



Psychometric characteristics of the adult scale of hostility and aggression: Reactive/proactive (A-SHARP) and relation to psychiatric features of adults with developmental disabilities



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ARTICLE INFO

Article history:

Received 5 June 2014
Accepted 14 July 2014
Available online

Keywords:

A-SHARP
Developmental disabilities
Matlock
Aman
Aggression
Hostility scale
Psychometrics

ABSTRACT

Recently, we described the development of the Adult Scale of Hostility and Aggression: Reactive/Proactive (A-SHARP) (Matlock & Aman, 2011). The A-SHARP was derived by factor analysis of ratings of 512 adults with intellectual and developmental disabilities (IDD), and its resulting five subscales were designated as (1) Verbal Aggression, (2) Physical Aggression, (3) Hostile Affect, (4) Covert Aggression, and (5) Bullying. The items on each subscale are rated first for severity (the Problem scale) and second for “origin” (i.e., to reflect extent to which behaviors are *planned* or *reactive*; “Provocation scale”). This study evaluated psychometric characteristics of the A-SHARP in the developmental sample of 512 adults. Mean item-whole subscale correlations ranged from .67 (Physical Aggression) to .78 (Verbal Aggression) on the Problem scale. Interrater reliability ($n = 39$) ranged from .59 to .78 on the Problem subscales and from .54 to .78 on the Provocation subscales. For the entire sample, the correspondence between the Problem and Provocation subscales was low (-0.04 to 0.28), indicating independence between the scales. The A-SHARP Physical subscale was strongly correlated with Behavior Problems Inventory (BPI) Aggression frequency ratings ($n = 512$, $r = 0.79$), and strongly with BPI severity ratings ($r = .86$). We examined congruent validity between A-SHARP subscale scores on the one hand and four DSM-IV categories and Down syndrome on the other. A number of significant associations were observed between the A-SHARP subscales and diagnostic group, supporting the A-SHARP’s congruent validity. Likewise, we examined the correspondence between use of psychoactive medicines and A-SHARP scores and found a number of associations between medication use and higher subscale scores. Overall, these results support the reliability and validity of the A-SHARP, and, as intended, the problem and provocation subscales appear to assess different constructs. However, much more work is needed to determine fully how well each of the subscales performs psychometrically.

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1. Introduction

Problem levels of aggression among people with intellectual and other developmental disabilities (IDD) can occur frequently (Hill & Bruininks, 1984; Jacobson, 1982; Ross, 1972). Therefore, it is important to have valid and reliable

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measurement tools for assessing aggression and hostility. Researchers have made distinctions between forms of aggressive behaviors that appear to be clinically important. One of the most important distinctions is that between aggressive behavior primarily motivated by the desire to acquire *some tangible reward* or some goal and that which is more impulsive or *in reaction* to others' behavior. Dodge and Coie (1987) labeled these “proactive” (or instrumental) aggression and “reactive” aggression, respectively. Reactive aggression is displayed in response to a perceived threat, provocation, or frustration. It is generally considered to be impulsive and typically occurs with a strong expression of negative, hostile emotion. Proactive aggression is a *non*-provoked aggressive act motivated to gain a resource or is directed toward a person with the purpose of bullying, domination, or intimidation. Whereas reactive aggression is a hostile *response*, proactive aggression is *planned*, instrumental, and more likely to be learned.

Dodge and Coie (1987) developed the first empirically derived instrument to assess these two constructs in typically developing children. This was later followed by additional tools to achieve the same ends (Brown, Atkins, Osborne, & Milnamow, 1996; Little, Henrich, Jones, & Hawley, 2003). When factor analyzed, these instruments produced two factors corresponding to the constructs of proactive and reactive aggression. The psychometric properties of the Dodge and Coie (1987), Brown et al. (1996), and Little et al. (2003) instruments lent support to the constructs' validity. A reliable, valid scale for assessing the severity of individuals' aggressive behaviors and, for indicating whether they are instrumental or impulsive should be useful to clinicians in the IDD field.

We developed the Adult Scale of Hostility and Aggression: Reactive/Proactive (A-SHARP) to measure severity of aggression and the “direction” of aggression (reactive vs. proactive) in adults with IDD (Matlock & Aman, 2011). In addition to measuring problem severity, we included a scale intended to assess the “origin” (reactive versus proactive) of aggressive behavior. This second attribute (reactive/proactive) was **not** intended to reflect the functional intent of aggression as understood in applied behavior analysis. Rather, it reflects what many clinicians characterize as hot and cold aggression. Elsewhere (Matlock & Aman, 2011), we described the A-SHARP and its empirical development. It has 52 items, which are rated in terms of the topography (appearance) of the behavior, and many of these items were also rated in terms of provocation (i.e., who initiated the behavior). In this article, we present psychometric characteristics of the A-SHARP. The development and psychometric characteristics of a parallel instrument, the Children's Scale of Hostility and Aggression: Reactive/Proactive (C-SHARP) (which complements the A-SHARP) have been described elsewhere (Farmer & Aman, 2009, 2010).

2. Methods

2.1. The A-SHARP

The A-SHARP was derived based on caregiver ratings of 512 adults with IDD (Matlock & Aman, 2011). The Comprehensive Exploratory Factor Analysis program (Browne et al., 2004) was used to derive factors from the original list of 58 items. The factors that emerged were labeled as: 1. Verbal aggression (9 items), 2. Physical aggression (13 items), 3. Hostile affect (11 items), 4. Covert aggression (8 items), and 5. Bullying (7 items). Forty-eight items of the A-SHARP are scored, although there are 52 items in total to maintain a parallel structure with the C-SHARP. The items of the A-SHARP are rated on Likert scales. The *Problem scale*, which describes aggressive behaviors, is rated on a 4-point scale ranging from 0 (never happens) to 3 (severe and/or very frequent problem). In addition, there is a 5-point *Provocation Scale*, which is intended to characterize the origin of the behavior (reactive vs. proactive). Provocation was rated from –2 (only when provoked, when s/he “just loses it”), through 0 (equally likely to happen with or without provocation), to +2 (always the first to act [i.e., always the instigator, the one who “starts it”]). As some Problem Behavior items appeared a priori to be reactive or proactive (e.g., intimidates others; steals from others when they are not looking), we did not include provocation ratings for 22 of them. In this study, raters assessed subjects' behavior over the last 6 months. The A-SHARP is available free from <http://psychmed.osu.edu/>.

2.2. The behavior problems inventory aggression subscale

We chose the 11-item “Aggressive/Destructive Behavior” subscale of the Behavior Problems Inventory (BPI; Edlinger, 1983; Rojahn, Matlock, & Tasse, 2000; Rojahn, 1984) as a measure of the convergent validity of the A-SHARP. We made the decision based on the BPI Aggressive Behavior subscale's favorable validity and reliability statistics and relative brevity (Rojahn, 1984). BPI items were scored on a five-point *frequency scale* (never = 0 through hourly = 4) and on a four-point *severity scale* (no problem = 0 through severe problem = 3).

2.3. Subjects

In deriving the A-SHARP, we employed stratified sampling, with the intention of sampling approximately 25% of the sample with severe/profound ID, 35% with moderate ID, and 45% with mild ID. The actual functional levels were as follows: severe/profound, $n = 115$ (22.5%); moderate, $n = 172$ (33.6%); mild, $n = 222$ (43.4%); and unknown, $n = 3$ (0.6%) (Matlock & Aman, 2011). Age ranged from 19 to 84 years ($M = 41.5$; $S.D. = 12.5$). In all, 61.5% were males and 38.5% were females. Ninety-three (18.2%) were in supported living, 24 (4.7%) were in developmental centers, and 358 (68.4%) were in sheltered workshops. Raters knew their subjects an average of 5.48 years ($S.D. = 4.88$).

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