

# Content Analysis of Factors Identified in Vocational Evaluation Analysis Reports

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The focus of this study was to qualitatively analyze the content and scope of vocational evaluation reports from various settings prepared by rehabilitation consultants from around the country. Specifically, this study identified specific variables, factors, patterns and themes that emerged from the data contained within vocational consultation reports. This study provides empirical support for variables and factors that were actually documented and relied upon by vocational consultants in arriving at their conclusions. The results of this study suggest there is a great deal of variability in the variables and factors considered and documented by consultants in arriving at a conclusion. Two hundred thirty four unique variables were identified through review of 30 vocational reports. Surprisingly, only twenty two of them occurred in greater than 50% of the reports reviewed. The authors recommend greater standardization of critical report elements that are empirically grounded in vocational evaluation theory.

## Introduction

The origins of vocational rehabilitation can be traced back to 1920 with the enactment of the Smith-Fess Act which was the foundation for modern day vocational rehabilitation programs (Roessler & Rubin, 2006). Decades of literature have since been published that address many of the factors and issues to be considered within the vocational rehabilitation process. Inherent in the term rehabilitation is an expectation of restoration of a particular function (rehabilitation, n.d.). In the case of vocational rehabilitation planning, the focus is on evaluating a person's vocational strengths and weaknesses and building upon his or her residual capacities to maximize productive occupational output and functional independence (Power, 2006).

The process of vocational rehabilitation evaluation relies upon data from a number of sources. Nadolsky (1971) described vocational evaluation as a process intended to predict work behavior and vocational potential through the application of vocational rehabilitation techniques and procedures. Farnsworth, et al. (2005), wrote that vocational evaluation draws upon clinical skills from the fields of psychology, counseling and education, including file review, diagnostic inter-

viewing, the use of testing, observation, data interpretation and career counseling. The most commonly referenced definition of vocational evaluation scope and practice is provided by the Vocational Evaluation and Work Adjustment Association (VEWWA) which defines the process as:

*a comprehensive process that systematically uses work, either real or simulated, as the focal point for assessment and vocational exploration, the purpose of which is to assist individuals with vocational development. Vocational evaluation incorporates medical, psychological, social, vocational, educational, cultural, and economic data into the process to attain the goals of evaluation (Dowd, 1993).*

Isaacson (1977) described four broad categories of factors that influence workers and their careers. Isaacson's broad categories included psychological, physical, sociological and economic factors. The first two categories, psychological and physical, include consideration of aptitudes; interests, personality and temperament; values; psychological characteristics; training time; physical demands; work conditions and hiring requirements (Isaacson, 1977). The last two categories, sociological and economic, include consideration of occupational regulations; occupational behavioral requirements (both on and off the job); occu-

pational prestige; occupational mobility; economic factors such as supply and demand and the implications of the interaction(s) between the various sociological and economic factors (Isaacson, 1977).

Roessler & Stanford (2006) categorized 48 unique factors into four broad categories that should be considered in arriving at a diagnostic understanding of an individual's vocational potential. The broad categories included physical factors; psychosocial factors; educational-vocational skills development factors and economic factors (Roessler & Stanford, 2006).

In specifically addressing vocational factors as they relate to earning capacity, Shahnasarian (2004), identified 14 specific factors to be addressed in evaluating the vocational earning potential of a person. These factors included stability of career development; work propensity; demonstrated earnings history; phase of career development; subject specific issues; motivation; ability to apply prior skills; future career development prospects; cognition; prognosis; need and capacity for retraining; pre-existing vocational handicaps; acquired vocational handicaps and vocational adjustment issues (Shahnasarian, 2004).

In addition to literature from the field of vocational rehabilitation, literature from the field of economics addresses factors to be considered in vocational assessment. This literature mainly addresses vocational rehabilitation issues from a forensic perspective where the issue of vocational potential and earning capacity is being litigated in a legal venue. This is commonly the case when the litigating parties are examining the economic damages of a case. Typically, vocational issues and medical costs are litigated separately from other damages such as punitive or hedonistic. For example, within the forensic arena, a vocational evaluation may be necessary to determine if an individual is able to return to a previous level of employment following an injury in which negligence is involved.

Dillman (1987) addressed interfacing the economic and vocational aspects of personal injury cases. Vocational factors to be considered included general educational development; specific vocational preparation; occupational aptitudes; occupational interests; occupational temperaments and physical demands (Dillman, 1987). Dillman (1988) described the concept of the age-earnings cycle which addresses the interaction between an individual's age, education and gender with a person's expected earning rate over his or her work life.

Horner and Slesnick (1999) conceptualized vocational factors within an economic supply and demand model. Supply side factors are those factors that an employee brings to an employer in consideration for employment. These factors include an individual's functional capacity; vocational capacity and worker preferences (Horner & Slesnick, 1999). Demand side factors are

external to the individual being evaluated and are a function of the number of jobs available from employers at a given wage rate for a specific vocational capacity profile (Horner & Slesnick, 1999). The demand side then would consider local demographics and geography for a particular labor market. It would also consider factors such as the presence of specific job types, unemployment rate and the availability of workers matching the needed vocational capacity profile.

The first author has had the opportunity for twelve years of experience as a vocational rehabilitation consultant, to observe a great deal of variability in vocational rehabilitation reports prepared by consultants in various settings from around the country. Despite numerous methods and protocols published in peer reviewed journals and textbooks (Andrew, 2000; Cohen & Yankowski, 1997; Havranek, 2007; Havranek, Field & Grimes, 2001; Power, 2006; Rosssler & Rubin, 2006; Shahnasarian, 2004; Weed & Field, 2001), there appears to be a high level of variability in the final product of vocational consultants. In particular, the variability appears to be in the underlying foundation of variables considered in arriving at vocational conclusions. In an investigation of attorney opinions of vocational rehabilitation consultant methodologies, Shahnasarian and Lassiter (2002) found attorneys have little confidence in the objectivity or consistency of methods used by vocational rehabilitation consultants.

Rule 702 of the Federal Rules of Evidence requires that expert methods be reliable. Reliability addresses the consistency of an assessment procedure (Power, 2006). The intent of this study was to qualitatively analyze the content and scope of vocational rehabilitation reports from various settings prepared by vocational consultants from around the country. The goal of the study was to identify specific variables, factors, patterns and themes that emerge from the data. This study provides empirical support for variables that were documented and relied upon by vocational consultants in arriving at their conclusions. Further, the study should provide empirical support for the degree of reliability of variables documented by vocational consultants across a range of service settings.

## Design

An inductive cross-case qualitative analysis was utilized to identify patterns and themes present across individual vocational rehabilitation evaluation reports. Evaluation reports were developed by vocational consultants of varying experience levels from across a range of vocational assessment settings around the United States (Table 1). A qualitative method of inquiry is particularly appropriate for exploring themes that emerge from a particular body of work such as vocational evaluation reports. Each indi-

**Table 1**  
*Distribution of Sample Reports By State and Professional Credentials*

|         | State |    |    |    |    |    |   |    |
|---------|-------|----|----|----|----|----|---|----|
|         | CA    | FL | LA | PA | VA | WA |   |    |
| PH.D.   | 0     | 2  | 0  | 0  | 2  | 0  | 0 | 4  |
| Masters | 2     | 0  | 19 | 1  | 1  | 1  | 2 | 26 |
| CRC     | 2     | 2  | 13 | 1  | 1  | 1  | 2 | 22 |
| CVE     | 0     | 0  | 13 | 0  | 3  | 1  | 0 | 17 |
| CCM     | 0     | 0  | 11 | 0  | 0  | 1  | 2 | 14 |
| CLCP    | 2     | 2  | 8  | 0  | 0  | 0  | 0 | 12 |
| CDMS    | 2     | 0  | 9  | 0  | 0  | 0  | 0 | 11 |
| LPC     | 2     | 2  | 2  | 1  | 0  | 0  | 0 | 7  |
| ABVE    | 0     | 2  | 2  | 0  | 0  | 0  | 0 | 4  |
|         | 2     | 2  | 19 | 1  | 3  | 1  | 2 |    |

vidual evaluation report represents the unique vocational foundation documented by the evaluating consultant in arriving at his or her respective conclusions and recommendations.

Unlike deductive quantitative research designs that attempt to identify main variables and a hypothesis in advance, an inductive qualitative design allows themes to emerge without presuming what the end result will look like (Patton, 2002). Cross-case analysis provides for the emergence of data across evaluation settings and experiences, while grounding the specific context of the case (Patton, 2002).

The research and design methodology for this study was submitted to and approved by the University of Florida Institutional Review Board (IRB).

### Method

A convenience sample ( $N=30$ ) of vocational rehabilitation analysis reports was analyzed in this study. The reports were collected from a number of sources and settings (Table 2). The report inclusion criteria for the study were:

1. No more than two reports from any one consultant.
2. No more than one plaintiff and one defense report from any one consultant.
3. Report must render an opinion of employability or wage earning capacity in the conclusion.
4. The author of the report must hold at least one of the following professional credentials: CRC, CVE, ABVE, CDMS

Data analysis was conducting using NVivo Qualitative Analysis Software. NVivo is a flexible and dy-

**Table 2**  
*Distribution of Sample Reports by Source of Report, Practice Area and Retaining Party*

| Report Source                                                                    | PI | WC | DVR | DIV | LTD | PLA | DEF | UNCLASS |
|----------------------------------------------------------------------------------|----|----|-----|-----|-----|-----|-----|---------|
| Sample report from an Educational Conference or Instructional Program            | 4  | 0  | 0   | 0   | 0   | 2   | 2   | 0       |
| Report was voluntarily submitted for inclusion in the study by the report author | 5  | 3  | 0   | 0   | 0   | 4   | 4   | 0       |
| Report obtained from a review of authors personal caseload                       | 5  | 8  | 1   | 2   | 2   | 10  | 5   | 3       |
|                                                                                  | 14 | 11 | 1   | 2   | 2   | 16  | 11  | 3       |

PI=personal injury; WC=workers compensation; DVR=State Division of Vocational Rehabilitation; DIV=marital dissolution; LTD=long term disability; PLA=Plaintiff; DEF=Defendant; UNCLASS=report neither plaintiff or defense.

dynamic software tool used by qualitative researchers to assist in the data analysis process. NVivo provided this researcher with a dynamic method for consistently coding data within individual evaluation reports and to perform cross-case analysis for like coded data points or nodes as they are referred to in NVivo (QSR International Pty Ltd., 2008).

Each paragraph within a report was coded by the creation of nodes that referenced unique variables addressed by the vocational consultant in that paragraph of the report. Using this coding technique, the researcher was able to interpret the raw qualitative report data in terms of specific variables documented by the consultant in the development of the report. Using a cross-case qualitative analysis approach, the researcher was able to identify the frequency and incidence of specific variables across reports prepared by consultants in a number of settings and contexts as well as professional credentials.

### Analysis

Once coding was completed, 234 unique variables had been coded across all sample reports. These variables were then consolidated into clusters or major categories or factors. After consolidation, all 234 individual variables had been clustered into one of eighteen major categories (Table 3).

Only two (11%) of the eighteen categories of variables were addressed in each of the 30 reports included in the sample. Each of the reports reviewed, addressed both past employment factors and personal factors. Between these two categories, were 37% of the total individual variables identified in the study. When looking at categories considered in over 90% of the reports in the sample, five categories (28%) were addressed which included 49% of the total individual variables identified in the study. The additional variables considered in over 90% of the reports reviewed included educational variables (97%); medical variables (97%) and purpose of assessment (90%).

Five of the categories were considered in 50% of the reports or less which accounted for only 16% of the total variables identified. These categories included activities of daily living (50%); military service (43%); transferable skills analysis (43%); economic factors (37%); work life expectancy (17%) and life expectancy (3%).

When examining the data at the variable level versus category level, a clearer picture of the scope of individual variables considered in each report surfaced. Of the total 234 individual variables identified, only 22 (9%) were considered in greater than 50% of the reports reviewed (Table 4). Of these 22 variables, six (27%) were employment variables; four (18%) were educational variables; three (14%) were personal vari-

ables; two (1%) were medical variables and two (1%) were familial variables. The remaining variables represented only one variable within each category and considered purpose of assignment; medication variables; transportation variables; psychometric variables and literature resources.

The remaining 212 (91%) of the individual variables identified were considered to varying degrees in 50% or less of the reports reviewed. Obviously, these variables represent a great deal of variability in the reports reviewed in terms of content and depth of the factors considered in the consultant opinions.

While the personal injury category had the highest number of average variables identified, it also had the highest level of variability among the five matter types examined. The lowest level of variability was noted in marital dissolution matters. Table 5 shows the number of factors identified in the each report, based upon the venue in which the report was prepared.

Table 6 shows the number of factors identified in the each report, based upon the credentials and level of education held by the consultant's preparing the reports.

Consultants who were state licensed as professional counselors had the highest number of average variables identified in their reports with moderately high variability. The lowest level of variability was noted in consultants certified as vocational evaluators and case managers. The highest level of variability was noted in consultants certified by the American Board of Vocational Experts. Consultants holding a doctoral degree were very similar to consultants holding a masters degree in terms of comparing measures of central tendency and variability.

In comparing differences in reports prepared for plaintiffs versus the defense, variability was very similar, but reports prepared for the defense addressed, on average, 37% more factors than those prepared for the plaintiff. (see Table 7).

### Discussion

There are four major vocational considerations that represent seminal factors upon which disability evaluations are derived. The factors of age, level of education, work experience and physical abilities form the basic foundation upon which other factors are considered (20 CFR 404 § 1560-1569). However, other than administrative settings such as Social Security disability evaluations, simple evaluation of these basic factors would be insufficient for fully evaluating a person's true vocational rehabilitation potential.

This study qualitatively identified 234 unique variables considered by vocational consultants across a range of venues (Table 8). These factors were orga-

**Table 3***Major Category Groupings for Factors and Rate of Report Incidence*

|                              | Number of Individual<br>Factors in Category | Number of Reports<br>Addressing Factors<br>within Category | Percentage of Reports<br>Addressing Factors<br>within Category |
|------------------------------|---------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------|
| Employment Factors           | 27                                          | 30                                                         | 100%                                                           |
| Personal Factors             | 59                                          | 30                                                         | 100%                                                           |
| Educational Factors          | 16                                          | 29                                                         | 97%                                                            |
| Medical Factors              | 12                                          | 29                                                         | 97%                                                            |
| Purpose of Assignment        | 1                                           | 27                                                         | 90%                                                            |
| Literature Resources         | 14                                          | 26                                                         | 87%                                                            |
| Avocational Factors          | 6                                           | 23                                                         | 77%                                                            |
| Familial Factors             | 18                                          | 22                                                         | 73%                                                            |
| Transportation Factors       | 18                                          | 22                                                         | 73%                                                            |
| Medication Factors           | 6                                           | 20                                                         | 67%                                                            |
| Psychometric Factors         | 12                                          | 20                                                         | 67%                                                            |
| Observations                 | 29                                          | 19                                                         | 63%                                                            |
| Activities of Daily Living   | 1                                           | 15                                                         | 50%                                                            |
| Military Service             | 6                                           | 13                                                         | 43%                                                            |
| Transferable Skills Analysis | 1                                           | 13                                                         | 43%                                                            |
| Economic Factors             | 6                                           | 11                                                         | 37%                                                            |
| Work Life Expectancy         | 1                                           | 5                                                          | 17%                                                            |
| Life Expectancy              | 1                                           | 1                                                          | 3%                                                             |
| <b>N=234</b>                 |                                             |                                                            |                                                                |

**Table 4***Individual Factors Considered in Greater than 50% of the Reports Reviewed (22 factors)*

| Category                                    | Number of Reports<br>Addressing Factor | Percentage of Reports<br>Addressing Factor |
|---------------------------------------------|----------------------------------------|--------------------------------------------|
| Employment-Past Work-Job Title              | 30                                     | 100%                                       |
| Personal-Gender                             | 30                                     | 100%                                       |
| Educational-Secondary                       | 29                                     | 97%                                        |
| Employment-Past Work-Employment Dates       | 29                                     | 97%                                        |
| Personal-Age                                | 29                                     | 97%                                        |
| Employment-Past Work-Job Duties             | 27                                     | 90%                                        |
| Medical-Treatment History                   | 27                                     | 90%                                        |
| Purpose of assignment                       | 27                                     | 90%                                        |
| Employment-Past Work-Employer Name          | 26                                     | 87%                                        |
| Employment-Past Work-Pay Rate End           | 24                                     | 80%                                        |
| Personal-Functional Limitations             | 21                                     | 70%                                        |
| Medication-RX                               | 20                                     | 67%                                        |
| Transportation-DL                           | 20                                     | 67%                                        |
| Psychometric-Vocational Testing             | 20                                     | 67%                                        |
| Familial-Marital Status                     | 19                                     | 63%                                        |
| Educational-Secondary-Date of Highest Grade | 18                                     | 60%                                        |
| Medical-Secondary Medical Conditions        | 18                                     | 60%                                        |
| Educational-Secondary-Highest Grade         | 17                                     | 57%                                        |
| Employment-Past Work-Physical Requirements  | 17                                     | 57%                                        |
| Familial-Children                           | 17                                     | 57%                                        |
| Literature Resources-DOT                    | 17                                     | 57%                                        |
| Educational Factor-Vocational               | 16                                     | 53%                                        |

**Table 5**  
*Factors Based on Venue*

| Venue                     | <i>n</i> | <i>M</i> | <i>SD</i> |
|---------------------------|----------|----------|-----------|
| Personal injury           | 14       | 69       | 23        |
| Workers compensation      | 11       | 63       | 20        |
| Vocational rehabilitation | 1        | 54       | -         |
| Marital dissolution       | 2        | 53       | 13        |
| Long term disability      | 2        | 52       | 17        |

**Table 6**  
*Factors Based on Credentials and Level of Education*

| Credentials                                       | <i>n</i> | <i>M</i> | <i>SD</i> |
|---------------------------------------------------|----------|----------|-----------|
| Licensed Professional Counselor                   | 13       | 71       | 24        |
| Certified Rehabilitation Counselor                | 23       | 65       | 21        |
| Certified Life Care Planner                       | 12       | 65       | 22        |
| Certified Disability Management Specialist        | 11       | 65       | 25        |
| Certified Vocational Evaluator                    | 15       | 60       | 16        |
| American Board of Vocational Expert Certification | 4        | 60       | 26        |
| Certified Case Manager                            | 13       | 55       | 13        |
| Doctoral Degree                                   | 4        | 68       | 20        |
| Masters Degree                                    | 26       | 63       | 21        |

**Table 7**  
*Factors Based on Retaining Party*

| Retaining Party | <i>n</i> | <i>M</i> | <i>SD</i> |
|-----------------|----------|----------|-----------|
| Plaintiff       | 16       | 57       | 20        |
| Defense         | 11       | 77       | 19        |

nized into eighteen major categories (Table 3). Of the aforementioned seminal factors considered by vocational consultants, they combined to account for the top four (of the 234) of the top 7 variables documented by vocational consultants in this study. This demonstrated very high agreement between consultants in considering the most basic of vocational factors.

However, only 22 of the 234 individual variables identified were addressed in greater than 50% of the reports reviewed (Table 4). Of these 22 variables, six were employment variables (job title; employment dates; past work-job duties; past work-employer name; past work-pay rate end; past work-physical requirements); four were educational variables (secondary education; secondary-date of highest grade; secondary-highest grade; vocational training); three were personal variables (gender; age; personal opinion of functional limitations); two were medical variables (treatment history; secondary medical conditions); two were familial variables (marital status; children). The balance of the 22 variables were purpose of assignment; medication factors; transporta-

tion factors; psychometric factors and literature resources.

Surprisingly, activities of daily living issues were only addressed in 50% of the reports reviewed. An analysis at the case level revealed assessment of this factor was evenly distributed across workers compensation, personal injury and long term disability venues as well as the party retaining the consultant. When examining reports addressing activities of daily living as a group, the reports in general were longer and addressed more variables on average ( $N=15$ ,  $M=70$ ,  $SD=19$ ) than the entirety of the report sample ( $N=30$ ,  $M=64$ ,  $SD=21$ ) and had less variability.

A key foundation factor in the assessment of vocational rehabilitation potential involves an examination of a person's past work experience (Dillman, 1987; Dillman, 1988; Dowd, 1993; Isaacson, 1977; Roessler & Stanford, 2006; Shahnasarian, 2004). This variable was well represented in the top 22 factors considered by consultants in greater than 50% of the report sample. As mentioned previously, 6 of the top

Table 8

Individual Factors Considered in 50% or less of the Reports Reviewed (212 factors)

| Category                                      | # of Rpts | % of Rpts | Category                              | # of Rpts | % of Rpts |
|-----------------------------------------------|-----------|-----------|---------------------------------------|-----------|-----------|
| Activities of Daily Living                    | 15        | 50%       | Employment-Past Work-Overtime         | 6         | 20%       |
| Avocation-Hobbies-Post Injury                 | 15        | 50%       | Medication-OTC                        | 6         | 20%       |
| Familial-Children Age                         | 15        | 50%       | Medication-Side Effects               | 6         | 20%       |
| Medical-Functional Capacity                   | 15        | 50%       | Observation-Affect                    | 6         | 20%       |
| Medical-Present Medical Status                | 15        | 50%       | Observation-Cognitive Functioning     | 6         | 20%       |
| Vocational Testing-Ability                    | 15        | 50%       | Personal-Mental-Sleep                 | 6         | 20%       |
| Education-Higher                              | 14        | 47%       | Vocational Testing-Scores-GE          | 6         | 20%       |
| Employment-Past Work-Hours Worked             | 14        | 47%       | Avocation-Keyboarding                 | 5         | 17%       |
| Employment-Past Work-Why Left                 | 14        | 47%       | Economic-Social Security-Award status | 5         | 17%       |
| Military-Service                              | 13        | 43%       | Employment-Unemployment Periods       | 5         | 17%       |
| Personal-Time in Area                         | 13        | 43%       | Familial-Children Education           | 5         | 17%       |
| Personal-Vocational-Planning                  | 13        | 43%       | Familial-Spouse-Employment Status     | 5         | 17%       |
| Transferable Skills Analysis                  | 13        | 43%       | Observation-Concentration             | 5         | 17%       |
| Education-Secondary-Performance               | 12        | 40%       | Observation-Effort                    | 5         | 17%       |
| Employment-Past Work-Location                 | 12        | 40%       | Observation-Timeliness                | 5         | 17%       |
| Personal-Dominant Hand                        | 12        | 40%       | Personal-Ability-Reading              | 5         | 17%       |
| Personal-Pain                                 | 12        | 40%       | Personal-Ability-Reading Sample       | 5         | 17%       |
| Vocational Testing-Scores-Percentile          | 12        | 40%       | Personal-Mental-Depression            | 5         | 17%       |
| Avocation-Computer                            | 11        | 37%       | Personal-Substance-Illicit Drug Use   | 5         | 17%       |
| Observation-Communication                     | 11        | 37%       | Personal-Weight Change                | 5         | 17%       |
| Vocational Testing-Interests                  | 11        | 37%       | Transportation-DL Class               | 5         | 17%       |
| Employment-Past Work-Accommodations           | 10        | 33%       | Transportation-Vehicle-Model Year     | 5         | 17%       |
| Familial-Cohabitation                         | 10        | 33%       | Vocational Testing-Dexterity          | 5         | 17%       |
| Vocational Testing-Aptitude                   | 10        | 33%       | Vocational Testing-Personality        | 5         | 17%       |
| Avocation-Hobbies-Pre Injury                  | 9         | 30%       | Work Life Expectancy                  | 5         | 17%       |
| Education-Higher-Course of Study              | 9         | 30%       | Avocation-Computer Software           | 4         | 13%       |
| Personal-Location Born                        | 9         | 30%       | Economic-Expenses                     | 4         | 13%       |
| Economic-Income-Sources                       | 8         | 27%       | Education-Higher-Accumulated Credits  | 4         | 13%       |
| Education-Higher-Duration                     | 8         | 27%       | Education-Higher-Performance          | 4         | 13%       |
| Medical-Adaptive Aids                         | 8         | 27%       | Education-Secondary-Repeated Grades   | 4         | 13%       |
| Medical-Description of Injury                 | 8         | 27%       | Employment-Past Work-How Obtained     | 4         | 13%       |
| Medical-Non RX Pain Control                   | 8         | 27%       | Medical-Consult with Medical Provider | 4         | 13%       |
| Observation-Cooperation                       | 8         | 27%       | Observation-Grooming                  | 4         | 13%       |
| Personal-Height                               | 8         | 27%       | Observation-Mental Status             | 4         | 13%       |
| Personal-Legal Involvement                    | 8         | 27%       | Observation-Pain Indicators           | 4         | 13%       |
| Personal-Race                                 | 8         | 27%       | Observation-Physical Appearance       | 4         | 13%       |
| Personal-Vocational-Efforts                   | 8         | 27%       | Observation-Postural Changes          | 4         | 13%       |
| Transportation-Transportation to Evaluation   | 8         | 27%       | Observation-Third Party Present       | 4         | 13%       |
| Transportation-Vehicle Type                   | 8         | 27%       | Personal-Home Ownership               | 4         | 13%       |
| Vocational Testing-Scores-SS                  | 8         | 27%       | Personal-Language                     | 4         | 13%       |
| Economic-Income-Amount                        | 7         | 23%       | Personal-Mental-Concentration         | 4         | 13%       |
| Economic-Social Security-Applied              | 7         | 23%       | Personal-Pain Rating                  | 4         | 13%       |
| Employment-Licenses and Certifications        | 7         | 23%       | Personal-Sensory-Vision-Glasses       | 4         | 13%       |
| Employment-Past Work-Pay Rate Start           | 7         | 23%       | Resource-Labor Market Survey          | 4         | 13%       |
| Medical-Psychological Treatment               | 7         | 23%       | Resource-Resume                       | 4         | 13%       |
| Observation-Dress                             | 7         | 23%       | Transportation-Public Transportation  | 4         | 13%       |
| Observation-Gait                              | 7         | 23%       | Education-Secondary-Extra Curricular  | 3         | 10%       |
| Observation-Memory                            | 7         | 23%       | Familial-Children-Dependency          | 3         | 10%       |
| Personal-Future Orientation                   | 7         | 23%       | Medical-MMI                           | 3         | 10%       |
| Personal-Home Address                         | 7         | 23%       | Medical-Treatment Fu schedule         | 3         | 10%       |
| Personal-Home Description                     | 7         | 23%       | Observation-Interpersonal             | 3         | 10%       |
| Personal-Substance-ETOH Abuse                 | 7         | 23%       | Observation-Validity of Evaluation    | 3         | 10%       |
| Personal-Substance-Tobacco Use                | 7         | 23%       | Observation-Vision                    | 3         | 10%       |
| Personal-Weight                               | 7         | 23%       | Personal-Exercise                     | 3         | 10%       |
| Resource-BLS Data                             | 7         | 23%       | Personal-Mental-Memory-ST             | 3         | 10%       |
| Transportation-DL State                       | 7         | 23%       | Personal-Pain Highest                 | 3         | 10%       |
| Transportation-Driving-Subjective Limitations | 7         | 23%       | Personal-Pain Lowest                  | 3         | 10%       |
|                                               |           |           | Resource-ONET                         | 3         | 10%       |

Table 8 (Continued)

Individual Factors Considered in 50% or less of the Reports Reviewed (212 Factors)

| Category                                | # of Rpts | % of Rpts | Category                               | # of Rpts | % of Rpts |
|-----------------------------------------|-----------|-----------|----------------------------------------|-----------|-----------|
| Resource-State Labor Statistics         | 3         | 10%       | Life Expectancy                        | 1         | 3%        |
| Transportation-Vehicle-Transmission     | 3         | 10%       | Medication-Purpose                     | 1         | 3%        |
| Economic-Social Security-Representation | 2         | 7%        | Military-Discharge Type                | 1         | 3%        |
| Education-ESE                           | 2         | 7%        | Military-Duty Station                  | 1         | 3%        |
| Employment-Past Work-Benefits           | 2         | 7%        | Military-Highest Rank                  | 1         | 3%        |
| Employment-Past Work-Direct             |           |           | Military-Job Specialty                 | 1         | 3%        |
| Employer Interview                      | 2         | 7%        | Observation-Adaptive Aids              | 1         | 3%        |
| Employment-Past Work-Employer           |           |           | Observation-Anxiety                    | 1         | 3%        |
| Evaluation Criteria                     | 2         | 7%        | Observation-Dexterity                  | 1         | 3%        |
| Employment-Past Work-Job                |           |           | Observation-Evaluation Duration        | 1         | 3%        |
| Performance                             | 2         | 7%        | Observation-Evaluation Location        | 1         | 3%        |
| Employment-Past Work-Job                |           |           | Observation-Follow Instructions        | 1         | 3%        |
| Satisfaction                            | 2         | 7%        | Observation-Frustration Tolerance      | 1         | 3%        |
| Employment-Past Work-Union              |           |           | Observation-Hearing                    | 1         | 3%        |
| Membership                              | 2         | 7%        | Personal-Ability-Arithmetic            | 1         | 3%        |
| Employment-Present Work Status          | 2         | 7%        | Personal-Ability-Cash Handling         | 1         | 3%        |
| Employment-Self Employment              | 2         | 7%        | Personal-Ability-Language              | 1         | 3%        |
| Familial-Children-Gender                | 2         | 7%        | Personal-Communication-Email           | 1         | 3%        |
| Familial-Children-Location              | 2         | 7%        | Personal-Communication-Telephone       | 1         | 3%        |
| Familial-Parents                        | 2         | 7%        | Personal-Coordination & Balance        | 1         | 3%        |
| Familial-Parents-Occupation             | 2         | 7%        | Personal-Functional Capacity Agreement | 1         | 3%        |
| Medical-Allergies                       | 2         | 7%        | Personal-Functional Modifications      | 1         | 3%        |
| Medication-Dosage                       | 2         | 7%        | Personal-Intimate Relations            | 1         | 3%        |
| Medication-Prescriber                   | 2         | 7%        | Personal-Location Raised               | 1         | 3%        |
| Military-DOS                            | 2         | 7%        | Personal-Medical Treatment Response    | 1         | 3%        |
| Observation-Duration of Evaluation      | 2         | 7%        | Personal-Mental-Anger Management       | 1         | 3%        |
| Observation-Physical Tolerance          | 2         | 7%        | Personal-Mental-Coping Response        | 1         | 3%        |
| Personal-Ability-Writing                | 2         | 7%        | Personal-Mental-Memory-LT              | 1         | 3%        |
| Personal-Citizenship                    | 2         | 7%        | Personal-Mental-Mood                   | 1         | 3%        |
| Personal-Job Seeking Skills             | 2         | 7%        | Personal-Mental-Orientation            | 1         | 3%        |
| Personal-Mental-Social                  | 2         | 7%        | Personal-Mental-Role Identity          | 1         | 3%        |
| Personal-Mental-Suicidal Ideation       | 2         | 7%        | Personal-Rx Prior to Evaluation        | 1         | 3%        |
| Personal-Nickname                       | 2         | 7%        | Personal-Sensory-Vision                | 1         | 3%        |
| Resource-COJ                            | 2         | 7%        | Personal-Sensory-Vision-Last Exam      | 1         | 3%        |
| Resource-Past Earnings-W2               | 2         | 7%        | Resource-Bureau of Census Data         | 1         | 3%        |
| Resource-SCO                            | 2         | 7%        | Resource-Job Analysis                  | 1         | 3%        |
| Transportation-DL Endorsements          | 2         | 7%        | Resource-OOH                           | 1         | 3%        |
| Transportation-Driving Record           | 2         | 7%        | Resource-SSA Earning Record            | 1         | 3%        |
| Transportation-Vehicle Modifications    | 2         | 7%        | Resource-Unemployment Data             | 1         | 3%        |
| Transportation-Vehicle Power Equipment  | 2         | 7%        | Transportation-Disabled Parking Permit | 1         | 3%        |
| Transportation-Vehicle Reliability      | 2         | 7%        | Transportation-DL Expiration           | 1         | 3%        |
| Vocational Testing-Norm Group           | 2         | 7%        | Transportation-DL Number               | 1         | 3%        |
| Vocational Testing-Scores-Raw           | 2         | 7%        | Transportation-DL-Restrictions         | 1         | 3%        |
| Avocation-Computer Peripheral           | 1         | 3%        | Vocational Testing-Scores-SEM          | 1         | 3%        |
| Education-Secondary-Favorite Classes    | 1         | 3%        |                                        |           |           |
| Education-Vocational-Duration           | 1         | 3%        |                                        |           |           |
| Education-Vocational-Performance        | 1         | 3%        |                                        |           |           |
| Employment-Awards                       | 1         | 3%        |                                        |           |           |
| Employment-Bonus Pay                    | 1         | 3%        |                                        |           |           |
| Employment-Past Work-Job Qualifications | 1         | 3%        |                                        |           |           |
| Employment-Past Work-Rehire Eligibility | 1         | 3%        |                                        |           |           |
| Familial-Children Health                | 1         | 3%        |                                        |           |           |
| Familial-Children-Employment            | 1         | 3%        |                                        |           |           |
| Familial-Parents Education              | 1         | 3%        |                                        |           |           |
| Familial-Parents-Health Status          | 1         | 3%        |                                        |           |           |
| Familial-Siblings                       | 1         | 3%        |                                        |           |           |
| Familial-Siblings-Occupation            | 1         | 3%        |                                        |           |           |
| Familial-Spouse-Disability Status       | 1         | 3%        |                                        |           |           |

22 variables were employment related. Cumulatively, there were 27 unique employment variables identified in the report sample. These factors were evenly distributed throughout the variable distribution with 14 of the 27 employment variables identified in less than 20% of the reports.

Despite employment variables having the greatest representation in the top 22 variables, this did not positively impact the inclusion of transferability of skills analysis in the reports. Surprisingly, transferability of skills was explicitly addressed in only 43% of the report sample. Transferable skills may be present when the skilled or semi-skilled work activities a person has performed in their past work, can be utilized, or transferred, to meet the requirements of skilled or semi-skilled work activities of other work or jobs (20 CFR 404.1568). Transferability of work skills is an important foundation factor to be considered in any attempt to identify jobs compatible with a workers traits and functional abilities (Havranek, Field & Grimes, 2001; Weed & Field, 2001). An analysis at the case level revealed assessment of transferable skills was present in 82% of workers compensation reports, but only in 21% of personal injury reports. The factor was evenly distributed for the party retaining the consultant. Possible reasons for this imbalance are an explicit requirement or expectation for completion of transferability of skills analysis in most workers compensation statutes.

The highest degree of variability in a single category was observed in self reports from the subject being evaluated. This category contained 59 unique variables that addressed a wide range of self report issues from the subject. Examples include things such as age, height, weight, residence description, pain ratings, subjective reports of functional capacity, mental health and memory factors. These variables would generally be collected during a psychosocial interview of a subject and are highly specific to the subject which probably accounts for the high level of variability observed. More of the psychosocial variables were considered by consultants who were credentialed as licensed professional counselors than by any other vocational or rehabilitation specific credential. This may be due to a strong psychosocial focus in the formal training and internship experiences of this group of consultants.

Another surprising finding was the relative absence of evaluator observations in most of the reports reviewed. A total of 29 unique observation related variables were identified across the report sample. The most frequent observation made by consultants was of the subjects communication skills which were present in only 37% of the reports reviewed. Additional observations made in at least 20% of the reports, was cooperativeness of the subject (27%); the subject's manner of dress, gait and general memory (23%); and general

affect and cognitive functioning (20%). The remaining 22 variables were identified in less than 20% of the report sample. As with psychosocial factors, the consultants who were credentialed as licensed professional counselors documented more observations of the subject than any other vocational or rehabilitation specific credentialed consultant.

In recent years, expert opinions have begun to come under greater levels of scrutiny under Rule 702 of the Federal Rules of Evidence (Daubert, 1993; Joiner, 1996; Carmichael, 1999). Rule 702 states:

*If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.*

As noted in Rule 702, methods should be reliable. Reliability addresses the consistency of an assessment procedure (Power, 2006). The results of this study suggest a great deal of variability in the interview methodology used to collect evaluatee information as well in the variables documented by consultants in the written reports outlining the consultant's conclusions. Based upon this, it is questionable as to whether a cogent argument could be made that a reliable method, such as is required by Rule 702, is employed in interviewing subjects. Only 22 of the 234 unique factors identified occurred in greater than 50% of the reports reviewed. The results of this study suggest a very low level of methodological reliability in terms of variables documented by vocational consultants across an array of settings in arriving at their conclusions.

This study should be interpreted with caution in that only a small sample of reports was evaluated and the sample of reports was highly weighted to vocational consultants in Florida. Further, some variables identified, would be considered cascading variables. In other words, not all variables would be considered in all reports. For example, while 6 unique variables were identified related to military service, a negative response to a subject serving in any branch of the military would preclude the consultant from further evaluation of the variable thus eliminating all 6 variables, not just one. Lastly, this study does not assess the "true" variables considered by consultants, but only those variables that were documented as being addressed. For example, if a subject did not serve in the military, the consultant may have simply omitted this from the report as not being relevant to the analysis at hand.

Clearly, this study does suggest additional research is warranted to clarify critical variables that should be

considered by vocational consultants in arriving at a conclusion. Research should address this issue both across settings as well as within a particular setting such as forensic earning capacity evaluations. In addition to foundational variables, independent variables that would warrant additional investigation include consultant credentials, evaluation venue and retaining party / referral source.

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