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Stressful Social Interactions Experienced by Adults With Mild Intellectual Disability

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Abstract

Adults with intellectual disability are vulnerable to stressful social interactions. We determined frequency and severity of various stressful social interactions, identified the social partners in these interactions, and examined the specific interpersonal skill difficulties of 114 adults with mild intellectual disability. Participants' characteristic risk factors for stressful social interactions were also identified. Minor and unintentional negative actions of others had high frequency but low severity of stress. Serious and intentional negative actions of others had a low frequency but high severity of stress. Stressful social interactions with other people who have intellectual disability occurred frequently and had a high severity. Difficulty controlling aggression predicted stressful social interactions. Findings are beneficial to developers of interventions to decrease stressful social interactions.

Psychological stress occurs as a result of a person–environment interaction in which individuals appraise a situation as threatening their well-being or self-esteem and as exceeding their resources to deal with the situation (Lazarus & Folkman, 1984). Perceptions of stress among people with intellectual disability have only recently been documented (Bramston & Bostock, 1994; Bramston & Fogarty, 1995; Bramston, Fogarty, & Cummins, 1999; Cooper & Collacott, 1996; Fogarty, Bramston, & Cummins, 1997). Adults with mild intellectual disability report similar overall rates of stress and perceive stress from the same types of events as does the general population, but they are particularly vulnerable to stressful social interactions (Bramston & Bostock, 1994; Bramston et al., 1999; Fogarty et al., 1997). Adults with mild intellectual disability state that this category of stressful events occurs more frequently and is more stressful when experienced than are other types of negative events (Bramston et al., 1999; Fogarty et al., 1997; Hartley & MacLean, 2005).

Given a link between perceptions of stress and psychological distress (e.g., Hartley & MacLean, 2005; Lunsy, 2003), an understanding of the stressful social interactions experienced by adults with mild intellectual disability has implications for improving their psychological well-being. Our purpose in this study was to determine the relation between stressful social interactions and psychological distress, types of stressful social interactions experienced, social partners involved in these interactions, risk factors for these interactions, and the interpersonal skill difficulties contributing to these interactions in adults with mild intellectual disability. This information can be used to design interventions and modify environments to decrease the occurrence of stressful social interactions and, subsequently, improve the psychological well-being of adults with mild intellectual disability.

Stressful Social Interactions and Psychological Distress

Perceptions of stress are positively related to psychological distress among adults with mild intellectual disability. In retrospective studies, researchers have demonstrated a relation between past experiences of major life events and psychiatric problems among adults with intellectual disability (Ghaziuddin, 1988; Hastings, Hatton, Taylor, & Maddison, 2004). Researchers have also found a positive relation between concurrently assessed perceptions of stress and a variety of psychiatric symptoms (Hartley & MacLean, 2005; Lunsky, 2003; Lunsky & Benson, 2001; Lunsky & Havercamp, 1999), and investigators conducting longitudinal studies have shown that perceptions of stress predict depressive symptoms that are evident 6 months later (Lunsky & Benson, 2001). Given the vulnerability of adults with mild intellectual disability to experiencing stressful social interactions, one of our aims here is to determine the relation between this specific category of stressful events and psychological distress.

Types of Stressful Social Interactions

A greater understanding of the types of stressful social interactions experienced by adults with mild intellectual disability is also needed. Previous studies have been focused on documenting the presence and negative impact of experiencing stressful events in this population (Bramston et al., 1999; Hartley & MacLean, 2005; Lunsky & Benson, 2001; Lunsky & Havercamp, 1999; Nezu, Nezu, Rothenberg, DelliCarpini, & Groag, 1995). The specific types of stressful events most commonly and severely experienced by adults with mild intellectual disability has been identified in only a few of these studies. Findings from this research suggest that not being listened to, hearing others argue, and being teased or having others say bad things about you occur frequently and receive high ratings of stress severity (Bramston et al., 1999; Hartley & MacLean, 2005; Lunsky & Benson, 2001). These previous studies, however, have typically involved many different categories of stressful events, only a small subset of which included stressful social interactions (Bramston et al., 1999; Hartley & MacLean, 2005). We designed the present study to build on these preliminary findings by conducting an in-depth investigation of the specific social interactions perceived as stressful by adults with mild intellectual disability.

Social Partners

Little is known about the social partners (e.g., people with intellectual disability, family, staff, or people in the community) with whom adults who have mild intellectual disability are having stressful social interactions. The few studies in which researchers have examined the social partners involved in stressful social interactions with this population suggest that interactions with other persons who have intellectual disability (e.g., boyfriends/girlfriends and roommates) occur most frequently, but stressful interactions with family and staff have the highest severity of stress (Benson & Fuchs, 1999; Chaney, 1996; Hartley & MacLean, 2005; Lunsky, 2003). These findings, however, are based on a single item inquiring about a category of social partners (“Do you get along with your family?” If not, “How much does that stress you?” or “Do you have a boyfriend/girlfriend/partner?” If yes, “How much does that stress you?”). Further investigation of social partners is needed to determine whether these findings remain when a broad range of stressful social interactions are considered.

An investigation of the subgroups of adults with mild intellectual disability at-risk for experiencing stressful social interactions with various social partners is also needed. Subject characteristics, such as IQ, age, gender, and living status may serve as risk factors for experiencing stressful social interactions with certain social partners. For example, adults with intellectual disability who have lower intellectual functioning may have fewer stressful social interactions with people in the community than do higher functioning adults with mild intellectual disability. Similarly, living status may influence the social partners involved in

stressful social interactions; adults living with their family are likely to have more stressful social interactions with family, whereas those living in group homes may be more likely to have stressful social interactions with other people who have intellectual disability and staff members. This information is also important for understanding and subsequently reducing stressful interactions for this population. Another of our aims in this study was to identify the social partners involved in stressful social interactions with adults who have mild intellectual disability and the participant characteristic risk factors for experiencing stressful social interactions with these various social partners.

Interpersonal Skill Difficulties

Previous studies of interpersonal skill deficits (e.g., difficulty conveying feelings, controlling anger, asserting opinions, or taking instruction) in adults with intellectual disability were largely based on caregiver ratings, thereby providing a limited view of the interpersonal skill problems of this population (Kellett, Beail, Newman, & Hawes, 2004; Kellett, Beail, & Newman, 2005). Similarly, social skill training for adults with intellectual disability largely targets the interpersonal skill deficits identified by caregivers (e.g., Embregts, 2002; O'Reilly, Lancioni, & Kiernans, 2000; O'Reilly et al., 2004). There is a paucity of research in which investigators assessed the interpersonal skills perceived as difficult by adults with intellectual disability. Recently, the first self-report measure of interpersonal skill difficulties for an intellectual disability population was developed (Kellett et al., 2005). Using this measure, which is a revised version of the Inventory of Interpersonal Problems-32 (IIP-32), adults with mild intellectual disability reported that managing aggression was the most difficult component of social interactions.

What remains to be understood is how interpersonal skill difficulties contribute to the experience of stressful social interactions. Another of our aims was to identify the self-reported interpersonal skill difficulties of adults with mild intellectual disability and their relation to perceptions of stressful social interactions. This information has important implications for understanding why certain social situations are perceived as stressful and other social situations are not by adults with mild intellectual disability. Moreover, this information can direct social skill training such that the interpersonal skill difficulties that contribute to stressful social interactions, and thereby impact the psychological health of adults with intellectual disability, are the focus in these training programs.

The present study provides a greater understanding of stressful social interactions encountered by adults with mild intellectual disability by (a) demonstrating an association between stressful social interactions and psychological distress; (b) determining the types of stressful social interactions experienced frequently and severely; (c) identifying the social partners involved in stressful social interactions with adults who have mild intellectual disability; (d) identifying characteristic risk factors for experiencing stressful social interactions with various social partners; and (e) determining the interpersonal skills perceived as difficult by adults with mild intellectual disability and their contribution to the experience of stressful social interactions. We expected that experiencing stressful social interactions would positively predict psychological distress. Based on previous studies of people with intellectual disability, we predicted that social interactions that involved not being listened to, hearing others argue, and being teased or having others say bad things would be reported to occur frequently and have a high severity of stress. We hypothesized that stressful social interactions with other persons who have intellectual disability would occur most frequently, but expected that interactions with staff and family would have the highest severity of stress. Given the paucity of research on characteristic risk factors for experiencing stressful social interactions with various social partners, we did not make any specific hypotheses for these analyses. We predicted that adults

with mild intellectual disability would report that controlling aggression is a difficult interpersonal skill.

Method

Participants

Participants, recruited from disability service providers in the Rocky Mountain region of the United States, were 127 adults with mild intellectual disability (IQ 55–70 and concomitant impairments in adaptive behavior) and adequate oral communication skills (i.e., orally communicate without the aid of another person) who were 19 through 65 years of age. Their mean age was 40.33 ($SD = 12.52$).

Participants with a diagnosis of autism were excluded given that deficits in social functioning are a defining aspect of this disorder. Eleven participants who were not able to pass the pretesting conditions outlined in the *Procedure* section were excluded. Two additional participants evidenced response bias during actual testing (i.e., reported the same response option for all items) and were also excluded. Previous studies of stressful social interactions among adults with intellectual disability included subjects with mixed etiologies of intellectual disability (Bramston & Bostock, 1994; Bramston & Fogarty, 1995; Bramston et al., 1999; Hartley & MacLean, 2005; Lunskey, 2003; Lunskey & Havercamp, 1999). To remain consistent with this approach, we chose participants with a range of reported etiologies for their intellectual disability, with the largest proportion being of unknown etiology. In addition to intellectual disability, 43 participants (37.8%) had been given a psychiatric disorder diagnosis by their disability service provider (17 mood disorder, 10 anxiety disorder, 8 personality disorder, 2 psychotic disorder, 5 adjustment disorder, and 1 sexual disorder). This prevalence is consistent with epidemiology research on comorbid mental health disorders in the intellectual disability population (Borthwick-Duffy, 1994; White et al., 2005). Characteristics of the 114 participants are displayed in Table 1.

Measures

Participant characteristics—Participants' age, gender, living status, and ethnicity were obtained from each person's disability service provider. The Kaufman Brief Intelligence Test, 2nd edition—KBIT-2 (Kaufman & Kaufman, 2004) is an individually administered measure of verbal and non-verbal problem-solving abilities. The KBIT-2 IQ Composite score has satisfactory internal consistency (.86 to .96), test–retest reliability (.88 to .92), and is highly correlated (.89) with Wechsler Adult Intelligence Scale-III (Wechsler, 1991) Full-Scale IQ (Kaufman & Kaufman, 2004). Staff members from each participant's disability service provider who had contact with the participant on at least a weekly basis served as informants for the Adaptive Behavior Assessment System-2nd edition—ABAS-II (Harrison & Oakland, 2006). This scale assesses three areas of adaptive behavior (conceptual, social, and practical), which combine to yield the General Adaptive Composite (GAC) score, which has high internal consistency (.97 to .99), test–retest reliability (.86 to .99), and satisfactory concurrent validity (Harrison & Oakland, 2006).

Psychological distress—The Birlerson Depressive Short Form Self-Rating Scale—hereafter called the Depressive Self-Rating Scale (Birlerson, 1981)—is a measure of depressive symptoms. This scale, which was originally developed for 7- to 12-year-old typically developing children, has 18 items and three response categories (never, sometimes, and most of the time). When used with adults who have mild intellectual disability, the scale was significantly positively correlated with somatic complaints, $r = .54$, and informant ratings of depressive symptoms, $r = .26$ (Benson & Ivins, 1992; Lunskey & Benson, 2001). In the present study the Depressive Self-Rating Scale had a mean of 13.68 and SD of 7.97. The Glasgow

Anxiety Scale for People with Intellectual—Disabilities hereafter called the Glasgow Anxiety Scale (Mindham & Espie, 2003) is a 27-item self-rating scale that has adequate internal consistency, $\alpha = .96$, criterion validity with the Beck Anxiety Inventory, $r_s = .75$, and 4-week test–retest reliability, $r = .95$, among adults with intellectual disability (Mindham & Espie, 2003). In the present study the Glasgow Anxiety Scale had a mean of 14.79 and *SD* of 8.87. In our study there was a moderate correlation between the Glasgow Anxiety Scale and Depressive Self-Rating Scale, $r = .53$, $p < .01$. Analyses were conducted separately for depressive and anxiety symptoms, and similar results were obtained, although findings were not as strong for anxiety. For the sake of simplicity, we created a composite measure of psychological distress by summing the *z* scores of the Depressive Self-Rating Scale and the Glasgow Anxiety Scale.

Stressful social interactions—The Inventory of Negative Social Interactions (Lakey, Tardiff, & Drew, 1994) is a 40-item self-report inventory inquiring about social situations that may be perceived as stressful. Sample items include “Said bad things about you” and “Took something of yours without asking.” Among adults with mild intellectual disability, this measure has been shown to have satisfactory reliability and criterion validity and was predictive of somatic complaints and depressive symptoms reported 8 months later (Lunsky & Benson, 2001; Lunsky & Bramston, 2006). All 40 items of the Inventory of Negative Social Interactions were used in this study.

The Lifestress Inventory (Bramston & Bostock, 1994) is a self-report measure of daily events or life situations that have been reported to be stressful by people with intellectual disability. This inventory has adequate 2-week test–retest reliability, internal consistency, and concurrent and criterion validity among people with intellectual disability (Bramston & Bostock, 1994; Bramston & Fogarty, 1995; Fogarty et al., 1997; Lunsky & Bramston, 2006). Three dimensions of stressful events are assessed in the Lifestress Inventory: Negative Interpersonal Relations (i.e., stressful social interactions), General Worry (i.e., stress surrounding everyday activities), and Coping (i.e., stress related to one’s disability). In this study we only used the Negative Interpersonal Relations dimension. Sample items include, “Have you had any arguments with anyone?” and “Do people tease you or call you names?” Three of the 13 items in this dimension were eliminated: 2 because they inquired about general stress related to a specific social partner (i.e., family or boyfriend/girlfriend) as opposed to a specific type of interaction and one because it was redundant with an item on the Inventory of Negative Social Interactions (i.e., others not listening to you). A composite measure of frequency and severity of stressful social interactions was created by summing scores from the 40-item Inventory of Negative Social Interactions and 10-item Negative Interpersonal Relations dimension of the Lifestress Inventory.

The response format was consistent across the Inventory of Negative Social Interactions and Negative Interpersonal Relations. In the frequency rating, participants indicated whether they had encountered the stressful situation in the past 2 weeks. In the severity rating, participants used a 4-point Likert-type scale containing verbal descriptors (no, a little, medium, and a lot) and numbers (1–4) to indicate the severity of stress incurred. Clear containers filled with varying amounts of colored water were also paired with these descriptor and numbers to provide a visual representation of the Likert-type scale options. Based on Fogarty et al. (1997), severity ratings were re-scored for all analyses such that a rating in which events that were not experienced or were experienced but not stressful were scored 0; events perceived to have a little stress, 1; events perceived to have medium stress, 2; and events with a lot of stress, 3. In the present study, adequate internal consistency was found for the frequency and severity of the Lifestress Inventory, $\alpha_s = .73$ and $.74$, respectively, and Inventory of Negative Social Interactions, $\alpha_s = .84$ and $.89$, respectively). There was also a moderate correlation between the frequency, $r = .45$, $p < .01$, and severity, $r = .42$, $p < .01$, of the Negative Interpersonal Relations dimension of the Lifestress Inventory and Inventory of Negative Social Interactions.

Inventory of Interpersonal Problems-32 (IIP-32)—This inventory (Barkham & Hardy, 1996) is a 32-item self-report measure of interpersonal skills that people may perceive as difficult (e.g., join a group or be assertive with others). In a recent investigation of the IIP-32 with adults who had mild intellectual disability, Kellett et al. (2005) conducted a factor analysis indicating that a four-dimension solution provided the best fit to the data. The four dimensions were Hard to Be Involved and Sociable (e.g., hard to join in on groups and hard to make friends), Hard to Be Assertive (e.g., hard to disagree with other people and hard to be firm when I need to be), Hard to Be Supportive (hard to take instructions from people who have authority over me and hard to really care about other people's problems), and Too Aggressive (e.g., I lose my temper too easily and argue with others too much). Among 255 adults with mild intellectual disability, good internal consistency, $\alpha = .72$ to $.89$, and 2-week test-retest reliability (.55 to .84) was demonstrated for these four dimensions and the Full-Scale IIP-32 score. These four dimensions differ in number of items included in each. Therefore, dimension scores were divided by the total number of items in that dimension. Participants used the same 4-point Likert-type scale as in the Lifestress Inventory and the Inventory of Negative Social Interactions to rate the difficulty of each item on the IIP-32.

Procedure

If requested, a caregiver was present during interviews to help participants feel comfortable; however, caregivers did not assist the participant in responding. A two-step pretest was used to determine whether each participant could reliably use a 4-point Likert-type scale and understood the meaning of stress. In the first step, participants were required to designate size-order relations among a set of clear containers with varying amounts of colored water, relate the containers to a written (no, a little, medium, and a lot) and numerical scale of size (1 to 4), and correctly indicate where their favorite and least favorite food items fell using the containers, numbers, or written words. In the second step, participants were given a definition of stress (consistent with Folkman & Lazarus, 1984) and required to provide an example of a stressful situation and define stress in their own words. This pretest was developed in a past study (Hartley & MacLean, 2005) and shown to result in minimal response bias during actual testing.

The Lifestress Inventory and Inventory of Negative Social Interactions were read to participants who passed the two-step pretest. They were then asked to rate the frequency and stress impact of each event as well as indicate the person involved in the stressful social interaction. Based on responses, four categories of persons involved in the interaction were identified: family, staff, people with intellectual disability, and people in the community. We asked participants to rate the difficulty of each item on the IIP-32. The Depressive Self-Rating Scale and the Glasgow Anxiety Scale were read aloud. The duration of the total session was 60 to 90 min.

Results

Data Analysis Plan

With the exception of analyses regarding the types of stressful social interactions commonly experienced, only the Severity of Stressful Social Interactions score was used in analyses. We based this decision on finding minimal differences when analyses were conducted separately for frequency and severity scores. However, the severity score accounted for more variance in outcome measures, suggesting that this score best captures the impact of stressful social interactions (e.g., regardless of the frequency of these interactions, experiencing highly severe stressful social interactions impacts psychological well-being).

The relation between stressful social interactions and psychological distress was examined through a hierarchical linear regression, in which we controlled subject characteristics

associated with psychological distress. Descriptive data was used to identify the frequency and severity of stressful social interactions experienced by adults with mild intellectual disability. A one-way repeated measure analysis of variance (ANOVA) was conducted to identify differences in the severity of stressful social interactions with various social partners (family, staff, people with intellectual disability, or community). Subject characteristic risk factors for stressful social interactions with various social partners were identified through correlations and ANOVAs. We examined the relation between stressful social interactions and psychological distress through a hierarchical linear regression, in which subject characteristics associated with psychological distress were controlled. Finally, we conducted a one-way repeated measure ANOVA and regressions to identify the interpersonal skills perceived as difficult by adults with mild intellectual disability and their relation to stressful social interactions. Table 2 presents the intercorrelations, means, and *SDs* for measures and Table 3 contains the means and *SDs*.

Stressful Social Interactions and Psychological Distress

In order to determine the relation between stressful social interactions and psychological distress, we first conducted analyses to identify, and later control for, significant associations between subject characteristics and psychological distress. Correlations were conducted between psychological distress and gender (0 = male, 1 = female), age (years), ethnicity (0 = Caucasian, 1 = not Caucasian), IQ (KBIT-2 Composite IQ standard score, $M = 61.82$, $SD = 5.52$), adaptive behavior (ABAS-II GAC standard score $M = 63.76$, $SD = 6.54$), and psychiatric disorder (0 = absent, 1 = present). There was no significant correlation between psychological distress and gender, $r = .06$, $p = .53$, age, $r = -.08$, $p = .41$, ethnicity, $r = .13$, $p = .17$, IQ, $r = -.07$, $p = .45$, or adaptive behavior, $r = -.06$, $p = .54$. There was a significant correlation between diagnosed psychiatric disorder and psychological distress, $r = .24$, $p = .01$, such that adults with mild intellectual disability diagnosed with a psychiatric disorder reported more psychological distress than did those without a psychiatric disorder. A one-way ANOVA indicated that psychological distress did not significantly differ between participants living in group homes, with family or a roommate, or alone.

We conducted a hierarchical linear regression in which the presence of a diagnosed psychiatric disorder (0 = absent, 1 = present) was entered in the first step, and overall severity of stressful social interactions was entered in the second. After accounting for the presence of diagnosed psychiatric disorders, we found that overall severity of stressful social interactions was significantly positively associated with psychological distress, $F(2, 112) = 19.95$, $p < .01$, $adj R^2 = .26$, accounting for 26% of the observed total variance in psychological distress.

Types of Stressful Social Interactions

Of the 50 stressful social interactions inquired about, participants reported experiencing from 3 to 41 within the past 2 weeks ($M = 15.80$, $SD = 7.83$). The mean severity rating for stressful social interactions was 2.07 ($SD = .56$) on the 4-point Likert-type scale. Table 4 displays the stressful social interactions with the highest and lowest frequency and severity.

Social Partners

A one-way repeated measure ANOVA and Bonferroni-corrected paired sample *t* tests, $p < .01$, were used to determine whether the severity of stressful social interactions differed by social partner. There was a significant difference, $F(3, 112) = 46.03$, $p < .01$, $\eta_p^2 = .58$, and a significantly higher severity of stressful social interactions with people who have intellectual disability than with family, $t(113) = -5.22$, $p < .01$, staff, $t(113) = -4.18$, $p < .01$, or community, $t(113) = 9.59$, $p < .01$. The severity of stressful social interactions with staff, $t(113) = -7.37$, $p < .01$, and family, $t(113) = 5.03$, $p < .01$, was significantly higher than for interactions with

community. There was a trend toward a higher severity of stressful social interactions with staff as compared with family, $t(113) = -2.01, p = .05$.

Hierarchical linear regressions were then employed to determine the extent to which stressful social interactions with various social partners contributed to psychological distress. Presence of a psychiatric diagnosis was entered in the first step, followed by the severity of stressful social interactions for each social partner (i.e., family, staff, people with intellectual disability, and community) in the second step. As shown in Table 5, after controlling for psychiatric disorders, we found that severity of stressful social interaction involving people with intellectual disability and staff were significant predictors of psychological distress.

Subject Characteristic Risk Factors

Correlations between subject characteristics (gender, age, ethnicity, IQ, adaptive behavior, and psychiatric disorder) and the severity of stressful social interactions with family, staff, people with intellectual disability, and community were conducted. Psychiatric disorder and IQ were the only subject characteristics significantly associated with the severity of stressful social interactions. The presence of a psychiatric disorder was related to a higher severity of stressful social interactions with people who have who have an intellectual disability, $r = .37, p < .01$, staff, $r = .28, p < .01$, and family, $r = .20, p = .04$. There was a positive correlation between IQ and severity of stressful social interactions with family, $r = .28, p < .01$, and community, $r = .34, p < .01$. One-way AN-OVAs indicated that there was not a significant difference in the severity of stressful social interactions with people who have intellectual disability, $F(3, 111) = 1.88, p = .14$, staff, $F(3, 111) = 1.15, p = .33$, family, $F(3, 111) = 0.84, p = .47$, or community, $F(3, 111) = 1.81, p = .15$, by living status (group home, family/host family, roommate/partner, and alone).

Interpersonal Skill Difficulties and Stressful Social Interactions

A one-way repeated measure ANOVA and Bonferroni-corrected paired sample t tests, $p < .01$, were used to identify potential difference in the difficulty of the four dimensions of interpersonal skills on the IIP-32. There was a significant difference in difficulty rating for the four dimensions, $F(3, 109) = 27.64, p < .01, \eta_p^2 = .63$. The Hard to Be Assertive dimension ($M = 0.96, SD = 0.73$) was rated as significantly more difficult than was Hard to Be Supportive ($M = 0.50, SD = 0.52$), $t(112) = 6.83, p = .01$. The Hard to Be Involved and Sociable dimension ($M = 0.85, SD = 0.61$) was rated as significantly more difficult than was the Hard to Be Supportive dimension, $t(112) = 5.70, p < .01$. Too Aggressive ($M = 1.01, SD = 0.65$) was rated as significantly more difficult than was Hard to Be Supportive, $t(112) = -8.31, p < .01$, and Hard to Be Involved and Sociable, $t(112) = -2.93, p < .01$. There was not a significant difference in the difficulty of the dimensions Hard to Be Assertive and Too Aggressive, $t(112) = -0.72, p = .47$. There was also no significant difference in the difficulty of the dimensions Hard to Be Involved and Sociable and Hard to Be Assertive, $t(112) = -2.44, p = .02$.

A hierarchical linear regression was conducted to determine the relation between the IIP-32 dimension scores and the Severity of Stressful Social Interactions. The only subject characteristic significantly correlated with overall severity of stressful social interactions was the presence of diagnosed psychological disorder. Therefore, the variable psychiatric disorder was entered in the first step, followed by the IIP-32 dimension difficulty scores. As shown in Table 6, after controlling for psychiatric disorders, we found that the Too Aggressive dimension was a significant predictor of overall severity of stressful social interactions.

Discussion

Adults with mild intellectual disability are vulnerable to experiencing stressful social interactions, and the experience of stress has a detrimental impact on their psychological well-being (Hartley & MacLean, 2005; Lunsky & Benson, 2001; Lunsky & Havercamp, 1999). In order to better understand the stressful social interactions experienced by these adults, we examined the relation between stressful social interactions and psychological distress, types of stressful social interactions commonly and severely experienced, social partners involved in these interactions, subject characteristic risk factors for these interactions, and interpersonal skills that contribute to perceptions of stress in adults with mild intellectual disability.

Perceptions of stressful social interactions accounted for 26% of the variance in psychological distress of adults with mild intellectual disability. This finding is consistent with past reports of the broader association between stress and a variety of symptoms of psychopathology in adults with intellectual disability (Hartley & MacLean, 2005; Hastings et al., 2004; Lunsky & Havercamp, 1999). Efforts to reduce the occurrence of stressful social interactions and help adults with mild intellectual disability better cope with these interactions when they cannot be prevented may markedly reduce psychological distress in this population.

The stressful social interactions with the highest prevalence involved hearing others argue and minor or unintentional negative actions of others (e.g., others getting in your way when busy, not listening to you, and acting bossy). These same types of minor and unintentional negative actions of others generally had the lowest severity of stress (e.g., bothered you by complaining and made you sick with cold/flu). In contrast, the stressful social interactions with low prevalence typically included lack of or inappropriate positive attention (e.g., failing to appreciate positive things) and more serious and intentional negative actions of others (i.e., damaged property, put you down for what you believe, or mimicked you). Stressful social interactions involving more serious and intentional negative actions of others largely had the highest severity (e.g., damaged your property and told private or bad things about you to others). These findings are generally consistent with past research (Bramston et al., 1999; Hartley & MacLean, 2005; Lunsky & Benson, 2001; Lunsky & Bramston, 2006).

Although many of these stressful social interactions are likely to occur regardless of the living, work, and social environments of adults with mild intellectual disability, it may be possible to minimize the occurrence of certain stressful social interactions through adapting the environments of adults with mild intellectual disability. For instance, hearing others argue, the most frequent stressful social interaction experienced by adults with mild intellectual disability, may be reduced by designating “argue-free” zones (e.g., can only argue outside of the building at work or in the basement of home), so that adults with mild intellectual disability do not have to hear their coworkers, family, or staff argue. Similarly, assigning adults with mild intellectual disability individual work areas at jobs or group homes may help reduce another frequent stressful social interaction, namely, having others get in your way when you are busy. Given that it is infeasible to eliminate all stressful social interactions, coping interventions aimed at teaching these adults to successfully cope with stress are also needed to limit the negative impact of these interactions.

Our participants reported that stressful social interactions most frequently involved other people with intellectual disability, which is consistent with previous reports (Benson & Fuchs, 1999; Chaney, 1996; Hartley & MacLean, 2005; Lunsky, 2003). These adults perceived stressful social interactions with other people who have intellectual disability as having the highest severity of stress. This finding contradicts earlier reports that stressful social interactions with staff and family had the highest severity (Bramston et al., 1999; Hartley & MacLean, 2005; Lunsky & Benson, 2001). Differences in methodologies may have caused this

discrepancy. Previous studies were based on single questions, whereas in this study we assessed a broad spectrum of social interactions. These different approaches require different response strategies. When a single question is used, adults with mild intellectual disability have to remember and then compile the severity of numerous stressful social interactions into one answer. In the present study, this population reported separately on the severity of stress for various stressful social interactions. Furthermore, we examined adults with mild intellectual disability who were receiving disability services and who generally participated in day centers, had jobs, and lived in group homes, where they interacted with other people who have intellectual disability. In two of the previous studies (Bramston et al., 1999; Lunsy & Benson, 2001), participants often worked in sheltered workshops with other people who had intellectual disability; however, the authors did not report their living status. It may be that participants in these previous studies often lived with family and, thus, had more interactions with these social partners. In the present study, stressful social interactions regarding other people with intellectual disability and staff were significant predictors of psychological distress.

Having a psychiatric disorder placed adults with mild intellectual disability at risk for experiencing stressful social interactions with a variety of social partners. As in the general population, the relationship between psychiatric disorders and stressful social interactions is likely bidirectional; experiencing stressful social interactions may lead to psychopathology, and people with psychiatric disorders may act in ways that evoke stressful social interactions (Davila, Hammen, Burge, Paley, & Daley, 1995; Hammen, 1991). Adults with mild intellectual disability who had higher IQs experienced more frequent stressful social interactions with family members and people in the community than with adults who had lower IQs. Adults functioning in the higher range of mild intellectual disability may interact more frequently with people in the community than do their peers who are lower functioning. Moreover, higher cognitive functioning adults with mild intellectual disability may pick up on subtle criticisms from family and people in the community more readily than lower cognitive functioning adults. A higher level of cognitive functioning may also lead to more multifaceted and potentially stressful relationships with family and people in the community.

The interpersonal skill reported to be most difficult was controlling aggression. This was also the interpersonal skill reported to be most difficult in a previous study using the IIP-32 (Kellett et al., 2005). This information builds on current understanding of interpersonal skill deficits, which is largely based on the perspective of caregivers (Kellett et al., 2004; Kellett et al., 2005). Difficulty controlling aggression was also a significant predictor of stressful social interactions. This finding suggests that in order to reduce stressful social interactions, and thereby increase psychological health, social skill training should be aimed at teaching anger management strategies to adults with mild intellectual disability. There are several promising anger management interventions for adults with intellectual disability (e.g., Rose, West, & Clifford, 2000; Willner, Jones, Tams, & Green, 2002) that may markedly decrease the experience of stressful social interactions. Research is needed to determine the effect of these interventions on reducing the experience of stressful social interactions.

Results from this study have limited generalizability. As previously mentioned, we examined adults with mild intellectual disability receiving disability services and who often spent time in day centers, jobs, and group homes with other people with intellectual disability. The experience of stressful social interactions may differ for such adults in other settings. There are also several methodological limitations to the present study. We employed a correlational methodology to investigate the relationship between stressful social interactions and psychological distress. This methodology does not allow for an understanding of the complex bidirectional relations between stressful social interactions and psychological distress. Moreover, it does not allow for an investigation of the indirect effects of stressful social interactions on psychological distress. For instance, the experience of stressful social

interactions may increase unhealthy behaviors (e.g., smoking cigarettes, not taking medications, overeating, poor sleep, or social isolation), which then lead to poor psychological health.

In the present study we used self-report measures of stressful social interactions. With the use of pretest procedures, researchers suggest that adults with mild intellectual disability can reliably respond to open-ended questions and use Likert-type scales (Finlay & Lyons, 2002; Hartley & MacLean, 2006). Moreover, self-report measures of stress have been shown to be correlated with caregiver-reported measures of stress for this population (Lunsky & Bramston, 2006). However, observational studies and caregiver report of stressful social interactions are needed to build on current findings of the types of social interactions for which adults with mild intellectual disability are most vulnerable. In addition, we utilized a composite measure of psychological distress based on symptoms of depression and anxiety. Research on the relation between stressful social interactions and specific psychiatric disorders is needed. In the general population, stressful social interactions have been shown to precede the onset of depression and perpetuate depressed affect over time (Davila et al., 1995; Hammen, 1991). Stressful social interactions may be similarly involved in depression for adults with mild intellectual disability.

In summary, stressful social interactions with the highest prevalence involved hearing others argue and minor or unintentional negative actions of others, whereas the stressful social interactions with the highest severity involved more serious and intentional negative actions of others. Efforts to reduce stressful social interactions in adults with mild intellectual disability who attend day centers, jobs, and group homes should be concentrated on situations in which they interact with other people with intellectual disability. Adults with psychiatric disorders are at greater risk of experiencing stressful social interactions. Similarly, having a higher IQ is associated with more stressful social interactions with family and community members. Social skill training should be aimed at teaching adults with mild intellectual disability how to manage anger in order to reduce the experience of stressful social interactions.

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Table 1

Characteristics of Participants

| Characteristic | <i>n</i> |
|------------------------------|----------|
| Gender | |
| Female | 54 |
| Male | 60 |
| Ethnicity | |
| White | 95 |
| Hispanic | 8 |
| Black Asian/Pacific Islander | 3 |
| Native American | 2 |
| Living status | |
| Group home | 69 |
| Family/Host family | 10 |
| Roommate/Partner | 8 |
| Alone | 26 |

Table 2

Intercorrelations Measures

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|
| Stressful social interaction | | | | | | | | | | | | | | |
| Frequency | | | | | | | | | | | | | | |
| 1. Overall | | | | | | | | | | | | | | |
| 2. With people with ID ^a | .66** | | | | | | | | | | | | | |
| 3. With staff | .48** | .11 | | | | | | | | | | | | |
| 4. With family | .42** | -.13 | -.01 | | | | | | | | | | | |
| 5. With community | .10 | -.20* | .02 | .20* | | | | | | | | | | |
| Severity | | | | | | | | | | | | | | |
| 6. Overall | .79** | .38** | .25* | .29** | .04 | | | | | | | | | |
| 7. With people with ID | .50** | .65** | .20* | -.11 | -.18 | .70** | | | | | | | | |
| 8. With staff | .47** | .12 | .53** | .24** | -.13 | .53** | .20* | | | | | | | |
| 9. With family | .32** | -.09 | -.05 | .69** | .31** | .45** | -.06 | .06 | | | | | | |
| 10. With community | .16 | -.15 | .08 | .20* | .82** | .17 | -.12 | .04 | .21* | | | | | |
| Interpersonal skill difficulty | | | | | | | | | | | | | | |
| 11. Hard to be involved & sociable | .34** | .30** | .05 | .10 | .07 | .36** | .33** | .09 | .10 | .12 | | | | |
| 12. Hard to be assertive | .39** | .41** | .01 | .15 | .14 | .42** | .44** | .04 | .18 | .19 | .48** | | | |
| 13. Hard to be supportive | .25** | .16 | .17 | .13 | -.14 | .27** | .17 | .21* | .15 | -.11 | .33** | .38** | | |
| 14. Too aggressive | .37** | .32** | .14 | .21* | -.09 | .42** | .37** | .20* | .25* | -.05 | .25** | .41** | .39** | |
| Psychological distress | | | | | | | | | | | | | | |
| 15. Composite | .50** | .34** | .30** | .14 | -.02 | .50** | .34** | .33** | .14 | .03 | .44** | .26** | .46** | .42** |

^aIntellectual disability.

Table 3Means and *SDs* of Measures of Stressful Social Interactions

| Measure | Mean | <i>SD</i> | Range | Potential range |
|--------------------------------------|-------|-----------|-------------|-----------------|
| Frequency | | | | |
| Overall | 15.80 | 7.83 | 3–41 | 0–50 |
| With people who have ID ^a | 7.14 | 5.43 | 0–29 | 0–50 |
| With staff | 3.73 | 3.69 | 0–22 | 0–50 |
| With family | 2.60 | 3.74 | 0–18 | 0–50 |
| With community | 0.66 | 1.18 | 0–5 | 0–50 |
| Severity | | | | |
| Overall | 35.07 | 22.06 | 4–116 | 0–150 |
| With people who have ID | 15.24 | 14.08 | 0–80 | 0–150 |
| With staff | 8.87 | 9.97 | 0–61 | 0–150 |
| With family | 6.20 | 9.80 | 0–50 | 0–150 |
| With community | 1.46 | 2.72 | 0–12 | 0–150 |
| Interpersonal skill difficulty | | | | |
| Hard to be involved & sociable | 0.85 | 0.61 | 0–2.5 | 0–3 |
| Hard to be assertive | 0.96 | 0.73 | 0–3 | 0–3 |
| Hard to be supportive | 0.50 | 0.52 | 0–2.50 | 0–3 |
| Too aggressive | 1.01 | 0.65 | 0–2.75 | 0–3 |
| Psychological distress | | | | |
| Composite | –0.03 | 1.75 | –2.72–15.07 | |

^aIntellectual disability.

Table 4

Prevalence of Most and Least Frequent Stressed Social Interactions and Mean Severity for Lowest and Highest Severe Stressful Social Interactions

| Stressful social interaction | %/Mean | SD |
|---|--------|-----|
| Frequency (%) | | |
| Most | | |
| Hear others argue ^a | 71.1 | – |
| When busy, people get in way ^a | 64.0 | – |
| Butted into your business ^b | 62.8 | – |
| Acted bossy ^b | 61.1 | – |
| Didn't listen to you ^a | 54.9 | – |
| Least | | |
| Overemphasized something you did ^b | 8.0 | – |
| Didn't take positive things that were important to you seriously ^b | 9.7 | – |
| Mimicked or imitated you ^b | 13.3 | – |
| Others damaged your property ^b | 15.0 | – |
| Put you down for what you believe ^b | 15.0 | – |
| Mean stress impact | | |
| Highest | | |
| Told private things about you ^b | 2.55 | .69 |
| Told bad things about you to another person ^b | 2.54 | .71 |
| Was in trouble lately ^a | 2.53 | .67 |
| Others damaged your property ^b | 2.50 | .73 |
| Lied to you ^b | 2.50 | .64 |
| Lowest | | |
| Bothered you by talking about their problems ^b | 1.70 | .73 |
| Didn't take positive things you did seriously ^b | 1.78 | .83 |
| Bothered you by complaining ^b | 1.80 | .82 |
| Made a scene ^b | 1.85 | .83 |
| Made you sick with a cold or the flu ^b | 1.88 | .81 |

^aLifestress Inventory.

^bInventory of Negative Social Interactions.

Table 5

Summary of Hierarchical Regression Analysis for Severity of Stressful Social Interactions (SSSI) With Various Social Partners Predicting Psychological Distress

| Model/Predictor variable | SE | | Adj R ² | F change | Within set t | Partial r |
|---------------------------|-----|-----|--------------------|----------|--------------|-----------|
| | B | β | | | | |
| 1 | | | | | | |
| Covariate | | | | 4.90* | | |
| Psychiatric disorder | .79 | .22 | .04 | | 2.21* | .22 |
| 2 | | | | | | |
| Main effects of SSSI with | | | .17 | 4.83** | | |
| People who have ID | .04 | .29 | | | 2.85** | .26 |
| Staff | .05 | .26 | | | 2.70** | .25 |
| Family | .02 | .13 | | | 1.32 | .12 |
| Community | .01 | .02 | | | .22 | .02 |

Note. Interactions among main effects were examined and did not account for additional variance in psychological distress. ID = intellectual disability.

* $P < .05$.

** $P < .01$.

Table 6
 Summary of Hierarchical Regression Analysis for IIP-32 Dimensions Predicting Overall Severity of Stressful Social Interactions

| Model/Predictor variable | B | SE B | β | Adj R^2 | F change | Within set t | Partial r |
|--------------------------|-------|------|---------|-----------|----------|----------------|-------------|
| 1 | | | | | | | |
| Covariate | | | .29 | | 46.07*** | | |
| Psychiatric disorder | 24.86 | 3.66 | .55 | | | 6.79** | .55 |
| 2 | | | | | | | |
| Main effects | | | .41 | | 6.52*** | | |
| Hard to be involved | .47 | .53 | .11 | | | .89 | .09 |
| Hard to be assertive | .79 | .96 | .10 | | | .82 | .08 |
| Hard to be supportive | -.04 | .88 | -.01 | | | .04 | -.01 |
| Too aggressive | 2.36 | .73 | .28 | | | 3.23** | .30 |

Note. Interactions among main effects were examined and did not account for additional variance in severity of stressful social interactions.

*** $P < .01$.