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MSc in Occupational Therapy (Professional Qualification)

**Title: Irish Youth, Urban Horses and Equine Assisted Activities
(EAA): A Critically Appraised Topic**

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Abstract:

Since the 1980's, caring for horses has become an urban phenomenon, particularly for male youths, in many disadvantaged Irish communities, where high levels of social and occupational deprivation exist (Kelleher Associates and O'Connor 2007). Limited evidence on this occupation exists. There is also growing use of Equine Assisted Activities (EAA) with adolescents in Ireland. This critically appraised topic (CAT) aims to examine the psychosocial effects of EAA for adolescents aged between 10-18 years old. An extensive search of databases, which includes CINAHL Plus, Web of Knowledge, and PsycINFO, was conducted between April 2011 and March 2012. Papers were selected based on inclusion and exclusion criteria, then analysed using the Oxford Centre for Evidence Based Medicine (2011). Overall 8 studies met the inclusion criteria, these include 4 quantitative, 2 mixed method and 2 qualitative studies. The significance of participating in the occupation of keeping horse/s and its potential benefits for youth's wellbeing are explored. This will be discussed in relation to what is known about the psychosocial effect of EAA when used therapeutically with adolescents. Key areas identified were resilience, social inclusion, participation and the complexity of occupation. The implications for occupational therapy and areas for future research are identified.

Introduction:

Wilcock (2007) argues that occupational scientists must research the fundamental relationship between occupation and health to provide a holistic view. Occupational rights and occupational justice are prominent in international occupational therapy dialogue (Townsend and Wilcock 2004 and Kronenberg et al 2005). There is a lack of evidence on the occupational participation of youths and its effect on health and wellbeing (Brown 2010), although within occupational therapy there appears to be a growing interest in using occupation therapeutically with marginalised youths (Synder et al 1998, Bazyk and Bazyk 2009, Frank et al 2001). This article aims to add a more comprehensive understanding of Irish youths caring for horses in urban areas by linking it to the critical appraisal of the empirical research on the psychosocial effects of Equine Assisted Activities (EAA). An overview, of the general population shows participation in horse-riding and its associated activities expends sufficient energy to be classified as moderate intense exercise, therefore having physical health benefits (British Horse Society 2011). Females appear to dominate these activities, as identified in both a UK survey of 1,248 horse rider (British Horse Society 2011), and a USA survey of youth aged between 12-18 years old on horsemanship (Smith et al 2006). Similar data within an Irish context is not available.

Horses in Therapeutic Settings:

An ancient Greek author of the oldest known book on horse riding acknowledged the benefits of the activity to humans (Bracher 2000). However, therapeutic horsemanship did not begin to gain popularity until the 1950s, when Danish horse-rider Liz Hartel who was previously paralysed by polio, won a silver medal in the Grand Prix Dressage competition at the 1952 Helsinki Olympic Games (Bracher 2000). The physical health benefits of EEA have been documented (Bracher 2000 and All et al 1999), such as improving gross motor skills for children with cerebral palsy (Sterba 2007).

For the purposes of this article EAA will be used as a global term to include all equine assisted activities (EAA) and therapies designed for people with various needs or disabilities. This is in keeping with the terminology used by Horses and Humans Research Foundation (HHRF) (2007) the Professional Association of Therapeutic Horsemanship International (PATH international) (2012). Other interventions include hippotherapy which is a “physical, occupational or speech therapy treatment strategy that utilises the equine’s movement as part of an integrated intervention program to achieve functional outcomes.” American Hippotherapy Society (2010). There is growing interest in the psychosocial benefits of EAA

on individuals, with a variety of challenges, from children to the adults (Smith- Osborne and Selby 2010, All et al 1999, Froeschule 2009, Bizub et al 2003, Davis et al 2009 and Selby 2009). To date, most of the literature is descriptive in nature with a limited amount of empirical evidence available (Smith-Osborne and Selby 2010, Vidrine and Owen-Smith 2002). Organisations in Ireland currently offering a variety of EAA include Festina Lente (2012), who provides Equine Assisted Learning (EAL) (See Appendix 1) and Therapeutic Horse Riding (THR), to young people with disabilities. Rag Tree also provides EAL (Rag Tree Equine Assisted Learning 2010). The Irish Youth Foundation (2011) has funded THR for children with physical and intellectual disabilities through the Peegasus Project in Sligo. Growing interest in Ireland of the effects of EAA is demonstrated by children being recruited to participate in Equine Assisted Therapy/ Learning (EAT/L) research, through Dyspraxia Association of Ireland (2012) and Irish Autism Action (2010). Thus indicating some of the current target populations for EAT/L research. No empirical research could be found on the use of EAA in an Irish context.

Irish Marginalised Communities and Horses:

In Ireland, horses are important culturally and play a significant role in many people's lives across a wide socioeconomic divide (Collins et al 2010). Historically, keeping horses has been culturally significant, particularly, to men in the Irish Traveller community (Conway 2004). In the 1980's and 1990's, in urban areas keeping horses became a "working class phenomenon, and not just something, which belonged to the Traveller community" (Kelleher Associates and O'Connor 2007, P.25). Conway (2004, p. 69) highlights the public focus of keeping horses was on disadvantaged communities in Dublin, this was fuelled by a media discourse centring on "urban cowboys" and the perceived risk to mainstream society. Public outcry resulted in the Control of Horses Act 1996. The Act gives power to local authorities to impound and detain unlicensed horses in urban areas, along with other powers to prevent stray horses.

Community youth horse projects emerged, as an alternative method to manage horses in urban areas, and coincided with the enactment of the Control of Horses Act (1996). The first of these projects was, Fettercairn Youth Horse Project, Tallaght, established in 1995. Further projects have been established since i.e. Cherry Orchard Equine, Educational and Training Centre. Although not formally evaluated these programs are widely "cited as examples of best practice in the care and control of horses in large urban areas" (Conway 2004, p.72). Recent media focus on the issue of stray horses in Dublin has continued with international

coverage in New York Times (Burns 2010). This discourse largely stigmatises those keeping horses in urban areas (The Daily Show 2011), deeming such activities as unsuitable within these physical environments. Whalley Hammell (2008) suggests this may be a form of cultural imperialism. Prompted by this Dublin City Council in cooperation with the Irish Horse Welfare Trust (IHWT) (2011) engaged with youths keeping horses in this area and established the Dunsink Horse Club, with a view to establishing a horse project. Saris et al (2002) states that community horse projects are symbols of social inclusion, and aim to give youths an alternative to criminal activity, a place to safely keep horses, and provide education and employment.

The regeneration projects are a state response based on the findings of the Fitzgerald report (Fitzgerald 2007) to social exclusion and criminality within several communities in Limerick (Hourigan 2011). Regeneration areas in Limerick have a population of whom 39-47% are under 25 years old. These communities represent the most socially deprived, with high rates of unemployment, early school leavers, homelessness, and lack of basic facilities such as central heating, private transport (Barrett et al 2008). A qualitative study by Kelleher Associates and O'Connor (2007) of young men from these disadvantaged areas highlights the impact poverty, social exclusion, and crime has on their daily lives. These youths demonstrated 'protest masculinity' through deviant occupations such as joyriding, burglary, drinking in fields and other activities considered anti-social or criminal. This identifies the important symbolic meaning of occupation (Kelleher Associates and O'Connor 2007). Although considered deviant by mainstream society, activities such as joyriding maybe subjectively healthful to youths engaging in them (Fanning and Gallagher 2009). These occupations provided "young men with recognition, identity and a place in the world that had been denied to them" (Hourigan 2011, p.176).

In limerick, youths in socioeconomically disadvantaged communities participate in keeping horses (Law 2002). However, no formal community horse projects exist. Young men identified their love and passion for horses. The personal impact of the Control of Horses Act 1996 and the anger felt at not being able to engage in this occupation was also identified (Kelleher Associates and O'Connor 2007). Keeping horses was "one of the few non-criminal outlets for these young men. Paradoxically, however, this outlet had been effectively eliminated by the Gardaí, thus further denuding their lives" (Hourigan 2011, p.177). Contrastingly, the Garda youth diversion projects in Limerick also implement some equine activities (IHWT 2011) aimed at enhancing learning and diverting children and young adults

from crime (Irish Youth Justice Service 2012). Mc Kiernan and Gallagher (2011) identify the importance of leisure activities for youth offenders in relieving boredom and providing the just right challenge allowing them to experience achievement, enhanced self worth and develop skills which transfer to everyday occupations. Similarly, McKey and Salmon (2011, p. 10) research highlights the positive personal psychological benefits of horse riding for a participant within the Limerick regeneration areas “...when I go horse riding I get away from everything when I’m stressed and it’s just me and the horse (laughs) and it means a lot to me, I love it like”.

The traveller community, another marginalised community, which Conway (2004) argues is deprived by the impact of the Control of Horses Act 1996 as it effects their ability to keep horses. This highlights the impact of this law on occupational choice and engagement for many marginalised communities. The literature acknowledges the desire and need for additional horse projects in several Revitalising Areas by Planning, Investment and Development (RAPID) cities and towns (Lynam and Dowdall 2008, Clarity: Research, Development and Training Ltd. 2008, and Griffith and Kelleher 2010), emphasising this as a meaningful and culturally significant occupation for some of the most disadvantaged communities in Ireland (Pobal 2011).

From an occupational perspective these youths live in areas of vast occupational deprivation where opportunities to engage in occupations that have cultural, social and personal meaning is almost impossible (Whiteford 2000). Occupational deprivation denies these individuals the positive health benefits of occupation. It may explain why health is seriously affected in the Limerick regeneration areas with statistics above national and city rate averages for disability, self-harm, incidence of cancer and low birth weights (Barrett et al 2008), this also highlights the impact of the social determinant of health (WHO 2003). Engaging in culturally significant and personally meaningful occupations promotes health and wellbeing (Yerxa et al, 1990, Law et al. 1998 and Clark et al. 1997). Anecdotal evidence appears to exist on the benefits of EAA for adolescents within these communities. This is demonstrated by several projects informal use of EAA (IHWT 2011). Youths in these communities engage in keeping horses in a context that is shaped by a complex interrelation of social, economic, political and cultural forces (Creek et al 2005). In urban areas which many would deem as unsuitable physical environments. Despite these factors youths continue to engage in this occupation which suggests that it holds particular meaning and value to them. Hence it is of relevance to occupational therapist to understand this occupation because engaging in this occupation may

benefit the health and wellbeing of these marginalised individuals and their larger community. Limited empirical evidence exists on the occupational choice and engagement of adolescents keeping horses and its impact on health and wellbeing. For adolescents within these disadvantaged communities who are generally considered at more risk than youths in more affluent communities (Johnson and Howard 2007), it is important to identify and research which occupations may provide a protective factor despite the high exposure to risk within these communities (Fergus and Zimmerman 2005).

Method:

This research has been conducted in part fulfilment of an MSc in Occupational Therapy. The initial aim of the research was to explore using qualitative methods the meaning of caring for horses to male youths living in disadvantaged urban areas in Ireland. Having received ethical approval from the University of Limerick, recruiting participants within the limited timeframe available proved to be in vain. Hence, a critical appraisal of the psychosocial effect of EAA was deemed to be an appropriate alternative, to identify and amalgamate what the research has found to date. This is important in the growing context of several organisations offering EAA' to adolescents and provides some exploration about what the potential benefits of keeping horses or engaging in community horse projects may be for disadvantaged youth. Using a Critically Appraised Topic (CAT) format, a literature review was conducted to investigate the following research questions:

1. What is the evidence to support the use of equine assisted activities/therapy as an effective psychosocial intervention for adolescents aged between 10 and 18 years old?
2. Do these findings have the potential to address some of the potential health benefits for youths in disadvantage communities engaging in keeping horses/community horse projects?

A Critically Appraised Topic (CAT) was chosen as a means of providing information about the effectiveness of EAA through identifying, summarising and appraising the literature, post a search of the most relevant research. A CAT focuses on a clinical question and assists with evidence based clinical decision making within practice (CEBM 2009). CAT's are a time efficient option for Occupational Therapists to summarise the best available evidence and use it to address clinical scenarios (Fetters et al 2004 and Wendt 2006).

The Oxford Centre for Evidence Based Medicine (2011) levels of evidence was used to provide the researcher with a framework to objectively appraise the research. The levels of evidence do not consider qualitative research. However, due to the subjective nature of people's experience of occupations (Pierce 2001 and Whalley Hammell et al 2000), it was considered to be important to include this aspect to provide roundedness (Whiteford and Hocking 2012).

Data Source and Search Strategies:

Search Strategy (PICO):

Client Group:

Adolescents: with/without physical, psychological and social challenges. Aged: between 10-18 years old.

Intervention:

Equine Assisted Therapy, Equine Assisted Activities, Therapeutic Horse Riding, Equine Assisted psychotherapy, Equine Assisted Counselling and Hippotherapy.

Comparison:

None

Outcomes:

Effects: psychological and/or social functioning/ behaviour and/or occupational performance/ functioning.

The literature search was conducted between April 2011 and March 2012. Search strategies are outlined within Table 1:1, which includes the databases and sites searched and the inclusion and exclusion criteria used. The literature search included a vast range of multidisciplinary literature including occupational therapy literature on this topic to ensure that relevant information was not missed.

Table 1:1

Databases and Sites Searched	Search Terms	Inclusion and Exclusion Criteria
<ul style="list-style-type: none"> • Academic Search Complete • Medline • PsycINFO • AMED • PsycArticles • Science Direct • CINAHL Plus • Science Direct • Informahealthcare • Web of Science • Web of Knowledge • Google Scholar • Springer link • Nursing and Allied Health Collection • OT seeker • OT CATs (Critically Appraised Topics) • The Cochrane Library • NLEH: National Electronic libraries for Health • Hand search Journals 	<ul style="list-style-type: none"> • Equine Assisted Activities, • Equine Facilitated Activities • Equine Assisted Learning, • Equine Assisted Therapy, • Therapeutic Horse Riding, • Equine Assisted Counselling, • Equine Assisted Psychotherapy • Hippotherapy, • /and Psychosocial 	<p>Inclusion Criteria:</p> <ul style="list-style-type: none"> • Published from 1997-2012. • Adolescents aged 10-18 years old • Psychological and/or social outcome measures • Empirical research: qualitative and quantitative • English text only • Full text only <p>Exclusion Criteria:</p> <ul style="list-style-type: none"> • Excluded studies which only sought to determine physical outcomes. • Adults: over 18 years olds • Children: under 10 year olds • Inappropriate journals were eliminated by information obtained from the title and abstract. • Descriptive articles • Opinion pieces

The researcher reviewed the articles titles and abstracts, eliminating articles which did not meet the inclusion criteria. Articles relating to other forms of Animal Assisted Therapy (AAT) not involving equines were excluded. Articles which did not include empirical evidence such as opinion pieces, descriptive articles were excluded. Full text copies of the articles were then obtained, and further critical evaluation completed.

Findings:

A total of 8 articles that met the inclusion criteria were critically evaluated. The studies included four quantitative studies (Table 2:1: Bachi et al 2011, Holmes et al 2012, Cartinella 2009 and Trotter et al 2008) and two mixed method studies (Table 2:2: Ewing et al 2007 and Chaplin 2010) and two qualitative studies (Table 2:3: Dell et al 2011 and Burgon 2011). Overall the interventions used within the studies varied and included therapeutic horse riding (THR), equine assisted psychotherapy (EAP), equine assisted counselling (EAC), EAT and EAL. Populations within the studies included adolescents aged between 10- 18 years old, with a variety of challenges i.e. severe emotional disorder, solvent abuse, adolescent “at risk” due to psychosocial issues. The sample groups within the studies were rather heterogeneous

in nature. Two studies were conducted with samples in residential setting (Dell et al 2011 and Bachi et al 2011) and one with participants in foster care (Burgon 2011). The studies used a variety of assessments looking at EAA impact on a variety of areas such as anxiety, depression, loneliness, self-esteem, self-image, self-control, interpersonal trust, empathy, social skills, and behaviour. The frequency and intensity/duration of the interventions varied, from 4 weeks to 2 years and from 30 minutes to 3 hours sessions respectively. A range of professionals conducted research in this area, with studies from social work, counselling, and psychology.

The tables outlining the studies are as follows:

Table 2:1: Quantitative Studies:

Author (Year)	Study Design /Methodology	Sample Size	Population	Intervention	Findings
Bachi et al (2011) Israel	Pilot study Treatment and control group Pre and Post Measures used: Offer self-image questionnaire Schedule to assess self control behaviours Children's interpersonal trust scale Student's life satisfaction scale A year later groups were reviewed Ethical approval not addressed. Consent addressed, participants not identified within study.	Convenience: N.29 Treatment group: N 14 Control group: N15 Groups similar in demographic and presentation	Adolescents in a residential setting Severe personal and adaptive needs including below average IQ, strong antagonism to social norms, lack of communication, work or study skills, lack of self control and increase use of violence and self harm. Age :14-18 years	Equine-facilitated Psychotherapy Only treatment group participated in EFP Individual sessions one-weekly: 50 minutes 7 months intervention (9 to 26 sessions)	Results were not statistically significant within any of the measures Trends suggest an increase/ positive effect in the areas of self-control, trust, general life satisfaction. While the control group showed a decrease or less of an increase. Self-image increased for both groups. One year follow up: showed positive trends with a greater % of the treatment group having received no new police record and not engaged in drug use when compared to the control.
Holmes et al. (2012) England	Quantitative measures: Spence children's anxiety scale Rosenberg self-esteem scale	Convenience (N. 11)	Adolescents with emotional, behavioural or learning difficulties. Aged 12-14	A racehorse rehabilitation centre. Four consecutive, 3 h long sessions. Included horses	Average anxiety scores decreased. No significant change in self esteem

	Behaviour was measured through experimenter observation every 15 seconds during intervention.		years (1 Female participant)	and a model horse	
Cartinella (2009) USA Dissertation	Single case study on improvement in social skills. Her parent completed the Social Skills Rating Scale each week, before, during, and after her treatment	Female 13 years old. Parents reported difficulties with anxiety and social skills	Adolescent female	6 week program of Equine Assisted Therapy Weekly sessions	Results suggest that there was no positive or stable changes observed in the adolescents social skills during treatment compared to her baseline.
Trotter et al (2008) USA	Comparative study of equine assisted counselling (EAC) against Kids connection a school-based group counselling program for 1 hour over 12 weeks. (Evidence based program) Measures: The Behavioural Assessment Systems for Children (BASC), self rating and parental rating scales Psychosocial Sessions Form (For EAC only)	Nonrandomised convenience sample EAC group: N 126 Kid connection: N 38 Total 102 males and 62 females. 86 attending elementary school, 78 attending middle school	Student considered "at risk" due to serious behavioural issues, learning difficulties, or social adjustment concerns. Students choose which group they would like to participate in.	Equine Assisted Counselling (EAC) 12 week program consisting of 2 hour group sessions. Groups consisted of 6-8 participants	Results: EAC statistically improved 17 behaviour in comparison to 5 behaviours in the alternative treatment within the BASC. Areas improved within the EAC include Emotional Symptoms Index, Clinical areas of improvement composite, atypical behaviours, sense of inadequacy and relations with parents. Parents of EAC identified improvement in 12 areas compared to 1 area for parents of kids connections.

Table 2:2: Mixed Method:

Author (Year)	Study Design/ Methodology	Sample Size	Population	Intervention	Findings
Ewing et al.(2007) USA	Quantitative: Pre and Post tests: Self-Perception Profile for Children, Empathy Questionnaire, Locus of Control Scale, Children's Depression Inventory, Children's Loneliness Inventory Questionnaire. Qualitative: Case studies compiled from interviews and observations	Convenience/ Purposive N. 28	Youth with Severe Emotional Disorders in an alternative school aged 10-13	Equine Facilitated Learning Over 9 weeks two hour sessions, twice weekly. Total of 36 hours participation.	Pre and Post tests were analysed with paired t-tests. Results: No statistical significance. Illustrated positive effects: Facilitated discussion of anxieties, education on personal hygiene, return to traditional education for two children, and trust.
Chaplin (2010) England	Quasi-experimental research design Measures: Rosenberg Self-Esteem Scale General Wellbeing Scale Index of Empathy for Children and Adolescents Self-perceived functioning at school (personalised) Teacher Assessment Form Qualitative data from interviews mainly with teachers	Convenience/ Purposive N. 3	Adolescent boys attending secondary school 12-15 years With moderate learning disability and social and emotional behavioural difficulties One boy acted as Mentor had already attended the pilot program	Equine facilitated learning (EFL) Dartmoor ponies Six weekly sessions lasting for 90 minutes	Quantitative data provides weak support for EFL to improve social and emotional functioning. Qualitative data, described improvements in functioning but reported a decline in behaviour when followed up 8 weeks later.

Table 2:3: Qualitative Studies:

Author (Year)	Study Design/ Methodology	Sample Size	Population	Intervention	Findings
Dell et al (2011) Canada	Phenomenology analysis of interviews: Male and female data coded separately	Purposive sample N. 15	First Nations and Inuit youth who abuse solvents attending a residential treatment centre Age: 12-17 years old.	Equine Assisted Learning 12 weeks 1 hour sessions	3 Themes: Spiritual Exchange, Complimentary communication and authentic occurrence. Facilitated “being”, empathy, self-esteem and social acceptance, enabled learning Seen to be a culturally relevant approach with this group.
Burgon (2011) UK	Qualitative Study Method: Observation of participants and field notes and semi-structured “ethnographic” conversations and open “field” interviews. Ethical approval received and considerations highlighted	Convenience/ Purposive sample: N. 7 (5 girls & 2 Boys)	Participants “at risk” due to psychosocial factors. In foster care Aged: 11-16 years old. One participant 21 years old.	Therapeutic Horsemanship Activities included: Invisible riding (No saddle or reins) with a side walker. Over two years: Frequency: varied weekly, fortnightly, or intermittently. Duration: Most attended for several months Sessions: 1 and 3 hours	Themes identified: Enhanced confidence and self esteem, sense of mastery and self-efficacy, development of empathy and attachment towards the horses .Opening new opportunities and possibilities by being involved in a normalising activity. These were all regarded as important in developing resilience .

Trotter et al (2008) found that Equine Assisted Counselling (EAC) statistically improved 17 behaviours within the Behavioural Assessment Systems for Children (BASC) compared to 5 behaviours in the alternative treatment group. The BASC parents rating for EAC identified improvements in 12 areas compared to 1 area for the alternative treatment group, concluding that EAC was effective. Bachi et al (2011) found at one year follow-up that 79% of equine facilitated psychotherapy (EFP) participants had acquired no new police record, with 21% acquiring one new police record. In comparison to the control group, 40% of participants had no new police record, 47% had one and the remaining had two/three. Similarly, a greater proportion of EFP participants had not used drugs or used drugs less when compared to the control group. Within this study measures in self-control, self-image and general life-

satisfaction were not statistically significant. Holmes et al 2012 results show a statistically significant decrease in anxiety. One quantitative study (Carintella 2009) and one mixed method study (Ewing et al 2007) found no statistically significant outcomes within their studies. This may have been due to a lack of sensitivity to change in the instruments used as outcome measures.

Most of the studies included have methodological flaws within the study. All the quantitative and mixed method studies used a convenience sample. With the exception of Trotter et al (2008), studies had very small sample sizes ranging from a single case study to 28 participants. None of the studies used a power analysis to identify the sample size required for the study. Four of the studies lacked a control group for comparison (Holmes et al 2012, Carintella 2009, Ewing et al 2007, and Chaplin 2010). Carintella (2009) was a single case study and represents the study with the weakest methodology within this review. All the studies lacked control for other external variables (i.e. other interventions) that participants might be exposed to. All participants within the studies were recruited from one specific geographical area. Variation exists within these studies in the terminology used to describe specific interventions and the professionals who facilitate these interventions. This has repercussion for replicating research and may impact upon the outcome of such interventions. It is clear that these factors greatly limit the generalizability of these study's results.

The two qualitative studies and within the qualitative element of the mixed methods studies a purposive sample was correctly used. The two qualitative studies identified the positive effects of EAA for adolescents at risk (Dell et al 2011 and Burgon 2011). Burgon (2011) reveals that adolescents experienced enhanced confidence and participating in therapeutic horse riding opened new possibilities and opportunities. These were identified as protective factors enhancing resilience. Burgon (2011) concurs with Dell et al (2011) findings that adolescents developed a sense of mastery, enhanced self-esteem and empathy. Self –esteem was seen to improve within these two studies this is in contrast to Holmes et al (2012) and Chaplin (2010) who both found no statistically significant change in self-esteem using the Rosenberg Self-Esteem Scale. Dell et al (2011) identified the importance of using EAL when the participants identify horses as being culturally relevant.

Clinical Bottom Line:

This CAT on the effects of EAA with adolescents found limited high quality research to support its use. Hence, occupational therapists should use caution if using EAA interventions at present. However, the findings do highlight a positive trend.

Discussion:

This CAT on the psychosocial effects of EAA with adolescents shows that the evidence to support its therapeutic use is limited. However, overall trends are positive. Furthermore, this critically appraised topic findings reveal a number of interesting and pertinent features of EAA. By reflecting these results back to the literature regarding keeping horses in urban areas, it illuminates the impact this occupation may have on facilitating resilience, social inclusion, participation, and potentially a positive effect on health and wellbeing. The complexity of occupation is addressed. Limitations and implications for occupational therapy are discussed.

Resilience:

Burgon (2011) suggests that their “at risk” adolescent’s engagement in THR contributed to the development of psychosocial benefits, which were protective factors and enhance resilience. “Resilience refers to the process of overcoming the negative effects of risk exposure, coping successfully with traumatic experiences, and avoiding the negative trajectories associated with risk” (Fergus and Zimmerman 2005, p.399). These protective factors included enhanced self-esteem and confidence, sense of self-efficacy and mastery, development of empathy and the opening of positive experiences (Burgon 2011). Increased self-esteem which qualitatively has been identified as an outcome of EAA has been identified as a protective factor which compensates against risk taking behaviours such as substance abuse and risky sexual behaviour. Ewing et al (2007) describes similar protective factors and points out that for two adolescents, their participation in EAL resulted in a positive chaining of events which led them to return to mainstream education. Bachi et al (2011) findings also indicate that participants followed a more positive trajectory post intervention. One year follow-up showed that equine facilitated psychotherapy (EFP) participants had acquired no new police record/fewer police records than the control group and a greater proportion of EFP participants had not used drugs or used drugs less when compared to the control group. Keeping horses may provide youths who engage in this occupation some protective factors required for resilience. As suggested by Saris et al (2002), community horse projects may be a community resource, providing a protective factor to youths in communities which have high exposure to risks, such as occupational deprivation, educational deprivation, poverty and social exclusion. Fergus and Zimmerman (2005) state that external resources, such as community horse projects may be centres for change, assisting adolescents to manage risk and preventing negative outcomes. The Garda Youth Diversion projects in Limerick use

EAA (IHWT 2011) to divert youths for crime, hence suggesting that it has protective factors and promotes resilience.

Social Inclusion:

Marginalised communities have actively sought equine projects that will enable them to continue to engage in keeping horses (Kelleher Associates and O'Connor 2007, Clarity: Research, Development and Training Ltd. 2008 and Lynam and Dowdall 2008), this may represent a process of occupational adaptation. Such equine projects may promote occupational justice within these communities. It is suggested that EAA enabled trust (Ewing et al 2007, Bachi et al 2011 and Dell et al 2011). Trust is an important indicator of social capital (Hourigan 2011). Active voluntary organisations (like community horse projects) Hourigan (2011) argues are associated with bridging social capital and assist in building trust across social groupings, thus increasing the individual's capability for social mobility. For example within Burgon's (2011) study coming into contact with a heterogeneous social group i.e. EAA facilitator's interaction with participant enhanced the youth's social mobility.

"I keep horses because it's part of who I am" Clarity: Research, Development and Training Ltd. (2008, p.1) highlights the cultural relevance of keeping horses to Traveller men and boys. For those who keep horses it is an intrinsic part of their daily lives. Horses play a vital role in the father/son relationship, are a positive recreational and social activity and facilitate passing on traditions. This occupation allows bonding of social relationships which may produce a cohesive community and social capital (Hourigan 2011). Conway (2004) argues policy and lack of provision to allow the Traveller community to keep horses in urban areas marginalises Travellers from mainstream society and devalues their culture. In contrast Dell et al (2011) highlights the importance of using culturally appropriate interventions with marginalised youths. Within their study the First Nations and Inuit youth viewed the horse as sacred and hence it was identified as a culturally relevant intervention.

On the other hand, Kelleher Associates and O'Connor (2007) identified that young males felt further occupational alienation as a result of the Control of Horse Act 1996, prohibiting or limiting participation in keeping horses. As one participant states: "The thing that did work was the horses. Now the pound takes them. It is a dangerous place now, fuck all to do" (Kelleher Associates and O'Connor 2007, p. 25). Hourigan (2011) highlights that a negative chaining of events that may result from legislation which restricts such an occupation. This alienates these marginalised youths further from the Gardaí, local authorities, and through

stigma created by the media, from mainstream society. This may produce a lack of trust in institutions and the wider community.

These issues are important as, individuals with attitudes of strong trust, institutional trust and reciprocity have superior health. Similarly, those with well-built social networks, regular social contact with friends and family, and engage with voluntary associations, have better health (Hourigan 2011).

Participation:

Participation is a vital component of the human experience. Law (2002) identifies that it leads to a sense of competence, life satisfaction and is crucial for emotional, psychological and skill development. Trotter et al (2008) shows that EAA had appeal for the adolescents within their study the majority of the participants chose EAC over school based counselling.

The British Horse Society (2011) and Smith et al (2006) report that female's dominant horse riding and horse related activities within the UK and USA. This is in contrast with marginalised communities in Ireland, where keeping horses is predominantly a male activity (Conway 2004 and Clarity: Research, Development and Training Ltd. 2008). Burgon (2011) also acknowledged an unexpected gender element in which adolescent boys identified as "at risk" appeared to express affection openly with horses. EAA enabled opportunities for safe physical touch, which was important to these male youths.

The natural environment in which EAA occurs is recognized for its potential therapeutic value by Burgon (2011) and Trotter et al (2008). The physical and social environment varies greatly between a youth independently keeping horses within a housing estate, the more formalised environment of a community horse project and the structured setting of EAA within a therapeutic environment. Although the nature of equine activities means they all will occur within a more natural environment than a typical clinical setting. The demands of the environment and its impact may vary greatly across all three settings.

Complexity of Occupation:

Whalley Hammell (2001) argues that occupational therapy researchers must go further than adopting qualitative methods to ensure a client-centred evidence-base, to enabling clients active involvement from setting the research agenda to collaborating right through the research process. Within health care research the gold standard is often considered to be the randomised control trial (RCT). Occupation is a complex phenomenon which makes it

challenging to assess occupation focused interventions, such as EAA as it is difficult to identify which elements are having an effect on the participant (Creek 2009).

In an Irish context the political, cultural, social, individual and occupational aspects of youths keeping horses in urban areas needs further exploration. Understanding communities' occupational choice and engagement in context, particularly, of marginalised groups who are at risk of occupational deprivation, enables occupational therapists to use their unique knowledge of occupation to act as a catalyst to promote and develop community interventions based on social inclusion and occupational justice (Whiteford 2000 and Townsend and Wilcock 2004). Whiteford (2011) states that occupational therapists have realised the importance of the concept of occupational deprivation, nevertheless, further work is need in order to understand the complexity of these issues. The complex, multifaceted and contextual nature of occupation (Creek et al 2005) can be seen in some degree through the participation of keeping horses for youths living in urban areas. From a risk society perspective such activities may be deemed as inappropriate within an urban area but further research in this area through participatory research may allow new ways of knowing such occupations (Whiteford and Hocking 2012).

Implications for Occupational Therapy:

Bracher (2000) identified that EAA are relevant for occupational therapy practice over a decade ago. However, to date EAA research conducted from an occupational perspective is extremely limited, particularly in relation to the psychosocial impact and/or occupational functioning. Further research in this area is warranted, particularly since EAA are being used in interventions with adolescents more frequently within an Irish and international context. EAA for individuals/groups who are motivated by horses enables occupational therapists through this occupation to engage these individuals/communities in a manner which is in keeping with our philosophical beliefs, by providing a meaningful occupation which promote social inclusion, reduce occupational deprivation, and potentially promotes health and wellbeing.

Occupational therapists with their unique perspective on occupation, holistic view, skills and knowledge on enabling client-centred practice are ideally placed to address complex occupational issues such as occupational deprivation, occupational adaptation and occupational justice, all issues highlighted as factors affecting youths keeping horses in urban areas. Further exploration of the impact of keeping horses for adolescent living well, would provide a more detailed insight into this occupation, by critically evaluating the impact of

political, social, economic and cultural factors that enable occupational engagement or occupational deprivation. Using a resilience framework to understand such issues, as it is strength/resources focused, appears to compliment the underpinning philosophy of occupational therapy.

Limitations:

While a comprehensive review of the literature was conducted, this was not a systematic literature review. Although, this work does form the basis from which a systematic review of the topic could be conducted. The effect of participation in keeping horses as an occupational choice and its impact on health and wellbeing cannot be thoroughly addressed when comparing it to a therapeutic intervention. Hence the findings of this article should be interrupted with caution. This research does not explore the ethical and animal welfare issues of caring for equines in urban areas, but is aware of this noteworthy and valid concern.

Conclusion:

This article gives a unique account of the therapeutic use of EAA both in Ireland and internationally, from an occupational perspective. Limited empirical evidence exists on keeping horses in disadvantaged communities and/or engagement in community horse projects. This article provides a comprehensive review of the occupation of keeping horses in disadvantaged urban areas by Irish youths. It shows the complexity of this occupation including the political, social, cultural, economic and individual factors. Engagement in this occupation arises in communities exposed to occupational deprivation, social exclusion, poverty, ill health and crime, highlighting the risk factors present in the everyday lives of youths living there. The findings of this CAT suggest that EAA may be an asset and a resource in assisting adolescents to develop resilience, social inclusion and participation. A key element to enhance resilience in adolescents is intervention focused on building resources and assets for adolescents exposed to risk (Fergus and Zimmerman, 2005). This CAT suggests that community horse projects may facilitate resilience in disadvantaged communities. These findings support the belief that engagement in occupation promotes health and wellbeing. This paper has raised many questions that warrant further research and supports the necessity for occupational therapists to participate in research confirming the relationship between occupation and wellbeing for adolescents.

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References:

All, A.C., Loving, G.L., and Crane, L.L. (1999) 'Animals, horseback riding, and implications for rehabilitative therapy', *Journal of Rehabilitation*, 49-57.

American Hippotherapy Association (2010) 'Introduction to Hippotherapy' [online], available: <http://www.americanhippotherapyassociation.org/hippotherapy/introduction-to-hippotherapy/> [accessed 3rd Feb 2012].

Bachi, K. Terkel, J. and Teichman, M. (2011) 'Equine-facilitated psychotherapy for at-risk adolescents: The influence on self-image, self-control and trust', *Clinical Child Psychology and Psychiatry*, 1-15, [online], available: <http://ccp.sagepub.com/content/early/2011/07/06/1359104511404177> [accessed 2nd Feb 2012].

Barrett, M., Walker, A., O'Leary, M. (2008) 'Summary of the community profile of the northside and southside regeneration areas in Limerick city', *Health Service Executive*, [online], available: http://www.hse.ie/eng/Publications/Public_Health/ [accessed 12th Mar 2011].

Bazyk, S. and Bazyk, J. (2009) 'Meaning of occupation based groups for low-income urban youths attending after school care', *American Journal of Occupational Therapy*, 63, 69-80.

Bizub, A., Joy, A. and Davidson, L. (2003) '“It's like being in another world”: Demonstrating the benefits of therapeutic horseback riding for individuals with psychiatry disability', *Psychiatric Rehabilitation Journal*, 26(4): 377-384.

Bracher, M. (2000) 'Therapeutic Horse Riding: What has this to do with Occupational Therapist?', *British Journal of Occupational Therapy*, 63(6): 277-282.

British Horse Society (2011) 'The health benefits of horse riding in the UK' [online] available: http://www.bhs.org.uk/sitecore/content/mss_content/Websites/MainSite/Riding/Health_Benefits_of_Riding.aspx [accessed 31 Jan 2012].

Brown, T. (2010) 'Centennial vision—child and youth practice area publications in the American Journal of Occupational Therapy in 2008 and 2009: A content analysis, methodology overview, and summary', *American Journal of Occupational Therapy*, 64, 814–819.

Burgon, H.L. (2011) '“Queen of the world”: experiences of ‘at-risk’ young people participating in equine-assisted learning/therapy', *Journal of Social Work Practice*, 25(2): 165–183.

Burns, J. (2010) 'Hardships of a nation push horses out to die', *New York Times*, 20th Dec, [online], available: <http://www.nytimes.com/2010/12/21/world/europe/21ireland.html> [accessed: 7th Mar 2011].

Cartinella, J.E. (2009) 'Social skills improvement for an adolescent engaged in equine assisted therapy: A single subject study', unpublished thesis (Phd), Pacific University, [online] available, <http://commons.pacificu.edu/cgi/viewcontent.cgi?article=1245&context=spp> [accessed 12th Jan 2012].

Centre for Evidence Based Medicine (CEBM) (2009) 'CATmaker' [online], available: <http://www.cebm.net/index.aspx?o=1216> [accessed 2nd Feb 2012].

Chaplin, D. (2010) 'The therapeutic effects of working with Dartmoor Ponies: a pathfinding project', *The Plymouth Student Scientist*, 3, (2), 60-9.

Clarity: Research, Development and Training Ltd. (2008) '*I keep a horse because it's part of who I am: A feasibility study and business and implementation plan for the development of a Traveller Horse Project in Limerick city and environs*', [online], available: <https://www.pobal.ie/Funding%20Programmes/traveller/Documents/Limerick%20City%20Horse%20Project%20Report%202009.pdf> [accessed 1st April 2011].

Clark, F., Azen, S. P., Zemke, R., Jackson, J., Carlson, M., Mandel, D., et al. (1997) 'Occupational therapy for independent- living older adults: A randomized controlled trail', *Journal of American Medical Association*, 278(16), 1321-1326.

Collins, J., Hanlon, A., More, S., Wall, P. and Duggan, V. (2010) *Challenges and Solutions to Support Good Equine Welfare Practice in Ireland*, Dublin: University College Dublin.

Control of Horses Act 1996, No.37/1996, Dublin: Office of Authority General [online], available: <http://www.irishstatutebook.ie/1996/en/act/pub/0037/print.html> [accessed 17th Feb 2011].

Conway, B. (2004) 'Traveller horses, local authorities and public policy in contemporary Ireland', *Nomadic People*, 8(1): 65-79.

Creek, J. (2009) 'Occupational Therapy defined as a complex intervention: a 5 year review', *British Journal of Occupational Therapy*, 72(3): 105-115.

Creek, J., Ilott, I., Cook, S., and Munday, C. (2005) 'Valuing Occupational Therapy as a Complex Intervention', *British Journal of Occupational Therapy*, 68(6): 281-284.

Davis, E., Davies, B., Wolfe, R., Raadsveld, R., Heine, B., Thomason, P., Dobson, F., Graham, H. (2009) 'A randomised controlled trail of the impact of therapeutic horse riding on quality of life, health, and function of children with cerebral palsy', *Developmental Medicine and Child Neurology*, 51: 111-119.

Dell, C.A., Chalmers, D., Bresette, N., Swain, S., Rankins, D., and Hopkins, C. (2011) 'A healing space: the experience of First Nations and Inuits youths with equine-assisted learning (EAL)', *Child Youth Care Forum*, [online], available: <http://www.springerlink.com/content/u5102hx546050g86/fulltext.pdf> [accessed 23rd Feb 2011].

Dyspraxia Association of Ireland (2012) 'Equine Assisted Therapy/Learning' [online], available: <http://www.dyspraxia.ie/EquineAssistedTherapyLearning> [accessed 12th Mar 2012]

Equine Assisted Growth and Learning Association (EAGALA) (2012) 'EAGALA' [online], available: <http://www.eagala.org/> [accessed 1st Mar 2012].

Ewing, C., McDonald, P., Taylor, M., and Bowers, M. (2007) 'Equine-facilitated learning for youths with severe emotional disorders: A quantitative and qualitative study.' *Child Youth Care Forum*, 36: 59-72.

Fanning, M. and Gallagher, M.B. (2009) 'Fiestas, function and meaning? An exploration of joyriding from an occupational perspective' unpublished (MSc), University of Limerick.

Fergus, S. and Zimmerman, M.A. (2005) 'Adolescents resilience: A framework for understanding healthy development in the face of risk', *Annual Reviews Public Health*, 26: 399-419.

Festina Lente (2012) 'Festina Lente' [online], available: <http://www.festinalente.ie/> [accessed 12th Feb 2012].

Fetters, L., Figueiredo, E., Keane-Miler, D, McSweeney, D. and Cheng-Chi Tsao (2004) 'Critically appraised topics', *Pediatric Physical Therapy*, 16: 19-21.

Fitzgerald, J. (2007) *Addressing issues of Social Exclusion in Moyross and other disadvantaged areas of Limerick City*. Report to the Cabinet Committee on Social Inclusion.

Frank, G., Fishman, M., Crowley, C., Blair, B., Murphy, S. T., Montoya, J.A., Hickey, M.P. Brancaccio, M.V., Bensimon, E.M. (2001) 'The new stories/new cultures after-school enrichment program: A direct cultural intervention. *American Journal of Occupational Therapy*, 55, 501-508.

Froeschle, J. (2009) 'Empowering abused women through equine assisted career therapy', *Journal of Creativity in Mental Health*, 4:181-190.

Griffith, M and Kelleher, P. (2010) 'Uncertain futures: men on the margins in Limerick city', *Irish Probation Journal*, 7: 24-44.

Holmes, C.M., Goodwin, D., Redhead, E.S., and Goymour, K.L. (2012) 'The benefits of equine-assisted activities: An exploratory study', *Child and Adolescent Social Work Journal* 29:111-122.

Horses and Humans Research Foundation (HHRF) (2007) [online], available: <http://www.horsesandhumans.org/> [accessed 1st Mar 2012].

Hourigan, N. (2011) *Understanding Limerick: Social Exclusion and Change*, Cork: Cork University Press.

Irish Autism Action (2010) 'Equine Assisted Learning and Autism' [online], available: <http://www.autismireland.ie/news-events/463/492/> [accessed 14th Mar 2012]

Irish Horse Welfare Trust (2011) '*Dunsink and Limerick Horse Projects*' [online], available: <http://www.ihwt.ie/site2/2011/03/dunsink-limerick-horse-projects/> [accessed 16th Mar 2012].

Irish Youth Foundation (IYF)(2011) '*Projects We Fund*' [online] available: <http://www.iyf.ie/children-we-support/projects-we-fund/> [accessed 11th Mar].

Irish Youth Justice Service (2012) '*Garda Youth Diversion Projects*' [online], available: <http://www.iyjs.ie/en/IYJS/Pages/WP08000062> [accessed 1st Feb 2012].

Johnson, B. and Howard, S. (2007) 'Causal chain effects and turning points in young people's lives: a resilience perspective', *Journal of Student Wellbeing*, 1(2): 1-15.

Kelleher Associates and O'Connor, P. (2007) '*Uncertain futures: An exploratory study of men on the margins*', unpublished document, University of Limerick, [online], available: http://www.ul.ie/sociology/docstore/uncertain_futures.pdf [accessed 22nd Feb 2011].

Kronenberg, F., Algada, S.S. and Pollard, N. (ed)(2005) *Occupational Therapy without Borders: Learning from the Spirit of Survivors*, Edinburgh: Elsevier Churchill Livingstone.

Law, M. (2002) 'Participation in the occupations of everyday life', Distinguished Scholar Lecture', *The American Journal of Occupational Therapy*, 56(6): 640-649.

Law, M., Steinwender, S., and Leclair, L. (1998) 'Occupation, health and wellbeing', *Canadian Journal of Occupational Therapy*, 65(2), 81-91.

Lynam, S. and Dowdall, B. (2008) '*Feasibility study regarding the establishment of a horse care project in Carlow*' online, Available: http://www.catherines.ie/images/horse_care_project.pdf [accessed 19th Mar 2011].

McKey, C. and Salmon, N. (2011) '*Patterns of occupations and occupational needs of adolescents living in an area of regeneration; an exploratory study*', unpublished (MSc), University of Limerick

McKiernan, T. and Gallagher, M.B. (2011) '*"Getting hooked on fishing": Fishing as a meaningful leisure occupation for young offenders living in the community*', unpublished (MSc), University of Limerick

Oxford Centre for Evidence Based Medicine (2011) '*Levels of Evidence*' [online], available: http://www.cebm.net/mod_product/design/files/CEBM-Levels-of-Evidence-2.1.pdf [accessed 1st Mar 2012].

Pierce, D. (2001) 'Untangling occupation and activity', *American Journal of Occupational Therapy*, 55(2), 138- 146.

Pobal (2011), '*Government supporting communities*', [online], available: <https://www.pobal.ie/funding%20programmes/rapid/pages/faqs.aspx> [accessed 12th Apr 2011].

Professional Association of Therapeutic Horsemanship International (PATH international) (2012) [online], available; <http://www.pathintl.org/> [accessed 1st Mar 2012].

Rag Tree Equine Assisted Learning (2010) 'About Us' [online], available <http://www.ragtree.ie//index.php> [accessed 1st Feb 2012].

Saris, A. J., Bartley, B., Kierans, C., Walsh, C. and McCormack, P. (2002) 'Culture and the state: Institutionalizing 'the underclass' in the new Ireland', *City*, 6: 2, 173 — 191.

Selby, A. (2009) 'A systematic review of the effects of psychotherapy involving equines' unpublished thesis (MSc), University of Texas.

Smith, C.E., Swinker, A.M., Comerford, P.M., Radhakrishna, R.B. and Hoover, T.S. (2006) 'Horsemanship and life skills of youth in horse programs', *The Professional Animal Scientist*, 22: 89-93.

Smith-Osborne, A. and Selby, A. (2010) 'Implications of the literature on equine-assisted activities for use as a complementary intervention in social work practice with children and adolescents', *Child & Adolescent Social Work Journal*, 27: 291-307.

Snyder, C. Clark, F. Masunaka-Noriega, M., and Young, B. (1998) 'Los Angeles street kids: New occupations for life program', *Journal of Occupational Science*, 5 (3): 133-139.

Sterba J A. (2007) 'Does horseback riding therapy or therapist-directed hippotherapy rehabilitate children with cerebral palsy?', *Developmental Medicine and Child Neurology*, 49(1): 68-73.

The Daily Show (2011) 'Urban horses', [online], available: <http://www.rte.ie/tv/thedailyshow/2011/0223/urbanhorses100.html> [accessed: 7th Mar 2011].

Townsend, E. and Wilcock, A.A. (2004) 'Occupational justice and client-centred practice: A dialogue in progress', *Canadian Journal of Occupational Therapy*, 71(2): 75-87.

Trotter, K.S., Candler, C.K. Goodwin-Bond, D. and Casey, J. (2008) 'A comparative study of the efficacy of group equine assisted counselling with at-risk children and adolescents' *Journal of Creativity in Mental Health*, 3(3): 254-284.

Vidrine, M. and Owen-Smith, P. (2002) 'Equine –facilitated group psychotherapy: Applications for therapeutic vaulting' *Issues in Mental Health Nursing*, 23:587–603.

Wendt, O. (2006) 'Developing Critically Appraised Topics' accepted for *Augmentative Speech-Language Communication (DAAC) 7th Annual Conference*, 28 January.

Whalley Hammell (2008) 'Reflections on ... well-being and occupational rights', *Canadian Journal of Occupational Therapy*, 75(1): 61-64.

Whalley Hammell, K. (2001) 'Using qualitative research to inform the client-centred evidence-based practice of occupational therapy', *British Journal of Occupational Therapy*, 64(5): 228-233.

Whalley Hammell, K., Carpenter, C. and Dyck, I. (ed) (2000) *Using Qualitative Research: A practical introduction for occupational and physical therapists*, Churchill Living: Edinburgh.

Whiteford, G. (2000) 'Occupational deprivation: global challenge in the new millennium', *British Journal of Occupational Therapy*, 63(5), 200-204.

Whiteford, G. (2011) 'From occupational deprivation to social inclusion: retrospective insights', *British Journal of Occupational Therapy*, 74(12): 545.

Whiteford, G., and Hocking, C. (ed) (2012) *Occupational Science: Society, Inclusion, Participation*, UK: Blackwell Publishing Ltd.

Wilcock, A.A. (2007) 'Occupation and health: Are they one and the same?', *Journal of Occupational Science*, 14:1, 3-8.

World Health Organisation (2003) *Social Determinants of Health: The Solid Facts*, 2nd ed. Wilkinson, R. & Marmott, M.R. (eds.), Copenhagen: WHO

Yerxa, E., Clark, F., Frank, G., Jackson, J., Parham, D., Pierce, D., et al (1990) 'An introduction to occupational science, a foundation for occupational therapy in the 21st century', *Occupational Therapy Health*, 1-15, available: informahealthcare.com, [15/11/2011].

Appendix 1:

Terminology:

- **Equine Assisted Activities (EAA)** is used as a globe term to include all equine assisted activities and therapies designed for people with various needs or disabilities. Horses and Humans Research Foundation (2007) and The Professional Association of Therapeutic Horsemanship International (PATH international) (2012).
- “**Hippotherapy** is the physical, occupational or speech therapy treatment strategy that utilises the equine’s movement as part of an integrated intervention program to achieve functional outcomes.” (American Hippotherapy Association 2010)
- **Equine Assisted Learning (EAL)** is focused on learning or educational goals as defined by the individual or group, such as leadership skills for a school group or resiliency training. EAL involves the team of mental health professional and horse professional working with the clients and horses (EAGALA 2012).
- “**Equine Assisted Psychotherapy (EAP)** incorporates horses experientially for emotional growth and learning. It is a collaborative effort between a licensed therapist and a horse professional working with the clients and horses to address treatment goals. Because of its intensity and effectiveness, it is considered a "brief" approach” (EAGALA 2012).