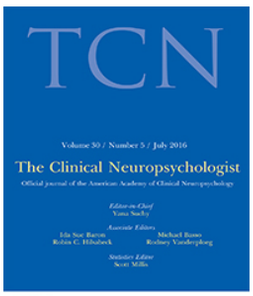

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# National Association of Psychometrists: 2015 professional practices and salary survey of U.S. and Canadian psychometrists

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**ABSTRACT**

**Objective:** The National Association of Psychometrists (NAP) conducted a salary survey to collect data regarding common practices and income of individuals employed as psychometrists. **Methods:** An email with a survey link was sent to NAP members and posted on the NAP website. There were 118 responses; most from the United States. **Results:** Canadian data was excluded from compensation analysis due to imprecision in the survey/exchange rates. Most respondents reported full time employment. Respondents' educations were equally split between bachelor's and master's degrees. More than half reported hourly compensation. Most psychometrists see one patient a day and the most frequent age range was adults between 17–59 years old. Administration times ranged from 3-5 h, except in young pediatric populations. Two hours was the most commonly reported amount of time needed to score a test battery. The average hourly wage was $23.00 ± 4.96. Certified psychometrists reported higher average hourly wages ($M$ = 24.57, $SD$ = 4.73) compared to those who are not certified ($M$ = 21.53, $SD$ = 4.76). This difference was statistically significant ($p < .001$) with a medium effect size ($d = .64$). Results of the survey also showed a significant increase in income based on years of experience as a psychometrist. **Conclusions:** The current survey may be used as a baseline for further study of the income and practices of psychometrists in the United States and Canada.

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Psychometrist; salary; neuropsychological; psychological assistant; clinical extender

## Introduction

In the arena of clinical neuropsychology, the term '*psychometrist*' has evolved and to this day there is still some uncertainty regarding its exact definition. A search for the job title

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Preliminary figures from the survey data were presented as a scientific poster at the Midwest Neuropsychology Group (MNG) Conference in 2016. This poster was available for view at the 2016 National Association of Psychometrists Conference in Seattle, WA.

psychometrist within a dictionary yields no results. The closest available title with a definition is a *psychometrician* which is defined in the Merriam Webster Dictionary as both: 'a person (as a clinical psychologist) who is skilled in the administration and interpretation of objective psychological tests,' and 'a psychologist who devises, constructs, and standardizes psychometric tests' (Psychometrician, n.d.). The first definition appears to describe a psychometrist, with some limitations to the scope of practice. Psychometrist is the preferred term to describe a person who is responsible for the administration and scoring of neuropsychological tests under the supervision of a licensed clinical psychologist. However, there are many titles currently in use for individuals who administer and score neuropsychological tests, and *psychometrist* and *psychometrician* are often misused interchangeably. Differences in the appropriate title, role, and qualifications confound current literature surrounding psychometrists.

Psychometrists working under the supervision of licensed clinical psychologists is a practice that dates back to the early 1900s. It was during that time American Psychologist Carl E. Seashore pointed out a need for technicians, and delineated what is known today as the active role of psychometrists: a subordinate to clinical psychologists (Malek-Ahmadi, Erickson, Puente, Pliskin, & Rock, 2012). Subsequently, from the 1930s to the present, psychometrists have been employed with the tasks of administering and scoring neuropsychological and cognitive assessments under the supervision of clinical neuropsychologists (Axelrod et al., 2000; Malek-Ahmadi et al., 2012). According to the American Academy of Clinical Neuropsychology (1999), it is acceptable and widespread practice to use individuals trained in the standardized administration and scoring of neuropsychological tests. Sweet, Benson, Nelson, and Moberg (2015) found that 55% of neuropsychologists use psychometrists (referred to as testing assistants).

At the national level, there are no educational or licensure requirements for psychometrists in the United States. However, some states such as New York, Arkansas, and North Carolina (Malek-Ahmadi et al., 2012) do require psychometrists to meet a minimal set of criteria that are consistent with those proposed by the major neuropsychological professional organizations (American Academy of Clinical Neuropsychology, 1999; Puente et al., 2006). Psychometrists generally have a bachelor's or master's degree in psychology and must work under the supervision of a licensed psychologist, as the licensed psychologist is responsible for the assessment. Individuals working in this capacity are analogous to medical laboratory and radiology technicians, collecting data for the licensed psychologist to interpret and base his/her opinions. Furthermore, in 2006, the National Academy of Neuropsychology (NAN) published an updated statement on their position in the use of psychometrists. Within this statement, NAN detailed a list of recommendations to consider when employing psychometrists, one of which was a minimum education requirement of a bachelor's degree (Puente et al., 2006).

In 1996, an American Psychological Association (APA) commissioned task force determined the qualifications for the responsible use of psychological tests. The Task Force on Test User Qualifications (TFTUQ) provided test user qualifications, which are defined as, 'the combination of knowledge, skills, abilities, training and experience, and, where appropriate, practice credentials that the APA considers desirable for the responsible use of psychological tests' (Turner, DeMers, Roberts Fox, & Reed, 2001, p. 1099). According to the task force, the knowledge needed for test administration should include: standardized administration procedures, scoring procedures, and safeguards for copyright, dissemination of test items, and confidentiality of test materials and information (Turner et al., 2001). While the task force focused on the competency of a single provider who completes psychological testing and interpretation, psychometrists have the knowledge sets listed above.

Malek-Ahmadi et al. (2012) extensively outlined the education and training of psychometrists and a lack of formalized procedures. Novice psychometrists are trained by first reading test manuals, observing an experienced psychometrist, and then administering tests to the experienced psychometrist and less impaired patients before being deemed competent to practice. Despite a general approach to training psychometrists, no standardized training or credentialing currently exists.

Board certification, the Certified Specialist in Psychometry[SM] (CSP), is voluntary and allows psychometrists meeting educational and experience requirements to sit for an exam to become boarded (Board of Certified Psychometrists, 2017). The Board of Certified Psychometrists (BCP) traces its origins to the Psychometry Certification Committee (PCC), an ad hoc advisory group created within the National Association of Psychometrists. In 2003, the PCC began working to establish the groundwork for the CSP credential (Board of Certified Psychometrists, 2017). In November 2005, the PCC evolved into what is now the BCP after the first CSP examination was administered. It was at this time the BCP became an independent credentialing body separate from the National Association of Psychometrists (NAP). Although BCP members often maintain a concurrent membership with NAP, both organizations maintain separate governance. As of 2017, there were just over 250 certified psychometrists in the United States and Canada (Board of Certified Psychometrists, 2017). CSPs work in a variety of practice settings (e.g. private practice, hospitals, universities, etc.), and many are also involved in clinical research. Since board certification in psychometry has a requirement of hours as a practicing psychometrist in order to be eligible to sit for the exam, those being board certified are already practicing psychometrists.

In one of the earliest published studies evaluating psychometrists' contribution to workplace proficiency, Musante (1974) evaluated opinions of 21 psychology faculty and staff from three clinical settings regarding psychometrist functioning and suggestions for modifying their role in assessment. All respondents reported the use of psychometrists saved psychologists valuable time, particularly with psychodiagnostic assessment. Across all three clinical settings, psychologists rated psychometrists above average in regards to test administration and behavioral observations, and several respondents indicated testing was more efficient when done by psychometrists. Overall, psychologists reported extremely high-quality performance from their psychometrists and their use allowed psychologists to not only perform their jobs better, but also expand their scope of professional activities.

Employing psychometrists has allowed neuropsychologists the capability to see a higher volume of patients within the same approximate time frame (Malek-Ahmadi et al., 2012, p. 27). In 1993, DeLuca and Putnam used a Monte Carlo simulation to compare the use of the technician model vs. a non-technician model. There was a 79% increase in both the number of patients assessed and the estimated gross yearly income for the practice using the technician model compared to the practice that didn't use the model. DeLuca and Putnam concluded that the use of a professional/technician model promotes a cost-effective approach to health care. They also emphasized the need for education and training guidelines for psychometrists and perhaps the establishment of a national credentialing agency, comparable to those existing for similar professions (i.e. EEG technicians).

Furthermore, DeLuca and Putman (1993) concluded the use of psychometrists in practice appears widespread, as 53% of all respondents and 62% of self-identified clinical neuropsychologists reported the use of psychometrists. Neuropsychologists in private practice were less likely to employ psychometrists (31%), though it was speculated the lack of qualified

psychometrists might have contributed to this. The use of psychometrists has aided in maintaining an objective perspective regarding data collection and clinical judgment that may otherwise be subjected to bias if a neuropsychologist were to perform dual roles in administering and further interpreting assessments and report integration (Axelrod et al., 2000).

As the role of psychometrists became more prominent in the 1990s, the National Association of Psychometrists (NAP) was founded in 1996 with the following specific objectives:

(a) to provide information and guidance regarding the education and training of Psychometrists.
(b) to develop and organize workshops to share education and training ideas, promote scoring reliability, and discuss test administration principles.
(c) to collaborate with other professional groups and test developers in the review of the testing process involving the standard administration and scoring of tests.
(d) to publish a newsletter which focuses on providing updated information relating to psychometrics as well as current efforts and developments of the association.
(e) to engage in functions, operations, and other activities that are incidental to promoting Psychometry as a profession and enhance the preceding goals (Bylaws of the National Association of Psychometrists, 2016).

Despite the high prevalence of psychometrists working in clinical neuropsychology settings (Sweet et al., 2015) coupled with the reported financial benefits of their employment (DeLuca & Putman, 1993), quantitative reports of salary estimates and pay practices of psychometrists is lacking. Given the high degree of clinical and economic value that psychometrists provide, establishing their market value is important particularly as health insurance reimbursement practices shift from fee-based to value-based performance. NAP initiatives have included surveys of members and non-members related to psychometry practice and compensation. However, published information on psychometrist compensation is scarce. This survey sought to create a baseline for compensation among psychometrists and provide data for psychometrists to use in negotiations for wage, benefits, and job expectations.

## Method

Data were collected through the use of an online survey (eSurvey Pro). The online survey software eSurvey Pro was utilized by NAP in previous unpublished salary surveys dating back to 2009. It was chosen for use in this survey due to its familiarity and the ease with which NAP's 2012 survey questions could be recycled. A link to the survey was emailed to members of NAP, and was advertised on the NAP discussion board (https://www.napnet.org) and within online newsletters emailed to NAP members. NAP members were encouraged to share the survey link with other psychometrists who were not current NAP members. The only requirement for participation was for the respondent to work as a psychometrist. The survey was open for a period of two months (from 5 January 2015 to 7 January 2015) and reminder emails were sent periodically. The survey is included in its entirety in the Appendix A.

The survey data were collected with intended anonymity. The online survey recorded IP addresses, although this information was not used in analysis. Access to raw data from the

survey was restricted to the authors of the article to ensure data security. Responses to each question were not required, resulting in variability of sample sizes and missing data for different categories. Survey data were downloaded into a Microsoft Excel spreadsheet and all data analyses were conducted using SYSTAT 13.0.

There were 118 responses, of which two were incomplete. Incomplete responses were those that listed a job title and location but did not provide further responses. From the total responses, 109 were from the United States and 9 from Canada. The NAP membership total at the time of the survey was 257. Survey results suggested 45.91% of NAP membership. However, survey respondents were not asked whether they were current NAP members at the time. Results from the survey were screened for inaccuracies in reporting and outliers. The survey allowed respondents to report their compensation either as an hourly wage or per-year salary; for analysis, per-year salaries were converted into an hourly wage. This was done in order to utilize the same compensation metric for all respondents and to account for individuals who work part-time. Canadian compensation figures were excluded from the primary analyses and are described in a separate section due to fluctuating exchange rates between the United States Dollar (USD) and the Canadian Dollar (CAD). All results reported are in USD unless otherwise specified.

### *Statistical analysis*

The majority of survey questions used categorical responses; therefore, percentages of responses are reported for most questions. Two-sample t-tests were used to compare differences in hourly wage and years of experience between those who have and have not obtained the CSP credential. Cohen's *d* was used to assess the effect size of these differences. A one-way ANOVA was used to compare differences in hourly wage among regions of the United States. Cohen's *d* was used to assess the effect size of these differences. Linear regression analyses were also used to assess the relationship between psychometrists' wage (dependent variable) with CSP status and years of experience (independent variables).

## Results

### *General sample demographics and characteristics*

The total number of respondents was nearly evenly split between bachelor's level (49.14%) and master's level education (49.14%). Experience ranged from less than one year to greater than 25 years with the highest number of respondents (16.38%) falling in the three to four year range. Two additional responses indicating some college and doctorate levels of education were also reviewed.

### *Overall average hourly wage*

The mean hourly wage for psychometrists in the United States was $23.00 ($SD = 4.96$; 95% Confidence Interval = [21.97, 24.03]). Years of experience correlated moderately with hourly wage ($r = .53$, $p < .001$; Figure 1). Patterns were also seen among employment setting or region and hourly wage, although not to a level of statistical significance.

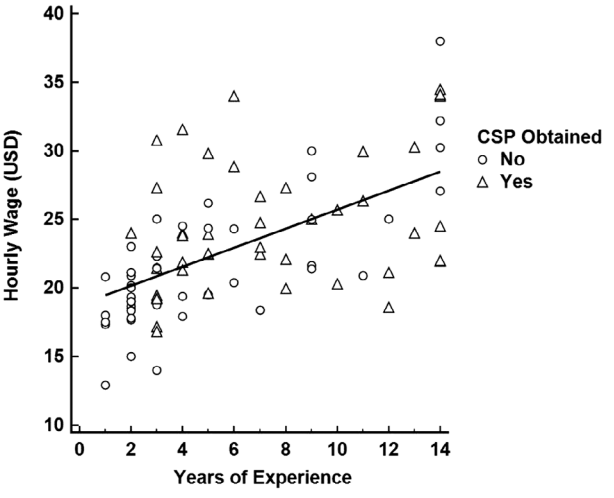


**Figure 1.** Association between years of experience and hourly wage for psychometrists.
Note: Years of experience is moderately correlated with hourly wage. $r = .53$, $p < .001$.

### *Schedule, populations, workload*

The majority of the sample reported full-time employment status (75.86%), with less than a quarter of the respondents reporting part-time or contract employment (15.52 and 8.62% respectively). Psychometrists employed full-time work an average of 36 h per week, while those working part-time average 20.5 h a week. The most common schedule was an eight-hour workday, five days a week. Most psychometrists reported hourly compensation (56.03%), followed by salary (36.21%) and contracted (7.76%). Contracted compensation was typically reported to be per-hour vs. per-patient (64.71 vs. 35.29%).

Most psychometrists saw one patient per day (52.63%), though some saw two patients (33.33%), and very few (14%) tested three or more patients per day. Of respondents who saw three or more patients per day, 62.5% (10 of 16) work in hospitals. Populations were defined by age (pediatric, adolescent, adult, and geriatric), and the populations tested may be restricted by the employment setting (e.g. a school setting). The most frequently seen patients were adults age 17–59 (92.1% of respondents). Large percentages of respondents also reported evaluations of geriatric patients (71.9%), adolescents (62.3%), or pediatric cases ages 6–11 years (52.6%). There were no clear differences in populations seen more frequently.

Table 1 shows the estimated average length of time spent administering tests (i.e. face to face patient time) divided by population age. The most frequently endorsed estimated length of time to complete a geriatric battery ranged between 2 and 3 h. Adult batteries estimated to take between 3 and 4 h, while adolescent batteries were estimated to be longer, ranging from 4-6 h. Pediatric test administration was reported to run 4–5 h, decreasing to 2 h if the child was less than five years of age. Table 2 shows the estimated average time spent scoring a typical assessment, again divided by population age. Pediatric (≤5) and Geriatric batteries were estimated to take one hour or less to score, while older Pediatric (6–11), Adolescent and Adult batteries took 1–2 h to score.

**Table 1.** Estimated average test administration time.

| | 0–1 h | | 2 h | | 3 h | | 4 h | | 5 h | | 6 h | | ≥7 h | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Population | Frequency | % | Frequency | % | Frequency | % | Frequency | % | Frequency | % | Frequency | % | Frequency | % |
| Pediatric (≤5 years) | 6 | 14.0 | 20 | 46.5[a] | 11 | 25.6 | 5 | 11.6 | 0 | .0 | 1 | 2.3 | 0 | .0 |
| Pediatric (6–11 years) | 2 | 3.2 | 7 | 11.3 | 9 | 14.5 | 24 | 38.7[a] | 11 | 17.7 | 7 | 11.3 | 2 | 3.2 |
| Adolescent (12–16 years) | 4 | 5.5 | 9 | 12.3 | 8 | 11.0 | 17 | 23.3[a] | 17 | 23.3[a] | 16 | 21.9 | 2 | 2.7 |
| Adult (17–59 years) | 3 | 2.8 | 12 | 11.3 | 26 | 24.5[a] | 33 | 31.1 | 14 | 13.2 | 15 | 14.2 | 3 | 2.8 |
| Geriatric (60+ years) | 3 | 3.7 | 25 | 30.9 | 30 | 37.0[a] | 15 | 18.5 | 1 | 1.2 | 6 | 7.4 | 1 | 1.2 |

Note: Includes all United States and Canadian psychometrists.
[a]Mode for each population.

**Table 2.** Estimated average scoring time.

| | <1 h | | 1 h | | 2 h | | 3 h | | 4 h | | ≥5 h | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Population | Frequency | % | Frequency | % | Frequency | % | Frequency | % | Frequency | % | Frequency | % |
| Pediatric (≤5 years) | 16 | 38.1[a] | 13 | 31.0 | 11 | 26.2 | 1 | 2.4 | 1 | 2.4 | 0 | .0 |
| Pediatric (6–11 years) | 8 | 12.9 | 21 | 33.9 | 22 | 35.5[a] | 9 | 14.5 | 2 | 3.2 | 0 | .0 |
| Adolescent (12–16 years) | 13 | 18.1 | 18 | 25.0 | 26 | 36.1[a] | 10 | 13.9 | 5 | 6.9 | 0 | .0 |
| Adult (17–59 years) | 20 | 18.7 | 35 | 32.7 | 39 | 36.4[a] | 8 | 7.5 | 4 | 3.7 | 1 | .9 |
| Geriatric (60+ years) | 25 | 30.9 | 35 | 43.2[a] | 17 | 21.0 | 2 | 2.5 | 2 | 2.5 | 0 | .0 |

Note: Includes all United States and Canadian psychometrists.
[a]Mode for each population.

**Table 3.** Income by education.

| Education | *N* | Mean | *SD* |
|---|---|---|---|
| Some college | 1 | 18.39 | – |
| Bachelors degree | 47 | 23.56 | 5.63 |
| Masters degree | 43 | 22.50 | 4.10 |

Note: Income reported in U.S. dollars. Includes all full time and part time United States psychometrists.

**Table 4.** Income by general work setting.

| General work setting | *n* | Mean | *SD* |
|---|---|---|---|
| Hospital | 41 | 24.24 | 5.49 |
| Clinic | 26 | 20.39 | 3.86 |
| Private practice | 5 | 25.65 | 4.36 |
| Research center | 3 | 24.40 | 3.73 |
| VA/Government | 6 | 24.47 | 2.58 |
| College/School | 3 | 23.81 | 6.09 |
| Forensic | 0 | – | – |
| Prison | 0 | – | – |
| Other | 7 | 21.30 | 4.18 |

Note: Income reported in U.S. dollars. Includes all full time and part time United States psychometrists.

### *Wage averages by education*

Compensation was evaluated by a respondent's educational attainment. Table 3 shows income means by education.

### *Wage averages by setting*

The employment settings reported in this survey were determined by those considered most familiar to psychometrists. As shown in Table 4, there were several employment settings with small sample sizes. The large disparity in sample sizes for the different employment settings did not allow for many of the wage differences to be tested statistically, so these results are presented in a qualitative fashion. However, the authors were able to compare reported wages between Hospital ($M = 24.24$, $SD = 5.49$) and Clinic ($M = 20.39$, $SD = 3.86$) settings. This difference was statistically significant ($t = 3.12$, (df = 65), $p = .003$, Cohen's $d = .81$). Among the remaining work settings, private practice reported being the highest paid followed by those in Veterans Affairs (VA)/government settings, and then by psychometrists in research centers. The lowest wages were reported by psychometrists working in college/school settings. Wages reported for research centers and VA/government were similar to hospitals. Hourly wages for respondents reporting a work setting under the *other* category fell between hospital and clinic-reported wages. Overall, psychometrists working in private practice reported the highest wages. The relatively low SD (2.58) for VA/government wages is likely due to the uniformity of the Federal pay system. The SDs for all other practice settings ranged from 3.73 to 6.09.

### *Wage averages by region*

Incomes by regions of the United States are shown in Table 5. Regions were determined using those specified by the United States Census Bureau (2010 Geographic Terms and

**Table 5.** Income by region of the United States.

| Region | *n* | Mean | *SD* |
|---|---|---|---|
| Pacific/Mountain | 9 | 27.53* | 7.78 |
| West North Central | 13 | 22.93 | 5.07 |
| East/West South Central | 16 | 23.80 | 4.83 |
| East North Central | 33 | 21.30 | 3.19 |
| New England/Middle Atlantic | 6 | 24.78 | 3.27 |
| South Atlantic | 14 | 22.47 | 5.39 |

Notes: Income reported in U.S. dollars. Includes all full time and part time United States psychometrists.
Pacific/Mountain = Alaska, California, Hawaii, Oregon, Washington, Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, Utah, Wyoming; West North Central = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; East/West South Central = Arkansas, Louisiana, Oklahoma, Texas, Alabama, Kentucky, Mississippi, Tennessee; East North Central = Illinois, Indiana, Michigan, Ohio, Wisconsin; New England/Middle Atlantic = Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont; South Atlantic = Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia. A one-way ANOVA test revealed significant effect for region on hourly wage. Post-hoc tests revealed one significant region-wise difference. The Pacific/Mountain region wage was significantly higher than the East North Central wage.
*$p = .01$.

Concepts – Census Divisions and Census Regions – Geography – U.S. Census Bureau, 2012). Some regions were combined in order to provide valid hourly wage estimates. The East North Central region was the most represented in the data, while the Pacific/Mountain and New England/Middle Atlantic were the least represented. A significant effect for region on hourly wage was noted (F = 2.80 (df = 5, 85), $p = .02$). Post-hoc tests revealed only one significant region difference, with the Pacific/Mountain region having a significantly higher hourly wage ($M = 27.53$, $SD = 7.78$) than the East North Central region ($M = 21.30$, $SD = 3.19$) where $p = .01$, and $d = 1.05$.

### *Wage differences for certification status*

Among the survey respondents, 48% ($n = 44$) reported having attained the Certified Specialist in Psychometry (CSP) credential. The difference in hourly wage between those with and without the CSP credential was statistically significant ($t = -3.05$ (df = 89), $p < .001$; $d = .64$; Figure 2). Individuals with the CSP credential ($M = 24.57$, $SD = 4.73$) had an hourly wage that was approximately three dollars higher than those without the CSP ($M = 21.53$, $SD = 4.76$). The medium effect size should be interpreted cautiously as a variety of factors determine one's compensation, so this result represents a general estimate of differences.

The difference in compensation related to CSP status was explored further with a linear regression model where hourly wage was set as the dependent variable and CSP status was set as the independent variable. Years of experience and an interaction term for CSP status and years of experience were also included. Furthermore, years of education and region were also included to account for their effects. The results of the model revealed significantly higher wages for certified psychometrists compared to those without certification (F = 13.67 (df = 1, 81), $p < .001$, partial $\eta^2 = .14$). As expected, more years of experience was associated with higher reported wages (F = 39.36 (df = 1, 81), $p < .001$, partial $\eta^2 = .33$) and the interaction of CSP status and years of experience was also statistically significant (F = 39.36 (df = 1, 81), $p < .001$, partial $\eta^2 = .13$). The significant interaction is consistent with the distribution of wages by years of experience shown in Figure 1 and indicates that both years of experience and obtaining the CSP are associated with higher wages. However, the effect size for years of experience indicates that this has more influence on reported wages than does CSP status.

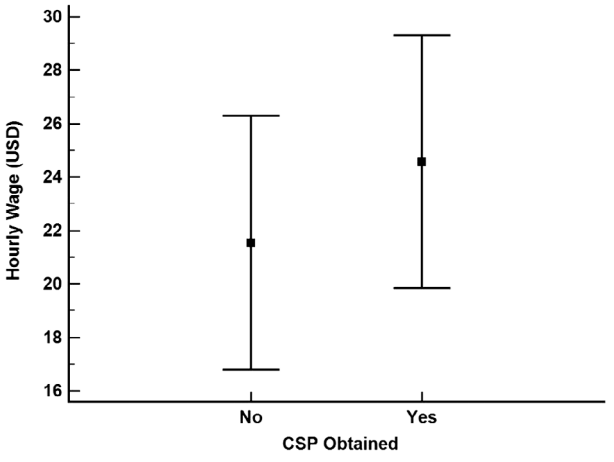


**Figure 2.** Hourly wage difference between psychometrists with and without the CSP designation.
Note: A two sample t-test revealed significantly higher pay for psychometrists who have obtained a CSP than those without a CSP. Boxes represent the mean and error bars represent standard deviation. $p < .001$; $d = .64$.

### *Additional job duties*

As previously stated, a psychometrist is a specialist at administering and scoring test instruments according to standardized procedures set forth by the publishing company. In most psychological and neuropsychological evaluations, the patient being evaluated spends the majority of their time with the psychometrist. Therefore, an equally important part of a psychometrist's job is to document behavioral observations during testing to share with the treating psychologist/neuropsychologist. It is not unusual for psychometrists to also perform certain clerical work (i.e. filing, faxing, and copying), train new hires, or order new tests and maintain clinic test inventories. Other tasks such as scheduling patients, participating in research and ordering office supplies was reported by less than half of respondents. Pre-authorization and billing were reported by less than ten percent of respondents. Table 6A provides a summary of reported job responsibilities. Table 6B provides a summary of these job duties reported when stratified by CSP status.

### *Benefits*

According to Sweet et al.'s, 2015 salary survey, 80.6% of employers provide psychometrists with benefits. In the current survey, just below 3% of respondents indicated they receive no employer benefits, and only 3.88% of respondents to the current survey reported they did not receive health benefits. The majority (75%) of those not receiving health benefits were employed part-time and paid hourly. Table 7 summarizes the benefits reported by respondents. The most frequently reported employer-provided benefits included health insurance (medical, dental, and vision). After health insurance, retirement accounts were the next most often received benefit, as 93.20% of respondents receive contributions toward a 401 k/403b, IRA, or pension plan. Professional development funds were another frequently received benefit. Of the respondents, 45.63% receive additional funds from their employer to contribute toward professional development, either in the way of a continuing education fund

**Table 6A.** Job responsibilities routinely performed by psychometrists.

| | Full/Part time ($n$ = 103) | | Contract ($n$ = 10) | |
|---|---|---|---|---|
| Job duty | Frequency | % | Frequency | % |
| Administer and score | 103 | 100.0 | 10 | 100.0 |
| Document observation notes | 96 | 93.2 | 10 | 100.0 |
| Perform clerical work | 80 | 77.7 | 3 | 30.0 |
| Create table/spreadsheet of test scores | 76 | 73.8 | 4 | 40.0 |
| Training | 71 | 68.9 | 3 | 30.0 |
| Ordering test materials | 66 | 64.1 | 2 | 20.0 |
| Assisting with research | 43 | 41.7 | 0 | .0 |
| Ordering office supplies | 38 | 36.9 | 1 | 10.0 |
| Scheduling appointments | 36 | 35.0 | 2 | 20.0 |
| Act as Manager/Supervisor | 11 | 10.7 | 0 | .0 |
| Report writing | 12 | 11.7 | 3 | 30.0 |
| Conduct insurance preauthorization | 10 | 9.7 | 0 | .0 |
| Billing | 9 | 8.7 | 1 | 10.0 |
| Conduct initial interview | 8 | 7.8 | 2 | 20.0 |

Note: Includes all United States and Canadian psychometrists.

**Table 6B.** Job responsibilities routinely performed by psychometrists.

| | CSP – yes | CSP – no |
|---|---|---|
| Job duty | % | % |
| Administer and score | 100.0 | 100.0 |
| Document observation notes | 90.9 | 94.3 |
| Perform clerical work | 72.7 | 75.5 |
| Create table/spreadsheet of test scores | 72.7 | 71.7 |
| Training | 68.2 | 66.0 |
| Ordering test materials | 65.9 | 52.8 |
| Assisting with research | 36.4 | 37.7 |
| Ordering office supplies | 32.1 | 40.9 |
| Scheduling appointments | 38.6 | 24.5 |
| Act as Manager/Supervisor | 13.6 | 7.6 |
| Report writing | 15.9 | 5.7 |
| Conduct insurance preauthorization | 9.1 | 11.3 |
| Billing | 11.4 | 5.7 |
| Conduct initial interview | 4.6 | 9.4 |

Note: Includes all United States and Canadian psychometrists.

or partial to full reimbursement for conference attendance. If tuition reimbursement is included in this category, the percentage receiving this benefit increases to 71.84%. Less frequently reported benefits included healthy living reimbursement, year-end bonuses, and adoption assistance. Although paid time off would also be an employer provided benefit, it was not included in the survey.

### *Comparison with other clinical extender professions*

Some of the reported job titles from the survey included: Psychometrist, Neuropsychometrist, Psychometrician, and Neuropsychological Testing Assistant. The Occupational Outlook Handbook does not have an entry for any of the aforementioned titles (United States Department of Labor, 2015). Thus, there is difficulty in analyzing pure compensation information for psychometrists. Psychometrists have been compared to physician extenders in the medical field (Festa, Barr, & Pliskin, 2010), such as other healthcare technicians (EEG, MRI,

**Table 7.** Reported employer provided benefits.

| | Full time ($n$ = 87) | | Part time ($n$ = 16) | | Combined ($n$ = 103) | |
|---|---|---|---|---|---|---|
| Benefit | Frequency | % | Frequency | % | Frequency | % |
| Medical | 86 | 98.9 | 11 | 68.8 | 97 | 94.2 |
| Dental | 81 | 93.1 | 11 | 68.8 | 92 | 89.3 |
| Vision | 74 | 85.1 | 11 | 68.8 | 85 | 82.5 |
| Life insurance | 74 | 85.1 | 10 | 62.5 | 84 | 81.6 |
| 401 k/403b | 74 | 85.1 | 10 | 62.5 | 84 | 81.6 |
| Pension plan | 41 | 47.1 | 9 | 56.3 | 50 | 48.5 |
| Disability insurance | 66 | 75.9 | 7 | 43.8 | 73 | 70.9 |
| IRA | 19 | 21.8 | 1 | 6.3 | 20 | 19.4 |
| Tuition reimbursement | 55 | 63.2 | 7 | 43.8 | 62 | 60.2 |
| Holiday/Year end bonus | 14 | 16.1 | 2 | 1.3 | 16 | 15.5 |
| Goal based financial incentives | 9 | 10.3 | 3 | 18.8 | 12 | 11.7 |
| Adoption assistance | 14 | 16.1 | 3 | 18.8 | 17 | 16.5 |
| Healthy living reimbursement | 30 | 34.5 | 3 | 18.8 | 33 | 32.0 |
| Continuing education fund | 18 | 20.7 | 3 | 18.8 | 21 | 20.4 |
| Partial reimbursement for conference attendance | 14 | 16.1 | 3 | 18.8 | 17 | 16.5 |
| Full reimbursement for conference attendance | 24 | 27.6 | 1 | 6.3 | 25 | 24.3 |
| None | 0 | .0 | 3 | 18.8 | 3 | 2.9 |

Note: Includes all United States and Canadian psychometrists.

etc.). The Bureau of Labor Statistics (United States Department of Labor, 2017) provides compensation information for other related job titles, which is summarized in Table 8. The mean hourly wage for psychometrists is $23.00. The mean hourly wage is higher than that of the following related job title categories: Psychiatric Technicians ($17.25), Medical and Clinical Laboratory Technicians ($20.05), and Health Technologists and Technicians, All Other ($22.13). However, psychometrists' average wage appears to be lower than Radiologic Technologists ($28.49), Magnetic Resonance Imaging Technologists ($33.29), and Diagnostic Medical Sonographers ($34.49) (United States Department of Labor, 2017).

Health Technologists/Technicians are described as entry level positions requiring a high school diploma and no training (United States Department of Labor, 2015). Psychiatric Technicians provide care for patients with mental illness and developmental disabilities, and these positions require a post-secondary education as well as on the job training. The broad category of Diagnostic Related Technologists and Technicians includes: Magnetic Resonance Imaging Technicians, Radiologic Technologists, and Diagnostic Medical Sonographers which all use specialized equipment to perform diagnostic tests. These occupations are described as requiring an associate's degree. Given the results of the survey, where most employers require a bachelor's degree for psychometrists, there is a strong argument to be made that psychometrists' pay should exceed that of Diagnostic Related Technologists and Technicians (Puente et al., 2006). This discrepancy may also reflect the lack of parity that exists between physician pay and psychologist pay.

### *Contract work*

The low number of respondents who reported contract compensation made analysis difficult. Inconsistencies in respondents' reports (e.g. reporting hourly compensation type, but stating a contract rate) further complicated analysis. Respondents who work in multiple positions (e.g. full-time salaried individuals who do contract work on the side) were asked to complete

**Table 8.** Salary and wage comparisons with comparable clinical extender job titles.

| | Employment | Hourly | | Annual |
|---|---|---|---|---|
| Category | Rate | Mean | Median | Mean |
| Health technologists and technicians | 21.5 | 20.55 | 22.34 | 45,460 |
| Diagnostic related technologists and technicians | 2.7 | 29.40 | 30.27 | 62,960 |
| Psychiatric technicians | .4 | 14.89 | 17.25 | 35,870 |
| Health technologists and technicians, all other | .9 | 19.75 | 22.13 | 46,020 |

Note: Employment rate per 1000 jobs. Income reported in U.S. dollars.

a separate survey for each position. Of the total respondents, ten individuals solely reported contract employment (including three Canadians). After removing Canadian data from the compensation analysis, four respondents reported an hourly rate for contract work which ranged from $16.25 per hour to $40.00 per hour. Battery or patient rates ($n = 3$) ranged from $125 per day to $350 per patient. All contract employees (the 10 respondents who exclusively reported contract compensation) worked three days or less per week and reported no benefits (except parking costs for one respondent).

### *Canadian data*

Analysis on Canadian compensation data was not performed due to imprecision in the survey to indicate currency (U.S. dollars vs. Canadian dollars) and volatility in exchange rates. Canadian data was included in all analyses that did not include monetary compensation. There were nine respondents who reported being employed in Canada. In comparison to American respondents, the employment settings were similar. The majority were employed in a hospital setting (n.b. there was an option for a government hospital for Canadian respondents [$n = 4$ hospital, $n = 1$ government hospital]), followed by clinic and a few in private practice or forensic setting. In contrast to the American respondents' even split between bachelor's and master's education, most Canadians had a bachelor's degree ($n = 7$) and this was the most reported minimum education level ($n = 8$). Experience ranged from 7–8 years to greater than 20 years. However, most responses indicated less than six years in a current position. There was a mixture of full-time, part-time, and contract employment. All were either paid hourly or by contract rates ($n = 7$, $n = 2$, respectively). All Canadian psychometrists reported administering and scoring tests as well as recording observation notes. Other duties followed a similar trend of American psychometrists; a high percentage reported clerical work, ordering protocols, and scheduling patients.

## Discussion

Despite being an occupation that has been in existence for over 75 years, and endorsement from large professional organizations in the field (i.e. APA, AACN, and NAN), psychometry is a field muddled with inconsistencies in job titles and duties. It is not recognized by United States federal labor organizations nor found to be easily defined in a dictionary. The use of psychometrists has been demonstrated to be beneficial to neuropsychology practice, as psychometrists benefit neuropsychologists in efficiency, volume of patients, cost-effectiveness, and objectivity in evaluation (Axelrod et al., 2000; Malek-Ahmadi et al., 2012; Sweet et al., 2015). In alignment with the objectives of NAP, this survey data helps guide individuals

spread across the United States and Canada with typical practices. Review of the tables provided may be used to guide standards of care (e.g. appropriate neuropsychological battery lengths), provide appropriate compensation and benefits based on psychometrist qualifications, define psychometry as a profession, and configure how psychometrists compare to other similar professions.

The current survey included questions about typical length of neuropsychological batteries and the appropriate amount of time to score a battery based on the age-based population as seen in Tables 1 and 2. A quick scan of these tables could easily guide a neuropsychologist and psychometrist to assess the length of time allotted for an individual's expected appointment, and how to best structure a psychometrist's time to balance adequate test administration and scoring time.

One of the seminal objectives of the current survey is to provide accurate and current compensation information for psychometrists, and this survey data serves as a baseline for psychometrist compensation. As a pioneering survey regarding compensation, the figures are intended to be disseminated, and aid in the definition of a psychometrist and the appropriate duties. Compensation is a complex figure with many interacting factors that can affect its outcome. Some of the factors explored with the current survey results included: education, work setting, certification status, years of experience and regional differences. Of the factors examined, years of experience appears to be the most influential followed by certification status—a significant interaction revealed that years of experience are more influential than CSP attainment. It is unclear how these results translate in a broader sense given the lack of available comparisons.

Data other than compensation provided two purposes: to explore any relationship to compensation and the effect it may have and, secondly, to help define the typical duties and expectations of a psychometrist. While compensation information is intended to reach a larger audience, the logistics of everyday practice of psychometrists may be most beneficial to psychometrists themselves and their employers.

As seen in Tables 6A and 6B, all respondents administer and score tests and nearly all record behavioral observations. These are the defining duties of a psychometrist. A majority of psychometrists also generate tables of scores, complete clerical duties, and provide training. A combination of a lack of standardized training for psychometrists and no minimum requirements for hiring a psychometrist (although a generic bachelor's degree is desired) leaves practices to perform their own training for psychometrists.

### *Limitations*

Several key data points were omitted in the current survey including: gender, paid-time-off benefits, and indication of Canadian or U.S. dollars for Canadian compensation. There is also an overall American bias to the survey. There is great difficulty in accessing psychometrists or even identifying how many psychometrists are in practice. Therefore, there is an inherent selection bias and statistical limitations to survey data which must be considered. It is difficult to ascertain whether the sample is truly representative of all psychometrists, and the survey results may reflect data on individuals who are involved in a professional organization. These individuals may be highly autonomous and driven, therefore, the results may overestimate the compensation, duties, and proficiency of psychometrists if less motivated psychometrists did not complete the survey.

Different work settings were not clearly defined within this survey aside from how the respondent self-identified with their employer. Although there may be a strict definition for a work setting, the current survey attempted to use a classification system that was inclusive to the most common settings known to psychometrists. This may be a potential area of improvement for future surveys.

Another area to be improved is the differentiation of contract work. The inconsistencies in the reporting of compensation type and actual figures made analysis difficult. Whenever responses were unclear, these were excluded from analysis. Clarification to reporting contract work rates may substantially increase the size of the sample, and may be considered in the future.

Furthermore, the inconsistency in job title for a psychometrist is also a demonstrated issue. This survey did not allow for levels of seniority within psychometry. Some systems use different levels to differentiate experience and duties, and employer sites may also have a lead psychometrist who is responsible for supervision of other psychometrists. Inclusion of different levels may potentially reveal differences in compensation among other factors (duties, etc.). Finally, while the survey was intended to be anonymous, the survey tool collected IP addresses of the individuals. The merits and drawbacks from such data require consideration in future surveys.

### *Future directions*

Through the use of surveys, NAP can relay data to psychometrists and organizations in order to provide fair compensation and appropriate expectations of workload and job duties. Furthermore, data may be used on a continental scale to advocate for psychometrists to be recognized by government bodies as having a distinct profession separate from other clinical extenders/technicians.

Further surveys can be used to assess change over time in the evolving field of psychometry as it relates to changes in policies and laws. In particular, this may be used in establishment of licensure or credentialing of psychometrists. Given the current results, which indicate a large percentage of respondents provide training of psychometrists, future surveys may include more specifics about training practices and be used in establishing training programs for psychometrists.

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## References

American Academy of Clinical Neuropsychology (1999). American Academy of Clinical Neuropsychology Policy on the use of non-doctoral-level personnel in conducting clinical neuropsychological evaluations. *The Clinical Neuropsychologist, 13*(4), 385–385. doi:10.1076/1385-4046(199911)13:04;1-Y;FT385

Axelrod, B., Heilbronner, R., Barth, J., Larrabee, G., Faust, D., Pliskin, N., … Silver, C. (2000). The use of neuropsychology test technicians in clinical practice: Official statement of the National Academy of Neuropsychology. *Archives of Clinical Neuropsychology, 15*(5), 381–382. doi:10.1016/S0887-6177(00)00054-8

Board of Certified Psychometrists (2017). Retrieved September 7, 2017, from https://psychometristcertification.org/faqs

Bylaws of the National Association of Psychometrists (2016). Retrieved May 25, 2017, from http://napnet.org/resources/Documents/NAP-Bylaws-1-31-14.pdf#page=1&zoom=auto,-15,402

DeLuca, J. W., & Putman, S. H. (1993). The professional/technical model in clinical neuropsychology: Deployment characteristics and practice issues. *Professional Psychology: Research and Practice, 24*(1), 100–106. doi:10.1037/0735-7028.24.1.100

Festa, J. R., Barr, W. B., & Pliskin, N. (2010). The politics of technicians. *The Clinical Neuropsychologist, 24*(3), 506–517. doi:10.1080/13854040802531463

Malek-Ahmadi, M., Erickson, T., Puente, A., Pliskin, N., & Rock, R. (2012). The use of psychometrists in clinical neuropsychology: History, current status, and future directions. *Applied Neuropsychology, 19*(1), 26–31. doi:10.1080/09084282.2011.643936

Musante, G. J. (1974). Staff evaluations of the technician role. *Professional Psychology, 5*(2), 214–216. doi:10.1037/h0037558

Psychometrician. (n.d.). Merriam Webster online. Retrieved from https://www.merriam-webster.com/dictionary/psychometrician

Puente, A. E., Adams, R., Barr, W. B., Bush, S. S., Ruff, R. M., Barth, J. T., … Tröster, A. I. (2006). The use, education, training and supervision of neuropsychological test technicians (psychometrists) in clinical practice: Official statement of the National Academy of Neuropsychology. *Archives of Clinical Neuropsychology, 21*(8), 837–838. doi:10.1016/j.acn.2006.08.011

Sweet, J. J., Benson, R. M., Nelson, N. W., & Moberg, P. J. (2015). The American Academy of Clinical Neuropsychology, National Academy of Neuropsychology, and Society for Clinical Neuropsychology (APA division 40) 2015 TCN professional practice and 'salary survey': Professional practices, beliefs and incomes of US neuropsychologists. *The Clinical Neuropsychologist, 29*(8), 1069–1162. doi:10.1080/13854046.2016.1140228

Turner, S. M., DeMers, S. T., Roberts Fox, H., & Reed, G. M. (2001). APA's guidelines for test user qualifications. *American Psychologist, 56*(12), 1099–1113. doi:10.1037//0003-066X.56.12.1099

United States Department of Labor. (2015). Occupation finder. Retrieved from https://www.bls.gov/ooh/occupation-finder.htm

United States Department of Labor. (2017). Occupational employment statistics. Retrieved from https://www.bls.gov/oes/current/oes_stru.htm#29-0000

2010 geographic terms and concepts – census divisions and census regions – geography – U.S. Census Bureau. (2012, September 1). Retrieved May 18, 2017, from www.census.gov/geo/reference/gtc/gtc_census_divreg.html

# Appendix A

## *Questions*

### *Demographics/Location*

(1) Please provide your current job title.
[open response]
(2) Select the country in which you are currently employed.
United States, Canada
(3) Please select the state in which you are currently employed.
Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, Washington, D.C., West Virginia, Wisconsin, Wyoming
(4) Please provide your current city of employment.
[open response]
(5) Current employment setting.
Hospital, Clinic, Private practice, Research Center, VA/Government, College/School, Forensic, Prison

### *Education/Experience*

(6) Please select your highest level of education.
High School Graduate, Some College, Bachelors Degree, Masters Degree, Doctorate
(7) Please indicate any credentials/licenses you have obtained (Ex: LPA, CBIS, etc.)
[open response]
(8) What is the minimum education level required for your position?
High School graduate, Bachelor's degree, Master's degree, Doctorate, No requirement
(9) What is the preferred education level for your position?
High School graduate, Bachelors Degree, Masters Degree, Doctorate, No preference
(10) Select the total number of years you have been employed as a psychometrist.
<1, 1–2, 3–4, 5–6, 7–8, 9–10, 11–12, 13–14, 15–16, 17–18, 19–20, 21–22, 23–24, 25+
(11) Select the number of years you have been at your current psychometrist position.
<1, 1–2, 3–4, 5–6, 7–8, 9–10, 11–12, 13–14, 15–16, 17–18, 19–20, 21–22, 23–24, 25+

### *Wages/Salary*

(12) Type of employment.
Full time, Part time, Contracted
(13) Type of compensation.
Hourly, Salary, Contracted
(14) For contracted work only. Please select if you charge per hour or per patient.
Per hour, Per patient
(15) For contracted work only. Please enter amount paid per patient, or per hour.
[open response]
(16) For hourly wage only. Please provide your hourly wage.
[open response]
(17) For salaried employees only. Please provide your gross annual income.
[open response]
(18) Average hours worked per day.
1–2, 3, 4, 5, 6, 7, 8, 9, 10,>10
(19) Typical number of days worked per week.
1 day a week, 2 days a week, 3 days a week, 4 days a week, 5 days a week, 6 days a week, 7 days a week
(20) Please select the benefits your employer offers.
Medical, Dental, Vision, Life Insurance, 401(k)/403(b)/etc., Pension Plan, Disability Insurance, IRA, Tuition

Reimbursement, Holiday/Year End Bonus, Goal based financial incentives, Adoption Assistance, Healthy Living Reimbursement, Continuing Education Fund, Partial reimbursement for conference attendance, Full reimbursement for conference attendance, None, Other (Please Specify)

### *Duties/Responsibilities*

(21) Please select the job duties and responsibilities you perform on a regular basis as a psychometrist. Administer/Score Tests, Observation notes/ chart notes, Tables/Spreadsheets of results, Clerical work (filing, faxing,copying), Ordering protocols/protocol inventory, Office supply ordering/inventory, Training, Assisting/Completing research, Appointment scheduling, Manager/Supervisor, Billing, Insurance Preauthorizations, Initial interview w/patients, Patient report writing, Other (i.e. Biofeedback, Therapy)

### *Patients and scheduling*

(22) Please select the patient populations you work with.
Pediatric, < 5 years old, Pediatric, 6–11 year olds, Adolescent, 12–16 year olds, Adult 17–59, Geriatric 60 and over
(23) Please select the average length of time spent administering a typical assessment per patient. ('face to face' test administration time with patient, not scoring time.)
[Rubric with populations seen in question 22 and hours: 0–1 h, 2 h, 3 h, 4 h, 5 h, 6 h, 7 h, 8 h, 9 h, 10+ h)
(24) Please select the average length of time spent scoring a typical assessment per patient.
[Rubric with populations seen in question 22 and hours: <1 h, 1 h, 2 h, 3 h, 4 h, 5+ h]
(25) Approximately how many patients do you test per day.
1, 2, 3, 4, 5+

### *Certification*

(26) Have you obtained certification through the Board of Certified Psychometrists?
YES, NO
(27) If no, do you wish to obtain certification in the future?
Yes, No, Maybe
(28) What is your employer's current preference/requirement on certification for new or existing psychometrists?
(29) If currently a CSP, please select the response you have received for certification from your employer.
Pay increase, Promotion, Acknowledgment/Marketing of certification, Less restrictions, Hired for job, No benefits
(30) Thank you for taking the time to complete this survey. Please leave any comments you have on the survey, along with any suggestions to improve our surveys including any areas you would like to see added.
[open response]