 6). Ayub and Iqbal (2012) noted that adolescents displaying personal growth tend to experience fewer mental health issues and display high levels of psychological wellbeing. This confirms previous studies’ findings which noted that an increase in personal growth is associated with a reduction of stress levels and the development of effective coping skills (Fabry, 1988; Rathi & Rastogi, 2007; Wong, 1998).

The last dimension displaying significant differences between the experimental and control group is the dimension related to self-acceptance. A close inspection of the qualitative data analysis revealed that the theme identified as *self-worth* can be linked to this dimension. The establishment of self-acceptance indicates the adolescents of the experimental group became aware of their self-worth and learned that they are worthy of love and respect. The crucial role played by the equine assisted intervention is evident when participants remark in their letters to the horses that “I have learned I have to respect myself,” “learned respect,” and “thanks for showing me respect” (see Table 6). Adolescents who realize they are worthy of respect tend to display positive attitudes toward themselves and are more likely to accept their negative attributes as well (Ryff, 1989, 1995, 2014). An example of this is a participant noting “the white [horse] taught me about respect and being different.”

Self-acceptance is also related to having patience with oneself when making mistakes (Chardonnes, 2009). Some excerpts of the letters state that “I shouldn’t give up so easily, they taught me to be patient” and “the black horse taught me to be patience not to give up so easily.” Adolescents displaying self-acceptance will be less likely to engage in self-destructive behavior (Garcia et al., 2014), which increases the probability of positive functioning (Ryff & Keyes, 1995), and experiencing psychological wellbeing (Kemp et al., 2014).

Apart from the themes linked to the quantitative results, an additional theme emerged during the qualitative data analysis. This theme was labeled *horses as agents of change*. The theme indicates that the adolescents in the experimental group realized that they changed and felt better about themselves after participating in the intervention. They attributed these changes and newfound knowledge about themselves to the horses. The participants wrote in this regard statements such as “thank you the horses for teaching me new things I didn’t know,” “the black [horse] taught me not to be afraid easily,” “learned many things about life, respect, uniqueness, attitude towards others, relationships, empathy,” and “when I with the horses learned we are unique” (see Table 6).

The notion of horses as active agents of change resonates with Chardonnens' (2009) belief that horses act as co-therapists during therapeutic situations. She furthermore suggested that horses are a source of strong affective communication, and that the unconditional love and acceptance they display resonate in those interacting with them (Chardonnens, 2009). According to Vincent and Farkas (2017), this experience of positive feelings or attachment allows for the creation of authentic positive relationships with others and oneself. It thus appears that horses' patience and nonjudgmental characters facilitate self-discovery and self-acceptance. As a result, individuals interacting with horses will attain personal growth and realize they are living a value-centric life. This confirms the notion that the presence of horses significantly contributes to the successful outcome of AAT. It furthermore shows that individuals who are not familiar with horses can experience enhanced levels of psychological wellbeing as a result of interacting with them.

In light of the above discussions, it is posited that the Eagala intervention played a significant role in the establishment of psychological wellbeing among adolescents from the Diepsloot Township. It should, however, be kept in mind that the number of sessions attended during the equine assisted intervention will play a role in the success of the intervention. This is evident from the results presented in Tables 4 and 5 which indicate that attending four to eight sessions have the most significant impact on achieving psychological wellbeing. These results concur with the findings of Schultz et al. (2007), Smith-Osborne Selby (2010), and Kendall et al. (2015), who all noted that the number of sessions attended during EAP have a significant impact on achieving psychological wellbeing. Schultz et al. (2007), who specifically conducted research on the Eagala model intervention, found a statistically significant correlation in the percentage increase in the Children's Global Assessment of Functioning (GAF) scores and the number of sessions attended. In the same vein, Trotter et al. (2008) noted an improvement in positive behavior among adolescents when they attended eight or more sessions of an Eagala intervention.

Limitations and Recommendations for Future Studies

Since only a limited number of participants could be accommodated during the Eagala intervention, no power calculation was done to determine the sample size. Instead, a sample of convenience was used. This, in addition to the small size, implies that the findings of the present study cannot be generalized to the adolescent population as a whole and needs to be interpreted with caution. Future studies therefore need to focus on obtaining larger samples.

Another limitation of the study is its cross-sectional nature. It is recommended that future research should incorporate longitudinal studies to determine if adolescents are able to maintain psychological wellbeing post intervention. Additionally, such studies should attempt to include more than one quantitative measure of psychological wellbeing to increase the reliability of the findings. More measures should furthermore be identified and standardized for use within the South African context.

Conclusion

Based on the results obtained from the quantitative and qualitative analyses it is concluded that the Eagala model intervention played a significant role in promoting psychological wellbeing in a group of adolescents living in the under-resourced township of Diepsloot. It should, however, be noted that at least four to eight sessions of the intervention need to be attended before a change in psychological wellbeing will become evident.

The results furthermore suggest that the Eagala model is an appropriate alternative form of intervention that could be used to promote psychological wellbeing in adolescents from under-resourced townships.

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Conflict of interest

All the authors declare that they have no conflict of interest.

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