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A Survey of Report Writing by Neuropsychologists, I: General Characteristics and Content*

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ABSTRACT

A survey addressing professional practices regarding the content and format of reports on clinical neuropsychological assessments was sent to a randomly selected sample of 750 US members of Division 40 of the American Psychological Association. A total of 414 usable replies were received, yielding a response rate of 55%. Although there was widespread agreement between respondents with different clinical practices regarding the need to include in reports various specific variables (e.g., patient age and education, referral agent and question), there was considerable variability with regard to other items. Most notably, frequency of comments about prior financial compensation seeking varied with patient age group, diagnostic category, and reimbursement source, whereas patient age group and (to a lesser extent) psychologist's board certification were associated with different habits regarding specification of the utilized norms. It is concluded that, although there are many similarities among clinical documentations from different sources, the content of neuropsychological reports tends to vary with the specific practice parameters of the individual neuropsychologist.

Report preparation is an important part of the clinical neuropsychological assessment process because it serves the purpose of documenting in an integrated manner the most significant findings and recommendations in response to a referral question (Axelrod, 2000; Williams & Boll, 2000). Previous research has documented that neuropsychologists spend, on average, about 29% of their time on assessment and about 14% of their time on report writing (Putnam, DeLuca, & Anderson, 1994). There are many ways in which such reports can be prepared, and these will often vary with the training of the clinician, the nature of the target readership, and the purpose of the evaluation (Baron, Fennell, & Voeller, 1995, pp. 191–217; Spreen & Strauss, 1998, pp. 29–42). Therefore,

although some authors have suggested specific tools (Zuckerman, 1995) or theoretical frameworks (Ownby, 1997) for report preparation, there is no single format that meets the needs of all clinicians under every circumstance. The purpose of this investigation was to determine the current most common practices in report writing in the field of clinical neuropsychology, and to evaluate how variations in report style and content might differ with variables such as practice setting, patient population, reimbursement structure, board certification, and supervision.

The survey method was chosen for this investigation because it has been applied successfully in the field of clinical neuropsychology with regard to a wide variety of topics, including

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prescription privileges (Chatel, Lamberty, & Bieliauskas, 1993), salary characteristics (Putnam & Anderson, 1994), managed care experiences (Sweet, Westergaard, & Moberg, 1995), test usage (Camara, Nathan, & Puente, 2000; Lees-Haley, Smith, Williams, & Dunn, 1996), practices with ethnic minorities (Echemendia, Harris, Congett, Diaz, & Puente, 1997), selection criteria for training programs (Lopez, Ryan, & Sumerall, 1998; Mittenberg, Petersen, Cooper, Strauman, & Essig, 2000), and general clinical practices and beliefs (Sweet, Moberg, & Suchy, 2000). None of these previous surveys have specifically addressed which variables affect the content and format of neuropsychological reports. It was anticipated that a better understanding of how factors intrinsic and extrinsic to the evaluation influence the end product of the written documentation (which often becomes a permanent part of an individual's academic or medical record) could be of value in the preparation of future clinicians for independent practice.

This paper will present data concerning the information that neuropsychologists typically include in their reports regarding patient background, history, referral question, clinical presentation of the patient, and general aspects of test results. Data about inclusion of specific test data, report format, and document length will be presented in another paper (Donders, 2001).

METHOD

Participants

A three-page (single-sided) anonymous questionnaire was sent to a random sample of 750 US members of Division 40 (Clinical Neuropsychology) of the American Psychological Association (APA) who were all more than one full year post attainment of the doctoral degree. A cover letter was included to explain the design and purpose of the survey, and specific instructions for completion were included in the survey itself. In order to prevent multiple returns, each survey was assigned a unique identification number. A postage-paid and addressed envelope was included for return convenience. A single written reminder was sent to those Division 40 members who failed to respond within 21 days of the mailing. No further communication was pursued with those members who failed to respond within an additional

21 days. Only one mailed survey was rejected by the US postal service because of an incorrect address.

A total of 451 surveys were returned within 42 days. Thirty-seven of these surveys were excluded from the analyses for the following reasons: incomplete data ($n = 29$), summations of exclusive percentages for specific questions that deviated from 100% ($n = 5$), or recent retirement of the respondent ($n = 3$). This resulted in a final sample of 414 usable surveys. This represents an acceptable return rate of 55.20% ($414/750$), which is comparable to other recent surveys (e.g., Sweet et al., 2000). At the time when this survey was conducted in the summer of 2000, there were 3,885 active members in Division 40 who were more than one-year post doctoral degree. Thus, the current final sample represents almost 11% of this membership ($414/3,885$).

Procedure

The complete survey that was used in this investigation is presented in the Appendix. Participants were first asked to identify a single primary setting in which they generated most of their reports based on clinical neuropsychological assessment, with the exclusive options including academic, medical, private, rehabilitation, school, and other. They were asked next to indicate the proportion of adult, geriatric, and pediatric patients whom they saw in their primary practice, with specific instruction that percentages should add up to 100. Participants were also asked to identify the proportions of neurological, psychiatric, forensic, and other referrals that they processed in their primary clinical setting, again with specific instructions to make sure that percentages add up to 100. For all of the subsequent questions in the survey that pertained to the format and content of neuropsychological reports, participants were then instructed to answer as pertaining to their most typical work product in their primary setting, with the largest age group, and the most common diagnostic population. For all but one of these questions, participants were given four options: 'never', 'occasionally', 'routinely', and 'always'. The only exception required a single 'true'/'false' response. Supplemental background information was obtained with regard to reimbursement structure, educational history, board certification, membership in professional organizations other than Division 40, length of reports, and involvement with supervision of interns and residents.

Analyses

It was anticipated that completion of formal statistical analyses of each item in the survey would lead to spurious inflation of Type I error without

necessarily identifying the main areas of clinical relevance. Therefore, a number of a priori decisions were made. First, it was decided to limit specific statistical analyses to only those survey items pertaining to report characteristics that displayed a distribution of (a) greater than 10% of the sample endorsing the 'never' response and (b) greater than 10% of the sample endorsing the 'always' response. This was done because it would focus primarily on areas in which there appeared to be the greatest variability in report preparation. For survey items that met these criteria, it was planned to evaluate whether the distributions of, respectively, 'always' and 'never' responses were influenced by the following factors: primary practice setting, most common patient age group, predominant type of patient, reimbursement characteristics, board certification, and involvement with supervision of interns or residents.

Second, in order to ensure sufficient power for the statistical analyses and to avoid undue influence by outliers, it was decided that the minimum number of participants in each subgroup should equal or exceed 10% of the sample. Specifically, this meant that comparisons involving the influence of the nature of the primary employment were limited to those participants working in either general medical settings, private practice, or rehabilitation facilities because there were insufficient numbers of participants who generated clinical neuropsychological assessment reports primarily through academic, school, or other institutions. For the same reason, and also in order to be consistent with other recent surveys (e.g., Sweet et al., 2000), comparisons involving the effect of board certification were limited to the diplomate in Clinical Neuropsychology of the American Board of Professional Psychology (ABPP).

A third decision was to limit analyses involving the effect of patient age group, diagnostic population, and reimbursement structure to only those participants who clearly demonstrated a majority involvement in any specific area. For example, in order to determine whether clinical practices differed with adult versus geriatric versus pediatric patients, analyses were limited to those participants whose clinical work was committed > 50% to one of these three areas. This would avoid dilution of these results by including too many participants whose practice and/or reimbursement were so diverse that it would obscure the influence of any particular variable.

Finally, it was decided that post hoc comparisons would be limited to those analyses that yielded overall levels of statistical significance of $p < .01$. This level of alpha was chosen because it was considered

to be important to guard against Type II error without sacrificing the earlier stated goal of reducing Type I error.

Chi-square was used to analyze the results, supplemented by post hoc inspection of the odds ratio (OR) for dichotomized groups. It has been demonstrated that the OR can offer more intelligible information about the relationship between variables than can be discerned from traditional statistical tests alone (Bieliaskas, Fastenau, Lacy, & Roper, 1997). OR values exceeding 2.00 were considered to be desirable. This would indicate that a certain event (e.g., a 'never' response to a specific survey question) was more than twice as likely to be generated by participants with a certain characteristic (e.g., board certification) than by respondents without that characteristic. This paper will only report findings that met the combined criteria of (a) $p < .01$ for overall chi-square analysis, and (b) $OR > 2$ for follow-up contrasts of dichotomized groups.

RESULTS AND DISCUSSION

General Characteristics

The vast majority of the participants in this survey had obtained the Ph.D. degree ($n = 359$, 86.71%). Other degrees conferred included Psy.D. ($n = 50$, 12.08%) and Ed.D. ($n = 6$, 1.45%), with one person having both of these latter two degrees. On average, participants were 15.89 years post graduation from a doctoral program ($SD = 7.65$, Median = 15.00, range 2–49). A clear minority was board-certified (ABPP) in clinical neuropsychology ($n = 80$, 19.32%). Although all participants were recruited on the basis of membership in APA Division 40, a distinct majority of them also held membership in the National Academy of Neuropsychology ($n = 298$, 71.98%) and/or the International Neuropsychological Society ($n = 294$, 71.01%). Slightly more than half of the participants were involved with the supervision of predoctoral interns or postdoctoral residents in clinical neuropsychology ($n = 232$, 56.04%).

The distributions of primary employment settings, patient age groups, diagnostic populations, and reimbursement sources are presented in Table 1. The primary employment setting pertained to the professional environment in which the participants generated most of their clinical

Table 1. Clinical Settings, Age Groups, Diagnostic Groups, and Sources of Reimbursement for Neuropsychological Assessment.

Variable	<i>n</i>	<i>M</i>	(<i>SD</i>)
Clinical Setting			
Private practice	194		
Medical	137		
Rehabilitation	63		
Other	20		
Patient age group (%)			
Adult		55.91	(25.08)
Geriatric		27.49	(23.10)
Pediatric		16.58	(25.19)
Patient diagnostic group (%)			
Neurological		57.26	(28.29)
Psychiatric		21.36	(21.56)
Forensic		16.09	(22.12)
Other		5.26	(14.44)
Source of reimbursement (%)			
Commercial insurance		30.83	(26.15)
Medicaid/Medicare		26.54	(25.61)
Medicolegal		18.87	(24.45)
Private pay		15.18	(19.69)
Other		8.59	(24.61)

neuropsychological reports. Thus, a person with an academic affiliation who did most of his/her assessments in a hospital setting would be considered to have a primary ‘medical’ employment for purposes of this survey. The ‘other’ category in Table 1 pertained to assessments done through schools and experimental university clinics. As can be seen in Table 1, almost half of the sample was in private practice and about a third worked primarily in a medical setting (which included neurological, psychiatric, and general medical clinics and hospitals). The only other subgroup that was large enough according to the a priori specified criterion (>10% of the sample) to be considered separately involved psychologists working in rehabilitation facilities. For this reason, statistical analyses of the impact of primary employment setting on the distribution of responses to specific survey items about report format and content were limited to the 394 participants who were either in private practice (*n* = 194), in a medical setting (*n* = 137), or in rehabilitation facilities (*n* = 63).

With regard to the proportion of assessments performed with various age groups, the data in

Table 1 reflect that the vast majority of the participants described a mixed clientele, which is consistent with other recent surveys (e.g., Sweet et al., 2000). Less than 4% of the participants (*n* = 15) had a clinical practice that was dedicated exclusively to only one of the three age groups. However, there were substantial proportions of the sample that described a practice that included a clear majority (>50%) time commitment to either adult (*n* = 217, 52.42%), geriatric (*n* = 76, 18.36%), or pediatric (*n* = 55, 13.29%) patients. These three groups (totaling 348 participants) were included in the statistical analyses of the relationship between patient age and distributions of responses to specific survey items about preparation of report.

The distribution of the various diagnostic populations encountered in clinical practice, as presented in Table 1, again indicates that the vast majority of the participants described a diverse clientele, with less than 4% (*n* = 14) indicating being exclusively involved with a single type of patient. Most of the ‘other’ diagnostic categories included evaluations for attention-deficit/hyperactivity disorder, learning disability, and chronic pain. These ‘other’ categories did not meet the a priori specified criterion (> 10% of the sample) for being analyzed separately. On the other hand, there were substantial proportions of participants who dealt primarily (>50%) with either neurological (*n* = 243, 58.70%), psychiatric (*n* = 46, 11.11%) or forensic (*n* = 44, 10.63%) cases. These three groups (totaling 333 participants) were included in the statistical analyses of the influence of diagnostic category on the distribution of responses to specific survey items.

Table 1 also displays the various sources of reimbursement for clinical neuropsychological assessments. It had originally been planned to separate out managed care from other types of conventional insurance, but many participants indicated that they were unable to retrieve this difference. For this purpose, traditional and managed care insurances were combined into the ‘commercial insurance’ category. The vast majority of the participants reported a mixture of reimbursements, and less than 9% (*n* = 34) indicated reliance on a single source. Almost all of the latter pertained to patients in the Veterans

Administration system (captured under 'other' funds). There were not enough participants who relied primarily (>50%) on private pay ($n = 36$, 8.70%) to be considered as a separate category. However, there were sufficient numbers of participants who described a majority reimbursement in one of the following areas: commercial insurance ($n = 114$, 27.54%), Medicaid/Medicare ($n = 87$, 21.02%), or medicolegal ($n = 59$, 14.25%). These three groups (totaling 260 participants) were included in the statistical analyses of the impact of reimbursement on report format and content.

In order to avoid confusion, the term 'medicolegal' refers in the following text to the source of reimbursement whereas the term 'forensic' refers to the type of referral for which the patient was seen. The two classifications are not synonymous. For example, an evaluation of the learning disability of a child in the context of a dispute between parents and schools, at the request of an attorney representing the parents, could be considered 'medicolegal' but not 'forensic'. On the other hand, if a physician in an acute rehabilitation hospital requested an evaluation of

the cognitive competency of a patient with severe head trauma to discharge herself against medical advice, with subsequent routine billing of the patient's no-fault insurance for the evaluation, such a referral could be considered 'forensic' but not 'medicolegal'.

Patient Background and History

Participants were asked to indicate how frequently they included information about demographics, prior history, comorbid conditions and other background information in their reports. These results are presented in Table 2. Less than 10% of the sample utilized the 'other' category, which required a write-in of variables not covered in the identified categories. The most frequently mentioned information in this regard pertained to prior test results and military history.

Inspection of Table 2 suggests that some variables were routinely or always included in reports by all of the participants, most notably age, education, and neurological history. In light of the ongoing controversy about the desirability of adjusting neuropsychological test scores for demographic characteristics in clinical patients

Table 2. Percentages of Inclusion of Specific Background Information in Neuropsychological Reports.

Survey item	N	O	R	A
Age	.00	.00	.24	99.76
Gender	1.21	.48	1.45	96.86
Handedness	.72	4.83	14.49	79.95
Racial/ethnic identity	8.94	27.05	18.84	45.17
English language fluency	5.80	41.06	21.50	31.64
Marital status	7.49	11.11	23.43	57.97
Education (including special services)	.00	.00	7.49	92.51
Employment/vocation	6.28	7.49	14.98	71.26
Prior physical/sexual abuse	3.86	52.90	27.54	15.70
Prior criminal conviction	9.18	51.93	25.36	13.53
Current financial contingencies (e.g., litigation)	8.21	34.54	35.99	21.26
Prior financial compensation seeking	17.63	53.14	16.91	12.32
Prior general medical history (e.g., diabetes)	.00	1.45	18.60	79.95
Prior neurological history	.00	.00	9.66	90.34
Prior psychiatric treatment	.00	1.45	19.08	79.47
Prior substance abuse	.97	1.93	19.32	77.78
Early childhood development	1.69	27.54	34.54	36.23
Current medications	.00	5.80	17.39	76.81
Other 'sensitive' information (e.g., HIV status)	8.21	49.76	27.29	14.73
Family medical/neurological/psychiatric history	.24	24.15	37.68	37.92
Other (specify)	92.51	1.21	2.90	3.38

N = never; O = occasionally; R = routinely; A = always.

(Heaton, Grant, & Matthews, 1991; Reitan & Wolfson, 1995a; Vanderploeg, Axelrod, Sherer, Scott, & Adams, 1997; Moses, Pritchard, & Adams, 1999), this is encouraging because it allows the reader of the report to consider the potential importance of these variables, regardless of which normative system the writer uses.

On the other hand, there were also variables for which a clear majority of the sample felt no need for frequent inclusion in reports. For example, more than half of the sample commented only occasionally on prior physical/sexual abuse or on a prior criminal conviction, and almost half of the sample did the same with regard to other 'sensitive' personal information. This is consistent with ethical principles for psychologists (specifically, standard 5.03a) that suggest that one should include in reports only information that is germane to the purpose for which the communication is made (American Psychological Association, 1992). Some respondents to this survey also pointed out that there are laws in various states that specifically ban disclosure of HIV positive status. Other respondents commented on the fact that some health care organizations have specific policies against the mentioning of racial or ethnic identity except in circumstances where it is clearly relevant for diagnostic or prognostic purposes (e.g., risk for hypertension and stroke). This exemplifies how neuropsychological reports may vary with circumstances that are not under the control of the psychologist, but of which the report writer should definitely be aware.

The area in which there appeared to be the greatest disparity among participants on what to include in reports pertained to prior financial compensation seeking. Almost 18% of the sample never included such information in reports, whereas at the same time more than 12% of the sample always did. Employment setting, board certification status, and responsibility for supervision of interns or residents did not affect these distributions to a degree that met the a priori established minimal criteria ($p > .01$ for all variables). However, there were statistically significant differences between groups with relative majorities of, respectively, adult, geriatric, and pediatric practices with regard to the

proportions that never included information in their reports about prior financial compensation seeking, $\chi^2(2, N = 348) = 36.10, p < .0001$. These data are presented in Figure 1. Inspection of this figure suggests that these participants were more than five times as likely to have a majority pediatric than adult or geriatric practice, $OR = 5.12$ (90% confidence interval = 3.03–8.65). This probably reflects the fact that simply because of their younger age, children are far less likely to have been involved in previous workman's compensation or acquired disability claims.

Two variables were associated to a statistically significant degree with a habit of always reporting information about prior financial compensation seeking: diagnostic category, $\chi^2(2, N = 333) = 27.85, p < .0001$ (see Figure 2), and reimbursement structure, $\chi^2(2, N = 260) = 26.68, p < .0001$ (see Figure 3). The participants who indicated that they always included the presence or absence of such a previous history in their reports were more than five times as likely to see primarily forensic as opposed to neurological or psychiatric patients, $OR = 5.87$ (90% confidence interval = 3.20–10.75). In addition, they were more than four times as likely to have a majority of their reimbursement come from medicolegal services than from commercial insurance or from

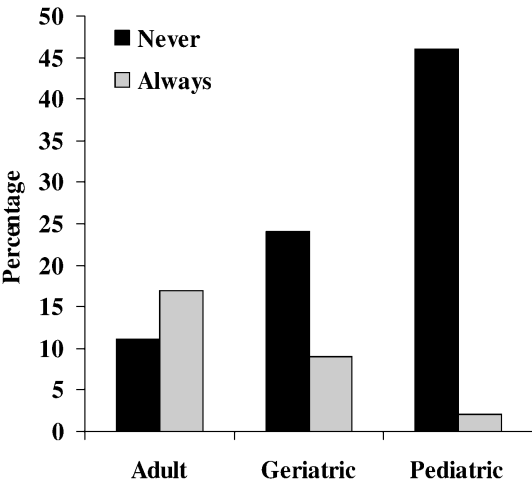


Fig. 1. Frequency of commenting in neuropsychological reports on prior financial compensation seeking, by primary age group served.

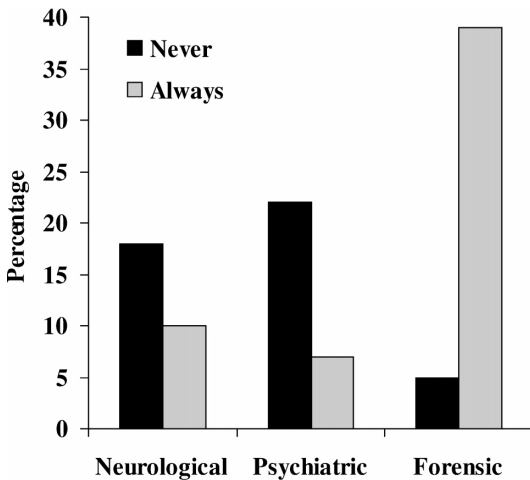


Fig. 2. Frequency of commenting in neuropsychological reports on prior financial compensation seeking, by primary diagnostic group served.

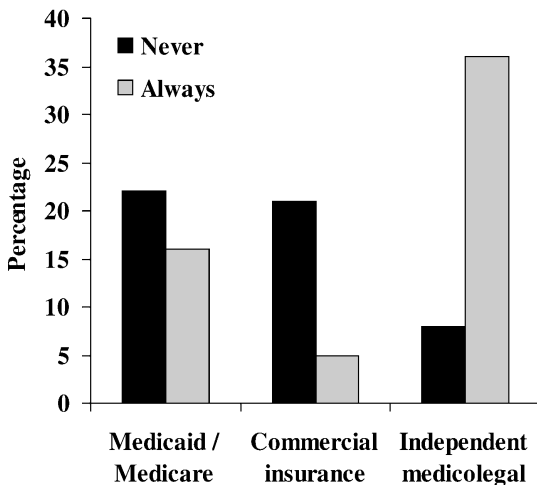


Fig. 3. Frequency of commenting in neuropsychological reports on prior financial compensation seeking, by primary source of reimbursement.

Medicaid/Medicare, OR = 4.91 (90% confidence interval = 2.69–8.97).

These findings suggest that neuropsychologists who primarily evaluate individuals in the context of personal injury litigation, workman's compensation and similar claims, and who do so as a third-party expert and not as a treating doctor, are particularly attuned to previous behavior that is

similar to the current one (i.e., financial compensation seeking). This is consistent with research that has established that financial compensation seeking is a risk factor for poor outcome in a variety of conditions, ranging from mild traumatic brain injury (Alexander, 1995) to post-traumatic stress disorder (Blanchard & Hickling, 1997, pp. 171–186). Furthermore, in light of the fact that persistent symptomatology and perception of maltreatment following a previously claimed cerebral injury or psychosocial trauma may make persons more vulnerable to the effects of a new stressful event (Martelli, Zasler, & MacMillan, 1998), it would appear to be prudent to include the presence of such a prior history in most neuropsychological reports.

Specific Report Content

Participants were asked next to indicate how often they included information in their reports that was specific to the referral question, the actual presentation of the patient, and general aspects of the test scores obtained. These data are presented in Table 3. Inspection of this table suggests that the vast majority (>94%) of the sample included routinely or always information about the referring agent and his/her reason to request the evaluation, a description of the clinical presentation of the patient (as ascertained from interview, history, and behavioral observations), a listing of the tests that were administered, and a qualification of level of performance in descriptive terms. These appear to be important sources of information in any evaluation, and their inclusion is recommended by various authors (Axelrod, 2000; Williams & Boll, 2000). Most of the participants also included summary information such as deviation IQ scores, but there was considerable variability with regard to the inclusion of a formal account of the nature of the normative system that was used to analyze the data.

More than 12% of the sample never included in their reports information about the nature of the norms that were used, whereas at the same time more than 23% of the sample always mentioned this information. Employment setting, diagnostic category, reimbursement structure, and involvement with supervision did not have a statistically

Table 3. Percentages of Inclusion of Information About Referral Question, Clinical Presentation of the Patient, and General Aspects of Psychometric Data in Neuropsychological Reports.

Survey item	N	O	R	A
Referring agent (e.g., physician, attorney)	.72	4.59	16.67	78.02
Referral question (other than 'please evaluate')	.48	3.62	29.95	65.94
Subjective complaints (e.g., pain, memory)	.00	.97	19.08	79.95
Complicating psychosocial factors (e.g., recent divorce)	.00	3.62	38.16	58.21
Behavioral observations (e.g., affect range, speech fluency)	.00	1.69	11.35	86.96
Indication of which tests were administered	.72	4.35	7.49	87.44
Descriptive terms (e.g., impaired, average)	.24	.48	16.91	82.37
Summary data (e.g., FSIQ, MMPI-2 Welsh code)	4.35	14.25	37.20	44.20
Nature of norms used (e.g., NDS, <i>T</i> scores)	12.32	36.47	28.02	23.19

N = never; O = occasionally; R = routinely; A = always.

significant effect on these distributions ($p > .10$ on all variables). However, there was a statistically significant effect of board certification (ABPP) on the tendency to never include information about the utilized norms in reports, $\chi^2(1, N = 414) = 9.52, p < .01$. These data are presented in Figure 4. Participants who were board-certified were more than twice as likely than other neuropsychologists to indicate that they never included in their reports specific information about the normative system that they used, $OR = 2.65$ (90% confidence interval = 1.55–4.52). However, it should be realized that this involved less than a quarter of the

subgroup with board certification ($n = 18, 22.50\%$) and that almost just as many participants in that subgroup always included normative information ($n = 15, 18.75\%$). Thus, it appears that there is a relatively greater minority among ABPP diplomates than among other neuropsychologists that does not disclose this information, but they are not representative of this sample of Division 40 members, board-certified or not.

Groups with relative majority adult, geriatric, and pediatric practices differed to a statistically significant degree in their tendency to always specify the normative system, $\chi^2(2, N = 348) = 9.44, p < .01$. These data are presented in Figure 5.

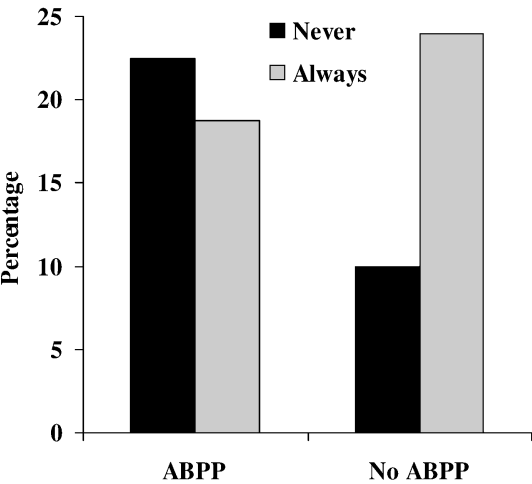


Fig. 4. Frequency of commenting in neuropsychological reports on utilized norms, by board certification status.

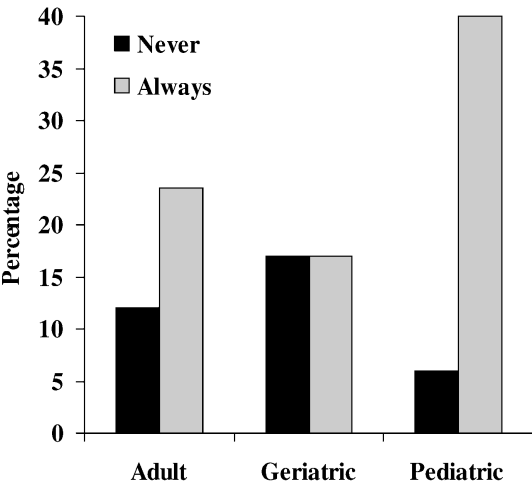


Fig. 5. Frequency of commenting in neuropsychological reports on utilized norms, by primary age group served.

The participants who indicated that they always included information about the utilized norms were more than twice as likely to have a majority pediatric as opposed to adult or geriatric clinical practice, $OR = 2.39$ (90% confidence interval = 1.43–3.97). In fact, less than 6% ($n = 3$) of pediatric specialists never included this information.

These findings are not surprising in light of the current state of norms for pediatric neuropsychological tests. First of all, there is considerable controversy in the field with regard to the need for age-based norms for specific tests of children's neurobehavioral abilities (Forster & Leckliter, 1994; Leckliter & Forster, 1994; Reitan & Wolfson, 1995b). Second, there are serious concerns about the adequacy of the currently available age-corrections for some of the most widely used developmental neuropsychological tests (Kizilbash & Donders, in press). Therefore, it is understandable that pediatric neuropsychologists may be especially inclined to clarify the nature of the norms that were used to interpret psychometric data.

CONCLUSIONS

The purpose of this survey investigation was to determine how variations in the content of clinical neuropsychological reports differ with variables such as practice setting, patient age, diagnostic category, reimbursement structure, board certification, and involvement with supervision. There were many areas in which neuropsychologists from a wide diversity of backgrounds were consistent with regard to what kind of information was included in their reports. For example, none of the respondents would be inclined to omit a prior neurological history from their reports, and the majority of the sample would only comment on premorbid sexual abuse if it were clearly relevant in the context of the purpose of the evaluation and the associated recommendations. On the other hand, there were some areas in which there were wide discrepancies between respondents in terms of the tendency to include specific content.

The two most outstanding areas in which there was great variability pertained to prior financial

compensation-seeking and the nature of the utilized norms. The nature of the patient age group that formed the majority of the individual participant's practice was the single variable that was associated with statistically significant differences in how frequently he/she commented on each of these variables. From the current results, it appears that pediatric practitioners write reports that are significantly different in some areas than those of their counterparts with majority adult or geriatric clienteles. In part, this is related to the natural developmental history of children and how this relates to both brain integrity and contextual variables (Bernstein, 2000). Another contributing factor appears to be the sorry state of affairs of currently available norms for many pediatric neuropsychological tests. During the past few years, there have been some encouraging developments along these lines, including the publication of tests that were specifically developed for use with children, and normed on sufficiently large and representative samples, such as the Children's Memory Scale (Cohen, 1997), the Comprehensive Test of Phonological Processing (Wagner, Torgesen, & Rashotte, 1999) and the NEPSY (Korkman, Kirk, & Kemp, 1998). In addition, several authors have addressed specific issues related to the preparation of reports about neuropsychological evaluations of children (Farmer & Muhlenbruck, 2000; Fennell & Bauer, 1997; Lorber & Yurk, 1999).

Characteristics of the major diagnostic group and of reimbursement structure (two factors that were clearly inter-related) also had a distinct influence on the frequency with which neuropsychologists commented on prior financial compensation seeking. Practitioners who saw primarily forensic patients as part of independent medico-legal evaluations were by far the most likely to always include this kind of information in their reports. This is consistent with the adversarial nature of many of these evaluations, the necessity to offer a plausible explanation that meets legal standards, and the need to rule out pre-existing or other confounding factors (Tsushima & Anderson, 1996, pp.113–131; Williams & Boll, 2000). Several authors have also addressed specific modifications to the content of neuropsychological reports that may be considered

in a forensic or medicolegal context (Kay, 1999; Larrabee, 2000).

There were also a number of variables that did not have a great impact on how participants responded to the report content items of this survey, such as those about prior financial compensation seeking or nature of the utilized norms. The fact that practice setting did not yield a statistically significant effect on the distribution of responses to specific survey items is probably related to the fact that the vast majority of respondents had a fairly diverse practice, regardless of whether they were in private practice or in any kind of institutional setting. This is consistent with previous surveys (e.g., Putnam & Anderson, 1994). Whether or not the neuropsychologist provided supervision to predoctoral interns or postdoctoral residents also did not affect the distribution of responses to specific survey items. This is encouraging because it suggests that individuals in training are exposed to procedures that are similar to those that are most prevalent in the field at large, which is an important consideration in terms of preparing them for future independent practice (Hannay et al., 1998; Johnstone & Farmer, 1997). The fact that board certification was not associated with great differences in report content is consistent with recent findings that there are many important areas of agreement between neuropsychologists with and without board certification with regard to assessment philosophy and the type of information to be gathered in evaluations (Sweet et al., 2000).

The current findings suggest that the content of neuropsychological reports is similar across many settings but that specific modifications are often made on the basis of the major age groups and diagnostic categories that are served, as well as reimbursement structure. A future paper (Donders, 2001) will discuss how any of these and other variables affect the format of reports, with specific attention to issues such as the inclusion of detailed test data and overall document length.

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Appendix
Survey of Clinical Neuropsychologists about Report Writing

Please indicate the following characteristics about your practice:

1. *Primary* setting in which you generate clinical neuropsychological reports (circle *only 1*):
Academic Medical Private Practice Rehabilitation School
Other (specify): _____
2. *Primary* age group of your clientele (make sure percentages add up to 100):
Adult % Geriatric % Pediatric %
3. *Primary* patient population you serve (make sure percentages add up to 100):
Neurological % Psychiatric % Forensic %
Other % (specify): _____

Please answer all of the following questions (4–12) as pertaining to your *typical* work product in your *primary* setting, with the *largest* age group and the *most* common population. (e.g., if you see primarily adult patients for forensic purposes in your private practice but also do some limited consulting at a pediatric clinic, then you should answer *all* of these questions as reflecting what you typically do in your adult, forensic, private practice).

4. How often do you typically include in your report the following background information?
- | | | | | |
|---|-------|--------------|-----------|--------|
| A. Age | Never | Occasionally | Routinely | Always |
| B. Gender | Never | Occasionally | Routinely | Always |
| C. Handedness | Never | Occasionally | Routinely | Always |
| D. Racial identity/ethnicity | Never | Occasionally | Routinely | Always |
| E. English language fluency | Never | Occasionally | Routinely | Always |
| F. Marital status | Never | Occasionally | Routinely | Always |
| G. Education (including special services) | Never | Occasionally | Routinely | Always |
| H. Employment/vocation | Never | Occasionally | Routinely | Always |
| I. Prior physical/sexual abuse | Never | Occasionally | Routinely | Always |
| J. Prior criminal conviction | Never | Occasionally | Routinely | Always |
| K. Current financial contingencies (e.g., litigation) | Never | Occasionally | Routinely | Always |
| L. Prior financial compensation seeking | Never | Occasionally | Routinely | Always |
| M. Prior general medical history (e.g., diabetes) | Never | Occasionally | Routinely | Always |
| N. Prior neurological history | Never | Occasionally | Routinely | Always |
| O. Prior psychiatric treatment | Never | Occasionally | Routinely | Always |
| P. Prior substance abuse | Never | Occasionally | Routinely | Always |
| Q. Early childhood development | Never | Occasionally | Routinely | Always |
| R. Current medications | Never | Occasionally | Routinely | Always |
| S. Other “sensitive” info (e.g., HIV status) | Never | Occasionally | Routinely | Always |
| T. Family medical/neurological/psychiatric history | Never | Occasionally | Routinely | Always |
| U. Other (specify) _____ | Never | Occasionally | Routinely | Always |
5. How often do you typically include in your report any of the following information that is *specific to the referral question and the actual presentation of the client*?
- | | | | | |
|--|-------|--------------|-----------|--------|
| A. Referring agent (e.g., physician, attorney) | Never | Occasionally | Routinely | Always |
| B. Referral question (other than “please evaluate”) | Never | Occasionally | Routinely | Always |
| C. Subjective complaints (e.g., pain, memory) | Never | Occasionally | Routinely | Always |
| D. Complicating psychosocial factors (e.g., recent divorce, death in family) | Never | Occasionally | Routinely | Always |
| E. Behavioral observations (e.g., range of affect, fluency of speech) | Never | Occasionally | Routinely | Always |
6. Please indicate if and how you typically include *test data* in your clinical neuropsychological reports (either within the text or as an addendum).
- | | | | | |
|--|-------|--------------|-----------|--------|
| A. Indication of which tests were administered | Never | Occasionally | Routinely | Always |
| B. Descriptive terms (e.g., impaired, average) | Never | Occasionally | Routinely | Always |
| C. Summary data (FSIQ, MMPI-2 Welsh code) | Never | Occasionally | Routinely | Always |
| D. Nature of norms used (e.g., NDS, <i>T</i> scores) | Never | Occasionally | Routinely | Always |

7. What *format* do you typically use to include test data in your clinical neuropsychological reports (either within the text or as an addendum)?

A. No numeric scores are provided	True	False		
B. Standard scores	Never	Occasionally	Routinely	Always
C. Percentile ranks	Never	Occasionally	Routinely	Always
D. Raw scores	Never	Occasionally	Routinely	Always
E. Age/grade equivalents	Never	Occasionally	Routinely	Always
F. Other (specify) _____	Never	Occasionally	Routinely	Always

8. Do you typically include in your clinical neuropsychological reports *any* of the following?

A. Discussion of results of <i>every</i> test administered	Never	Occasionally	Routinely	Always
B. Separation of report into distinct sections (e.g., history, observations, test results)	Never	Occasionally	Routinely	Always
C. Narrative description in layperson's terms of the type of task involved on specific tests	Never	Occasionally	Routinely	Always
D. Standard grouping of findings by domain (e.g., language, perception, memory)	Never	Occasionally	Routinely	Always
E. Hypothesis about lesion nature/location	Never	Occasionally	Routinely	Always

9. How do you typically *answer the referral question* in your clinical neuropsychological reports?

A. Separate cover letter or chart note	Never	Occasionally	Routinely	Always
B. Summary/conclusion section of report	Never	Occasionally	Routinely	Always
C. Woven into the general text of report	Never	Occasionally	Routinely	Always
D. Other (specify) _____	Never	Occasionally	Routinely	Always

10. Do you typically use *formal diagnostic codes* in your clinical neuropsychological reports?

A. DSM-IV	Never	Occasionally	Routinely	Always
B. ICD-9-CM	Never	Occasionally	Routinely	Always
C. Other (specify) _____	Never	Occasionally	Routinely	Always

11. How do you typically offer *recommendations* in your clinical neuropsychological reports?

A. Itemized in a separate section	Never	Occasionally	Routinely	Always
B. Narrative description in a separate section	Never	Occasionally	Routinely	Always
C. Woven into the general text of report	Never	Occasionally	Routinely	Always
D. Other (specify) _____	Never	Occasionally	Routinely	Always

12. When *distributing reports* (assuming you have informed consent), do you typically:

A. Wait until after review with client/family	Never	Occasionally	Routinely	Always
B. Modify or delete sections of the report, depending on where it is to be sent	Never	Occasionally	Routinely	Always
C. Give the patient/family a copy of the report	Never	Occasionally	Routinely	Always

Please complete the following final characteristics about yourself:

13. Most prevalent reimbursement structure of your clients (make sure percentages add up to 100):

Medicaid/Medicare |__| % Managed care |__| Private pay |__| % Medicolegal |__| %
Other |__| % (specify) _____

14. Your highest professional degree: PhD PsyD EdD Other (specify) _____

15. Years post highest degree: |__|

16. Are you board-certified in clinical neuropsychology? Yes, ABPP Yes, ABPN No

17. Are you a member of (circle all that apply): APA-Division 40 INS NAN

18. How long is your *median* clinical neuropsychological report (including any appendages)? |__| pages

19. Do you teach/supervise report writing of interns or residents? Yes No

20. Any other comments you may wish to add: _____