

Application of Dogs as Co-therapists for Improving Emotion Competence of Adolescents with Social Communication Difficulties in Speech Therapy

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December 14, 2023

Speech delivery at the Learning and Teaching Expo 2023, Hong Kong







- Students from S1-S6
- School-based team includes 22 teachers, 2 social workers, 1 speech therapist, 1 educational psychologist
- Caritas Mother Teresa Hall 明愛樂恩中心 (under the Social Welfare Department)
  offers residential home services



# Students from School for Social Developments (SSD)

- Exhibit moderate to severe emotional and behavioral difficulties including:
  - defiant behaviors
  - destructive behaviors
  - unruly behaviors
  - violence
  - stealing
  - absence from school
  - staying out overnight
  - losing control in emotional dysregulation
- Other possible special educational needs

(Education Bureau, 2018)



#### **Education Bureau**

The Government of the Hong Kong Special Administrative Region of the People's Republic of China

### **SSD Services**

- Provide intensive support for students with moderate to severe emotional and behavioural difficulties to help them tide over their transient adaptation problems in the course of development
- Enhance learning motivation and life skills so that students can resume education in ordinary schools as soon as possible

(Education Bureau, 2022)

### Objectives of the Education Services of Caritas-Hong Kong

Grounded in the spirit of Christ and Catholic moral values, the education services of Caritas-Hong Kong uphold the core belief of "Love in the Service of Hope" in discharging the mission of:

Helping the underprivileged and the vulnerable;

Encouraging people to actualize their potential;

Promoting mutual understanding and reconciliation; and

Nurturing the spirit of giving back to the community.

The goal of our services is to provide a quality education embracing lifelong learning, integral human development and equal opportunities for students, to enable and empower them, even the Last, the Least and the Lost, to turn into the Loving, the Learning and the Leading, developing their capabilities, to serve the community.



# Multicomponent Intervention

















































### Treatment approach

### 人狗無疆界:犬隻輔助言語治療

陸億樑 鄧珊珊





數千年來,犬隻都是人類 的好朋友,全因犬隻擁有一部 分和人類共同的語言,包括眼 神、動作等身體語言,令牠有

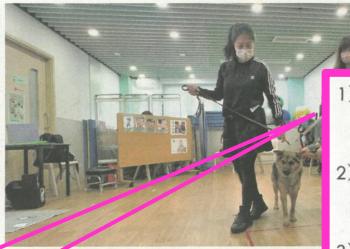
善解人意的本領。明愛特殊教育及康復服務的兩位言語治療師鄧姑娘及廖先生對犬隻這些特質趨之若鶩,並積極為自閉症人士設計融合治療犬的言語治療活動,向他們提供舒心及功能性的訓練。

為了讓中心活動更多元化,明愛樂薈牽開拓新活動模式,多次舉辦「童言物語:犬隻輔助言語治療」工作坊,提升自閉症會員的社交 溝通能力。運用治療犬融合在言語治療訓練中,安排治療犬擔任三個角色:

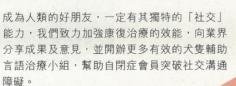
- 1) 社交拍檔(social partner),將治療犬的 生活細節納入為治療教材,如:介紹犬隻玩 具、生活用品、社交圈子等;
- 2) 溝通者(communication partner),在訓練裡,鼓勵會員與治療犬溝通,完成特定任務(如:提供口令給治療犬拾回物件等);
- 3) 獎勵 (reinforcement),在成功完成某些目標後,獎勵學員與治療犬一些互動時間(如:撫摸、餵食等)。

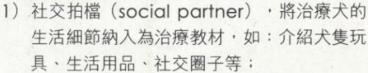
會員由最初參差不齊的參與度,到漸漸掌 握跟治療犬相處一致的步伐,享受社交溝通帶來的群體樂趣。同行的家長對治療犬的參與亦 很雀躍,課堂間都充滿著歡樂的笑聲:每次完 堂後,各會員均主動地與治療犬「圍爐」起來,分別利用口語或身體語言,表達對治療犬 的不捨,自發地踏出社交溝通的第一步。

我們堅守一個信念,犬隻之所以能夠多年









- 2) 溝通者(communication partner),在訓練裡,鼓勵會員與治療犬溝通,完成特定任務(如:提供口令給治療犬拾回物件等);
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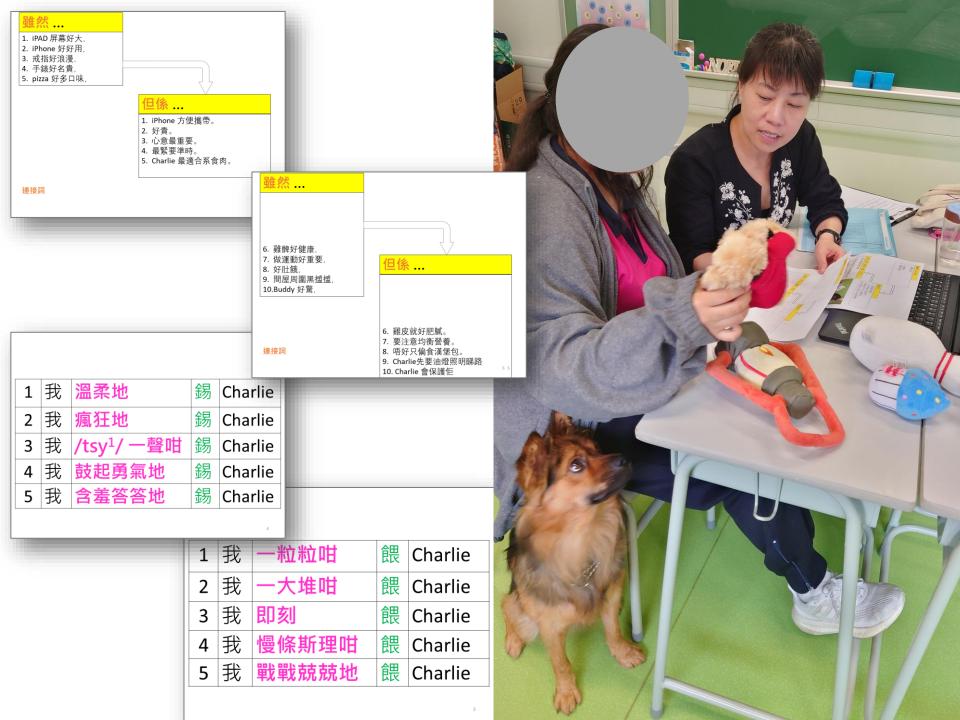


- 02 介紹犬隻玩具及生活細節
- 03 學習與犬隻拜年



明愛家庭服務









### Proposed answers to interview questions

Nov 24, 2021

#### Interview Questions (with draft answers)

#### 1. Are there many qualified therapy animal trainers in Hong Kong?

Thank you for the question. First of all, I'm not in a position to comment on situation with "animal" other than dogs. So I'll just focus sharing my knowledge about dogs.

There're many dog trainers not just in Hong Kong, but all over the world. But I don't see any standardized way to qualify a dog trainer. So the quality of dog training skill can sometimes be quite disappointing. It has to do with misunderstanding and misinterpretation of dog psychology and behavior. The dog training methods the trainers use depend on the school of thoughts they receive when they are attending dog training class. Broadly speaking, there're 2 key methods currently using in the community. They are the positive reinforcement and pack

leadership. Posit

Going back to yo today are mostly dogs and the own relationship to ou and I hope the transhibilitation sen actual service de

2. Can you tell

I receive my ama providing training depending on the different backgro process of dog re need to get traine session and learn protective leader provide the necebecome a trust-w And the dog instinctually becomes attached to you. Besides, I will use lots of treats and praise in my training to increase not just motivation, but also reciprocal interaction that significantly increases dog's understanding of my thoughts. You can easily tell why. Survival depends on food. This is where the dog further attaches to you, behaves well to please you and truly become a part of your family.

#### 3. Do you think all schools should have a therapy animal?

I suggest all schools should keep an open mind to welcome therapy dogs, but not keeping one per se. Dogs are pack animals. They must live in pack and only feel safe and secured around a pack leader. Also, training a therapy dog is a 24/7 job. It's a mission rather than an interest or hobby. It requires the owner to fully commit to deliver quality service to any rehabilitation.

#### 4. What benef

A lot of medical the human body it includes lowe more than 10 year an ideal therapy

#### 5. Are there a untrained d

It's indeed very (e.g. the other t proper manage And on the other will trigger his a launching at pe bringing comfor unfortunately.

#### 6. Also, what benefits are there for Lily when she works with the students?

To answer this question, I would like to recommend you to take a look at "A Brief History about Dogs" from Ted Talk. It gives a quick overview on how the relationship between humans and dogs change from dangerous rivals to best friends, starting from how we used to work together. In the old days, human and dogs are hunting partners. We hunt for food to survive. Our similar social structure made it easy for dogs to integrate with human families and learn to understand our commands. So when human cultures and occupations became more diverse and specialized, we breed different types of dogs to become our working partners, whether they're hunting, herding, sledding, or slouching. Dogs, small or big size, are very tough breed of animals and their body are engineered to work on a daily basis. In the school here, the students provide everyday stimulation to Lily who enjoys her work. Lily in turn provides the necessary emotional support and stability to students who may find it difficult to cope with what's given in a changing and uncertain world. Research also shows that when dogs and humans interact, both our bodies release oxytocin; a hormone that we've talked about before. It commonly associates with feelings of love and protectiveness.





#### Strengths

- Student demonstrated active listening throughout.
- Exhibited genuine interest in the information shared by responding with appropriate body language such as head nod.
- Provide an independent feedback with appropriate language (English) to interviewee's questions post event.

#### Areas for Improvement

- Suggest to be more in the leading role in the process, in particular in the onset (e.g. why this interview, what is the ultimate goal of this exercise).
- Be more interactive in the process by asking sub questions. This will help identifying more interesting facts beyond what could be elicited through the scripted questions.
- Show more confidence such as raise voice level
- A smile always do magic in the interview process.

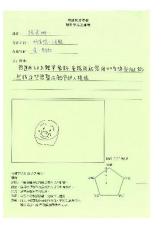
# Post interview feedback to student

### **Training roadmap**

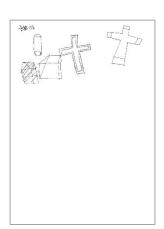
樂恩狂想 GOOk

人寵 營養須知	設計概念 (造型) 初步塑型	入廚製作 人寵糕餅	食品 拍攝技巧	宣傳「色香味」 特點
紅色 杞子、紅甜椒 士多啤梨 橙色 南瓜、紅蘿蔔、三文魚肉 黃色 黃黃粉、黃甜椒 芒果、菠蘿 蓝黄粉、黄甜椒 奇異果 藍色 藍莓 藍莓 紫色 素心蕃薯 紫色色素忌廉	Ethel lover			CONT.
言語治療	設計與科技	家政	設計與科技	言語治療

## Design sketches





















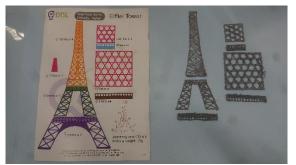






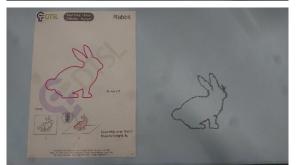


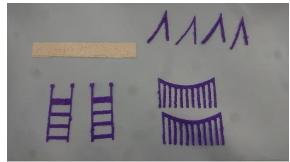
## 3D pen design applications



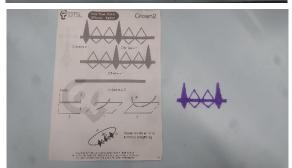


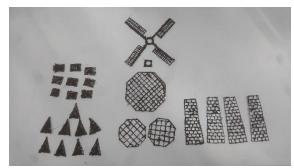












































### Learning framework

### 蛋糕創意命名



視覺



- 顔色
- ・ 形狀
- 特色主題



嗅覺



- 花香
- 果香
- 奶香
- ・蛋香



味覺



- 鬆軟綿密
- ・ 入口即溶
- 酥脆可口





肉 毛 錦綉大會 波 五光十色 如珠如寶 無欲無求 垂涎欲滴 珠圓玉潤



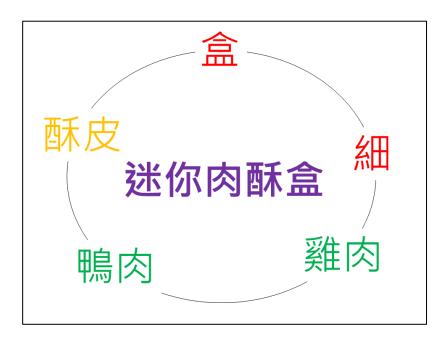
啖啖肉香

肉香撲鼻

香氣四溢











天涯海角





















# 言語治療目標

#### 成功準則:

- 60% 學生能在跨科活動中自發地闡述自己製作食品的特點 評估方法:
- 透過錄影紀錄學生在色、香、味的口語表達,並進行話語分析 結果:
- 70% 學生能自發地從「色、香、味」三方面闡述自己製作食品 (日常及寵物糕餅)的特點

#### 優異獎:

在宣傳自製食品(人和/或寵物)練習中,有點題及總結,能夠說出 食品背後的創意及名稱,並就食品的色、香、味三個項目闡述其特色。

#### 個別語障學生

 參與【樂恩狂想 cook】跨科組後測活動中,在視覺和口頭提示下, 五至七成時間說出自製寵物蛋糕「色、香、味」的特點



# 十五位說食專員





言語治療跨專業協作

#### 中二同學首次製作狗狗餅食 【橡皮雞肉蛋餅】



2022年5月20日(星期五) 2A

【生命教育:吾家犬兒】



# 樂恩狂想 COOK

家政、設計與科技、 言語治療跨專業協作

#### 中三同學首次製作貓犬蛋糕 【繽紛三重奏】



2022年6月27日(星期一) 3B 2022年6月28日(星期二) 3A

【生命教育:吾家犬兒】





# 樂恩狂想 COOk

家政、設計與科技、 言語治療跨科組活動

# 學生設計、製作及宣傳 健康寵物零食

學習「一條龍」式服務



主要食材為三文魚、鴨肉、雞肉、雞蛋; 含少量麵粉、紫薯、菇黃、黃甜椒、菜心

2023年2月22日: 3A及3B班

2023年3月27日: 2A班

【生命教育:吾家犬兒】

★ 學生寵物
■ 職員寵物







2022.07.24

公教報·文教

# 拍短片展示色、香、味 三文章紅草物

05 拍攝製成品 06 學生製作寵物餅乾 07 學生作品「藍橋之約」 08 學生作品「甜蜜蜜初戀」

### Media impression



Kong Kao Po 公教報 July 24, 2022



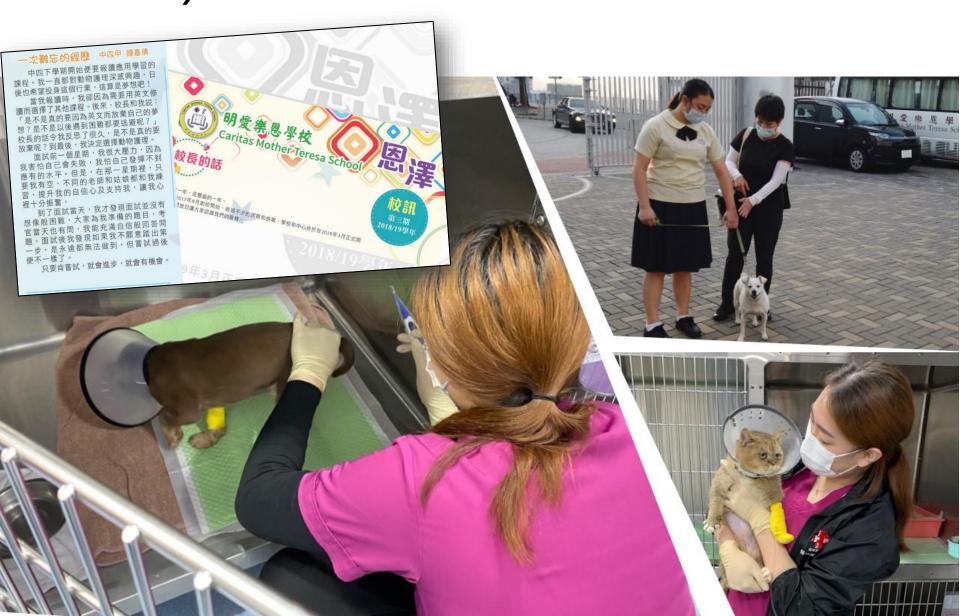








# Graduate of 2021: Vet assistant trainee (實習 獸醫助理)









他們進行言語治療・亦推動生命教育・加強學生

樂恩學校的學生喜歡與Lily相處

她繼續走路·「她們根據Lily的外型·將輪椅調 教適合的高度及闊度,給Lily試用輪椅後,她們 又問我有沒有需要改善的地方」,可見學生的細

#### 樂恩狂想cook 跨學科協作活動

Lily除了在言語治療室陪伴學生,也會 走入課室作支援。早前,學校便就「吾家 犬兒」推行「樂恩狂想cook」活動·由







Kong Kao Po 公教報 July 24, 2022



#### 4. School-based Research 校本研究

Application of Dogs as Co-therapists for Improving Emotion Competence of Adolescents with Social Communication Difficulties in Speech Therapy



## Therapy dog as co-therapist (social partner)

Animals must be integrated as a component of the professional's speciality, and be deemed as a cotherapist instead of merely a companion, in order for the success of AAT (Macauley, 2006).

# Hypothesis 1

Participants in both groups will exhibit improvements on measures of the aspect of emotion recognition, emotion understanding, emotion regulatory processes in emotion competence, yet the treatment group with dog will demonstrate a greater improvement.

# Hypothesis 2

The treatment group with dog will display a better learning outcome in terms of test results and motivation.

# Methodology

#### Target emotions:

Anger (憤怒), sadness (悲傷) and anxiety (焦慮)

#### Goal:

Improve emotion competence in terms of emotion recognition (情緒辨識), emotion understanding (情緒理解), and emotion regulatory processes (情緒調控).

#### Outcome measures:

- 1. A baseline-treatment design with pre-, mid- and posttesting by an informal situation task
- 2. Students' attendance

## Informal situational tasks

Emotion	Informal	Scoring		
Anger	A classmate say that you are ill-mannered due to bad upbringing. [俾同學話方家教: "喂,你有沒家教架?!"]	Q1: How would you feel and what would you do? (Emotion recognition and emotion understanding)		
	Your best friend turns out to be two-faced and talks behind your back. [你身邊既好同學原來係雙面人,係其他人面前數你,又話你kam]	1 mark = appropriate answer 0 mark = inappropriate answer  Q2: Any alternative solutions to the situation?		
Sadness	Your best friend suddenly ignores you completely. [你個好朋友突然對你不理不睬]	(Emotion regulatory processes )  1 mark = ignorance (e.g., no [村],		
	Your family has money issue, and you are not able to buy what you want. [屋企有金錢上嘅壓力,例如無錢,買唔到你想要嘅嘢]	don't know [唔知]) 2 marks = undesirable response (e.g., cursing back [鬧返佢]) 3 marks = one desirable		
Anxiety	You notice that your classmates are discussing something about you. [見到同學眼光似乎討論緊我]	response (e.g., tell the teacher [同老師講], ignore the other [唔 理佢], walk away [走開]) 4 marks = more than one		
	You realize that your classmates are spreading rumors about you. [知道同學已經傳緊我嘅壞話]	desirable responses		

# Results

#### **RESULTS OF SITUATION TASKS:**

Question 1 How would you feel & what would you do (emotion recognition and emotion understanding)?

The results indicated no significant main effect for grouping, F(1,24) = .016, p = .901, partial  $\eta = .001$ ; a significant main effect for treatment tests, F(2,24) = 7.467, p = .003, partial  $\eta 2 = .384$ ; and **no significant** interaction between grouping and treatment tests, F(2,24) = 1.067, p = .360, partial  $\eta 2 = .082$ .

Two-Way ANOVA Results Comparing the Pre-, Mid-, and Post-Test Mean

Pairwise Comparisons for Question 1

Pre

Mid

Mid

**Post** 

Pre

Mid

Scores of the Control and Treatment Group for Question 1

Source	SS	<u>df</u>	Mean Square	F	Sig.	partial η²
Intercept	547.756	1	547.756	392.422	<.001	.942
Grouping	.022	1	.022	.016	.901	.001
Treatment tests	20.844	2	10.422	7.467	*.003	.384
Grouping X	2.978	2	1.489	1.067	.360	.082
Treatment tests						
Within	33.500	24	1.396			
Total	629.000	30				
*p < .05						

		Post	1.000	.835	.243	
	Post	Pre	1.500	.835	.085	
		Mid	-1.000	.835	.243	
Treatment	Pre	Mid	-1.333	.682	.062	
		Post	-1.833 <sup>*</sup>	.682	*.013	
	Mid	Pre	1.333	.682	.062	
		Post	500	.682	.471	
	Post	Pre	1.833 <sup>*</sup>	.682	*.013	

.500

(I) Test (J) Test Mean Difference (I-J) Std. Error

 $-2.500^*$ 

-1.500

2.500\*

#### Significant difference between:

- ❖ Mid-test > Pre-test in regular group
- Post-test > Pre-test in therapy dog group

\*p </.05

Group

**Control** 

.471

Sig.

\*.006

.085

\*.006

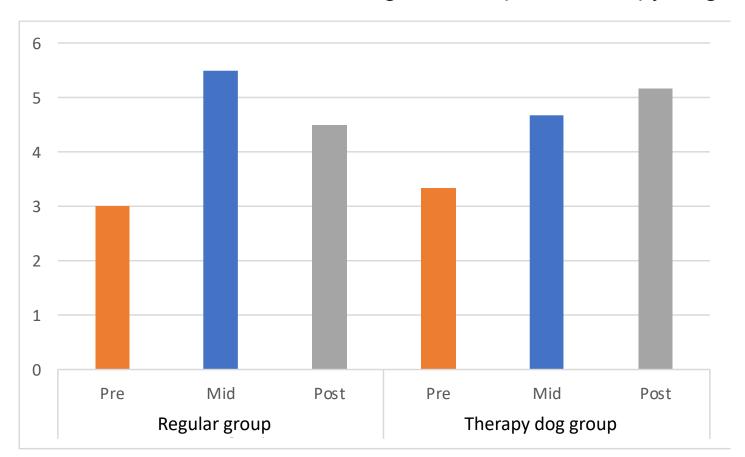
.835

.835

.835

.682

Figure 1
Mean Scores for Question 1 of Regular Group and Therapy Dog Group



- Improvements in emotion recognition and emotion understanding are observed for both groups.
- Regular group yields a higher immediate effect than persistence effect, while treatment group yields a higher persistence effect than immediate effect.
- > Greater enthusiasm in observing the therapy dogs' facial expression in relation to the target emotions, as well as their behaviour in response to the emotions for the therapy dog group. Neutral or even negative attitudes were displayed by the participants in the regular group towards the video clips. It indicates the creation of a <u>more long-term memory</u> in the minds of the therapy dog group.

#### **RESULTS OF SITUATION TASKS:**

Question 2 Any alternative solutions to the situation (emotion regulatory processes)?

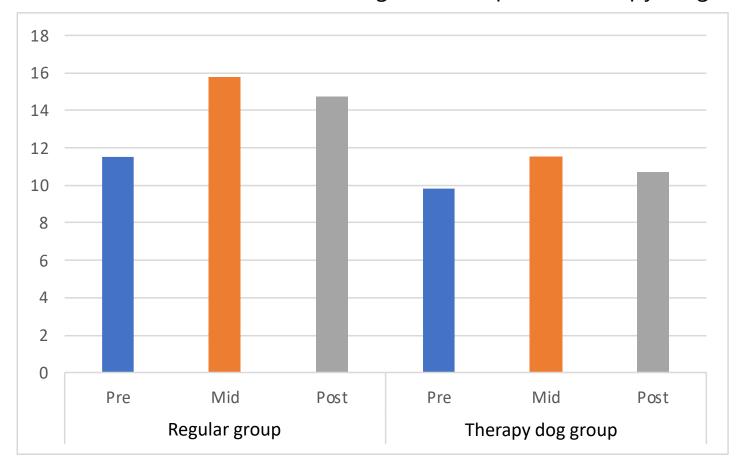
The results indicated a significant main effect for grouping, F(1,24) = 4.751, p = .039, partial  $\eta 2 = .165$ ; no significant main effect for treatment tests, F(2,24) = 1.307, p = .289, partial  $\eta 2 = .098$ ; and no significant interaction between grouping and treatment tests, F(2,24) = .298, p = .745, partial  $\eta 2 = .024$ .

Two-Way ANOVA Comparing the Pre-, Mid-, and Post-Test Mean Scores of the Control and Treatment Group for Question 2

SS	<u>df</u>	Mean Square	F	Sig.	partial η²
4380.800	1	4380.800	260.138	<.001	.916
80.000	1	80.000	4.751	.039	.165
44.033	2	22.017	1.307	.289	.098
10.033	2	5.017	.298	.745	.024
404.167	24	16.840			
4852.000	30				
	4380.800 80.000 44.033 10.033	4380.800 1 80.000 1 44.033 2 10.033 2	4380.800     1     4380.800       80.000     1     80.000       44.033     2     22.017       10.033     2     5.017       404.167     24     16.840	4380.800       1       4380.800       260.138         80.000       1       80.000       4.751         44.033       2       22.017       1.307         10.033       2       5.017       .298         404.167       24       16.840	4380.800       1       4380.800       260.138       <.001

<sup>\*\*</sup> p < .05

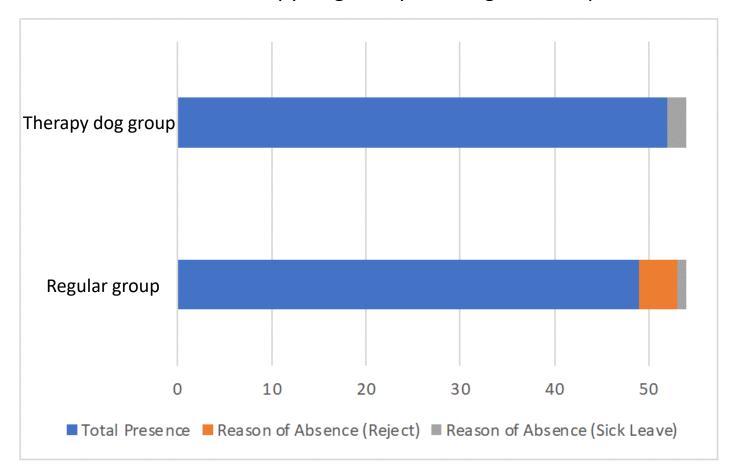
Figure 2
Mean Scores for Question 2 of Regular Group and Therapy Dog Group



- Improvements in emotion regulatory processes are found in both group.
- The treatment effect is only potent immediately and cannot be sustained persistently.
- Regular group yields a greater overall improvement of mean scores from pre-test to mid-test and post-test than that of the therapy dog group.
- Time is less controllable in therapy dog group. Generalization from dogs to human experience could not be attained independently by participants.

67

Figure 3
Attendance Rate of Therapy Dog Group and Regular Group



Participants in the therapy dog were more motivated and engaged during dog therapy as compared with traditional treatment. :

- Higher total presence (52)
- Lower total absence (2) which are all due to sick leave
- ➤ The presence of the dogs act as a <u>beneficial catalyst</u> for <u>social cohesion</u>, which promotes the reduction of apparent behaviours, withdrawal, and aggressive activities amongst individuals (Kotrschal and Ortbauer, 2003).

# Conclusion

 The application of animal-assisted therapy generates an increased motivation and higher persistence effect for adolescence with social communication difficulties to participate and engage in intervention.

# References

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Thank you

