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To Work or Not To Work: Motivation (Not Low IQ) Determines Symptom Validity Test Findings

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Abstract

Social Security Disability Determinations Service (DDS) claimants are seeking compensation for an inability to work (Chafetz, 2010). These usually low-functioning claimants fail Symptom Validity Tests (SVTs) at high rates (Chafetz, 2008), typically over 40%. In contrast, claimants for the Rehabilitation Service in Louisiana (LRS) are seeking to work. Individuals referred by the Department of Child and Family Services (DCFS) are seeking reunification with their children. All three groups consisted of equivalently low-IQ claimants when considering only those who passed SVTs. Only the DDS group failed SVTs at high rates, whereas LRS claimants failed at minimal rates and DCFS claimants did not fail. Thus, intrinsic motivation explains effort in this particular study of low-functioning claimants: those seeking to work or to look good to reunify with their children pass SVTs at high rates.

Keywords: Symptom validity; Low IQ; Motivation; Work

Introduction

To determine the underlying nature of noncredible behavior, psychologists need to understand motivation. In both malingering and somatoform presentations, the symptoms and findings are often noncredible, but the differences between the two have been proposed to involve self- (somatoform) versus other- (malingering) deception (Boone, 2007). Patients with factitious disorders clearly deceive others, but the gain is thought to be psychological, having to do with the need for attention by doctors from a "patient" in a sick role (American Psychiatric Association, 2000; Boone, 2007; Delis & Wetter, 2007). As with somatoform disorders, the motivation in factitious disorders is thought to be internal psychological. Greiffenstein (2009) has explored the complexity of motivation, citing the study by Paniak, Reynolds, Toller-Lobe, Melnyk, Nagy, & Schmidt (2002) in which it was common in litigated minor head injury cases for a psychologically disturbed patient initially to promote cognitive symptoms to gain a doctor's attention, but then turn to pursuing compensation.

Financial incentive motivation has been studied by Greve, Ord, Bianchini, and Curtis (2009), who showed that the higher amounts of federal workers compensation (WC) benefits, compared with state WC benefits, lead to a higher base rate of malingering. In a meta-analytic review, Binder and Rohling (1996) showed that "money matters" and that there was more abnormality and disability in patients with financial incentives though they had less severe injuries. Bianchini (2010) has explored many different motivation–emotional factors involved in prolonging disability presentations, including attorney involvement (Bernacki & Tao, 2008), administrative delays (Sinnott, 2009), and childhood psychological trauma (Harkonmaki et al., 2007), any of which can affect motivation.

Flaro, Green, and Robertson (2007) showed that Word Memory Test (WMT) effort failure is 23 times higher in WC claimants with mild traumatic brain injury than in a group of parents seeking custody of their children. Presumably, the parents are motivated to look good to have their children returned to them, whereas the WC claimants have a motivation to appear less functional, given a compensation incentive. The failure rate was minimal in these motivated parents with an IQ <75, but the highest failure rate (48%) occurred in another group of university students seeking ADHD assessment for accommodations. Thus, cognitive abilities were uncorrelated with effort failure.

The present study seeks to determine how motivations about pursuing work and about regaining rights to children participate in a low-functioning claimant's effort on SVTs. The Social Security Administration (SSA) through the state Disability Determinations Services (DDSs) examines whether claimants are disabled and thereby deserving of compensation under the law (www.socialsecurity.gov/disability/professionals/bluebook/; Chafetz, 2010). Disability, according to SSA, is "the inability to engage in any substantial gainful activity due to any medically determinable physical or mental impairment" (Social Security Advisory Board, 2003; U.S. Dept. Health and Human Services, 1994). This extreme definition of disability has led to problems with the program. In particular, claimants are forced to prove total inability to work because of their impairments, which often leads to exaggeration and frank malingering (Chafetz, 2008, 2010; Chafetz, Abrahams, & Kohlmaier, 2007). Thus, these claimants can be described, as motivated to show that they cannot work, that they are unable "to engage in any substantial gainful activity."

The Vocational Rehabilitation Program of the Louisiana Rehabilitation Services (LRSs) within the Louisiana Workforce Commission is a career development and independence program for individuals with disabilities (http://www.laworks.net/ WorkforceDev/LRS/LRS_Main.asp). LRS provides comprehensive rehabilitation services that include work evaluation and job readiness, assessment for assistive technology, job counseling, and medical and therapeutic services. The services help provide training, skills, resources, and problem-solving related to getting and keeping a job. Claimants seeking help through LRS can thus be described as motivated to obtain work, and it is noteworthy that the type of jobs typically offered approximately the same dollar amount per month as Social Security Disability compensation (Chafetz, 2009).

The Department of Children and Family Services (DCFS, formerly Office of Community Services—OCS) has a major component whose goal is child protection. Parents sent to the senior author for evaluation from DCFS are required to be evaluated concerning their parenting abilities for their children. Their motivation can best be described as attempting to do everything in their power to regain reunification.

The objective of the present study is to determine whether these three different motivations yield differential effort on SVTs. We hypothesize that those claimants who are motivated to prove their inability to work (DDS claimants) will show worse effort on SVTs than claimants seeking to go to work (LRS), or claimants seeking to look good to reunify with their children (DCFS).

Methods

Participants

Three groups of low-functioning (Full-Scale IQ [FSIQ], VIQ, or VCI < 80) participants were used in this paper: (a) DCFS adults: 39 individuals referred from the DCFS for an evaluation regarding a complaint related to caring for their children; 25 met criteria for low cognitive functioning; (b) LRS adults: 73 individuals referred for an evaluation to aid in obtaining work or work-related training; 55 met criteria for low cognitive functioning; and (c) DDS adults: 58 claimants referred; 55 with full data sets (no missing SVT), all 55 met criteria for low functioning and were included. Table 1 shows the demographic characteristics of these three groups.

	DDS	LRS	DCFS	
Sample size ^a	55/44	55/45	25/23	
Age ^b	29.1 (11.6)	34.4 (12.6)	30.0 (9.9)	
Education ^b	9.3 (1.9)	10.6 (1.5)	10.1 (1.6)	
FSIQ ^c	62.5 (9.0)//67.5 (6.0)	68.3 (8.6)//69.2 (8.3)	71.7 (7.7)//71.7 (7.7)	
Gender	26M, 18F	31M, 14F	6M, 17F	
Ethnicity	37-A, 7-W, 0-O	35-A, 7-C, 3-O	15-A, 6-C, 2-O	

Table 1. Sample characteristics for the DDS, LRS, and DCFS groups

Notes: A = African American; C = Caucasian; O = Other; M = male; F = female; DDS = Disability Determinations Service; LRS = Louisiana Rehabilitation Service; DCFS = Department of Child and Family Service; FSIQ = Full-Scale IQ.

^aLow-functioning sample size: Before removal of truly impaired/after removal.

 ${}^{b}M$ (SD) using Ns after removal of truly impaired.

^cFSIQ for all in group//after removal of failing MSVT.

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To be eligible, all participants had to have an FSIQ, VIQ, or VCI < 80 on the Wechsler Adult Intelligence Scale (WAIS)-III, WAIS-IV, or Wechsler Abbreviated Scales of Intelligence (WASI). Participants were then removed from the sample if they met conditions for impairment according to Howe and Loring's (2009) criteria for the "dementia-profile" on Green's (2004) Medical Symptom Validity Test (MSVT). This procedure was important so that we could assure SSA officials that these findings were not based on claimants who were truly impaired.

Permissions

At the time the claimants signed the HIPAA notification, they were asked for permission to use the scores from their examination for research and assured that their identity would be protected. Permission was granted if the claimant initialed next to the research notification. Only one claimant declined and her scores were not used. The author presented preliminary findings of this research at a statewide Louisiana DDS meeting (April 28, 2003), and the local DDS Medical Liaison Officer provided written acknowledgment of this research. Characteristics of the DDS samples have been described previously (Chafetz, 2008; Chafetz et al., 2007), and preliminary comparisons of these three groups have been presented previously (Chafetz, 2009; Prentkowski & Chafetz, 2010).

Procedures

Green's (2004) MSVT was used to assess quality of effort for all subjects. The MSVT is a forced-choice test that consists of 10 pairs of words presented twice to each subject on a computer screen. Examinees are then asked to choose the correct target words for pairs consisting of a target word and a foil. In practice, because of complaints of reading difficulties, the examiner read the words as they were presented on the screen, thereby effecting a combined oral and visual presentation of the word-pairs. The measures produced by the MSVT include Immediate Recognition (IR), Delayed Recognition (DR), Consistency (Con); Paired-Associate Recall (PA), and Free Recall (FR).

The methods of Howe and Loring (2009) were used to determine whether those who failed the MSVT were truly impaired. In order to be considered as "truly impaired," claimants had to meet criteria for the "dementia-profile": (a) failure (<90%) on any of the first three measures of the MSVT; (b) no scores significantly below chance (<30%); (c) at least a 20-point difference between the mean of the first three measures (IR, DR, and Con) and the mean of the last two measures (PA and FR): First 3 > last 2 by at least 20-points; (iv) IR and DR are greater than FR; and (v) PA > FR. Those who were considered truly impaired by these criteria were not included in the analyses, as it is considered that failure on the MSVT was due to impairment and not poor effort.

However, Singhal, Green, Ashaye, Shankar, and Gill (2009), using the MSVT, have shown that simulators can produce the truly impaired ("dementia") profile. Thus, additional critical reasoning using the Slick, Sherman, & Iverson (1999) criteria was needed. In particular, two DDS participants and one LRS participant who met the true impairment criteria were not removed from the database because they had an FSIQ score >70. The reasoning in these cases derived from B-criteria in Slick, Slick et al., (1999) (*see* below in the "Known Groups" section) in which a discrepancy between test results would be considered as a guideline leading toward a diagnosis of malingering. We reasoned that those subjects with FSIQ >70 would not be so impaired to have produced the profile characteristics termed the "dementia profile" in the Howe and Loring (2009) study. Recognition memory is largely retained in mild mental retardation (Green, 2004) and in early dementia (Merten, Bossink, & Schmand, 2007), and it is clear that a higher proportion of non-compensation seeking subjects with moderate mental retardation (Victor & Boone, 2007) and with more advanced dementia (Merten et al., 2007; Teichner & Wagner, 2004) fail recognition-based effort testing. Thus, we considered that those claimants in the Borderline range were at least a full standard deviation above the levels at which recognition memory begins to fail.

Other embedded effort indicators were compared, including Reliable Digit Span (RDS) (Greiffenstein, Baker, & Gola, 1994) and A-Test errors (Chafetz, 2008; Chafetz, in press; Chafetz & Abrahams, 2006).

Besides the MSVT and the mental status examination, each participant was administered a test of cognitive functioning: either the Wechsler Adult Intelligence Scale (WAIS-III, WAIS-IV) or the WASI.

Known Groups

The known-groups (criterion) design (Greve & Bianchini, 2004; Heilbronner et al., 2009) typically uses Slick et al., (1999) criteria for the determination of malingering and is the current model in the field for the determination of classification accuracy statistics of symptom validity variables. The Slick et al., (1999) criteria and modifications (Boone, 2007; Larrabee, 2007) have been thoroughly described and are merely summarized here: A-criterion: Substantial external incentive is present; B-criteria:

Evidence from neuropsychological testing; C-criteria: Self-report evidence; and D-criterion: Behaviors meeting B and C criteria are not fully accounted for by neurological, psychiatric, or developmental factors. The Social Security Disability claimants, by virtue of seeking disability benefits, fit Criterion A. (As noted, the LRS and DCFS claimants have different motivations, although many LRS claimants were seeking or receiving Social Security Disability.)

As described in Slick et al., (1999), a significantly below chance finding (B1 criterion) on an SVT is sufficient by itself for the classification of definite malingering. Chance-level performance, being well below the range associated with mildly demented patients and consistent with moderate to severe levels of dementia (Green, 2004; Tombaugh, 1996), would satisfy both B2 (score on the validated measure of response bias consistent with exaggeration or feigning) and B4 (discrepancy between test data and behavioral observations) criteria, as the claimants are providing enough of a coherent history and were not considered demented, but scored below the demented range. Moreover, in the TOMM manual (Tombaugh, 1996), not a single patient scored in the chance range. Thus, chance-level performance fit the Slick et al., (1999) definition of probable malingering.

A claimant with an IQ score at \geq 70, who also obtained the "dementia profile" (Howe & Loring, 2009) would satisfy both B2 (score on the validated measure of response bias in a range consistent with exaggeration or feigning) and B4 (discrepancy between test data and behavioral observations) criteria, as the claimants are providing enough of a coherent history and were not considered demented, but obtained the "dementia profile."

The Larrabee, Greiffenstein, Greve, & Bianchini (2007) modification of the Slick et al., (1999) criteria in which two or more validated measures of response bias are failed being sufficient to define probable malingering was also used. In this case, failure on the A-Test plus the MSVT was used to define probable malingering. Thus, for the known-groups statistical tally, the malingering group was composed of those claimants who had failed the A-Test and MSVT or those who obtained significantly below the chance scores on the MSVT.

A-Random Letter Test of Auditory Vigilance (A-Test). The A-Test is an auditory continuous performance task that is part of the mental status examination of Strub and Black (1993). The A-Test has 60 letters containing 18 intermittently arranged As spoken by the examiner at a rate of one letter every 2 s. The claimant is asked to tap the table with the dominant hand when the letter A is spoken, but not for any other letter. If a tap is produced for the first letter (not an A), the claimant is judged not to have understood the directions, which are then repeated. Two types of errors are counted: (a) Omission errors in which the claimant taps for another letter. A delayed response in which the claimant taps as the next letter is being presented is noted as a delayed response, but it is not counted as an error. Omission and commission errors are added to give the total A-Test score. The A-Test has recently been established as a symptom validity variable (Chafetz, in press).

Results

Basic Findings

Of the 25 participants from the DCFS group, 2 were removed for meeting criteria for true impairment according to Howe and Loring (2009), leaving 23 non-impaired cases for analysis. In the LRS group, 10 cases were removed as truly impaired, leaving 45 analyzable cases. In the DDS group, 11 truly impaired cases were removed, leaving 44 analyzable cases. The percentages of the non-impaired cases in each group, along with the group findings are shown in Table 2.

Table 2 also shows the known-groups malingering rates in the three groups. The DDS group has a 45.5% known-groups malingering rate (20 of 44 cases), whereas the LRS group has 6.7% (3 of 45 cases) meeting criteria for known-groups malingering. It is noted that in these three cases, the claimants were also seeking or had obtained DDS Social Security

Table 2. MSVT failure rate and known-groups rate for DDS, LRS, and DCFS groups

Group	# Clean	# Pass	# Fail	% Clean pass (%)	% Clean fail (%)	Known fail	% Known fail (%)
DDS	44	21	23	47.7	52.3	20	45.5
LRS	45	39	6	86.7	13.3	3	6.7
DCFS	23	23	0	100	0.00	0	0.0

Notes: MSVT = Medical Symptom Validity Test; DDS = Disability Determinations Service; LRS = Louisiana Rehabilitation Service; DCFS = Department of Child and Family Service; Clean = not truly impaired; Pass/fail on MSVT; known = known groups.

According to Criterion D from Slick et al., (1999), one known DDS case was removed due to Down's syndrome, and one known LRS case was removed due to very low adaptive functioning and low capacities overall, leaving the numbers seen in the table.

No claimants in the DCFS group failed the MSVT. Thus, the % known fail is 0/23 or 0%.

compensation. In the DCFS group, there were no failures of the MSVT (0%). Pearson's χ^2 analysis of the distribution of these known malingering data within the three motivational samples indicated a significant difference— $\chi^2(2) = 27.99$, p < .001.

Covariates

Analysis of variance (ANOVA) revealed a significant difference between the groups for Education—F(2,109) = 7.2, p = .001, but not for Age—F(2, 109) = 2.5, p = .085. Furthermore, Education was significantly correlated with IR (r = .41, p = .001), DR (r = .37 p = .001), A-Test (r = -.22, p = .019), and RDS (r = .24, p = .014), but Age was significantly correlated only with IR (r = -.29, p = .002) and not with any other SVT variables. Therefore, Education will be the covariate in the multivariate group comparisons of the SVT variables.

The Pearson χ^2 analysis of Ethnic group was not significant— $\chi^2(4) = 5.2$, p = .27. The χ^2 analysis of Gender was significant— $\chi^2(2) = 11.6$, p = .003. Close inspection of Table 1 reveals that the Gender distribution of the DDS and LRS groups was quite similar, and the Pearson χ^2 was not significant— $\chi^2(1) = 0.93$, p = .34. The Gender distribution comparing the DDS and DCFS groups shows that the DCFS group has more women than men, with the reverse in the DDS group— $\chi^2(1) = 6.6$, p = .01. As will be seen, the DDS group is the only one with a significant SVT failure, and the lack of gender effect concerning SVT variables will be further discussed later.

Regarding IQ, the groups originally were selected on the basis of comparisons for low intellectual functioning individuals. ANOVA for IQ between the three groups was performed to determine whether there were further differences at the lower end of intellectual functioning. The group differences for FSIQ were statistically significant—F(2, 109) = 10.1, p = .001. Tukey's HSD post hoc testing revealed that the FSIQ of the DDS group was significantly lower than that of the LRS group (p = .005) and the DCFS group (p = .001). It is known, however, that FSIQ is highly dependent on effort and thus significantly correlated with SVT findings (Chafetz et al., 2007) in these DDS claimants. When an ANOVA was performed for FSIQ on only those claimants passing the MSVT, there were no longer IQ differences between the three groups—F(2,80) = 1.74, p = .181). Considering these findings, FSIQ was not used as a covariate, as the differences were determined to be due to levels of effort, and not subject to underlying cognitive abilities.

Group Differences

Cohen and Cohen (1983, p. 385) have shown how the analysis of covariance is handled within a multiple regression-correlation analysis, essentially calculating the proportion of *Y* variance accounted for by the grouping variables above that accounted for by the covariate (Education). We used this approach with each of the dependent variables to have a clean analysis of the proportion of variance attributed just to the groups. The partial correlation for IR attributed just to the groups is .381 (t = 4.3, p < .001). For DR, *r*-partial = .436 (t = 5.1, p < .001); for A-Test, *r*-partial = -.293 (t = -3.17, p = .002); for RDS, *r*-partial = .323 (t = 3.4, p = .001).

Table 3 shows the group comparisons for the validity variables, showing the amount of variance (r^2 -partial) accounted for with each comparison, with Education as a covariate. The specific contrasts show that the DDS group has significantly lower IR and DR scores, and RDS, compared with the LRS group and with the DCFS group. Also, the DDS group had significantly more A-Test errors compared with the LRS group and with the DCFS group. There are no significant differences on any validity variable between the LRS and DCFS groups. It is noted that these low-functioning claimants in the LRS and DCFS groups obtained passing scores on the IR, DR, RDS, and A-Test variables, whereas the DDS group failed all the validity variables.

Group (N)	MSVT IR	MSVT DR	A-test	RDS
DDS (44) ^a	77.2 (29.2)	74.2 (28.1)	3.6 (6.5)	5.7 (2.5)
LRS (45)	96.8 (9.2)	95.9 (11.1)	0.4 (1.2)	7.5 (1.5)
DCFS (23)	99.8 (1.0)	99.8 (1.0)	0.2 (0.5)	7.5 (1.8)
Partial r^2 (%)	14.5	19.0	8.6	10.4

 Table 3. Comparing the means and standard deviations of effort variables for the three groups

Notes: MSVT = Medical Symptom Validity Test; DDS = Disability Determinations Service; LRS = Louisiana Rehabilitation Service; DCFS = Department of Child and Family Service; IR = Immediate Recognition; DR = Delayed Recognition. The group *Ns* are reduced somewhat for the A-test (LRS = 43) and RDS (LRS = 40; DCFS = 18) variables due to missing data. The partial r^2 (%) represents the proportion of variance due solely to the group effects, using Education as a covariate.

^aContrasts comparing DDS versus LRS and DDS versus DCFS statistically significant (p < .01) for all four validity variables. There are no significant differences between LRS and DCFS groups for any variable.

Discussion

This study sought to determine the differences in SVT results in groups with different kinds of intrinsic motivation: (1) a DDS group of Social Security Disability claimants who are seeking compensation for a purported inability to work; (2) an LRS group of claimants seeking help through the LRSs in order to secure work or further vocational training; and (3) parents referred by the LA DCFS for evaluation regarding removal of children from their households. It is noted that all the claimants in these three groups had low intellectual functioning, thus addressing SSA concerns that SVT failure might be due to low levels of intellectual functioning.

The findings show that \sim 45% of DDS claimants reach Slick et al., (1999) criteria for probable malingering or higher (definite), whereas only a small percentage of LRS claimants do so, and none of the DCFS claimants failed symptom validity testing. The mean scores on symptom validity testing were passing for LRS and DCFS claimants on all measures, and failing on all measures in DDS claimants.

Social Security Disability compensation is awarded to people determined to be unable to work in any occupation. Claimants seeking disability compensation must prove an inability to work (Chafetz, 2010). Their motivation is regarded as opposite those claimants seeking help through the LRS, who are trying to obtain services to obtain work or vocational training. So far as we know, this is the first head-to-head comparison regarding motivation to work, equating claimants for low intellectual functioning. While the overall mean FSIQ of DDS claimants was lower than that of LRS claimants (and of DCFS claimants), the mean FSIQ scores were not significantly different when only those claimants passing the MSVT were considered. Moreover, the monetary compensation levels in the two groups are likely not a factor (Chafetz, 2009), particularly considering that LRS claimants—depending upon abilities and work orientation—can potentially earn more income than DDS levels of compensation.

The findings for the DCFS claimants are similar to those in Flaro et al., (2007), in which parents seeking to regain custody of their children scored significantly better on the WMT when compared with claimants in litigation with a reported mild Traumatic Brain Injury. In the present study, the DCFS claimants were equated with both other groups for low intellectual functioning. Their motivation was clearly to present themselves in the best possible light to regain their children from state control. Thus, again, low intellectual functioning does not present as a factor in SVT failure; motivation was the controlling factor in SVT failure.

Considering the debate about performance on SVTs in low-functioning individuals (Victor & Boone, 2007), it is important to emphasize that the comparisons in this present study were between groups of claimants all with low intellectual functioning. For the most part, children as well as adults who show low intellectual functioning pass standardized (and free-standing) SVTs (Flaro et al., 2007; Green & Flaro, 2003; Richman et al., 2006). Marshall and Happe's (2007) findings show that adults with low IQ have passing rates for the forced-choice portion of the CVLT-II, as well as other SVTs. On the other hand, Hurley and Deal (2006) showed that 41% of individuals with MR living in residential facilities failed the usual cutoff on the Test of Memory Malingering (TOMM). In this study, there appeared to be no relationship between TOMM performance and IQ. What was not known, however, was the proportion of these subjects who were receiving Social Security Disability, and thus the "motivation" of these subjects was not clear. In fact, Simon (2007) showed that a forensic group of MR inpatients obtained mean scores of 48.7 and 49.4 on Trial II and the Retention Trial of the TOMM, respectively, with only one failure on Trial II. The fact that they had already been adjudicated suggested that motivation to fail was lacking.

The point about motivation can be further emphasized if one considers that the few LRS claimants who failed symptom validity testing were also claimants for Social Security Disability. Although we cannot know for certain, it is quite possible that the real goal of these claimants was to obtain and/or retain disability income, and they were simply obeying requirements to participate in the work-oriented LRS program. In any case, none of the other LRS claimants failed SVTs, which emphasizes that motivation to work is the controlling factor.

A limitation of the present study was our inability to control for the number of high-functioning subjects who had to be eliminated from the study to provide a head-to-head comparison of low-functioning individuals. We must note, however, that at least part of this issue was captured within the issue of motivation. In particular, DDS subjects are motivated to prove low intellectual functioning as part of their inability to work (Chafetz, 2010), whereas LRS subjects were motivated to prove that they can work, and DCFS subjects were motivated to look intellectually sharp to regain custody of their children. Nevertheless, issues such as a change in the economy could have easily produced a higher proportion of higher functioning LRS patients who were recently out of work, and therefore seeking to obtain new work. However, these claimants also passed the MSVT (data not presented) without difficulty.

In summary, this study showed that motivation to fail, and not low intellectual functioning, was the primary reason that intellectually impaired individuals failed the MSVT and other symptom validity measures. All claimants in the three study groups were equated for low intellectual functioning. Claimants for Social Security Disability compensation, who were

motivated to show low intellectual functioning, failed the MSVT at high rates, compared with claimants with a Vocational Rehabilitation program who were seeking to work, and parents evaluated for Child Protection, who were seeking to look intellectual competent to care for their children.

Conflict of Interest

None declared.

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