The stress of the university experience for students with Asperger syndrome

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College students, with or without disabilities, are faced with numerous stressful situations within the university environment. For an individual diagnosed with Asperger syndrome, success at this level requires non-traditional supports. With limited knowledge of this disorder, the university staff are faced with a distinct disadvantage in their efforts to outline an appropriate plan. While providing traditional academic assistance is now commonplace, federal laws mandate that universities widen the scope of support so as not to exclude any student from campus activities or programs.

In an effort to provide a framework for support, this article interfaces diagnostic information with the realities of college life. Areas of focus include the transition process, social rules, engagement in academic activities, and mastering a new life of independence. It is hoped that the presented suggestions might prove helpful as universities begin to establish service support teams and outline plans of support.

1. Introduction

Stress, an individualized phenomenon unique to each person and the environment, can be characterized as two types, life events and chronic strains [30]. During college, where the dynamic relationship between the person and environment in stress perception and reaction is especially magnified [35], additional difficulties are present for individuals with disabilities. The most common diagnostic categories encountered at this level have required college professors and support staff to accommodate for learning difficulties or various learn-

ing styles. There is, however, a diagnostic category needing supports other than traditional academic interventions.

Asperger syndrome, considered a high-level classification of autistic spectrum disorders, presents several non-academic issues that could interfere with success at the university level. In order to comprehend the extent and types of supports needed, the intricacies between the person with Asperger syndrome and the college experience must be explored. As occupational therapists, with an understanding of neurobiological disorders, as well as experience working with individuals to decrease stress, we are appropriate candidates to undertake this task. This article seeks to explore and highlight the person-environment interactions and identify strategies to decrease stress.

With this in mind, the intricacies of the diagnosis must first be documented so that the reader can appreciate that life events, managed adequately by most, can be considered chronic strains for an individual with Asperger syndrome. Thereafter, the expectations and culture of the university environment will be reviewed so that the reader can be aware of the interplay. The only way to design an effective intervention plan is to identify the particular stressors for college students [48], and approach those naturally occurring stressors from the perspective of an individual with Asperger syndrome. Although each intervention plan needs to be individualized, based on the complexities of the diagnosis, a framework of options will be presented within this article. To clarify the issues faced by college personnel and support staff, real life scenarios and strategies will be presented.

2. Asperger syndrome

Asperger syndrome, currently listed as one of the autistic spectrum disorders under the general heading of Pervasive Developmental Disorder (PDD), was officially added to the *Diagnostic and Statistic Manual of Mental Disorders* (DSM) in its fourth edition [1]. Prior

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to this latest edition, researchers and experts utilized Asperger's descriptions in attempt to identify such individuals [12,44,45,47]. Despite efforts to distinguish this syndrome from an autistic disorder, it is felt that the current criteria are nearly identical and do not present any clear boundary between the two [10]. Although it has been estimated that the prevalence of Asperger syndrome is 7 out of every 1,000 births [13], documenting a true incidence of this disorder is difficult.

While it is true that children with Asperger syndrome share characteristics with autistic children, there are also a number of unique features. It is therefore appropriate to outline the specific diagnostic criteria for Asperger syndrome according to DSM-IV [1].

A. Qualitative social interaction impairment as shown by at least two of the following:

1. Significant impairment in nonverbal behavior use, including social interaction gestures, facial expression, eye-to-eye contact, and body postures.
2. Inability to form developmentally appropriate relationships with peers.
3. Failure to spontaneously seek out others for interactions, including sharing interests, enjoyment, or achievements.
4. Difficulty with social or emotional reciprocity.

B. Repetitive and restricted stereotyped patterns of behavior, activities, and interests, as shown by at least one of the following:

1. Significant preoccupation with one or more stereotyped and restricted interest patterns whose focus or intensity makes it abnormal.
2. Significant display of nonfunctional routines or inflexible adherence to rituals.
3. Repetitive and stereotyped motor movements such as complex whole-body movements, or hand or finger flapping or twisting.
4. Significant and persistent preoccupation with parts of objects.

C. Clinically significant social, occupational, or other impairment in functioning.
D. Absence of a clinically significant general language delay.
E. Absence of a clinically significant delay in cognitive development or in development of age-appropriate adaptive behavior (other than social interaction), self-help skills, and childhood curiosity about the environment.

F. Failure to meet diagnostic criteria for schizophrenia or another pervasive developmental disorder.

A unique difficulty, however, is the concept that individuals with Asperger syndrome often "look normal". As society tends to judge individuals based on their outward appearance, it is often confusing why the language and social behaviors are odd. Within the university culture, pedantic or unusual speech patterns, difficulty with social relationships, clumsiness, and limited interests can be quite interfering. Additional descriptors of this population, which are important for university interventionists to consider, include:

1. intellectually average or gifted
2. have a desire for friendship and are motivated to form relationships, but do not often know how to establish friendships
3. make flawed attempts at most social activities
4. demonstrate avoidance of eye contact (although not excessive)
5. interactions are repetitive without the appropriate turn-taking, tend to be one-sided in their conversations, and may ask repetitive questions
6. engage in long-winded pedantic speech patterns and may use flat or monotone voice patterns
7. talk repetitively on one theme and tend to collect facts on specific subjects
8. have the ability to engage with another person who have the same interests (i.e., chess, computer games)

With the symptomatology ranging from mild to severe, documenting a specific picture of this disorder is difficult. Additionally, the identification of Asperger syndrome often occurs at a later age or does not get identified at all. Different explanations include confusion on the part of the clinician, absence of early classic autistic signs, intact cognitive capabilities, decreased severity of the symptoms, decreased interference with specific function until a later age, and/or just an "odd" child which does not prompt parents to seek a diagnosis. For colleges, this means that these individuals may in fact have been enrolled students without diagnostic identification. With the laws today, however, once the diagnosis is disclosed, the university is mandated to provide support.

3. Legal responsibility

The American with Disabilities Act (ADA) [2] influences how institutions of higher education allocate

funding and service supports for individuals with documented disabilities. The definition of disability, according to ADA, is an impairment that substantially limits a major life activity. It is clear that institutions of higher education must provide classroom supports, as academic achievement is a major life activity. The mission of any college or university, however, is not simply academic advancement. The overall goals of any university experience include developing skills for adulthood, forming life-long relationships, identifying a vocational pathway, and/or participating in extra-curricular activities. If ADA states that individuals with a disability cannot be excluded from participation in services, activities, or programs of a public entity, then all of these activities would need to be supported. For the purpose of this article, the areas that elicit stress will be investigated.

4. Stressful situations within the university environment

College students, with or without disabilities, are faced with numerous stressful situations within the university environment. An individual with Asperger syndrome, with specific difficulties in predicting events because of changing schedules, "picking up on" verbal and non-verbal social cues, and understanding the collage of events occurring in the environment, college life can be a daunting experience. To complicate matters further, individuals with Asperger syndrome do not typically demonstrate that they are stressed or having difficulty coping [26]. They may tune out, daydream, demonstrate flat affect, or simply not respond. Consequently, it is difficult for support staff to detect the need for assistance. With regard to a stress management plan, therefore, one of the first mechanisms would be to provide a safe place for the student to go when he feels stressed or out of sorts. This would allow the student to access the safe place as he sees fit or feels the need. The safe place could be a counselors office, his dorm room, the learning support center, or any other place that the student feels safe and support staff feel is appropriate.

4.1. The transition process

College students, who are a group particularly prone to stress [9], experience the greatest amount of difficulty surrounding the process of transitioning to college. Baker et al. [3] state that stress is greatest at the beginning of the transition to college, specifically the first

few weeks. Other researchers [7,39] note an increase in stress as students anticipate leaving their friends and family for college. When stress becomes excessive, it can increase feelings of loneliness, nervousness, and excessive worrying [48]. This compounds the level of loneliness and nervousness typically expected during the transition process. As a result, the importance of beginning support services prior to the start of the college experience, as emphasized in the research of Pancer and Hunsberger [29], cannot be ignored. These authors document that the amount of stress that students report immediately prior to beginning their university experience is specifically related to their adjustment six months later. Not surprisingly, students with higher levels of stress prior to college show much poorer levels of adjustment.

The unknown is a particular area of difficulty for individuals with Asperger syndrome. If not adequately prepared and educated about unknown or unpredictable situations, the need for order and routine is often the response. Routine and order, however, are diametrically opposite of what could be described as the college mentality of "going with the flow". This need for routine and predictability, consequently, sets this student further apart from others. John, a 19 year old with a diagnosis of Asperger syndrome entering college, exemplifies this point.

John's schedule for arrival day that the college sent to him stated that there is a college barbecue at 3:00 p.m. in the courtyard. He has planned that if he arrives at 10:00 am, he will have enough time to unpack before the barbecue. When his roommate arrives and asks if he would like to go on the one o'clock tour, John says that he can't because he has to unpack.

It would be specifically important for the college support staff to make every attempt to familiarize the student with the expectations of both the social and academic environments prior to participating in those activities. When planning these preparatory activities, the support staff should attempt to anticipate every possible scenario that would occur for a new student. Even the most basic activity should be accounted for in the preparation phase.

John should be told prior to arrival that he would have adequate time to unpack during the orientation weekend, or that on the first day the most important task is to meet different people and spend time with other students. With this information, he might have been able to deviate from his preexisting plan.

Specific suggestions for the transition process, particularly important for individuals with Asperger syndrome, include:

– a tour of the campus
– following the sequence of the specific daily schedule
– visiting the cafeteria and outlining which section to sit in
– going to the bookstore during off-peak hours in order to investigate what is available
– meeting the teachers and discussing how the specific class operates
– showing the student which bulletin boards announce upcoming social activities
– meeting the residence hall staff so that the student knows who to go to with questions
– communicating with roommate prior to arrival on campus
– reviewing the schedule of activities for the first week and discussing which activities would be of interest to the student
– identification of safe places
– an overview of what to expect during the first several days of orientation
– set a meeting time with support staff during the first several days to touch base and determine if any areas have not been planned for adequately

4.2. Social relationships and activities

Once a student has arrived on campus, the social demands quickly become apparent. For an individual with Asperger syndrome, this may be quite threatening. They know that they lack the skills to master the most basic of interactions. How do you find someone to go to dinner with? How do you join up with a group going to the movie in the recreation center? These are practical realities that are difficult for these individuals.

Roe [33] comments that individuals with disabilities do not correctly perceive the skills that are supposed to be learned. While these individuals may appear distant and tuned-out, they may not be expressing disinterest, but rather an inability to fully absorb the interactions and verbalizations of the surroundings. The individual may not "relate" to other's behavior or decipher the non-verbal messages going on around him. Roe emphasizes that there is a terror associated with having no knowledge of how to handle a situation. College life has a distinct culture all its own, with spoken or unspoken rules. If typical college students have difficulty

deciphering these rules, then the student with Asperger syndrome is at a distinct disadvantage.

A secondary issue within this process is the reality of the social exchange. Individuals with Asperger syndrome may actually be faced with a very critical society who do not understand this hidden disorder. The individual looks "normal". Why is he not looking at me when we are talking? Why isn't he laughing at my joke? Why is he standing in my personal space? The second party of the exchange responds to the subtleties of a social exchange, often not understood as a problem by the individual with Asperger syndrome. That negative response by the second party is observed, felt, or reported by the identified student. The reality of other student's response to us must be identified so that strategies for coping with the harshness of life can occur. For individuals who are striving so hard to simply "fit in", these realities can be devastating. If these realities are not discussed and managed effectively, they will be stored within and each event will build on past events. The feelings of shame, resentment, confusion, and frustration will frequently be converted to anxiety. We then return to the beginning of the cycle. In order to reduce the anxiety, these feelings must be confronted as the causes of the anxiety.

As each student embarks on this unfamiliar endeavor called college life, a variety of stresses emerge. Time management, making new friends, increased academic demands, and no parental limitations imposed are all new situations to manage. Research supports that having a positive social support system reduces the negative impact of stress on the immune system [34]. While the investigators believe that there are other effective strategies, including exercise and having a sense of humor, the need for a social support network cannot be understated. The typical mediators of stress for college students [11,25,38,46], such as regular social contact with friends and family, may be compromised when a student moves away from home for the first time. For a student with Asperger syndrome, who may not have a large network of friends, this issue is magnified. Additionally, the student, based on probable years of reliance on family support, is more compromised with regard to the lack of a consistently available family network.

Additional reducers of stress, such as social activities and peer events, can actually increase feelings of stress during college [8]. As college marks a distinct period of creating new systems of social supports, this process can be in and of itself stressing. Students with Asperger syndrome, who may not have the basics of how to

establish or even maintain a social network of peers, are again severely compromised. Leisure satisfaction, documented to be a stress buffer by providing a sense of purpose and competence for college students [31], is another area of concern for individuals with Asperger syndrome based on their limited interest in activities.

In university social situations, responses to social situations may create the most stress. Two specific situations require intervention for a student with Asperger syndrome. First, one must imagine the stress of knowing that a response is required, but that your repertoire does not include this particular type of conversation. Second, knowing that a mistake could be socially disastrous and that you do not have the ability to simply pick up the basics without specific assistance or instruction. With these two issues in mind, preparing the student with Asperger syndrome, through practice and providing the required or expected social phrases, would be considered essential.

During the first meeting with Tom, the peer mentors talked about how someone might simply walk past you in the hall in between classes with just a "hi" and they might not have time to stop and talk. Therefore, Tom should not feel that someone does not like him when in fact it might simply be that the person needs to get to class and doesn't have time to talk. A list of greetings was generated for Tom to use when he is going to class and sees a friend or acquaintance. These included:
1) *"Hey, how ya doing?"*
2) *"What's up?"*
3) *"How's it going?"*
4) *"Hi."*
5) *"Catch ya later."*

Instruction for social situations has utilized peer observation, discussion, role-playing, real situation practice, and feedback. Studies have documented these procedures as effective in improving the quality and frequency of social interactions with peers. Kamps et al. [21] documented verbal prompts and feedback systems as effective; teaching conversational scripts for social situations was found to be useful [14,22,23]; observing peer interactions of typical children provided specific social learning opportunities for children on the autistic spectrum [18]; and teaching other children and adults to demonstrate interactions in order to shape more appropriate social behaviors in children with autism had been used successfully [21,27,28,43]. Goldstein et al. [15] found positive results when peers were taught to attend to and acknowledge the social participation of the child with autism.

How then would this work at the university level? If it is clear that peer support is necessary, to what extent is an individual's confidential information shared with non-pertinent persons? While a student would appear to benefit from understanding by others, both Cohn [6] and Smith [41] refer to a student's fear of "losing face" with their peers if their disability is discovered. At the college level, when social acceptance is optimum, this issue needs to be attended to respectfully. One possibility is to identify peer mentors who would support the individual in a variety of situations. Additionally, individuals with Asperger syndrome, due to cognitive and language strengths, appear to respond well to the use of social stories [17] and video case examples to conceptualize unknown situations. In addition to providing a framework of the scenario, as well as rote responses or actions expected in the social situation, these approaches would limit the extent of disclosure for the individual.

Tom's peer mentors planned to accompany him to the cafeteria on Thursday. They developed a social story specific to the university's cafeteria environment. The story surrounded a young man going to lunch. Components of the story included: possible methods of making small talk with others on the food line, how to decide where to sit, how he might look for other people in his class, how to end a conversation so that he could leave the table, where to deposit the trash and food tray, and how to negotiate the crowds of people.

4.3. Academic stressors

College students experience high stress at predictable times. The academic workload requires peak periods of stress; such as during midterms and finals, as well as consistent underlying pressure to manage the pace of the work [19]. Additionally, more than just academics happen within the classroom. There are many assignments that require group involvement and social interaction. For example, professors outline these types of experiences so that young adults learn how to function within groups, become familiar with group dynamics and processes, and develop skills for future work and community projects. These components are systematically added as they simulate real life events. If these activities are designed to promote the development of future life skills, an objective outlined in the mission of the university, individuals with Asperger syndrome need to be accommodated for within that process.

Bob's American Government class was assigned a community action project to be completed in a group of four. At the support staff meeting, Bob continuously asked the peer mentors, who were not even registered for that class, to be in his group and go with him to the community site. Clearly, the making of the group was stressful, as was going out into the community. The group outlined strategies for Bob to use in order to join a group and spoke with the teacher who could facilitate the process, if necessary, in class the next week. The peer mentors went to the community site with Bob before the group was to go so that he could understand the dynamics of that situation. This also allowed Bob time to problem solve with the peer mentors concerning the group project.

Documented concerns of social skills have been one of the major areas of concern when attempting to integrate children with autism into typical classroom situations [1,16,36,37]. Decreased initiation, difficulty with reciprocal interactions, and lack of responsivity to the initiation of others [40,42] frequently leads to the avoidance of social contact. Although researchers have evaluated and intervened on behalf of young children and adolescents, little has been documented for young adults in academic environments.

McEvoy et al. [24] have established that teacher participation was necessary to increase the social exchanges between the children in integrated settings. The fact that a student self-discloses to the university implies that teachers are aware of the difficulties so that classroom modifications can occur. It is therefore clear that professors are prime interventionists with regard to social interactions, which are inherent in academic or classroom related activities. In addition to managing issues that arise spontaneously within the classroom, the professor should preemptively outline the classroom group expectations and potential difficulties for the peer mentors and support staff. This will allow time for role-play, practice, and discussion. In order for this strategy to be effective, consistent communication between the support team and professors would be critical.

As students with "hidden" disabilities arrive on campus, professors and support personnel will be forced to "rethink" teaching methods and designs for learning. All teaching and learning should start with knowledge of the students' skills, their backgrounds, and what skills they need to acquire [4]. Program design must incorporate an understanding of how a student with Asperger syndrome processes information, relates to

others in and out of the literal classroom, and comprehends the components of the hidden curriculum. The professor and support staff's expectations for a student in terms of comprehension, attitude, and behavior must also be accounted for in the planning process. When planning support strategies, it is helpful for the staff to visualize for the learning environment, identify the components of performance expected in each scenario, and then consider each individual student's limitations.

4.4. A new life of independence

Hudd [19] discusses the stress of being a college student who is now responsible for his or her own daily needs. While this new level of independence is challenging for the typical student, it might actually be foreign for a student with Asperger syndrome. At home, a parent would be able to monitor follow-through of household and self-care activities. At elementary and high school, a team of professionals would assure that the student attended to daily responsibilities. This support team is mandated for an individual on the autistic spectrum under the Individuals with Disabilities Education Act (IDEA) [20] if the disability interferes with education. This law mandates support services for individuals with disabilities between the ages of three and twenty one years, or until high school graduation. Knowing that the support staff is instantly accessible within the school building, is a comforting thought for an individual with a disability. Having a sudden decrease of supports, or possibly no supports at all, can be extremely frightening. If the stress becomes excessive, health and academic performance can be affected [5].

4.5. Cognitive-behavioral intervention

If one considers that stress results from the interaction between stressors and the individual's perception and reaction to those stressors [32], students must understand that thoughts and attitudes, not external events, create their feelings [6]. Cohn states that recognizing the anxious feelings and subsequent somatic reactions, as well as the thoughts associated with anxiety provoking situations, can change the manner in which they think, feel, and attempt to behave. Recognizing that the negative feelings are the result of distorted thoughts or altered perception is the first step in the sequence. Cognitive behavioral therapy deals with distorted thoughts by first recognizing the distorted thoughts and then comparing to the actual events of a given situation. If, however, an individual with Asperger syndrome has difficulty interpreting social situations correctly, this will need to be accounted for within the process.

On Thursday, the peer mentors had lunch with James at the third table on the left side of the cafeteria. On Friday, a support staff observed that he approached a group of students at that same table. As he stood at the edge of the table, none of the other students looked up. He sat down at the table, ate his lunch without talking to the other students, and then left. As he walked away, the group of students laughed and pointed at him. The support staff scheduled a meeting with James the next day where he expressed that he had such a fun time at the table on Thursday that he wanted to do it again on Friday. The support staff member discussed each step of the scenario in order to help James understand that it was not going to be the same fun experience because he did not know anyone at the table. James insisted that although he was not invited to sit at that table, it was fine that he was there – none of the students minded. After much discussion, the staff member stated that James would just have to trust her with regard to the unspoken rules of the cafeteria. Unless he knows or recognizes the students at the table, they invite him to sit with them, or James asks to sit with them, he should look for another place to sit. Although sometimes difficult, the realities of unspoken college rules need to be discussed with James.

Recognizing negative thoughts as distorted, or addressing repressed feelings of repetitive alienating experiences, is an extremely difficult process. This author is not suggesting that this is the responsibility of the university staff. The counselor, however, is required to assist with identification and referral for such concerns. Not only as ethical professionals, but because these concerns influence social interactions on campus and may contribute to social anxiety or withdrawal, two concerns that clearly impact the multiple levels of the overall educational experience.

5. Summary

While many specific events and situations have been documented as stressors for college students, the nature of these stressors and the prevalence needs further research. At this point, it is unclear whether the majority of stressors occur from academics or interpersonal relationships, or if the stresses are daily hassles or major life events [35]. Regardless, in order to have a positive college experience, individuals with Asperger syndrome need to have experiences that are free from fear, anxiety, and excessive stress.

Just as each student is an individual, with his or her own combination of strengths and weaknesses, each individual with Asperger syndrome also has his or her own unique difficulties. Any university that designs a rigid or inflexible plan of support for individuals with disabilities is not meeting the spirit of the law or mission statement. With limited knowledge of this disorder, universities are faced with a distinct disadvantage in their efforts to support these individuals. While the strategies presented within this article might prove helpful as colleges and universities attempt to comply with ADA and earnestly support their students, it is not meant to imply that other supports would not be warranted. Additionally, as new research becomes available regarding neurological functioning and success of educational strategies, intervention and support plans will need to be continually modified.

References

[1] American Psychiatric Association, *DSM-IV: Diagnostic and Statistical Manual for Mental Disorders,* (Fourth Edition), Author, Washington, DC, 1994.

[2] American with Disabilities Act of 1990, 35.104, 42 U.S.C. 12101.

[3] R.W. Baker, O.V. McNeil and B. Siryk, Expectations and reality in freshman adjustment to college, *Journal of Counseling Psychology* **32** (1985), 94–103.

[4] J. Boettcher and R. Conrad, Instructional design in a nutshell, *Acumen* **2** (2000), 1–4.

[5] R.L. Campbell and L.W. Svenson, Perceived level of stress among university undergraduate students in Edmonton, Canada, *Perceptual and Motor Skills* **75** (1992), 552–554.

[6] P. Cohn, Why does my stomach hurt? How individuals with learning disabilities can use cognitive strategies to reduce anxiety and stress at the college level, *Journal of Learning Disabilities* **31**(5) (1998), 514–516.

[7] C.E. Cutrona, Transition to college: Loneliness and the process of social adjustment, in: *Lonliness: A source book of current theory, research and therapy,* L.A. Peplau and D. Perlman, eds, John Wiley, New York, 1982, pp. 291–309.

[8] P.L. Dill and T.B. Henley, Stressors of college: A comparison of traditional and nontraditional students, *Journal of Psychology* **132**(1) (1998), 25–32.

[9] T.J. D'Zurilla and C.F. Sheedy, Relation between social problem-solving ability and subsequent level of psychological stress in college students, *Journal of Personality and social Psychology* **61**(5) (1991), 841–846.

[10] R. Eisenmajer, M. Prior, S. Leekam, L. Wing, J. Gould, M. Welham and B. Ong, Comparison of clinical symptoms in autism and Asperger's disorder, *Journal of the American Academy of Child & Adolescent Psychiatry* **35**(11) (1996), 1523–1531.

[11] W.M. Ensel and N. Lin, The life stress paradigm and psychological distress, *Journal of Health and Social Behavior* **32** (1991), 321–341.

[12] C. Gilberg, Asperger's syndrome in 23 Swedish children, *Dev Med Child Neurol* **31** (1989), 529–531.

[13] C. Gilberg, Autism and related behaviors, *Journal of Intellectual Disability Research* **37** (1993), 343–372.

[14] H. Goldstein and C.L. Cisar, Promoting interaction during socio-dramatic play: Teaching scripts to typical preschoolers and classmates with disabilities, *Journal of Applied Behavior Analysis* **25** (1992), 265–280.

[15] H. Goldstein, L. Kaczmarek, R. Pennington and K. Shafer, Peer-mediated intervention: Attending to, commenting on, and acknowledging the behavior of preschoolers with autism, *Journal of Applied Behavior Analysis* **25** (1992), 289–306.

[16] A. Gonzalez-Lopez and D.M. Kamp, Social skills training to increase social interactions between children with autism and their typical peer, *Focus on Autism & Other Developmental Disabilities* **12**(1) (1997), 2–14.

[17] C. Gray and J.D. Gerard, Social stories: Improving responses of student with autism with accurate social information, *Focus on Autistic Behavior* **8** (1993), 1–10.

[18] H. Hops, H. Walker and C.R. Greenwood, Social skills deficits, in: *Behavioral assessment of childhood disorders,* E.J. Mash and L.J. Terdal, eds, Guilford, New York, 1988, pp. 263–314.

[19] S.S. Hudd, J. Dumlao, D. Erdmann-Sager, D. Murray, E. Phan, N. Soukas and N. Yokozuka, Stress at college: Effects on health habits, health status and self-esteem, *College Student Journal* **34**(2) (2000), 217–227.

[20] Individuals with Disabilities Education Act, Public Law 105-17, 20, U.S.C. 1400, 1997.

[21] D.M. Kamps, B.R. Leonard, S. Vernon, E. Dugan, J. Delquadri, B. Gershon, L. Wade and L. Folk, Teaching social skills to students with autism to increase peer interactions in an integrated first grade classroom, *Journal of Applied Behavior Analysis* **25** (1992), 281–288.

[22] P.J. Krantz and L.E. McClannahan, Teaching children with autism to initiate to peers: Effects of a script-fading procedure, *Journal of Applied Behavior Analysis* **26** (1993), 121–132.

[23] K.A. Loveland and B. Tunali, Social scripts for conversational interactions in autism and Down syndrome, *Journal of Autism and Developmental Disabilities* **21** (1991), 177–186.

[24] M.A. McEvoy, R.E. Shores, J.H. Wehby, S.M. Johnson and J.J. fox, Special education teachers' implementation of procedures to promote social interaction among children in integrated settings, *Education and Training in Mental Retardation* **25** (1990), 267–276.

[25] G.E. Moss, *Illness, immunity, and social interaction,* John Wiley, New York, 1973.

[26] B.S. Myles and R.L. Simpson, *Asperger syndrome: A guide for educators and parents,* PRO-ED, Inc., Austin, TX, 1998.

[27] S.L. Odem and P.S. Strain, A comparison of peer-initiated and teacher antecedent interventions for promoting reciprocal social interactions for autistic preschoolers, *Journal of Applied Behavior Analysis* **19** (1986), 59–71.

[28] N.J. Oke and J. Schreibman, Training social initiations to a high-functioning autistic child: Assessment of collateral behavior change and generalization in a case study, *Journal of Autism and Developmental Disabilities* **20** (1990), 479–497.

[29] S.M. Pancer and B. Hunsberger, Cognitive complexity of expectations and adjustment to university in the first year, *Journal of Adolescent Research* **15**(1) (2000), 38–57.

[30] L.I. Pearlin, The sociological study of stress, *Journal of Health and Social Behavior* **30** (1989), 241–256.

[31] K.G. Ragheb and J. McKinney, Campus recreation and perceived academic stress, *Journal of College Student Development* **34** (1993), 5–10.

[32] J.L. Ramano, Psychoeducational interventions for stress management and well-being, *Journal of Counseling and Development* **71** (1992), 199–202.

[33] K. Roe, Asperger syndrome and terror, *Focus on Autism & Other Developmental Disorders* **14**(4) (1999), 251–253.

[34] V.L. Rose and S. Rabin, Study shows that social ties can affect immune system, *American Family Physician* **58**(1) (1998), 203–206.

[35] S.E. Ross, B.C. Niebling and T.M. Heckert, Sources of stress among college students, *College Student Journal* **33**(2) (1999), 312–317.

[36] M. Rutter, Diagnosis and definition, in: *Autism: A reappraisal of concepts and treatment,* M. Rutter and E. Schopler, eds, Plenum, New York, 1979, pp. 1–25.

[37] L. Schreibman, *Autism,* Sage, Beverly Hills, CA, 1988.

[38] R.K. Schutt, T. Meschede and J. Rierdan, Distress, suicidal thoughts, and social support among homeless adults, *Journal of Health and Social Behavior* **35** (1994), 134–142.

[39] P. Shaver, W. Furman and D. Buhrmester, Transition to college: Network changes, social skills, and loneliness, in: *Understanding personal relationships,* S. Duck and D. Perlman, eds, Sage, London, 1985, pp. 193–219.

[40] R.L. Simpson, B.S. Myles, G.M. Sasso and D.M. Kamps, *Social skills for students with autism,* The Council for Exceptional Children, Reston, VA, 1991.

[41] S.L. Smith, *Succeeding against the odds: How the learning disabled can realize their promise,* Putnam, New York, 1991.

[42] W.L. Stone and K.L. Lemaneck, Parental report of social behaviors in autistic preschoolers, *Journal of Autism and Developmental disabilities* **20** (1990), 513–521.

[43] P.S. Strain, F.W. Kohler, K. Storey and C.D. Danko, Teaching preschoolers with autism to self-monitor their social interactions: An analysis of results in home and school settings, *Journal of Emotional and Behavioral Disorders* **2** (1994), 78–88.

[44] P. Szatmari, G. Bartolucci and R. Bremner, Asperger's syndrome and autism: Comparison of early history and outcome, *Dev Med Child Neurol* **31** (1989), 709–720.

[45] D. Tantam, Asperger's syndrome, *J Child Psychol Psychiatry* **29** (1988), 245–255.

[46] P.A. Thoits, Stress, coping, and social support processes: Where are we? What next? *Journal of Health and Social Behavior* (*extra issue*) (1995), 53–79.

[47] L. Wing, Asperger's syndrome: A clinical account, *Psychol Med* **11** (1981), 115–129.

[48] J.J. Wright, Reported personal stress sources and adjustment of entering freshman, *Journal of Counseling Psychology* **14**(4) (1967), 371–373.