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Self-Esteem and Empathy in Sighted and Visually Impaired Preadolescents

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Abstract: This article reports on a study of self-esteem and empathy among 71 students with visual impairments and 88 sighted students. No significant difference was found between the two groups of students in their levels of self-esteem, empathy toward others, and bonding with pets.

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Self-esteem and empathy are important components of any child's development. As children develop a sense of self and interact with and gain experience in the world, their self-esteem is affected. Self-esteem has been defined as the value that an individual places on his or her own characteristics, qualities, abilities, and actions (Woolfolk, 2001). Baumrind (1991) suggested that the development of self-esteem (including self-regulation and competence) in children and adolescents requires an environment that provides both the freedom to explore and experiment and protection from danger. Individuals with high self-esteem tend to have confidence in their own abilities to make decisions, expectations for successful outcomes, a willingness to experience new things, and sensitivity to others' needs and to have relationships that are characterized by respect and dignity (Tuttle & Tuttle, 2004). Therefore, the manner in which a disability interacts with the processes and factors that are involved in the development of self-esteem is an important area of research.

Similarly, the development of empathy is important. As children develop perspective-taking skills, their ability to be empathic--that is, to feel an emotion as experienced by another--develops as well. Eisenberg and Miller (1987) contended that children who are empathic are more compassionate, more understanding, and more likely to help others than are children who are not empathic.

Some young children with disabilities have negative self-images; they may view themselves as failures, have negative thoughts about themselves, be dependent on their parents and others, and have feelings of loss if the disability was adventitious. They may also have difficulty with social skills, such as reading nonverbal cues from their nondisabled peers and controlling impulsive behavior (Vernon, 1993). To develop a healthy self-concept and empathy toward others, they need to be provided with interventions, such as counseling, stress-reduction techniques (meditation and relaxation exercises), and help with developing their personal and social skills. To become more empathic, children with disabilities may need specific instruction in making eye contact, leaning forward, and facing individuals when they converse with them.

Previous studies

Past studies have compared the development of children with visual impairments with that of sighted children. Warren (1994) and Ferrell (1986) questioned this approach. Ferrell's (1998) Project PRISM, a longitudinal study of the development of visually impaired children from 1 day to 5 years old, concluded that the children had some delays in the acquisition of developmental milestones, but that these differences disappeared over time. The presence of additional disabilities among the children accounted for many of the developmental delays.

Some longitudinal studies have shown that the development of visually impaired children who did not have additional disabilities did not differ greatly from that of their sighted peers (Cowen, Underberg, Verrillo, & Benham, 1961; Freeman, Goetz, Richards, & Groenveld, 1991; Sacks & Wolfe, 1988). As they age, children with visual impairments appear to go through similar changes as do their sighted peers. However, Wolfe (2000) noted that they are confronted with unique issues, including the inability to obtain a driver's license; lack of acceptance by sighted children of physical and behavioral abnormalities they may exhibit (such as deformed eyes, poor posture, and stereotypic mannerisms); the use of adaptive equipment (including telescopes and a long cane) to perform independent living skills; and the inability to observe nonverbal behavior (such as facial expressions and body language), which could interfere with dating and other interpersonal relationships. Wolfe suggested that to facilitate the social and emotional development of children with visual impairments, interventions such as providing transportation, providing instruction in social skills, and encouraging children to be risk takers and problem solvers be implemented.

Rosenblum (2000) reported that the 10 adolescents with visual impairments whom she interviewed about their feelings regarding their vision loss, their school and family experiences, and their friendships had all experienced the positive benefits of having friends. These children also mentioned they were not part of the popular group at school and felt left out because they were nondrivers.

Researchers have suggested that children who are visually impaired are often more socially immature and more egocentric than are sighted children and that since they often have difficulty observing and imitating peers, they may have more difficulty developing positive self-esteem (Tuttle & Tuttle, 2004; Warren, 1994). According to Tuttle and Tuttle (2004, p. 73), "the psychological principles involved in the dynamics of the development of one's self-concept and self-esteem among the sighted are equally applicable to persons who are blind." However, Tuttle and Tuttle (2004) suggested that people with visual impairments may have lower self-esteem due to a disproportionate number of negative reflections they may experience compared with their nondisabled peers. They also identified the problem of dependence that visually impaired children face when they require assistance from others. This feeling of dependence can result in lower self-esteem even when a visually impaired student who has excellent coping and adaptive skills accepts assistance to perform daily living skills.

Lopez-Justicia, Pichardo, Amezcua, and Fernandez (2001) conducted three studies in which they compared the self-concepts of Spanish children with low vision and sighted children aged 4-17. In the first study, the Percepcion del Autoconcepto Infantil (PAI) was administered to 30 children (15 children with low vision and

15 sighted children) aged 4-7. A significant difference was found between the two groups in their global self-concept and the dimensions of affectivity, autonomy, belonging, and socialness, with the children with low vision having a lower score on the PAI than the sighted children. In the second study, the Self-Concept Scale of the Self-Description Questionnaire was administered to 34 children (17 with low vision and 17 who were sighted) aged 8-11. In this study, significant differences between the two groups were found in their relationships with classmates and parents; the children with low vision scored higher than the sighted children on relationships with their parents. In the third study, 46 children (23 children with low vision and 23 sighted children) aged 12-17 completed the Tennessee Self-Concept Scale. Significant differences between the two groups were found in their physical self-concepts and physical self-behavior, which is defined as how the person behaves toward himself or herself. In summary, the findings of these three studies showed that the children with low vision had a lower self-concept than did the sighted children but that the children with low vision had more supportive relationships with their parents.

Current study

The study presented here was conducted to compare the self-esteem and empathy of preadolescent children with visual impairments with those of sighted children. Several family variables were explored. Of particular interest to this study was the variable of pet ownership. According to Levinson (1978), empathy and self-esteem may be facilitated in children when they form bonds with pets.

Research on interactions between humans and animals has suggested that animals have a great impact on children during preadolescence (Van Houtte & Jarvis, 1995). During this period, children may view pets as both a responsibility and a source of friendship. However, research on the relationship between pet ownership and specific aspects of socioemotional development has received limited attention in the literature.

One study that investigated the effects of bonding with pets (specifically dogs) on self-esteem and empathy in preadolescent children suggested that pet ownership, as well as the establishment of a strong bond with a dog, had positive effects on the children (Bierer, 2000). This study found that both male and female dog owners had higher self-esteem and empathy scores than did children who were not dog or pet owners.

In another study that explored self-esteem and bonding with pets, Angle (1994) asked fifth and sixth graders to complete a pet-bonding scale and a self-descriptive questionnaire to examine their views of themselves. The results demonstrated that the girls and boys bonded to pets in similar ways, but that the girls had higher mean pet-bonding scores than did the boys. In addition, the boys who were pet owners had higher scores on the peer relationships subscale of the self-esteem measure than did the boys who were not pet owners. No significant difference concerning self-esteem was found for girls who were pet owners compared with those who did not own pets. This finding supports the notion that companion animals play a role in the affective development of preadolescents and, specifically, that forming bonds with pets may help preadolescents form bonds with their peers.

In another study (Covert, Whiren, Keith, & Nelson, 1985), the Coopersmith Self-

Esteem Inventory (CSEI; Coopersmith, 1981) was administered to 285 children aged 10-14. The findings revealed that the preadolescents who owned pets had higher self-esteem scores than did those who did not own pets. Furthermore, the children formed stronger attachments to dogs and cats than to other pets, such as turtles and mice.

Research on the influence of variables that help shape a child's personality and behavior is important. Research that describes these variables and any resulting differences between children who have and do not have disabilities may be a first step toward gaining a better understanding of the unique needs of children who are visually impaired.

Method

Participants

The 159 participants (81 boys and 78 girls) included two groups of preadolescents--71 who were visually impaired and 88 who were sighted--who ranged in age from 8 to 14 (mean age = 11 years, $SD = 1.296$). The sighted participants were recruited from public schools in agricultural communities in two southwestern states.

The administrators of the public schools were contacted by the first author regarding participation in the study and were sent information on the study and consent forms to give to the parents of all the fifth graders in their schools. Since the authors were replicating Bierer's study (2000) with the addition of visually impaired children, fifth graders were targeted as the potential participants. The students demonstrated their willingness to be involved in the study by signing the consent forms along with their parents.

The visually impaired participants were recruited from the same two southwestern states as the sighted children, as well as from two midwestern states and one western state. Superintendents of the residential schools for children with visual impairments in the five states (three in large metropolitan areas and two in rural areas) were contacted about their students' participation in the study. The residential schools did not have residential weekend placements. One of the residential schools in a large state had a summer program for visually impaired children who attended public schools; these children resided in both rural and urban areas of the state. All the children volunteered to be in the study and had their parents' permission to do so.

In addition, the authors contacted counselors of visually impaired children at a state agency in the Southwest that serves children and adults with visual impairments. These counselors forwarded the information about the study to the children's parents. The parents who agreed to let their children participate signed consent forms and returned them to the counselors, who then contacted the authors with referrals.

The children with visual impairments met the eligibility criteria for special education that were established by the Individuals with Disability Education Act. That is, they had a visual impairment that, even with the best correction, adversely affected their educational performance (Hunt & Marshall, 2002). Since the participants were from residential schools for students with visual

impairments or were referred by a state agency that serves people with visual impairments, they met these criteria.

Measures

The authors developed a demographic questionnaire that focused on such characteristics as gender, ethnicity, age, family composition (that is, mother's work status and number of family members in the household), and the number and type of pets in the household. Additional instruments included the CSEI-Short Form, the Bryant Index of Empathy for Children and Adolescents (IECA), and the Companion Animal Bonding Scale (CABS). All these instruments were provided only in print.

The CSEI-Short Form, which is designed to measure the beliefs that individuals have and maintain about themselves, consists of 25 items of favorable or unfavorable statements about the self, which participants indicate is "like me" or "unlike me," and takes approximately 10 minutes to complete. The scores range from low self-esteem (0) to high self-esteem (25). Sample items include "I am popular with kids my own age," "I often get discouraged at school," and "There are a lot of things about myself I would change." All the students completed this inventory.

The IECA, a 22-item scale, is intended to measure a child's response to the perceived emotional experience of others. The scores range from low empathy (0) to high empathy (22). Sample items include "Sometimes I cry when I watch TV," "I think that kids who don't have friends probably don't want any," and "I feel upset when I see a boy being hurt." The participants indicate "I agree" or "I disagree" for each item. Bryant (1982) reported that the internal consistency or reliability estimates for the scale were calculated by computing Cronbach alpha coefficients of .68 for fourth graders and .79 for seventh graders. According to Bryant, the IECA meets the minimum requirements for construct validity.

The CABS is designed to measure the frequency of caretaking behaviors of children toward their pets. Brown, Herbert, and Wilson (1996) reported that reliability (internal consistency) ranged from .77 to .82. The items were rated using a Likert-type scale, with 1 indicating always and 5 indicating never. Sample items included "How often do you hold, stroke, or pet your pet?" and "How often do you clean up after your pet?" The total possible score ranges from 8 to 40 points, with a lower score indicating that a child participates more fully in the caring for his or her pet. This scale was administered only to the participants who were pet owners.

Procedures

Before the study began, all the measures were administered orally to three visually impaired children in their homes to determine interrater reliability. The results of this activity were not included in the study's results. One author administered and completed the measures and the other author also simultaneously listened and completed the measures. When the authors' ratings were compared and analyzed, they were in 99% agreement.

The sighted participants completed the measures independently. Before they did so, the authors explained the study, showed an instructional videotape that

further informed the participants about the study and the measures, and answered any questions that the participants had about the study. Then, with the authors present, the participants independently completed the measures at their schools.

An individual interview format was used for the visually impaired participants. That is, the measures were individually administered by the authors to each of the participants at their various residential schools or in their homes. Times were scheduled for the measures to be read to them. Since the measures were administered orally, other options such as braille or large print were not made available to them. One of the authors was available to explain the study at two of the residential schools when the parents and their children came on the first day of summer school or the fall semester.

Results

Demographic characteristics

Most of the participants (85%) lived with two adults. Of the remainder, 15 (9%) lived with a mother and 10 (6%) lived in other family configurations (such as with an aunt, grandparents, or a parent's significant other). In addition, 66% of the children lived in households with 1-3 siblings, 23% lived in households with 4-6 siblings, and 7% lived in households with 7-14 siblings; 6% of the children did not live with any sibling (see Table 1 for the demographic characteristics of all the participants).

Begin Table 1:

Table 1
Demographic characteristics of the participants (percentage).

Description: There are 3 main column heads: Variable, Sighted children (n = 88), and Children with visual impairments (n = 71).

Variable (Pet owner): Dog; Sighted children: 68; Children with visual impairments: 52.

Variable (Pet owner): Cat; Sighted children: 16; Children with visual impairments: 16.

Variable (Pet owner): Other; Sighted children: 13; Children with visual impairments: 13.

Variable: Non-pet owner; Sighted children: 0; Children with visual impairments: 19.

Variable: No response; Sighted children: 3; Children with visual impairments: 0.

Variable (Mother's work status): Full-time work; Sighted children: 58; Children with visual impairments: 44.

Variable (Mother's work status): Part-time work; Sighted children: 18; Children with visual impairments: 22.

Variable (Mother's work status): No work; Sighted children: 23; Children with visual impairments: 30.

Variable (Mother's work status): No response; Sighted children: 1; Children with visual impairments: 4.

Variable (Gender): Boy; Sighted children: 49; Children with visual impairments: 54.

Variable (Gender): Girl; Sighted children: 51; Children with visual impairments: 46.

Variable (Ethnicity): Caucasian; Sighted children: 55; Children with visual impairments: 68.

Variable (Ethnicity): Hispanic; Sighted children: 28; Children with visual impairments: 16.

Variable (Ethnicity): African American; Sighted children: 0; Children with visual impairments: 8.

Variable (Ethnicity): Native American; Sighted children: 3; Children with visual impairments: 0.

Variable (Ethnicity): Asian American; Sighted children: 1; Children with visual impairments: 0.

Variable (Ethnicity): Mixed; Sighted children: 10; Children with visual impairments: 8.

Variable (Ethnicity): Other; Sighted children: 3; Children with visual impairments: 0.

Variable (Adults at home): One adult: mother; Sighted children: 4; Children with visual impairments: 17.

Variable (Adults at home): One adult: father; Sighted children: 0; Children with visual impairments: 2.

Variable (Adults at home): One adult: other; Sighted children: 0; Children with visual impairments: 2.

Variable (Adults at home): Two adults: mother and father; Sighted children: 77; Children with visual impairments: 41.

Variable (Adults at home): Two adults: mother and stepmother; Sighted children: 2; Children with visual impairments: 0.

Variable (Adults at home): Two adults: mother and stepfather; Sighted children: 11; Children with visual impairments: 19.

Variable (Adults at home): Two adults: mother and other; Sighted children: 1; Children with visual impairments: 7.

Variable (Adults at home): Two adults: father and stepmother; Sighted children: 3; Children with visual impairments: 2.

Variable (Adults at home): Two adults: father and other; Sighted children: 1; Children with visual impairments: 2.

Variable (Adults at home): Other adult: grandmother; Sighted children: 1; Children with visual impairments: 0.

Variable (Adults at home): Other adults: grandfather and grandmother; Sighted children: 0; Children with visual impairments: 4.

End of Table 1.

With regard to the mothers' employment, the mothers of 82 participants (51%) worked full time, and the mothers of 32 (20%) worked part time; the mothers of 41 participants (26%) did not work outside the home; 4 participants (3%) did not respond to this item.

With regard to race/ethnicity, 61% of the participants were Caucasian, 23% were Hispanic, 4% were African American, 1% were Native American, and 1% were Asian American. Fifteen participants (9%) reported they were "mixed," and 2 (1%) reported "other."

The vast majority of the participants were pet owners: 97% of the sighted participants and 81% of the children with visual impairments. Of the 142 pet

owners, 68% owned dogs, and 18% owned cats; the rest of the pet owners had lizards, iguanas, cows, fish, snakes, turtles, hamsters, guinea pigs, horses, birds, rabbits, hermit crabs, goats, chickens, rodents, salamanders, scorpions, and chameleons.

Scores for the three measures

The average CABS scores were 18.85 (SD = 7.79) for the dog owners and 15.69 (SD = 11.34) for the cat owners; the owners of other types of pets had an average score of 16.33 (SD = 12.23). The average scores for the 88 sighted participants on the three measures were CABS: 20 (SD = 5.98) for the 13 cat owners and 21 (SD = 5.42) for the 60 dog owners, CSEI: 16 (SD = 4.47), and IECA: 14 (SD = 3.29). The average scores on the three measures for the 71 children with visual impairments were CABS: 13 (SD = 12.82) for the 23 cat owners and 16 (SD = 9.81) for the 42 dog owners, CSEI: 17 (SD = 4.27), and IECA: 14 (SD = 3.23). Due to the small number of nonpet owners, their data was not reported in this article.

For all the participants, the average score for the CSEI was 16.62 (SD = 4.39) with a range of 7-25 points. With the Mann-Whitney nonparametric test, the total score was 3061.5. Specifically, the mean rank for the sighted participants was 75.70, with a sum of ranks of 6661.5, and the mean rank for the visually impaired participants was 85.33, with a sum of ranks of 6058.5. See Table 2 for the full results of the of the Mann-Whitney statistical test.

Begin Table 2:

Table 2.
Results of the Mann-Whitney statistical test (N = 159).

Description: There are 3 main column heads: Statistical test, Total score on empathy, and Total score on self-esteem.

Statistical test: Mann-Whitney U; Total score on empathy: 3061.500; Total score on self-esteem: 2745.500.

Statistical test: Wilcoxon W; Total score on empathy: 5617.500; Total score on self-esteem: 6661.500.

Statistical test: Z; Total score on empathy: -.218; Total score on self-esteem: -1.315.

Statistical test: Assumption significance (two tailed); Total score on empathy: .828; Total score on self-esteem: .189.

End of Table 2.

The average score for all the participants on the IECA was 13.62 (SD = 3.26), with a range of 5-20. With the Mann-Whitney nonparametric test, the total score was 2745.5. Specifically, the mean rank for the sighted participants was 80.71, with a sum of the ranks of 7102.5, and the mean rank for the visually impaired participants was 79.12, with a sum of ranks of 5617.5. No significant difference was found between the sighted children and those with visual impairments regarding their levels of self-esteem, empathy toward others, and bonding with pets.

Discussion

Tuttle and Tuttle (2004) described two sources for the development of self-esteem: externally oriented (reflections from others) and internally oriented (proof of one's worth through competence, productivity, and responsibility). They noted that "someone who is visually impaired must view [himself or herself] first, as a person of dignity and worth, and second, as a person who, among many other attributes, happens also to be blind" (p. 183). Thus, self-esteem is not static, but dynamic and changing with variables in a person's life. In light of this situation, the results of this study are both interesting and encouraging. No significant differences were found between the sighted and visually impaired children for levels of self-esteem, empathy toward others, or taking care of pets.

The results of this study raised questions for future research. Because there was such a preponderance of pet owners, one question is, Are there differences between pet owners and non-pet owners with visual impairments with regard to self-esteem and empathy? In addition, visually impaired children often have difficulty developing social skills. Thus, a second question for future research is, How may high levels of pet bonding influence social development?

The findings were similar to those of other studies that investigated pet ownership and levels of empathy and self-esteem (see, for example, Covert et al. 1985; Van Houtte & Jarvis, 1995). According to Vidovic, Stetic, and Bratko (1999, p. 212), "having a pet is positively correlated with feelings of importance, social competence and self-esteem." The fact that no differences in this regard were found between the sighted and visually impaired preadolescents is encouraging. It indicates that the children with visual impairments in this study appeared to have developed socially in a similar manner to the sighted children with regard to self-esteem and empathy. The reason for this similarity, which is contrary to previous findings, is unclear. It could be due to recent trends in education, such as inclusion, or to families' greater awareness of the benefit of having a pet for their children (because of parental education by professionals regarding their children's social development), or to the factors involved in caring for a pet.

Limitations

The participants may not be representative of preadolescent children who reside in urban or rural areas in other parts of the United States. Not only were they self-selected, but they were students at residential schools for children with visual impairments. Therefore, the results cannot be generalized to similar populations outside the area investigated by this study. In addition, when participants in a study are interviewed, they may be subject to the Hawthorne effect (Crowl, 1996); that is, their answers may not have reflected their actual beliefs or practices, but may have been those that they thought that they should have or have accomplished or that they considered acceptable to the interviewer.

Suggestions for future research

Future research needs to explore further the relationship between pet ownership and bonding and child development in diverse populations. A more representative sample of children from different regions in the United States may yield different results than what was found in this study. Another area to explore is

the relationship between visually impaired children who are pet owners and those who are not pet owners in levels of self-esteem and empathy.

The authors plan to conduct interviews with the participants of the current study who reside in residential schools for visually impaired students. The measures used in this study will be administered again to these children, followed by in-depth, structured interviews concerning their self-esteem, empathy toward others, and pet ownership. Additional questions on their perceptions of orientation and mobility skills and reading ability were added to the measures. The qualitative approach of using in-depth interviews will provide additional information about the impact of pet ownership on children's lives.

References

- Angle, R. L. (1994). The utilization of the pet bonding scale to examine the relation between the human/companion animal bond and self-esteem in preadolescence. Unpublished doctoral dissertation, University of Houston.
- Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance abuse. *Journal of Early Adolescence*, 11, 56-94.
- Bierer, R. E. (2000). The relationship between pet bonding, self-esteem, and empathy in preadolescents. Unpublished doctoral dissertation. Albuquerque: University of New Mexico.
- Brown, B. H., Herbert, C. R., & Wilson, C. A. (1996). Pet bonding and pet bereavement among adolescents. *Journal of Counseling and Development*, 74, 505-509.
- Bryant, B. K. (1982). An index of empathy for children and adolescents. *Child Development*, 53, 413-425.
- Coopersmith, S. (1981). *Self-esteem inventories*. Palo Alto, CA: Consulting Psychologists Press.
- Covert, A. M., Whiren, A. P., Keith, J., & Nelson, C. (1985). Pets, early adolescents, and families. *Marriage and Family Review*, 8, 95-108.
- Cowen, E. L., Underberg, R. P., Verrillo, R. T., & Benham, F. G. (1961). Adjustment to visual disability in adolescents. New York: American Foundation for the Blind.
- Crowl, T. (1996). *Fundamentals of education research*. Madison, WI: Brown & Benchmark.
- Eisenberg, N., & Miller, P. A. (1987). The relation of empathy to prosocial and related behaviors. *Psychological Bulletin*, 101, 91-119.
- Ferrell, K. (1986). Infancy and early childhood. In G. T. Scholl (Ed.), *Foundations of education for blind and visually handicapped children and youth* (pp. 119-135). New York: American Foundation for the Blind.
- Ferrell, K. (1998). *Project PRISM: A longitudinal study of developmental*

patterns of children who are visually impaired. Greeley: University of Northern Colorado.

Freeman, R. D., Goetz, E., Richards, D. P., & Groenveld, M. (1991). Defiers of negative prediction: A 14-year follow-up of legally blind children. *Journal of Visual Impairment & Blindness*, 85, 365-370.

Hunt, N., & Marshall, K. (2002). *Exceptional children and youth: An introduction to special education* (3rd ed.). Boston: Houghton Mifflin.

Levinson, B. M. (1978). Pets and personality development. *Psychological Reports*, 42, 1031-1038.

Lopez-Justicia, M. D., Pichardo, M. C., Amezcua, J. A., & Fernandez, E. (2001). The self-concepts of Spanish children and adolescents with low vision and their sighted peers. *Journal of Visual Impairment & Blindness*, 95, 150-160.

Rosenblum, L. P. (2000). Perceptions of the impact of visual impairment on the lives of adolescents. *Journal of Visual Impairment & Blindness*, 94, 434-445.

Sacks, S. Z., & Wolffe, K. E. (1988). Lifestyle of adolescents who have visual impairments: An ethnographic analysis. *Journal of Visual Impairment & Blindness*, 92, 7-17.

Tuttle, D. W., & Tuttle, N. R. (2004). *Self-esteem and adjusting with blindness* (3rd ed.). Springfield, IL: Charles C Thomas.

Van Houtte, B. A., & Jarvis, P. A. (1995). The role of pets in preadolescent psychosocial development. *Journal of Applied Developmental Psychology*, 16, 463-479.

Vernon, A. (1993). *Counseling children and adolescents*. Denver: Love.

Vidovic, V. V., Stetic, V. V., & Bratko, D. (1999). Pet ownership, type of pet and socio-emotional development of school children. *Anthrozoos*, 12, 211-217.

Warren, D. H. (1994). *Blindness and children: An individual difference approach*. Cambridge, England: Cambridge University Press.

Wolffe, K. E. (2000). Growth and development in middle childhood and adolescence. In A. J. Koenig & M. C. Holbrook (Eds.), *Foundations of Education*, Volume 1 (pp. 135-156). New York: AFB Press.

Woolfolk, A. (2001). *Educational psychology* (8th ed.). Needham Heights, MA: Allyn & Bacon.

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