Critical Issues in Evaluating and Establishing the Effectiveness of Animal-Assisted Interventions

In the second session of the conference, Dr. Alan Kazdin of Yale University outlined the current criteria for evidenced-based treatments, critiqued research to date on animal assisted interventions, and recommended evaluation strategies to help develop the field.

Critical Issues in Evaluating and Establishing the Effectiveness of Animal-Assisted Interventions

Alan Kazdin, Ph.D., Professor of Psychology and Child Psychiatry, Yale University; Director, Yale Parenting Center and Child Conduct Clinic; and President-elect, American Psychological Association

Alan E. Kazdin, Ph.D. is the John M. Musser Professor of Psychology and Child Psychiatry at Yale University, Director of the Yale Parenting Center and Child Conduct Clinic, and President-Elect of the American Psychological Association. Dr. Kazdin is a licensed clinical psychologist, a Diplomate of the American Board of Professional Psychology, and a Fellow of the American Psychological Association and the Association for the Advancement of Science. His honors include Research Scientist Career and MERIT Awards from the National Institute of Mental Health and Awards for Distinguished Scientific Contribution to Clinical Psychology and Distinguished Professional Contribution to Clinical Child Psychology, Outstanding Research Contribution by an Individual (Association for Advancement of Behavior Therapy). His research focuses on childhood aggressive and antisocial behavior, child and family therapy, and processes that contribute both to clinical dysfunction and therapeutic change. He has authored or edited over 600 articles, chapters, and books. His 45 books focus on child and adolescent psychotherapy, aggressive and antisocial behavior, and methodology and research design.

The major points from Dr. Kazdin’s presentation are as follows:

- Evidenced-based treatments require randomized controlled trials with sufficient statistical power, which are very expensive and must meet very high standards. Smaller and less expensive research designs can be used initially to build the case for animal assisted interventions. These methods include single-case experimental research, rigorous qualitative research, and laboratory studies of human functioning such as neuro-imaging.

- One of the barriers to progress in research on animal assisted interventions are unsupported assumptions about human functioning and therapeutic change. These faulty assumptions include: building empathy, caring and respect will break the cycle of violence; developing self-control, emotional regulation, a positive sense of purpose, or responsibility will help redress clinical problems; and building self-esteem will help the child and reduce symptoms. These constructs, processes, and characteristics are not necessarily related to behavior, clinical dysfunction, and
therapeutic change. They can be changed without a change in clinical dysfunction, and clinical dysfunction can be changed without any impact on these constructs.

- The target populations in research on animal assisted interventions for youth have not been well-defined. The focus on “at-risk” children is problematic since this identification lacks specificity and most “at-risk” behavior is not easily identified. In addition, the “at-risk” focus requires studies to demonstrate both reduction in risk and to document outcomes.

- Applications of animal assisted interventions have been too diffuse, with few studies over very diverse problem domains.

- For research in the field of animal assisted interventions, we need to identify what we are trying to accomplish with AAI, what are the special strengths of AAI, and for whom is AAI likely to be effective and under what conditions. Research should expand outcome measurement focus to include quality of life and subjective experience.

- Rather than evaluating therapeutic change, researchers should examine the impact of programs on the quality of lives of participants. Using multiple measures and controls (e.g. compare contact with animals with no animal contact or stuffed animal), studies could measure ability to focus, sociability, knowledge acquisition, or neurological responses. Studies should include more than one animal and more than one therapist.

- Moderators in AAI treatments include type of animals, type of experience with animal, clinical problem, and personality and characteristics of child, animal, or combination.

Dr. Kazdin’s powerpoint presentation follows.
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Overview of the Presentation

Overall Goal:
To identify methodological and substantive next steps for AAI research

Key Topics:
1. Contexts
   - Treatment of Aggressive and Antisocial Child Behavior
   - Advances in Child and Adolescent Therapy Research
2. Barriers to Progress in AAI
3. Methodological Issues and Requirements
4. Substantive Questions and Topics to Pursue

Key Characteristics

Antisocial Behaviors
- Aggressive Acts
- Theft
- Vandalism
- Firesetting
- Lying
- Truancy
- Running Away
- Cruelty
- Precocious Sexual Activity
- Substance Abuse

Characteristics that Make these Behaviors Clinically Significant
- Frequent and Intense
- Repetitive and Chronic
- Broad Range of Behaviors
- Impairment in Everyday Life (e.g., home, school)

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Alan E. Kazdin, Ph.D.
Yale University

Presented at the National Technology Assessment Workshop on Animal-Assisted Programs for Youth at Risk, Baltimore, MD, December 2007.
Clinical and Social Significance of Conduct Disorder

1. Prevalence
2. Clinic referrals
3. Stability of the problem
4. Prognosis
5. Transmission across generations
6. Costs to society
7. Until recently, absence of effective interventions

Outcomes in Adulthood

Psychiatric Status: Greater psychiatric impairment including sociopathic personality, alcohol and drug abuse, and isolated symptoms (e.g., anxiety, somatic complaints), also, greater history of psychiatric hospitalization

Criminal Behavior: Higher rates of driving while intoxicated, criminal behavior, arrest records, and conviction, and period of time spent in jail

Occupational Adjustment: Less likely to be employed; shorter history of employment, lower status jobs, more frequent change of jobs, lower wages, and more frequently on public assistance (welfare)

Educational Attainment: Higher rates of dropping out of school, lower attainment among those who remain in school

Marital Status: Higher rates of divorce, remarriage and separation

Social Participation: Less contact with relatives, friends, and neighbors; little participation in organizations such as church

Physical Health: Higher rates of hospitalization for physical and psychiatric problems, if history of abuse as a child, higher morbidity and mortality rates for cancer, heart disease, and respiratory disease

Current Progress

1. Quantity of controlled treatment outcome studies
2. Quality of studies has improved
3. Conclusions from reviews
   a. Treatment works
   b. Effects are strong (Effect sizes ≥ .70)
4. Several evidence-based treatments are available

Evidence-Based Treatments

Brief Definition:
Treatments that have empirical research in their behalf (randomized controlled trials)

Criteria:
1. Random assignment of cases/participants to conditions
2. Careful specification of the patient population
3. Use of treatment manuals (well described and replicable treatments)
4. Multiple outcome measures (if used, are naïve to conditions)
5. Statistically significant differences between treatment and a comparison group (e.g., treatment as usual)
6. Replication of outcome effects, especially by an independent investigator or team (at least 2 or more studies, but usually many more are completed)

Examples of Evidence-Based Psychotherapies for Children and Adolescents

Anxiety, Fear, Phobias
Cognitive Behavior Therapy
Modeling
Reinforced Practice
Systematic Desensitization
Depression
Cognitive Behavior Therapy
Coping with Depression Course
Interpersonal Psychotherapy for Adolescents
Oppositional Defiant Disorder, Conduct Disorder, Delinquency
Multisystemic Therapy
Parent Management Training
Cognitive Problem-Solving Skills Training
Attention-Deficit Hyperactivity Disorder
Classroom Contingency Management
Parent Management Training (Medication)

Evidence-Based Treatments for Conduct Problems

Parent Management Training is directed at altering parent-child interactions in the home, particularly those interactions related to child-rearing practices and coercive interchanges.

Multisystemic Therapy focuses on the individual, family, and extra familial systems and their interactions as a way to reduce symptoms and to promote prosocial behavior.

Multidimensional Treatment Foster Care Model focuses on youth who are in placement and who are to return to their parents or more permanent foster care. Behavioral treatments in the placement and in the setting in which the child is returned are a part of a comprehensive effort to integrate treatment and community life.

Cognitive Problem-Solving Skills Training focuses on cognitive processes that underlie social behavior and response repertoire in interpersonal situations.

Anger Control Training includes problem-solving skills training in the context of groups in the school.

Brief Strategic Family Therapy focuses on the structure of the family and concrete strategies that can be used to promote improved patterns of interaction. This treatment has been developed with Hispanic children and adolescents and has integrated culturally pertinent issues to engage the families.

Functional Family Therapy utilizes principles of family therapy and behavior modification for altering interaction, communication patterns, and problem solving among family members.
Developing the Research Agenda

1. Barriers to Progress in AAI Research
2. Methodological Issues and Requirements
3. Key Questions, Topics, and Priorities

Barriers to Progress

1. Unsupported assumptions about human functioning and therapeutic change in AAI Research
   - Most at-risk children: Identification (sensitivity and specificity)
   - Most at-risk (e.g., antisocial behavior) not easily identified
   - Measures of treatment (e.g., attention, self-control)
   - Well-being
   - Medical-health factors (e.g., Down's syndrome, muscular dystrophy, cerebral palsy, brain injury)

2. Mixing Theory of Etiology and Theory of Change
   - Key Points:
     1. How the problem was caused is critical to know so one can provide treatment and prevention
     2. Want to know the causes whenever possible but great progress can be made in knowing how to treat (change social, emotional, behavioral functioning by identifying the causes

3. Target Populations
   - Focus on at-risk children: Identification (sensitivity and specificity)
   - Most at-risk (e.g., antisocial behavior) not easily identified
   - Requires the study to show that risk is reduced and outcome is prevented (long-term agenda in a budding literature)

Methodological Issues

1. Treatment Outcome Methodology Requirements
   - Treatment manuals
   - Multiple therapists
   - Multiple outcome measures that directly evaluate the clinical problem
   - Randomized controlled trials, sufficient statistical power

2. Expand Research Methods
   - Quantitative research (Group research, null hypothesis testing of course)
   - Single-case experimental research
   - Qualitative research (rigorous designs, not mere descriptions)

3. Ongoing Assessment During AAI during and over the course of treatment

Key Questions, Topics, and Foci

1. Guiding questions
   - What are we trying to accomplish with AAI?
   - What are the special strengths of AAI?
   - For whom is AAI likely to be effective and under what conditions (i.e., what are the moderators of treatment)?
Moderator

Defined: Characteristic that influences the relationship between two variables, i.e., changes the magnitude or direction (e.g., sex, age, cohort)

Examples: If boys and girls respond differently, sex is said to be a moderator
If patients with comorbid disorders respond less well to treatment, comorbidity is said to be a moderator

AAI Examples might be:
- Type of animal
- Type of experience with the animal, Clinical problem
- Personality characteristics of the child and of the animal, and their combination

Moderators of Therapeutic Change in the Treatment of Conduct Disorder

- Child Factors
  - Severity and duration of the disorder
  - Comorbidity (presence of two or more disorders)
  - Poor academic performance

- Parent and Family Factors
  - Parent psychopathology (current and past)
  - Parent behaviors (physical and mental stress)

- Other Factors
  - Poor living accommodations (e.g., inadequate space, neighborhood)

Key Questions, Topics, and Foci

1. Guiding questions
2. Topics for Research
   A. Expand outcome measurement focus
      - Therapeutic change in relevant domains
      - Quality of life and subjective experience
   B. Draw on other AAI, i.e., Human Assisted Interventions
   C. Expand the range of intervention studies
   D. Laboratory Studies of Human (and animal) Functioning

Key Questions to Guide Treatment Research

1. What is the impact of treatment relative to no-treatment?
2. What components contribute to change?
3. What treatments can be added (combined treatments) to optimize change?
4. What parameters can be varied to influence (improve) outcome?
5. How effective is this treatment relative to other treatments for this problem?
6. What patient, therapist, treatment, and contextual factors influence (moderate) outcome?
7. What processes within or during treatment influence outcomes, cause, and are responsible for outcome (therapeutic change)?
8. To what extent are treatment effects generalizable across problem areas, settings, and other domains?

Key Questions, Topics, and Foci

D. Laboratory studies of human (and animal) functioning

Key Foci for AAI Research

Summary

1. Expand outcome measurement focus
   - Therapeutic change in diverse domains
   - Quality of life and subjective experience
2. Draw on the "other" AAI, i.e., Human Assisted Interventions
   - Both substantive and methodological resources
3. Expand the range of intervention questions that are addressed
4. Laboratory studies of human (and animal) functioning
Guiding Questions

1. What are we trying to accomplish with AAI?
2. What are the special strengths of AAI?
3. For whom is AAI likely to be effective and under what conditions (i.e., what are the moderators of treatment)?

Summary of Challenges

1. Methodological
   - The bar is high
   - Not just RCTs, more refinements in procedures and assessments

2. Models of Etiology and Change (Intervention)
   - Some of current AAI work is based on models no longer viable
   - Connections that are not causal (e.g., self-esteem, increasing responsibility, empathy) as paths to clinical change

3. AAI in Relation to Other Treatments
   - AAI is working in areas where great progress has been made (e.g., anxiety, depression, aggression) or where there are treatments of choice in difficult intervention areas (e.g., autism)

For Further Information

Alan E. Kazdin, Ph.D.
Department of Psychology
Yale University
New Haven, CT 06520-8205
Email: alan.kazdin@yale.edu

Yale Parenting Center and Child Conduct Clinic
314 Prospect Avenue
New Haven, CT 06511
http://www.yale.edu/childconductclinic