

GREGORY RESEARCH BELIEFS SCALE:
FACTOR STRUCTURE AND PSYCHOMETRIC PROPERTIES

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Dedication

This work is dedicated to my proud mother, Shirley Mae Gregory. Thank you for being such a great mother and human being.

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Virgil L. Gregory Jr.

GREGORY RESEARCH BELIEFS SCALE:

FACTOR STRUCTURE AND PSYCHOMETRIC PROPERTIES

The study at hand involves developing the Gregory Research Beliefs Scale (GRBS) to reliably and validly measure social work students' beliefs about the function of research in social work practice. Research has considerable actual and potential benefits for practice. Social work students' beliefs about this construct are vital. A description of the advantages of using research to inform practice is given. Additionally, the Council on Social Work Education and National Association of Social Workers' policies that mandate the merger of research and practice are also provided to further justify the need for adequate psychometric evaluation of the construct. Details of the literature search strategy are described and critical evaluations of the empirical articles are conducted. Based on critical evaluations of instruments which have previously measured the same construct, a number of psychometric shortcomings are outlined to validate the need for further scale development of the construct. The present study's objectives were to develop a scale which has an empirically and theoretically supported factor structure, acceptable coefficient alpha levels, empirically supported discriminant (divergent) validity, concurrent criterion validity, and known-groups criterion validity. Steps for developing the GRBS's items, response format, sample, research design, and statistical tests are specified and conducted to determine the factor structure and psychometric properties. Finally, the strengths, limitations, and areas for future research are discussed.

Cathy K. Pike, PhD, Chair

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LIST OF ABBREVIATIONS

<i>a</i>	Intercept
AF	Alpha Factoring
AIC	Akaike Information Criterion
APA	American Psychological Association
<i>b</i>	Regression Coefficient or Slope
BSW	Bachelor's in Social Work
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CPT	Classic Psychometric Theory
CSWE	Council of Social Work Education
<i>d</i>	Cohen's <i>d</i>
<i>df</i>	Degrees of Freedom
DSW	Doctorate in Social Welfare
EFA	Exploratory Factor Analysis
F	F Statistic
<i>g</i>	Hedge's <i>g</i>
GLS	Generalized Least Squares
G-CAS	Graduate Student Computer Anxiety Scale
GRBS	Gregory Research Beliefs Scale
IU	Indiana University
IUPUI	Indiana University–Purdue University Indianapolis
IUSSW	Indiana University School of Social Work
KMO	Kaiser–Meyer–Olkin
K–RRI	Kirk–Rosenblatt Research Inventory

LISREL	Linear Structural Relationships
M	Mean
MANOVA	Multivariate Analysis of Variance
MARS-R	Mathematics Anxiety Rating Scale Revised
MBA	Master's in Business Administration
ML	Maximum Likelihood
MRA	Minimum Residual Analysis
MS	Master's in Science
MSW	Master's in Social Work
N	Sample Size
n_1	Sample size of the first sample
n_2	Sample size of the second sample
NASW	National Association of Social Workers
NNFI	Non-Normed Fit Index
p	Probability Level
pp.	Pages
PAF	Principal Axis Factoring
PCA	Principal Component Analysis
r	Correlation Coefficient
R	Multiple Correlation Coefficient
R^2	Multiple Coefficient of Determination
Rep.	Representative
RMSEA	Root Mean Squared Error of Approximation
RSE	Research Self-Efficacy Scale
SD	Standard Deviation

SEM	Structural Equation Modeling
Sig.	Significance
SIMPLIS	SIMPLe English for LISrel models
SMEs	Subject Matter Experts
SPSS	Statistical Package for the Social Sciences
SRMR	Standardized Root Mean Squared Residual
SWE	Social Work Empowerment Scale
SWK	Social Work
SWLS	Satisfaction with Life Scale
SWSE	Social Work Self-Efficacy Scale
t	T Statistic
TLI	Tucker-Lewis Index
ULS	Unweighted Least Squares
WLS	Weighted Least Squares
x	A social work student's hypothetical score on the GRBS
X^2	Chi-Square
\hat{Y}	Total Number of Completed Research and Statistics Courses To Be Predicted
α	Alpha

INTRODUCTION

The Role of Research in Practice

Research has considerable actual and potential benefits for social work practice (Blythe & Tripodi, 1989; Cheetman, 1997; Cournoyer & Klein, 2000; Cournoyer & Powers, 2002; Ell, 1997; Epstein, 1996; Franklin, 1999; Gilgun, 2005; Grinnell, 1997; Jenson, 2005; Kirk, 1992; Kirwin, 1994; Proctor, 2001, 2003a, 2003b; Reamer, 1992; Rosen, 1996; Rosen & Proctor, 2002; Royse, 1999; Rubin & Babbie, 2005; Schilling, 1997; Thyer, 2002; Weinbach & Grinnell, 2001). Understanding social work students' beliefs about this construct is essential. If research has no advantages for practice, any psychometric examination of the construct will be meaningless and void. By explaining the role that research has in practice, the importance of students' beliefs about the subject matter becomes more evident and compelling. Likewise, the need for reliable and valid psychometric measurement of the construct is further supported.

There are several justifications for applying empirically supported interventions to practice. First and foremost, research provides practitioners with empirically tested methods that aid the practitioner in selecting interventions that are likely to produce favorable outcomes (Rosen & Proctor, 2002; Rubin & Babbie, 2005; Weinbach & Grinnell, 2001). Rosen and Proctor define "interventions" as actions which are implemented by the social worker to yield successful outcomes. Likewise, Rosen and Proctor define "outcomes" as being the circumstance the practitioner wishes to alter. According to Meehl (1997), research is a superior alternative to clinical wisdom/practice experience. Practice decisions made on the basis of research (actuarial evidence) are likely to be more efficient with regard to time and money (Dawes, Faust, & Meehl, 1989). Meehl takes a pro-positivist stance against practice wisdom to encourage clinical psychologists to embrace decision-making based on

research. With some exceptions, the argument put forth by Meehl is directly applicable to the current status quo in social work. Meehl maintained that the quantitative tools (e.g., multivariate statistics, experimental research designs) employed in the scientific method provide the best strategies for answering questions encountered in practice. To reiterate, the chief advantage of research is that it guides social work practitioners in applying the most efficient interventions to client problems to achieve the most beneficial outcome and to avoid those interventions which are harmful or ineffective (Grinnell, 1997).

Second, provided that social workers stay vigilant of such new findings, research allows social workers to be educated about any new empirically supported practice approaches that have been recently established (Thyer, 2002). For example, research has shown that when pharmacotherapy is used in conjunction with cognitive behavioral therapy, the combined treatment package is more effective in managing positive and negative schizophrenic symptoms than pharmacotherapy alone (Rector & Beck, 2001). Third, research provides social work practitioners with insights pertaining to various subjects that hold relevance for their respective client populations (Rubin & Babbie, 2005). Fourth, research plays a major role in managed care decisions regarding reimbursement for services (Cournoyer & Powers, 2002). Franklin (2002) suggested that social workers with training in various evidence-based practices are more likely to be successful in a managed care environment. Finally, social work students and practitioners use research to understand published reports and to evaluate practice (Bloom, Fischer, & Orme, 1999; Blythe & Tripodi, 1989; Royse, 1999; Rubin & Babbie, 2005; Tripodi, 2002). These five benefits of applying research to practice accentuate the practical importance of the issue. Mandates from CSWE (2008) and NASW (1996, 2008) underscore the significance of the topic in

social work education. Next, the policies of these governing bodies as they pertain to research and practice are explored.

CSWE Policy on the Application of Research in Social Work Practice

Explicit Curriculum

The importance of research in practice is accentuated by the fact that both CSWE (2008) and NASW (1996, 2008) require that it be taught in accredited social work programs and adopted amongst students and practitioners. The educational policy of CSWE is clear in its emphasis on the implementation of research in practice for both bachelor and masters level social work students. Council on Social Work Education (2008) stated that social workers should “use practice experience to inform scientific inquiry and use research evidence to inform practice” (p. 5). Council on Social Work Education also requires social workers to “critically analyze, monitor, and evaluate interventions” (p. 7). Educational policy 2.1.10 stated that social workers possess skills and knowledge to address various client systems. According to CSWE, practice knowledge is inclusive of “identifying, analyzing, and implementing evidence-based interventions designed to achieve client goals; using research and technological advances; evaluating program outcomes and practice effectiveness;...” (pp. 6 – 7). Due to CSWE’s requirement that accredited BSW and MSW programs adequately prepare students to implement research in practice, valid psychometric measurement of students’ beliefs about research and social work practice is necessary.

NASW Code of Ethics Policy on the Application of Research in Social Work Practice

Similar to CSWE (2008), NASW (1996, 2008) Code of Ethics which governs both social work students and practitioners, also requires research to be applied to practice. The NASW Code of Ethics best summarized the role of research in practice: “Social workers should critically examine and keep current with emerging knowledge

relevant to social work and fully use evaluation and research evidence in their professional practice” (p. 25). More specifically (as it relates to *Social Workers’ Ethical Responsibilities as Professionals and Competence*), social workers are directed to use research to guide their practice in a manner that is congruent with social work values and ethics. Reading, being knowledgeable of, and evaluating published literature are also ethical obligations pertinent to the social work profession. Additionally, as it pertains to *Social Workers’ Ethical Responsibilities to Clients*, when there is no established protocol for a particular area of practice, the Code of Ethics instructs social workers to consider research in conjunction with other factors to guide their interventions and ultimately prevent their clients from being harmed (1.04 Competence). Because the NASW Code of Ethics is unambiguous about the crucial role that research plays in practice, the need for reliable and valid measurement of the construct (beliefs about research and social work practice) is justified even further. Social work and other social and behavioral science literature, as well as CSWE and NASW, clearly articulate the advantages and necessity of applying research to practice; however, this does not necessarily mean that social work students (and practitioners) have adopted this same stance, hence the need for adequate psychometric measurement of beliefs pertaining to research and social work practice. In 2008 the NASW revised the Code of Ethics to include statements pertaining to cultural competency and social diversity, respect, discrimination, and social and political action. These recent revisions in no way alter or nullify the statements made in the manuscript pertaining to research and social work practice.

LITERATURE REVIEW

Literature Search Strategy

To examine the prevailing authoritative opinion and the degree and quality of empirical inquiry regarding the construct of social work students' beliefs about the role of research in practice, a literature review was conducted that includes online databases, reference lists, hard copy journals, and pertinent texts. The following is a description of the process by which literature was obtained for inclusion in this review.

Reference Sources

Online Databases

The process of identifying psychometric scales and juried theoretical, review, and empirical articles began by using online databases. Online databases (Ebscohost, Expanded Academic, and Meta-Search) which are accessible via the Indiana University-Purdue University Indianapolis (IUPUI) campus were used to identify scholarly journal articles that contain information relevant to the construct at hand. Keywords, terms, and phrases used in each of these databases; dates the searches took place; and the particular electronic database used were all documented by printing out the results of each search, for each respective electronic database.

Reference Lists

Second, the reference lists of obtained articles were reviewed in order to obtain other relevant literature pertaining to the construct at hand. After additional articles were identified and obtained from the reference lists of other articles, in some instances the reference list of these articles were also reviewed in order to collect additional pertinent literature.

Hard Copy Journals

Third, in instances where identified articles were not available for print online, when possible the shelved hard copy of the respective journals were identified and manually copied for review and inclusion in this literature review. When shelved journals were identified for a particular article, the tables of contents in these journals were skimmed to see if they included any other scales and articles that might be pertinent to the construct of interest. Because so many applicable articles were obtained from the *Journal of Social Work Education* and *Social Work Research* and due to their overt relevance to the construct, these two journals were searched electronically with different keywords and terms. These two journal searches were available on a campus catalog of online journals.

Texts

Fourth, frequently referenced and seminal texts pertaining to social work research, practice, and psychometrics were consulted and included according to their applicability to this review. The reference lists of these texts were also reviewed for pertinent sources regarding student perceptions of research and practice. It is important to note that of the entire population of literary sources that were identified and reviewed, only a sample of those sources were actually included in this literature review. That sample was determined by the degree of relevance to the construct under examination. Appendix A is a detailed log of the databases, keywords and phrases, dates, reference sources, and overall literature search process that took place throughout the development of this manuscript.

Limitations of Search Strategy

Although the search strategy employed for this review has several strong points, it also has practical limitations associated with it which in turn have potential

implications for the outcomes and conclusions of this literature review. The electronic databases that are reviewed may not be exhaustive of all of the literature on social work students' beliefs about research and practice. Another disadvantage was the fact that if the electronic database in question did have access to a particular journal that was exclusively available online, access to the most recent volumes in that journal was often restricted, therefore preventing access to the most recent literature.

Error was another limitation of the search strategy. "Error" refers to limitations in the search strategy that could have been avoided, yet were not because of various mistakes that possibly could have been made when searching for the literature.

Various errors in the search strategy which may have occurred include the following:

1) not searching other readily available electronic databases that could have substantially improved the literature search, 2) not using key words that may have yielded more productive results, 3) overlooking pertinent articles in the results of electronic database output as well as reference lists of journal articles and texts, and finally 4) other unacknowledged errors in the search strategy that are not articulated in the previous four points.

Management of Limitations

To reiterate, all of the limitations regarding the search strategy have independent implications, as well as a collective, cumulative effect on the outcome of this literature review. Steps were taken to minimize these undesirable effects via using interlibrary loans to obtain texts which were geographically unfeasible to obtain. One text in particular (Briar, Weissmann, & Rubin, 1981) and its associated article (Kirk & Rosenblatt, 1981) was obtained from the University of Wisconsin. Furthermore, while not explicitly articulated, it is implicit in the description of the search strategy that comprehensiveness was maximized by relying on multiple sources; including

both electronic and manual sources, examining the references cited in the literature, and by consulting various texts regarding the subject matter at hand.

Student Beliefs about Research & Social Work Practice

From a psychometric standpoint, the literature review (both authoritative sources and empirical studies) integrates and critically evaluates the currently available literature on social work students' beliefs about research and practice. Via this integration and critical evaluation, outstanding gaps in the construct's measurement are explicitly identified and used to justify further psychometric development of the construct.

Authoritative Sources

There appears to be a fairly strong consensus amongst authoritative sources that social work students have an overall negative perception of research and/or its function in practice (Berger, 2002; Davis, 2003; Forte, 1995; Garrett, 1998; Lukton, 1980; Reinherz, Regan, & Anastas, 1983; Royse, 1999; Royse & Rompf, 1992). According to Lukton, social work education is not preparing practitioners who adopt an empirical practice or wish to play an active role in the development of social work knowledge.

Many students in various professional helping disciplines share a mutual disdain for research and statistics (Berger, 2002). A number of explanations have been submitted to account for social work students' supposed pessimistic perception of research in practice. Anxiety about math and statistics is responsible for social work students' lack of interest in statistics and research (Royse & Rompf, 1992). Statistical anxiety is possibly more pronounced for social work students than students in other disciplines (Davis, 2003). Forte (1995) and Garrett (1998) asserted that social work students perceive research to be intimidating and difficult. Still other explanations for

social work students' unenthusiastic beliefs about research stem from a perceived lack of relevance to practice (Royse, 1999). Royse also stated that social work students chose social work as a profession because they fear math and expect required quantitative research courses will be kept at a minimum. Berger claims that student beliefs such as these aid in maintaining the polarization that exists amongst practice and empiricism.

Empirical Studies

In contrast to the authoritative sources, much of the available research shows that social work students ultimately have a favorable view of research and its place in practice (Lazar, 1991). Table 1 provides a summary of studies which measure the identified construct of interest and their pertinence to social work students. Studies appear in chronological order. The scales that have been used to measure the construct are provided, as are the outcomes, sample size, authors, and year of publication. The common theme amongst the studies is that social work students have primarily optimistic beliefs about research and its place in practice (Basom, Iacono–Harris, & Kraybill, 1982; Green, Bretzin, Leininger, & Stauffer, 2001; Kirk & Rosenblatt, 1981; Linn & Greenwald, 1974; Olsen, 1990; Rosen & Mutschler, 1982; Rosenblatt & Kirk, 1981; Siegel, 1985). Only one study (Siegel, 1983) documented social work students as having pessimistic perceptions of research in practice.

Table 1. Social Work Student Beliefs about Research and its Role in Social Work Practice

ID #	Year	Author(s)	Scales	Sample	Outcomes	Sample Size
1	1974	Linn & Greenwald	Scale with Poor Psychometric Definition	MSW Students	Over the course of school year, the overall sample developed optimistic views of their research attitudes and ability	32
2	1981	Kirk & Rosenblatt	K-RRI	BSW, MSW, & DSW Students	The majority of BSW, MSW, & doctoral SWK students had optimistic views about how valuable and beneficial research is to practice.	1127
3	1981	Rosenblatt & Kirk	K-RRI	BSW, MSW, & DSW Students	There is a positive relationship between students' perception of the value and benefit of research and the number of research courses that the students finished. Students found research to be more valuable and beneficial to practice as they completed more research courses.	1127
4	1982	Rosen & Mutschlers	K-RRI	BSW, MSW, & Doctoral Students; SWK Practitioners	Master's and doctoral level social work students have a positive attitude toward both the utility and value of using research to guide practice.	436
5	1982	Basom, Iacono-Harris, & Kraybill	Scale with Poor Psychometric Definition	BSW Students and other undergraduate majors	When compared to other social science majors, BSW students were not significantly different in regards to their attitudes toward and proficiency in research. Both cohorts had optimistic views about research.	30

Table 1. Social Work Student Beliefs about Research and its Role in Social Work Practice (cont'd)

ID #	Year	Author(s)	Scales	Sample	Outcomes	Sample Size
6	1983	Siegel	K-RRI (Modified)	MSW Students	Social work student perceptions of research and practice actually became significantly more pessimistic between the pre and post-test.	148
7	1985	Siegel	K-RRI (Modified)	MSW Students	Combining both research and practice courses is associated with more optimistic student perceptions of the role research plays in practice.	148
8	1990	Olsen	K-RRI (Modified)	MSW Students	Students have a more optimistic view of the utility of research in practice. However, social work student's opinions regarding how important they perceived research to be in practice did not alter.	60
9	1991	Lazar	K-RRI	Social Work Students, Faculty, & Practitioners in Israel	Social work students believe research is a useful adjunct to practice.	300
10	2001	Green, Bretzin, Leininger, & Stauffer	GCAS & modified Versions of the K-RRI & MARS-R	MSW, MBA, MS degree in business, and graduate clinical and counseling psychology students	MSW students are significantly more interested in research than business students and significantly less interested in research than psychology students. MSW students have significantly more anxiety about research and computers than do graduate psychology and business students.	149

BSW = Bachelor's in Social Work

DSW = Doctorate in Social Welfare

K-RRI = Kirk-Rosenblatt Research Inventory

MARS-R = Mathematics Anxiety Rating Scale Revised

MBA = Master's in Business Administration

MS = Master's in Science

MSW = Master's in Social Work

SWK = Social Work

Studies that do not measure the identified construct (social work students' beliefs about practice and the function of research) were excluded from this empirical review. For example, several studies examining slightly similar constructs such as research anxiety (Davis, 2003; Royse & Rompf, 1992) were excluded. Likewise, those studies that exclusively measure social work faculty and/or practitioner perceptions of research and its role in practice were also excluded (Casselman, 1972; Faver, Fox, Hunter, & Shannon, 1986; Kirk, Osmalov, & Fischer, 1976; Lawson & Berleman, 1982; Richey, Blythe, & Berlin, 1987; Rosenblatt, 1968).

Implications for Future Research

In light of the currently available studies (Basom, Iacono–Harris, & Kraybill, 1982; Green, et al., 2001; Kirk & Rosenblatt, 1981; Linn & Greenwald, 1974; Olsen, 1990; Rosen & Mutschler, 1982; Rosenblatt & Kirk, 1981; Siegel, 1985) which examine social work students' perceptions of research and its place in practice, while the results are slightly mixed, the overwhelming preponderance of research evidence shows that social work students have an overall positive view of the role research has in practice. There are several problems with this conclusion, all of which point to the need for further and continued psychometric research regarding the construct.

First, all of the research identified in this review (summarized in Table 1) regarding student perceptions of research and practice is at least 15 years old (Lazar, 1991), save the study by Green and associates (2001). The 2001 study by Green and colleagues measures computer and research anxiety. The number of items on the K–RRI (Kirk & Rosenblatt, 1981) which were used to measure students' perceptions of the role research has in practice, was greatly reduced and consequently so was the potential knowledge regarding the construct being measured. The K–RRI scale originally consisted of three domains/factors and a total of 19 items (variables). In

Green and associates' study, only one of the domains was measured, and two items were removed from that domain, leaving a five item modified version of the scale. Because students' perceptions of applying research in practice have not been comprehensively measured since 1991, it is the author's assertion that the current status of social work students' perceptions of empirically based practice is still unknown. It is conceivable that perhaps in response to the structure (Mechanic, 1999) and influence (Vandiver, 2002) of managed care, social work education may have changed substantially since 1991 and therefore student perceptions of research in practice may be even more favorable now than in the past.

Second, as is acknowledged by the authors of several of the respective studies (Lazar, 1991; Rosen & Mutschler, 1982; Rosenblatt & Kirk, 1981), the K-RRI has both developmental shortcomings and questionable psychometric properties that ultimately limit the utility of studies that have used it. Table 1 shows that of the 10 studies that have attempted to measure the construct in question, 8 have used either a pure or altered version of the K-RRI. Although the K-RRI has emerged as the primary instrument to measure the construct of interest, it has notable limitations which limit any findings with regard to student's beliefs about the role research plays in practice. Via a critical psychometric evaluation of the K-RRI and other more or less analogous scales, considerable insight is gained with regard to this question. It is this second measurement factor which serves as the impetus for this study.

Research, Social Work Practice, and Student Beliefs: A Critical Evaluation of Scales

As a result of the aforementioned literature search, several scales have been identified that most closely appear to measure the construct of social work students' perceptions regarding the application of research to practice. The K-RRI is currently the most frequently used scale in studies that seek to measure the construct in question

(see Table 1). Within a time span of 20 years (1981 to 2001) 80% of the studies identified via this literature search have used some version of the K–RRI (Green et al., 2001; Kirk & Rosenblatt, 1981; Lazar, 1991; Olsen, 1990; Rosen & Mutschlers, 1982; Rosenblatt & Kirk, 1981; Siegel, 1983, 1985). Several studies (Green et al., 2001; Davis, 2003; Royse & Rompf, 1992) have used different scales (Richardson & Suinn, 1972) to measure social work students' anxiety with regard to statistics. Such scales are not included for evaluation because they do not fit the construct which is of primary focus. The Graduate Student Computer Anxiety Scale (GCAS) and the Mathematics Anxiety Scale–Revised (MARS–R) appear to measure constructs pertaining to affective states such as anxiety. The purpose of this review is to measure beliefs, attitudes, and/or perceptions. From a cognitive theory perspective (Beck, 1976; Beck 1995), it is those beliefs that serve as antecedents or precursors to various affective states. This study examines a construct which is essentially concerned with the cognitive processes that create or at least precede various emotions, not the emotions themselves. Because of the K–RRI's overwhelming prevalence in social work literature which seeks to measure the identified construct and due to the K–RRI's psychometric limitations, much attention is given to this scale via a critical psychometric evaluation. Furthermore, the consequent research that has derived from this scale will be critically evaluated as well.

Kirk–Rosenblatt Research Inventory

Sample

The sample used to test the K–RRI came from six BSW programs ($n_1 = 473$), four MSW programs ($n_2 = 552$), and five doctoral social work programs ($n_3 = 102$); creating a rather large sample size of 1127 (Kirk & Rosenblatt, 1981). As is noted by Kirk and Rosenblatt, the gender (56% women) and race (75% Caucasian) of their

sample very closely resembled the gender (53% women) and race (72% Caucasian) of social work students at that time.

Psychometric Properties

The K–RRI includes 19 Likert response format items and 3 dimensions which purport to measure perceptions of research and its applicability to practice (Kirk & Rosenblatt, 1981). The three dimensions in the scale address the Importance of Research (7 items; Cronbach's $\alpha = 0.65$), the Usefulness of Research (5 items; Cronbach's $\alpha = 0.71$), and the Unbiased Nature of Research (7 items; Cronbach's $\alpha = 0.78$) (Kirk & Rosenblatt, 1981).

Psychometric Limitation I: Lack of Factor Analytic/Data Reduction Methods

One of the problems which substantially limit the psychometric credibility of the K–RRI is its method of assigning items to the respective dimensions. The three aforementioned dimensions in the K–RRI are based on face validity and the correlation amongst items (Kirk & Rosenblatt, 1981). “Items were assigned to each dimension on the basis of their face validity” (Rosenblatt & Kirk, 1981, p. 29). This method of assigning items to factors is unconventional and has been documented by others as being problematic for the K–RRI because it has the potential to increase acquiescence/response bias (Rosen & Mutschler, 1982). Using face validity to allocate items to factors is undesirable because items may not actually tap the construct that they appear to tap, the process is influenced by subjectivity and personal bias, and the transparency of what is being measured may create acquiescence bias (DeVellis, 2003).

In general, factor analytic methods are used to determine how many or how few factors underlie a set of items/variables (DeVellis, 2003; Shultz & Whitney, 2005; Urbina, 2004). Exploratory factor analysis (EFA), principal–component analysis

(PCA), and confirmatory factor analysis/structural equation modeling (CFA/SEM) are used to aid psychometric researchers in quantitatively determining which items correspond to their respective factors or dimensions (Brown, 2006; Bryant & Yarnold, 1995; Nunnally & Bernstein, 1994; Thompson, 2004), thereby considerably reducing the problems that arise when face validity is used to determine factors.

The development of the K-RRI did not incorporate factor analytic methods and therefore did not benefit from its psychometric advantages. Factor analysis decreases a number of items or variables to a reduced subset of factors (DeVellis, 2003) by taking into account correlations among items (Nunnally & Bernstein, 1994; Shultz & Whitney, 2005). Exploratory factor analysis and CFA are two types of factor analytic methods which are used to determine the number of factors that are in a scale and which items belong to a particular factor (Thompson, 2004). Below, the various steps involved in conducting both EFA and CFA are described below.

Exploratory factor analysis is used when the researcher has no theory or anticipation regarding which items measure which factors (Thompson, 2004). In EFA the variance is partitioned into specific, error, and common variance; common variance is essential to the extraction of factors (Shultz & Whitney, 2005). Two crucial steps in EFA are factor extraction and rotation (Nunnally & Bernstein, 1994). Factor extraction can be obtained via a number of methods such as principal component analysis (PCA), principal axis factoring (PAF), maximum likelihood (ML), minimum residual analysis (MRA), alpha factoring (AF), generalized least squares (GLS), unweighted least squares (ULS), and weighted least squares (WLS) among others (Brown, 2006; Nunnally & Bernstein, 1994). Nunnally and Bernstein recommend using PCA (p. 539).

Once an extraction or variance condensation method has been chosen, there are a number of rules for deciding how many factors to retain (Bryant & Yarnold, 1995; DeVellis, 2003; Nunnally & Bernstein, 1994; Shultz & Whitney, 2005). Kaiser's rule (eigenvalue ≥ 1 ; Kaiser, 1970) and Cattell's (1966) scree plot are two standards that are used to determine the number of factors in EFA (as cited in Bryant & Yarnold, 1995). According to Nunnally and Bernstein, the objective in EFA is to account for as much variance as possible with as few factors as possible. The amount of variance that is explained by factors has been used by some to compare results from different studies (Nunnally & Bernstein, 1994) and by others to retain factors (Bryant & Yarnold, 1995). With regard to the latter, if the first factor explains substantially more variance than the proceeding factors, this is taken as evidence of one-dimensionality and those items which have not loaded on this factor could justifiably be excluded from the final scale (Kaplan & Saccuzzo, 1997). In conjunction with the aforementioned, theory and a number of other methods have been used to decide which factors should be retained (Nunnally & Bernstein, 1994); further delineation is beyond the scope of this review.

The second step in EFA involves rotating factors in such a way that different subsets of items each share a common factor and that each of those factors are distinct from other factors (DeVellis, 2003). In EFA a factor's items are determined by how strongly a particular item loads on a particular factor (Shultz & Whitney, 2005). The goal of factor rotation is to approximate Thurstone's concept of "simple structure" (as cited in Nunnally & Bernstein, 1994). Simple structure is achieved when every item in the scale has a loading of 1.00 on one factor and a loading of 0.00 on all remaining factors (DeVellis, 2003). Therefore, if simple structure is achieved, there is absolutely no ambiguity or uncertainty about which items belong to which factor(s). However in

practice, in order for an item to be considered as belonging to a particular factor that item should load on that factor with a minimum value of 0.30 (Brown, 2006; Shultz & Whitney, 2005). Enders and Bandalos (2001) have suggested that small item loadings are 0.40 and large item loadings are 0.80.

Similar to the diverse factor extraction methods in the first step of EFA, there are also different ways to rotate factors in the second step (Thompson, 2004). Exploratory factor analysis allows the researcher to determine if the factors are to be considered correlated (oblique) or uncorrelated (orthogonal) (DeVellis, 2003). The following are some heuristics regarding oblique and orthogonal rotations in EFA (Nunnally & Bernstein, 1994): 1) if oblique rotations yield factors with a correlation (r) of less than 0.30 then an orthogonal rotation should be used because the factors are obviously not strongly correlated and, 2) if an oblique rotation produces factors with a correlation (r) of 0.50 or more, one should think about combining the factors to make one factor. With regard to EFA, Nunnally and Bernstein reported having a slight inclination towards orthogonal rotation, but state that since both are mathematically justifiable, choosing between the two ultimately rests with the researcher's preference (pp. 501 – 502).

Last, after the factor extraction and rotation methods have been selected and item loadings on each particular factor have been used to determine their proper location, the researcher then begins to look for thematic similarities amongst the items on each factor to determine and name what constructs those factors tap (Shultz & Whitney, 2005). While not an exhaustive explanation of the EFA process, based on sources that have been previously cited, effectively and accurately determining the content and number of factors in a particular scale, is grounded in both quantification and theory

and requires considerably more than face validity methods (Kaplan & Saccuzzo, 1997).

Confirmatory factor analysis differs from EFA in that the former requires that a model specifying exactly which items belong to which constructs be defined in advance (Thompson, 2004). Exploratory factor analysis uses an a posteriori approach, while CFA adopts an a priori model (Bryant & Yarnold, 1995). Confirmatory factor analysis is often meant to imply techniques which derive from structural equation modeling (SEM) (DeVellis, 2003).

Based on discussion provided by Millsap (2002), the phases of SEM will be briefly described simply to explicate its superiority to face validity as a method of determine a scale's factors. The three phases of SEM include "model specification, parameter estimation, and fit evaluation" (p. 261). The model specification phase involves explicitly stating the relationships amongst the items in a scale and their anticipated factors, as well as relationships amongst the factors themselves. Parameter estimation involves using data to make approximate calculations regarding the parameters of the model. The chosen estimation technique (e.g., common factor methods like ML, WLS, and GLS) is contingent upon assumptions regarding multivariate normality. The Model Fit Evaluation phase uses estimation methods to determine if the specified model is congruent with the actual data. Global and local fit indices such as the root mean square (RMS), root mean square error of approximation (RMSEA), the root mean square residual (RMSR), and the comparative fit index (CFI) indicate exactly how well the model actually fits the data. (See Bryant and Yarnold for further discussion of measures of goodness-of-fit).

Despite the fact that current factor analytic methods are primarily confirmatory (Nunnally & Bernstein, 1994), there is still some debate regarding whether CFA is

superior to EFA (DeVellis, 2003). Because Kirk and Rosenblatt (1981) specified factors and their corresponding items in advance, conventional wisdom suggests CFA would have been preferable to EFA (Brown, 2006). However, Saucier and Goldberg (as cited in DeVellis, 2003) stated that EFA which has been replicated in another independent sample, could possibly serve as greater empirical support than CFA.

The assertion being made here is that with regard to the K–RRI (Kirk & Rosenblatt, 1981), in comparison to face validity methods, EFA, PCA, and CFA/SEM are far superior ways of determining a scale’s structure and will therefore produce psychometrically superior scales. The face validity method of structuring factors which has been employed by Kirk and Rosenblatt (1981), is prone to subjectivity and bias (see DeVellis, 2003 for discussion regarding limitations of face validity). In stark contrast, the factor analytic methods and the various aforementioned techniques associated with them, embrace objectivity and therefore are substantially more effective in arriving at the true ontological nature of the phenomena at hand. This assertion is embodied in and best articulated by Kaplan and Saccuzzo (1997):

Factor analysis can help a test constructor build a test that has submeasures for several different traits. When factor analysis is used correctly, these subtests will be internally consistent (highly reliable) and independent of one another...The nature of the factor analysis method ensures these characteristics. Thus, factor analysis is of great value in the process of test construction. (p. 113)

Moreover, Nunnally and Bernstein (1994) stated “Factor analysis is at the heart of the measurement of psychological constructs” (p. 111). DeVellis (2003) maintained that an assumption of coefficient alpha is that the scale items consist of only one dimension and that a scale’s dimensionality is validated via factor analytic methods. The K–RRI’s low coefficient alphas could be explained by the absence of factor analytic methods to establish the scale’s dimensionality. The lack of factor analytic methods in the K–RRI is a major weakness in the scale and any consequent research

that has emerged from it. The next section provides a critical examination of the coefficient alphas yielded by three factors in the K–RRI.

Psychometric limitation II: Low Levels of Cronbach's/Coefficients Alpha

The importance of adequate coefficients alpha (throughout this review the terms “coefficient alpha” and “Cronbach's alpha” are used interchangeably) can be found in the underlying assumptions of classic psychometric theory (CPT) (Henard, 2000) which states that the observed score (X_O) on a test is a summation of both the true score (X_T) and error (X_E , $X_O = X_T + X_E$) (Shultz & Whitney, 2005). When researchers wish to more closely approximate a true score, they must decrease error (Henard, 2000). Cronbach's alpha is associated with content sampling error. Higher coefficient alphas yield less error, increase internal consistency, and have greater reliability (Shultz & Whitney, 2005).

Recall that the coefficient alphas for the three respective scales in the K–RRI are 0.65 (Importance of Research), 0.71 (Usefulness of Research), and 0.78 (Unbiased Nature of Research) (Kirk & Rosenblatt, 1981). Since these alpha values do not meet the minimum coefficient alpha threshold of 0.80 (Nunnally & Bernstein, 1994), these scales are not suitable for basic research. According to Nunnally and Bernstein, a Cronbach's alpha of at least 0.80 is needed if the magnitude of correlation is of interest or if group research involving experimental designs are employed (such experimental designs could very well be employed in research regarding social work education). Likewise, the majority of researchers in social work advocate for a minimum alpha of 0.80 (Rosenthal, 1994). With regard to the K–RRI's first factor, DeVellis (2003, p. 95) states Cronbach's alphas from 0.60 to 0.65 are “undesirable.” Several researchers (DeVellis, 2003; Kaplan & Saccuzzo, 1997; Shultz & Whitney, 2005) have less rigorous standards for classifying coefficient alpha and consider 0.70

to be the cutoff for acceptable reliability. With this more liberal standard in mind, it is worthwhile to note that the second factor in the K–RRI only satisfies this criterion by 0.02 points. Consequently, the second factor is on the borderline of coefficient alpha acceptability and therefore could also benefit from improvement. Not only do low coefficient alphas mean poor reliability (Shultz & Whitney, 2005), they also pose problems for validity because before a scale can be valid, it must first be reliable (Urbina, 2004). Yet just because a scale is reliable, validity is not guaranteed (Rubin & Babbie, 2005). With the K–RRI’s fairly low coefficient alphas, one could question its validity.

Psychometric limitation III: Unknown Validity

Based on the literature search conducted in this review, no examinations of the K–RRI’s validity have been found. Others (Rosen & Mutschler, 1982) have also acknowledged this shortcoming. Because the K–RRI’s validity has not been empirically examined, the eight studies (Green et al., 2001; Kirk & Rosenblatt, 1981; Lazar, 1991; Olsen, 1990; Rosen & Mutschler, 1982; Rosenblatt & Kirk, 1981; Siegel, 1983, 1985) that have employed the scale have no or limited empirical justification for knowing if they have measured the construct that they anticipated measuring (Shultz & Whitney, 2005). Without measuring the scale’s construct (convergent or discriminant), criterion (concurrent, predictive, or postdictive), or factorial validity (Rubin & Babbie, 2005), the current empirical status of psychometric measurement regarding the phenomena and questions regarding the phenomena itself are uncertain.

*Research Self-Efficacy Scale**Sample*

The Research Self-Efficacy Scale (RSE) is another instrument whose psychometric properties have been evaluated in a sample consisting of social work students (Holden, Barker, Meenaghan, & Rosenberg, 1999). The psychometric validation study for the RSE included a sample of 91 students (69 = MSW; 22 = BSW). The authors maintained that to keep the students' identification anonymous, demographic information was not gathered.

Psychometric Properties

Both the RSE's internal consistency reliability and dimensionality were evaluated (Holden et al., 1999). The RSE has a coefficient alpha of 0.94 which is considered to be exceptionally strong (DeVellis, 2003). The authors report using a PCA to determine the number of dimensions or factors that are in their scale. The authors used the amount of explained variance to determine the number of dimensions/factors. One factor explained 68% of the variance, therefore providing support for a one-dimensional scale (Kaplan & Saccuzzo, 1997).

The convergent construct validity of the RSE is also established (Holden et al., 1999). A total of eight bivariate correlations between the RSE and the Social Work Empowerment Scale (SWE; Frans, 1993) and the Social Work Self-Efficacy Scale (SWSE; O'Hare & Collins, 1997) were used to determine the RSE's convergent construct validity (Holden et al., 1999). The predicted correlation coefficients (r 's) were stated in advance. The actual correlation coefficients were compared with the predicted correlation coefficients to see if there was a statistically significant difference between the two. Those predicted correlations which were not statistically significant from the actual correlations, were viewed as support for the RSE's

convergent construct validity. The RSE's convergent construct validity was confirmed upon finding that five of the eight bivariate correlation predictions were supported, via statistically insignificant differences between the predicted and actual correlations. The psychometric properties of both the SWSE and the SWE were not included for comparison in this review because they research self-efficacy and empowerment rather than measure social work students' beliefs about research in practice.

Psychometric Limitation I: Sample Size

The two biggest psychometric limitations associated with the RSE are its small sample size with regard to factor analytic methods (Bryant & Yarnold, 1995) and the dereliction of multivariate statistics in examining the scale's convergent construct validity (Bryant, 2000). While Cronbach's alpha is primarily influenced by a scale's inter-item correlations, number of variables (items), and number of factors (Cortina, 1993), sample size is instrumental in conducting a PCA with results that can be replicable in another sample (Bryant & Yarnold, 1995). Bryant and Yarnold recommend at least 100 participants be in a PCA sample.

Psychometric Limitation II: Lack of PCA Output

Another limitation of the RSE psychometric study (Holden et al., 1999) is the fact that the factor loadings, scree plot, the amount of variance that is explained by subsequent factors, and other statistical output frequently used in PCA and EFA (Shultz & Whitney, 2005) are not discussed or provided, thereby limiting critical evaluation and confidence in the study's findings.

Psychometric limitation III: Lack of Multivariate Statistic Validity Methods

Both CFA and PCA can be used to assess the convergent and discriminant validity of a scale (Bryant, 2000). Brown (2006) maintained that CFA is a crucial method for the evaluation of construct validity. Confirmatory factor analysis is used to evaluate

construct validity by comparing hypothesized models with the actual data; one model that shows the items from two separate scales (two scales measuring similar or identical constructs) as all loading on one factor and the second model that shows the items from two separate scales (again both measuring similar constructs) as loading on different factors. If the former model has a better fit than the latter, the scale's convergent construct validity is supported (Bryant, 2000). According to Judd, Jessor, and Donovan (as cited in Bryant, 2000), "CFA is far superior to the visual inspection of bivariate correlations" (p. 113). In summary, while the RSE has exceptional internal consistency, the PCA that was used to establish the scale's one-dimensionality is questionable, as is the method that was used to investigate its construct validity.

Scales with Poor Psychometric Definition

Other studies (Basom et al., 1982; Linn & Greenwald, 1974) measuring the same construct have used measures (without formal names) that have no or very poorly defined psychometric properties. Basom and associates reported using a scale with six items and a coefficient alpha of 0.78. Other than the coefficient alpha value, no other psychometric data is reported. The face validity of the scale is difficult to evaluate because only 2 of the six items are reported. The study by Linn and Greenwald used a nine item, three-factor scale, with a bipolar semantic differential format. Again, no reliability or validity information is reported. While the semantic differential format is described briefly, the actual items in the scale are not published. Additionally, these scales do not reference any other sources which provide the appropriate psychometric data. Therefore, these two scales leave a huge empirical void with regard to their descriptive and psychometric properties.

Research Questions and Purpose

The purpose of this study is to create the Gregory Research Beliefs Scale (GRBS), a scale that reliably and validly measures social work students' beliefs regarding the role of research in practice. This overarching research goal will be achieved via the following research objectives:

- 1) Factor Structure: Confirmatory factor analysis and PCA will be used to determine the empirical quality of the GRBS's factor structure.
 - a. PCA: The factor structure or the items that are believed to be caused by the various constructs in the GRBS will be empirically and theoretically determined via PCA, with item loadings of at least 0.30.
 - b. CFA: The hypothesized factor structure (an a priori model) will be empirically and theoretically determined via CFA with acceptable goodness-of-fit indices that are superior to competing alternative models.
- 2) Internal Consistency: All subscales in the GRBS will have a Cronbach's alpha of at least 0.80.
- 3) Discriminant (Divergent) Construct Validity: The GRBS's discriminant construct validity will be empirically supported by comparing it to the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985) via CFA and PCA. Specifics regarding how these analyses are used to either support or refute the GRBS's discriminant validity are provided in the 'Methods' subsection titled *Discriminant (Divergent) Construct Validity*.
- 4) Concurrent Criterion Validity & Known-Groups Criterion Validity: Concurrent criterion-related validity will be examined by using the GRBS to predict (multiple regression) the number of research and statistics courses

that participants in the sample have taken in the past. The GRBS's known-groups validity will be empirically supported via the scale's ability to classify (discriminant function analysis or logistic regression) participants in the sample as undergraduate (BSW) or graduate social work students (MSW).

METHODS

Scale Development

The steps used to develop the GRBS are partially based on guidelines provided by DeVellis (2003). Other scale development guidelines and concepts used to create the GRBS come from various relevant psychometric sources (DeVellis, 2003; Nunnally & Bernstein, 1994; Rubin & Babbie, 1997; Shultz & Whitney, 2005).

Construct Definition: Research and Social Work Practice

The first step in developing a scale is to define the construct or latent variable being measured (DeVellis, 2003; Shultz & Whitney, 2005; Sommer & Sommer, 1997).

Research

The construct being examined in this review pertains specifically to what social work students believe about published research findings and the role those research findings either directly or indirectly function in practice. Due to the broad nature of both research and practice, it is necessary to provide definitions of what the two concepts imply. For the purposes of this study, research is inclusive of all aspects of the scientific process (Wallace, 1971), both quantitative and qualitative research, and philosophical underpinnings of the research process. The scientific process and all of its subsidiary components – observations, empirical generalizations, theories, and hypotheses – are all applicable to the construct of student's perceptions of research and practice. Arguably, the component most directly relevant for the aforementioned construct is empirical generalizations, because construct development is primarily concerned with the actual findings of the research. Empirical generalizations, not to be confused with external validity, are essentially the findings obtained from different research studies (Wallace, 1971). The construct that this psychometric review focuses

on could just as easily be stated as “students’ perceptions of *empirical generalizations* and their role in practice.” However, this phrasing is convoluted and would exclude the other three more subtle components of the scientific process (observations, theories, and hypotheses).

Social Work Practice

Social work practice is broadly defined and includes all stages of social work practice (Coady & Lehmann, 2001; CSWE, 2008; Sheafor, Horejsi, & Horejsi, & 2000; Shulman, 1999; Zastrow, 2000) with all types of client systems (Miley, O’Melia, & DuBois, 1998). Table 2 succinctly summarizes each stage of social work practice and integrates information from a number of models that have been published in social work literature (Coady & Lehmann, 2001; Sheafor et al., 2000; Shulman, 1999; Zastrow, 2000).

Table 2. Six Stages of Social Work Practice

Stage 1: Problem Identification
a. A description of the client's or clients' problematic situation and strengths
b. Establish rapport with client system
Stage 2: Data Collection & Assessment
a. Obtain information from the client as well as other relevant systems
b. Determine the focus or foci of interventions
Stage 3: Planning and Contracting
a. Establish goals
b. Consider potential responses or interventions to the problem
c. Identify an intervention plan
Stage 4: Intervention
a. Application of the identified, empirically supported treatment
Stage 5: Outcome Evaluation
a. Measurement of the intervention's effect or lack thereof
Stage 6: Termination
a. Conclude the working relationship with the client system

The practice aspect of the construct which is social work students' beliefs about the role of research in practice, is not limited to clinical practice or purely macro–practice; instead it is meant to encompass all those levels, systems, and roles that generalist social work practitioners are likely to encounter (Feit, 2003; Haynes & Mickelson, 2000; Miley et al., 1998). For the purposes of this research, “generalist social work practice” does not refer to activities regarding professional supervision, only those practice interventions that are targeted at individuals, families, small groups, organizations, and communities. As it has a key role in the social work profession, practice also implies a focus on both the client system and the client's or clients' broader social functioning (DiNitto & McNeece, 1997; Karls, 2002). Additionally, the construct encompasses practice with those persons who have a marginalized status in society (Schraver, 2001).

Beliefs

The GRBS is a measure of social work students' *beliefs*. Although lay people in everyday language use terms such as beliefs, attitudes, and thoughts interchangeably, there are substantive differences amongst these terms (Beck, 1995) that hold particular relevance for the definition of the construct at hand. Belief is defined as “1. The mental act, condition, or habit of placing trust or confidence in a person or thing. 2. Mental acceptance of or conviction in the truth or actuality of something. 3. Something believed or accepted as true...” (Webster, 1984, p. 164).

Beliefs are the most basic and deepest aspect of cognition, from which attitudes and thoughts develop (Beck, 1995) (Beck refers to these types of beliefs as *core beliefs*). Somewhat similar to Webster's (1984) definition, Beck defined belief as being what one holds to be completely true. In stark contrast to beliefs, Beck maintained that thoughts are: the shallowest aspect of the cognitive process, fleeting, short-lived, and determined by beliefs. Webster considers *attitude* to be “A state of mind or feeling...” (p. 136). Beck used the phrase *intermediate belief* to encompass an individual's attitude and assumptions. Attitudes are conceptualized by Beck as being a mediator between both beliefs and thoughts.

Analogous to Beck's (1995) distinction between core and intermediate beliefs, Padaki (2000) differentiated between *central* and *peripheral beliefs*. Central beliefs inform long-term behavior, are resistant to change, and are considered to be substantiated. Peripheral beliefs are temporary, tentative, and amenable to change. The author seeks to measure social work students' core or central beliefs because the construct being examined is meant to reflect the deepest and arguably the most substantive level of the cognitive process as it pertains to social work research and practice.

To reiterate, the construct which the GRBS measures encompasses beliefs rather than thoughts or attitudes. Such brief descriptions of this construct are necessary for the clarity, overall methodological rigor, and consequent findings of this literature review. The next section outlines the strategy by which items for the GRBS were generated.

Item Construction

Domain Sampling/Content Validity

The items in this inventory were developed from a sampling theory of item construction (Nunnally & Bernstein, 1994) and content analysis (Rubin & Babbie, 1997) perspectives. Domain sampling refers to the subject matter of the construct, as well as the applicability of the construct to the intended test takers (Nunnally & Bernstein, 1994). Beliefs pertaining to the function of research in practice constitute the domain of content for this instrument development study. Bachelors and masters social work students comprise the audience for whom the content domain is appropriate. Because the domain of content includes the phenomenon that is being examined (Nunnally & Bernstein, 1994), specifying this domain almost seems to be a simple reiteration of the construct's definition. Domain sampling theory is specifically concerned with content validity or the degree to which the instrument's items adequately reflect the construct's (latent variable's and factor's) subject matter (DeVellis, 2003; Nunnally & Bernstein, 1994). Similar to inferential statistics' purpose of drawing conclusions about a population based on observations from a representative sample drawn from that population (Kirk, 1999), content validity is concerned with accurately generalizing scores on a sample of items to a whole population of items which belong to a particular content domain (Nunnally & Bernstein, 1994).

Ensuring that the scale's items adequately reflect the construct of interest has psychometric implications for construct and criterion validity (Nunnally & Bernstein, 1994). Instead of taking steps to establish content validity after the scale's construction, Nunnally and Bernstein maintained that a scale's content validity should be considered and addressed prior to and throughout the development of the scale items. Consequently, the GRBS seeks to establish adequate content validity using several content analytic methods. The following section provides a description of those content analytic methods which were used to construct the GRBS's items.

Content Analytic Methods for Item Construction

The methods used to construct the GRBS's items incorporated several approaches frequently used in content analysis. For example, written documents such as journal articles and book chapters constitute the content for which coding and classification took place (Rubin & Babbie, 1997), hence the term "content analytic methods." It is important to specify that the item construction method used in this study neither reflects nor implies a complete content analysis. Items for consideration for inclusion in the final version of the GRBS were created via the following processes: 1) pertinent literature was acquired, 2) literature was reviewed and statements associated with the construct were recorded, 3) themes were assigned to statements, 4) themes were clustered, and 5) each clustered statement was converted into a scale item.

First, journal articles and texts (see literature review process on pages seven through nine) which contain material pertinent to research, practice, and/or social work students were acquired. Material pertaining to social work students was relevant because the constructs the GRBS measures is pertinent to social work student perceptions. Second, the acquired literature was reviewed and statements directly associated with research, practice, and/or social work students were identified and

documented via the Content Analysis Log in Appendix B. For each source of literature containing a statement pertaining to research, practice, and/or social work students, the quoted statement from the respective literature source was entered into an Excel spreadsheet under the column heading of “Student Beliefs about Research & Social Work Practice: Content” (see the Content Analysis Log in Appendix B). For each quoted statement pertaining to research, practice, and/or social work students, the source of the statement was provided in the form of an APA style reference. The APA style reference for each of the quoted statements pertaining to research, practice, and/or social work students were entered into the Excel spreadsheet under the column heading of “Source,” in the same row as the corresponding statement (see the Content Analysis Log in Appendix B). The page number for each quoted statement pertaining to the construct of interest was entered into the Excel spreadsheet under the column heading of “Page #.”

Third, each statement associated with research, practice, and/or social work students was assigned a theme. The themes assigned to the quoted statements were entered into the Excel spreadsheet under the column heading of “Hypothesized Factor” (see the Content Analysis Log in Appendix B). Statements which appeared to be associated with the same aspects of the construct were assigned the same theme.

Fourth, themes were clustered in the Excel spreadsheet via clicking and dragging the cell with the first hypothesized factor all the way down to the last hypothesized factor, so that all of the cells under the “Hypothesized Factor” column heading are highlighted. Next, the hypothesized factors were clustered together by clicking “Data” and using Excel to “Sort” the column using an “Ascending” format (“Expand Selection” button was also selected). By sorting the quoted statements according to

the themes assigned to them, statements were clustered into sets of hypothesized factors.

Fifth, each of the clustered statements was written into a test item for consideration for inclusion in the GRBS. Finally, as a result of the process outlined in steps one through five, scale items and the respective factors that they are believed to measure were identified for inclusion or exclusion on the GRBS. Moreover, the aforementioned content analytic process was used to determine the a priori model that informed the GRBS's hypothetical factor structure.

Response Format

A Likert-type response format was adopted due to the format's applicability to the measurement of beliefs and potential for increased variability (DeVellis, 2003). Via the Likert response format, each item in the GRBS consists of a statement pertaining to a belief about research and social work practice and seven response options for respondents to express their level of agreement or disagreement (DeVellis, 2003). While Likert response options can take on a number of qualities (Royse, 1999), this author has chosen to use seven response options that are also used by Diener and associates (1985): "Strongly Disagree," "Disagree," "Slightly Disagree," "Neither Agree Nor Disagree," "Slightly Agree," "Agree," and "Strongly Agree." For each item in the GRBS, the respondent provided a score ranging from one to seven, with one indicating "Strong Disagreement," progressing up to seven indicating "Strong Agreement." Consequently, lower scores on the GRBS's items are indicative of lower levels of agreement, while higher scores on GRBS are indicative of higher levels of agreement with the respective statements.

Subject Matter Experts

After the GRBS's factors and corresponding items were identified, 20 subject matter experts (SMEs) were asked to review the items to determine the extent to which the scale items represent the construct of interest (Shultz & Whitney, 2005). The SMEs who were asked to participate in this study have been selected via non-probability, convenience sampling. Subject matter experts who were asked to review the GRBS's items had substantial experience in teaching research and/or research experience. The SMEs asked to take part in the study were ideal for the tasks asked of them because of their expertise and direct involvement in teaching research to social work students.

Subject matter experts were asked to evaluate the tentative items on the GRBS. Specifically, SMEs were provided descriptions of the four constructs that the items are believed to tap and asked to name the construct that they believe each item represents. Subject matter experts were mailed the following: four envelopes, with a construct name and description printed on each one; an envelope containing each item from the GRBS printed on a sliver of paper; a sheet with a series of demographic questions; and a postage-paid envelope addressed to the student researcher. Subject matter experts were asked to place each GRBS survey item (printed on a sliver of paper) in the envelope of the construct that the item appears to be measuring.

Subject matter experts were also asked to provide their employment function, academic degrees, years of social work experience, practice area, and gender (Pike, 1994). The demographic questions that were sent to SMEs in this study were adapted from Pike. Subject matter experts were asked to return the survey item ratings and demographic information to the student researcher's home address. Prior to the hard copy materials being mailed, the SMEs were emailed a cover letter stating that they

are being asked to participate in a study and will receive the study materials in approximately one week. If prospective subject matter experts indicated that they did not want to participate, they were not contacted again. The names, email, and mail addresses for persons invited to act as subject matter experts can be found in Appendix D. The constructs, construct descriptions, and items for the GRBS evaluated are located in Appendix E. Appendix E contains the 89 GRBS items and their hypothesized constructs before the deletion of 15 items. Seventy-four of the 89 items located in Appendix E were distributed to the pilot study. The SME data were evaluated to determine the extent to which the SMEs agree on which GRBS items (total of 74 items) are measuring which GRBS constructs (total of four constructs).

Research Design

The present study involved four independent data collections. The first set of data was collected from SMEs across the United States. The second data collection came from the pilot study that consisted of only MSW students. The third set of data was collected from MSW and BSW students online. The final data set came from MSW and BSW students in traditional classroom settings.

Past studies have examined this construct via distributing surveys in class. The GRBS was distributed to students online via email (Basom et al., 1982; Kirk & Rosenblatt, 1981; Lazar, 1991; Rosenblatt & Kirk, 1981; Siegel, 1983, 1985), as well as in classroom settings. Bachelor of social work and MSW students in the IU School of Social Work at IUPUI were asked to complete the GRBS online via email messages that were posted to the BSW and MSW listservs. The email message contained a cover letter inviting students to participate in the study, as well as a link to the website where the GRBS could be completed. Informed consents were not used in this study because informed consent is not required for exempt studies (R. Wininger,

personal communication, February 24, 2008). Students were sent three reminder emails over a course of six weeks. Each reminder email was separated by a two week interval (Guidelines – Surveys, 1997; Rubin & Babbie, 1997). The reminder emails serve as the only method for increasing the likelihood that students have received and read the messages to the listserv that invite participation in the study. Via the BSW and MSW listservs, student participants were first invited to take the GRBS via email on May 6, 2008.

The GRBS was administered online via Survey Monkey ©. Survey Monkey © is a website that allows test administrators to design surveys and collect data survey data online. An online survey was conducted because of various benefits associated with an electronic survey method (Best & Krueger, 2002). Research (Bachmann, Elfrink, & Vazzana, 1996) has shown that online surveys had the potential to be superior to more traditional survey methods because printing costs are reduced and the time it takes for participants to respond is less. An online survey method is superior to telephone methods because there is no need to pay trained interviewers (Schaefer & Dillman, 1998). Bachmann and associates maintained that “e-mail surveys would only be representative of groups such as information system professionals, CPAs, engineers, architects, college faculty, or any select population that includes individuals who have access to the Internet and whose email addresses are readily available” (p. 35). Based on Bachmann and colleagues’ criteria, BSW and MSW students in the IU School of Social Work at IUPUI are ideal candidates for online surveys because they have access to the internet via IUPUI facilities and both groups could be easily reached via their respective listservs.

A meta-analysis (Manfreda & Vehovar, 2004) comparing online survey methods to more traditional survey methods concluded that online surveys yielded more non-

responses than traditional methods in the general population. The authors of this study stated that problems associated with online surveys that may explain the greater lack of response include the increasing commonality of online surveys, respondent fatigue, the respondents' concern for confidentiality, and misunderstanding regarding the professional legitimacy of the survey. In the present study, the researcher attempted to mitigate the aforementioned threats via informing the students of the following: names or email addresses would not be collected, survey responses would not be linked to any personally identifiable information, survey responses would not be shared with any parties other than the co-investigator, the principal investigator and researcher will not be able to identify which students chose to complete the survey, student participants were not asked to sign an informed consent, the responses of many students was sought, and they could contact the researcher or the IUPUI/Clarion Research Compliance Administration with questions about their rights or any problems.

Schaefer and Dillman (1998) stated that there are currently no procedures that guarantee online survey response rates will be high. Schaefer and Dillman stated that in their study the email survey had a response rate of 58%, while the traditional mail survey had a response rate of 57.5%. Rubin and Babbie (1997) stated that response rates of 50%, 60%, and 70% are considered "adequate," "good," and "very good," respectively (p. 352).

Sample

A non-probability, convenience sample of students currently enrolled in the BSW and MSW programs at the IU School of Social Work at IUPUI was used to collect the psychometric data for this study. Random sampling was not used in this study due to a lack of resources and due to the researcher not wanting to ask students to divulge

information such as their names or email addresses. Random sampling would require an exhaustive list of all the BSW and MSW students in the IU School of Social Work at IUPUI (the entire population) (Healey, 2005).

There are approximately 575 students currently enrolled in the IU School of Social Work at IUPUI (S. Gass, personal communication, January 2, 2008) and about 120 BSW students (I. R. Queiro–Tajalli, personal communication, January 2, 2008). The inclusion criteria for participation in the present study required that participants be admitted to a BSW or MSW program at the IUSSW and that all participants be 18 years of age or older. Persons who are not yet admitted to a BSW or MSW program in the IUSSW or whom are 17 years of age or younger, were excluded from the present study. Students in the MSW program remain on the listserv approximately six months after graduation (D. J. Westhuis, personal communication, March 16, 2009). In the BSW program, students remain on the listserv indefinitely (Queiro–Tajalli, personal communication, March 15, 2009).

A pilot study of the GRBS was conducted with 20 to 40 social work students. The sample for the pilot study was recruited from the IU Northwest campus. Students received an eligibility sheet outlining the eligibility criteria for the study. The course instructor passed out the survey instrument. Students were notified that nonparticipation in the study would not affect their academic standing, grades, or relationship with IU Northwest or IU in general.

Students participating in the study were asked to provide demographic data such as: gender, race, ethnicity (Hispanic, Non–Hispanic), age, program of study (full–time vs. part–time), type of social work degree currently being pursued (BSW, MSW), number of completed graduate level research courses, number of completed undergraduate research courses, number of completed graduate level statistics

courses, number of completed undergraduate statistics courses, number of credit hours completed in the social work program the student is currently enrolled in, and number of months of human services employment. Students were not asked to provide narrative feedback regarding the pilot study.

Prior to the survey being distributed to the pilot study (MSW students) in IU Northwest, the 89 items on the GRBS were reduced to 74. Fifteen items were eliminated from the GRBS because the researcher believed the items were redundant with other items on the GRBS, did not appear to measure the construct for which they were hypothesized to, or were very likely to yield no variability in responses (items deleted from the GRBS prior to administration to the pilot study can be found in Appendix I). Appendix J contains those test items which were evaluated by the SMEs and administered to pilot study participants. Further, some items on the GRBS were eliminated to reduce the likelihood that students would become fatigued by the measurement task.

The pilot study was used to evaluate the variability in responses to each item on the survey. A preliminary coefficient alpha was computed on data obtained from the pilot study. Items that did not contribute to the internal consistency of the scale were noted and examined.

To gain access to the IUSSW BSW and MSW students, I sought the permission of the IUSSW Dean, Dr. Michael A. Patchner. To be allowed to ask IUSSW BSW students to consider participating in the study, I sought the permission of the executive director of the IUSSW BSW program, Dr. Irene Queiro-Tajalli. The permission of Dr. David Westhuis, the Executive Director of the IUSSW MSW program, was sought to elicit participation from IUSSW MSW students. Appendices F and G contain Dr. Westhuis and Dr. Queiro-Tajallis' approval of my study,

respectively. Appendix H contains an email from Dr. Patchner in response to my request to include IUSSW BSW and MSW students in the sample (M. A. Patchner, personal communication, October 14, 2007).

Sample Size: Confirmatory Factor Analysis

The GRBS initially had four constructs. In the four-factor model the General Value of Social Work, Agency, Quality, and Intervention constructs each have 20, 19, 20, and 15 items, respectively. The sample size (N) for this psychometric study is a minimum of 201. Sample size is important in CFA because the number of participants in the sample has a direct influence on how powerful the statistics are with regard to parameter estimation and model goodness-of-fit evaluation (Brown, 2006). The CFA and EFA sample size for this study is determined via a number of guidelines and considerations that were published in various peer-reviewed publications and seminal texts (Comrey & Lee, 1992; Gorsuch, 1983; Kline, 2005; MacCallum, Widaman, Zhang, & Hong, 1999; Marsh, Hau, Balla, & Grayson, 1998).

A Monte Carlo study by Marsh, Hau, Balla, and Grayson (1998) empirically evaluated the axiom that larger sample sizes and more items per construct are optimal for model convergence, generation of accurate solutions, and parameter estimation. From this simulation came several empirically supported guidelines (Marsh et al., 1998) which in part dictated this study's sample size: 1) a large sample with more items per construct is more likely to converge and have an accurate solution; 2) a small sample with fewer items per construct is less likely to converge and more likely to have an inaccurate solution; 3) a small sample is more likely to converge and have an accurate solution when there are more items per construct; 4) a scale with fewer items per construct is more likely to converge and have an accurate solution if there is a large sample; 5) a construct's reliability increases as the number of items per

construct increases; 6) parameter estimates and construct reliability have decreased standard deviation as the sample size and number of items per construct increase; 7) the magnitude of a model's parameter estimates is not greatly influenced by sample size or the number of items per factor; 8) variation in parameter estimates reduces as sample size and items per construct increase; and 9) accuracy in parameter estimates increases as more items per construct is associated with more precise parameter estimates. Marsh and colleagues' simulation study support the sample size of 201 because they found that a sample size of 200, with at least six items per construct yielded 100% convergence rates and no inaccurate solutions. Moreover, Marsh and associates found that a sample size as small as 50 had 100% convergence rates and no inaccurate solutions when there are 12 items per construct. When there were only six items per construct, Marsh and colleagues also obtained a 99.6% convergence rate with a sample size of 50 and 100% convergence rates when the sample size was 100 or greater. Based on the data reported by Marsh and others, each latent variable in the GRBS should have at least six items.

Gorsuch's (1983) guideline maintained that factor analytic studies should have at least 100 participants and five participants per item (observed variable). The 5 participants per item guideline is applicable when the construct is anticipated to explain a great deal of variance in the items and when there are many items for each anticipated construct (Gorsuch, 1983). Gorsuch's sample size determination guideline applies both to CFA and EFA (Bryant & Yarnold, 1995). If the GRBS has four constructs and at least six items per construct, according to Gorsuch's recommendations the minimum sample size required is 120 (at least six items for each of the four constructs; a minimum of 24 total items. Twenty-four items multiplied by five participants per item equals a minimum sample size of 120).

Kline (2005) offered guidelines for determining sample size as well. According to Kline, sample sizes under 100, 100 to 200, and greater than 200 hundred are ‘small,’ ‘medium,’ and ‘large,’ respectively (p. 15). MacCallum and colleagues (1999) stated that when the construct accounts for approximately half of the variance in items, a solution could still be found if there are many items per construct and between 100 and 200 cases in the sample. MacCallum and associates also stated that when the amount of variance explained in items is less than .5, but there are at least six items per construct and a minimal number of constructs, a solution can be found if the sample exceeds 100. According to the sample size criteria articulated by Kline and MacCallum and others, the current study’s sample size of 201 in conjunction with its items per construct ratio is acceptable and not likely to be problematic.

Sample Size: Principal Component Analysis

To reiterate, the sample size of 201 exceeds Gorsuch’s minimal sample size guideline (provided that other specified conditions are satisfied); however, the number of participants is only considered as “fair” according to Comrey and Lee (1992), whose guidelines for determining sample size in factor analysis are as follows: “50 – very poor; 100 – poor; 200 – fair; 300 – good; 500 – very good; and 1000 or more – excellent” (p. 217).

Statistical Tests

Due to the fact that Cronbach’s coefficient alpha assumes that a set of items constitutes a single dimension (DeVellis, 2003), factor analytic statistics will be used to determine the scale’s/subscale’s dimensionality prior to establishing the scale’s/subscale’s coefficient alpha(s) (Cortina, 1993). The scale’s factor structure will be identified using both EFA and CFA. To some extent, it is viewed as inappropriate to use the results of an EFA to inform a CFA a priori model and to use

the same sample to conduct both an EFA and CFA (Kline, 2005). To reiterate, a CFA is the appropriate statistical test to use when the researcher has a theory regarding the relationships amongst items and their corresponding factors and EFA is applicable when the researcher has no theory or concept regarding which items are indicative of which factors (Brown, 2006; Bryant & Yarnold, 1995; DeVellis, 2003; Nunnally & Bernstein, 1994; Shultz & Whitney, 2005; Thompson, 2004; Urbina, 2004).

Confirmatory factor analysis is implemented in the present study because the author has an a priori theory regarding the parameters in the model (exactly which items comprise which factors, the relationships amongst those factors, and the relationships or lack thereof amongst error variances; Brown, 2006). Exploratory factor analysis is used in the present study because there are branches of research in which there is debate regarding whether EFAs and PCAs which are invariant across studies, should be considered as superior to the goodness-of-fit standards that are used in CFA (DeVellis, 2003). In order for the present study to be resistant to criticisms from either ideology, both CFA and a PCA were conducted.

Confirmatory Factor Analysis

Confirmatory factor analysis of the data and the priori model in question was conducted using the Linear Structural Relationships 8.80 (LISREL) program and the SIMPLIS (SIMPlE English for LISrel models) syntax command language (Jöreskog & Sörbom, 1993; Du Toit, Du Toit, Mels, & Cheng, 2005). In computing a CFA these steps were followed: 1) specification of the a priori model, 2) identification of the model via calculation and comparison of the model's total degrees of freedom ($v =$ the number of items or observed variables in the model; Total degrees of freedom

$= \frac{v(v+1)}{2}$) and the number of parameters in the model (the sum of the model's factor

loadings/pattern coefficients, item unique/error variance, and correlations between or

amongst factors), 3) estimation of the a priori model and alternative or rival models via maximal likelihood (ML) if the multivariate assumption of normality is met (Satorra–Bentler estimation was planned in the event the multivariate normality assumption was not met), 4) evaluation of the a priori model via select goodness-of-fit statistics and comparison of the favored a priori model to the competing alternative models using select goodness-of-fit statistics, and 5) model modification, if necessary (Thompson, 2004).

Each of the aforementioned steps involved in computing a CFA encompasses further details, some of which are delineated here (Brown, 2006; Thompson, 2004). The a priori model in a CFA is specified by explicitly stating the number of items and constructs that are present in the scale which items in the scale are assumed to be caused by which constructs, the relationships between or amongst the constructs (correlated and/or uncorrelated), and the oblique and/or orthogonal nature of error variances (Thompson, 2004).

To avoid any potential ambiguity regarding what a factor loading is in CFA, a definition of this term and an explanation of its interpretation is provided (Brown, 2006). A factor loading (also referred to as a pattern coefficient) in CFA refers to the numerical value that indicates how strongly the unobservable construct influences or directly effects the observable item (Brown, 2006; Kline, 2005; Thompson, 2004; also see DeVellis, 2003 for discussion on latent versus observed variables). Unobservable constructs can be viewed as predictors/independent variables, observed variables (items in the scale) can be viewed as criteria/dependent variables, and pattern coefficients are equivalent to regression slopes (Brown, 2006). A factor loading is interpreted in the same way as a regression coefficient (beta weight) (Kline, 2005). For example, in a standardized solution, with a hypothetical factor loading of .47, a

standardized unit increase in the construct typically creates a .47 standardized increase in the item (Brown, 2006; Mueller & Hancock, 2007).

When Maximum Likelihood is the selected estimation method in CFA, the statistical significance of the factor loading can be determined via standard errors for each of the freely estimated parameters in the model (Brown, 2006). The quotient of the unstandardized parameter estimate (numerator) and the standard error (denominator) provides a z-score. If the z-score is above the absolute value of 1.96, then the factor loading is statistically significant when alpha equals .05. A factor loading with a z-score below the absolute value of 1.96 is statistically insignificant when alpha equals .05. According to Brown, items with statistically insignificant factor loadings can be dropped from their respective constructs. Thus, similar to EFA, CFA also provides a mechanism for optimizing the length of a scale. This study adopts a .05 alpha level for all tests of statistical significance, unless otherwise stated.

When a factor loading is squared, the product is referred to as a communality (Brown, 2006). The squared factor loading or communality provides the proportion of variance in the item that can be explained by the construct (Brown, 2006). Multiplying the squared factor loading by 100 gives the percentage of variance in the item which can be explained by the construct. Any variance in an item which is not explained by its respective construct is referred to as error/unique variance (Brown, 2006). Confirmatory factor analysis is one aspect of a broader category of techniques called covariance structure analysis and covariance structure analysis is based on concurrent regressions (Bentler & Bonett, 1980), hence CFA's regression terminology and conceptualization.

When examining the conditions for model identification in CFA, the total degrees of freedom should be greater than (over-identified model) or equivalent to (just-

identified model) the estimated parameters in the model (Brown, 2006; Thompson, 2004). An under-identified model (total degrees of freedom are less than the estimated parameters) will not produce a solution due to the fact that the number of estimated parameters that could yield an exact fit is limitless (Brown, 2006).

Estimation methods are used in CFA to estimate pattern coefficients, item error variance, and construct correlation parameters in a model (Brown, 2006). Estimation involves a mathematical procedure that seeks to increase the similarity between the predicted and sample variance-covariance matrices (Brown, 2006). Maximal likelihood is the most commonly used estimation method in CFA (Brown, 2006; Kahn, 2006). The goal of ML estimation is to estimate a population's true parameters via obtaining factors that replicate a population covariance matrix (Thompson, 2004). Multivariate normality is an assumption of ML. Should the data not approximate a multivariate normality an alternative estimation method called asymptotic distribution free (ADF) can be used. However ADF requires a sample size of over 1,000 participants (Thompson, 2004). A Satorra-Bentler estimation method can also be used when the multivariate normality assumption is violated (Mueller & Hancock, 2007). The Satorra-Bentler estimation method is frequently used for interval-ratio data that is not normal (Brown, 2006). In comparison to the Satorra-Bentler method, Brown does not recommend the use of WLS because of the large sample size that is required.

In CFA, once a favored a priori model has been articulated, the factor structure of that model can be further supported by comparing that model with competing models that are credible in theory (Thompson, 2004; Weston & Gore, 2006). Thompson recommends three types of alternative models that should be compared to the favored a prior model in question; an Independence Model, a One-Factor Model, and an Uncorrelated Factors Model. The Independence Model states that all of the items in

the scale have no correlation and that there is a total absence of factors. The One Factor Model can be used as an alternative model to examine the factor structure of a model with several subscales (more than one factor). The Uncorrelated Factors Model – as the name implies – specifies that the factors in the model are orthogonal in nature. Thompson maintained that oblique models are more likely in CFA and typically provide a better fit for the data than an uncorrelated model.

The consistency between a model and the observed data can be assessed in CFA with goodness-of-fit indexes (Bryant & Yarnold, 1995). The various fit indexes can be grouped according to whether or not they provide an absolute, parsimonious, or incremental fit (Brown, 2006). Absolute fit indices assess the extent to which the predicted and sample variance-covariance matrices resemble one another (one wants the predicted and sample variance-covariance matrices to have a strong resemblance). Parsimonious fit indices assess the model with regard to how well the a priori model fits the data, while taking into consideration the limited or “parsimonious” use of freely estimated parameters. Brown stated that if two competing models have an equal fit to the data, the parsimonious fit index will support the model that has “fewer freely estimated parameters” (p. 83). Incremental fit indices compare the a priori model to an Independence/Null Model that states that the items in the scale have no correlations (Tanaka, 1993). A particular fit index will yield specific information about some aspect of the data’s fit to the model. Consequently, fit indexes from absolute, parsimonious, and incremental fit categories should be reported (Brown, 2006; Shultz & Whitney, 2005).

Chi-square is a fit index that is used to evaluate goodness-of-fit in CFA (Shultz & Whitney, 2005). A non-significant chi-square is evidence that the data fits the model well, while a significant chi-square indicates a poor fit between the model and the

data (Bryant & Yarnold, 1995). The non-normed fit index (NNFI; also referred to as the Tucker-Lewis Index (TLI)) and the comparative fit index (CFI) are measures of incremental fit (Brown, 2006). The standardized root mean squared residual (SRMR) and root mean squared error of approximation (RMSEA) belong to absolute and parsimonious categories, respectively (Brown, 2006). Tentative thresholds for evaluating a model's goodness-of-fit with the NNFI, CFI, SRMR, and the RMSEA are values of near .95 or greater, near .95 or greater, near .08 or smaller, and near .06 or smaller, respectively (Hu & Bentler, 1999). It is important to note that given the number of participants in a sample – $N \geq 250$ or $N \leq 250$ – certain precautions (estimation method, Type I vs. Type II Error, etc.) regarding the aforementioned fit index thresholds should be observed (Hu & Bentler, 1999). More liberal and older thresholds for the NNFI (Bentler & Bonett, 1980), CFI (Bentler, 1990), SRMR (Kline, 2005) and RMSEA (Browne & Cudeck as cited in Kline, 2005) are .90 or above, .90 or above, less than .10, and less than .09, respectively. The goodness-of-fit cutoff criteria that governed this study depended on a number of issues, including sample size.

The previously mentioned goodness-of-fit statistics are only several of dozens of available fit indices (Thompson, 2004). The NNFI (TLI), CFI, SRMR, and RMSEA are being identified as key indicators of the data's fit to the favored a priori model because of the indexes' empirical justification that has been established by Hu and Bentler and because of the acceptance that the four indexes and their respective cutoff values have gained in other CFA literature (Brown, 2006; Kahn, 2006). Further explication is provided later in conjunction with the results.

According to Thompson (2004), "Respecifying a CFA model based on consultation of critical ratio and modification index statistics is a dicey business, if the

same sample is being used to generate these statistics and then to test the fit of the respecified model” (p. 131). According to Thompson, when a sample is used to re-identify a model and then that same sample is used to test the re-identification of that model; sampling error increases, the results are less likely to be replicated, and the process becomes exploratory rather than confirmatory. Thompson’s aforementioned comments would essentially be the case for this study. Thus, for the purposes of this study, any modification recommendations from the CFA will be tested on a future sample (rather than the current sample).

Principal Component Analysis

The EFA will use a PCA extraction method and a promax rotation method. A PCA is being used because this extraction method ensures a solution, capitalizes on the amount of explained variance, and produces components that do not correlate, amongst other things (Nunnally & Bernstein, 1994). Promax is selected because the rotation allows for the extracted components to be correlated (DeVellis, 2003) and given the construct at hand, it is likely that the components in the scale will be oblique. Nunnally and Bernstein (1994) maintained that the choice between oblique versus orthogonal rotation can essentially be a product of the researcher’s preference. Moreover, the authors made a similar claim regarding component versus common factor extraction methods, stating that conclusions which are drawn from either type of extraction are nearly the same.

The following are principles that will be used to guide the decision-making process in the PCA. With regard to the magnitude of component loadings, items which load on a component with a value of at least .30 or .40 are considered salient or seen as being substantially associated with first or second order factors (Brown, 2006). Therefore, only items that load on components with a value of .30 or above

was considered as salient in the present study (Shultz & Whitney, 2005). After components were both extracted and rotated with a PCA and promax, respectively; the Kaiser criterion (eigenvalue ≥ 1 ; Kaiser, 1970), scree plot (Cattell, 1966), amount of explained variance for each component, and theory was used to determine the ultimate factor structure of the scale (Bryant & Yarnold, 1995; Norušis, 2006; Nunnally & Bernstein, 1994). As has been stated previously, if two components have a correlation of .50 or greater, the components and their corresponding items can likely be combined to make one component (Nunnally & Bernstein, 1994).

Internal Consistency

For each of the dimensions/factors that have been identified via CFA and EFA, a Cronbach's coefficient alpha (Cronbach, 1951) were computed. Coefficient alpha is a measure of internal consistency. Internal consistency pertains to how each observed variable (item) on a scale correlates with other observed variables on the same scale (O'Rourke, Hatcher, & Stepanski, 2005). Only subscales with coefficient alphas of at least .80 were included in the final version of the GRBS. This .80 or greater coefficient alpha threshold was implemented because scales with a coefficient alpha of at least .80 are considered adequate in research (DeVellis, 2003; Kaplan & Saccuzzo, 1997; Nunnally & Bernstein, 1994; Urbina, 2004). It is worth reiterating that Cronbach's alpha is influenced by the correlations among items, the number of items, item variability, and the number of dimensions or subscales within the instrument (Cortina, 1993; Shultz & Whitney, 2005).

Discriminant (Divergent) Construct Validity

Validity is concerned with whether or not an instrument is measuring the construct that it claims to measure (Shultz & Whitney, 2005). Discriminant construct validity is concerned with the degree of dissimilarity or lack of correlation between instruments

that measure different constructs (DeVellis, 2003). The scale used to assess the GRBS's discriminant validity was the SWLS (Diener et al., 1985). The SWLS was selected as a comparison scale/construct for several reasons. First, from a face validity perspective, the SWLS's five items appear to measure a construct (satisfaction with life) that is theoretically—very different from and unrelated to the construct that the GRBS intends to measure (see Shultz & Whitney, 2005 for discussion on discriminant validity). Second, the SWLS is brief, as it consists of only five items, and therefore the length of the scale is not likely to exhaust or fatigue test-takers. Third, the SWLS is in the public domain and does not require permission or additional financial resources to use in the current study (Pavot & Diener, 1993). Finally, the SWLS's psychometric properties have been empirically validated (Diener et al., 1985). A description of the SWLS's psychometric properties is provided below.

The SWLS's factor structure and internal consistency have been examined by Diener and associates (1985). Exploratory factor analysis and factor loading cutoff criteria (observed variables with factor loadings less than .60 were excluded) was used to narrow the initial 48 indicators to 10 indicators. Afterwards, five more indicators were excluded due to their redundant nature, leaving a total of five indicators in the scale. Principal axis factoring of the five items was conducted and via eigenvalue and scree plot criteria one factor was extracted which explained two-thirds of the scale's variance. Cronbach's alpha for the five items was .87. The aforementioned statistical analyses included a sample of 176 participants. The SWLS's items and response format are found in Appendix C.

For the GRBS, CFA and PCA were used to establish the scale's discriminant construct validity. Confirmatory factor analysis was used to establish discriminant validity by examining if the GRBS and SWLS which measure different constructs,

have goodness-of-fit statistics that are supportive of a two-factor model rather than a one-factor model (Bryant, 2000). That is to say that the items on GRBS and SWLS were combined and hypothesized to form two-factors. The two-factor model should have goodness-of-fit statistics that are superior to the one factor model. Although CFA is considered to be better than PCA in establishing construct validity (Bryant, 2000), PCA will also be used to examine the discriminant validity of the GRBS. With PCA, responses to the GRBS and SWLS will be analyzed and the PCA should provide output (scree plot, amount of variance explained by each factor, eigenvalue criterion) which suggests both the GRBS and the SWLS are independent, divergent constructs (see Brown, 2000 for brief discussion on PCA and construct validity).

Concurrent Criterion Validity

Criterion-related validity pertains to the evaluation of an association that may exist among a scale and a particular dependent variable that is germane to the function of that scale (Shultz & Whitney, 2005). Concurrent criterion validity is examined via collecting the scores on a scale and on a dependent variable simultaneously (Shultz & Whitney, 2005). Depending on the criterion/dependent variable's level of measurement and key statistical assumptions that need to be met, a specific type of multivariate statistic (i.e., multiple regression, discriminant function analysis, logistic regression) will be used to determine if the GRBS makes some statistically significant contribution to the prediction or classification of at least one theoretically pertinent, discrete or continuous variable (see Bryant, 2000 for further discussion regarding multivariate statistics that are used to establish criterion and other forms of validity). For the purposes of this study, concurrent criterion validity will be examined by using the GRBS to make predictions (multiple regression) regarding the number of research and statistics courses completed by the sample. Descriptive and inferential statistical

computations were computed via SPSS 15.0 for all samples except the final sample of 199. All statistical analyses [Cohen's d (Cohen, 1988) and Hedge's g (Hedges & Olkin, 1985) were calculated via formulas the researcher wrote in Excel 2007] pertaining to the final sample of 199 were computed using SPSS 16.0.

Additionally, known-groups concurrent criterion validity was explored by using the GRBS to classify (discriminant function analysis or logistic regression) the sample according to undergraduate (BSW) or graduate level (MSW) status. Contingent upon the researcher's purpose, know-groups validity can be considered criterion or construct validity (DeVellis, 2003). If the GRBS does indeed serve as a statistically significant predictor and/or classifier, then the GRBS's known-groups concurrent criterion validity would be considered as empirically supported.

Human Subjects Review Issues

Thus far, a number of conceptual, practical, methodological, and statistical issues pertaining to measurement of student perceptions about research and practice have been addressed. One common and rather imperative theme among all of these issues is that of ethics. Social workers conducting research are expected to take precautions to ensure participants are protected from various types of harm (NASW, 1996, 2008). For example, explication of the pros and cons of participation, the right to refuse participation, preventing participants from experiencing negative consequences for non-participation, informed consent, and confidentiality are just several of the *Evaluation and Research* ethics to which social work researchers are expected to adhere when conducting a study.

With the primary objective of this study being to evaluate the psychometric properties of the GRBS, this study in conjunction with its research design, presents no more than minimal risk to participants in the sample. Although participants' email

addresses are not being collected in the study, the researcher is not able to guarantee the participants' confidentiality (Miller & Salkind, 2002). Any potential risks were mitigated by the fact that prior to actually participating in the study, prospective participants were provided with an explanation of the study as well as risks and benefits of participation. Participation was totally voluntary and there were no punitive consequences for refusing to participate; participation or non-participation in the survey in no way affected students' academic standing, grades, or relationship with the IU School of Social Work at IUPUI or IUPUI in general. Although for statistical reasons completion of all questions was encouraged, students were free to choose not to answer any question (demographic or otherwise) that they were not comfortable answering; and students were not be asked to identify their names (see page 36 for further explanation regarding the mitigation of risk).

Potential benefits of participating in the study included the opportunity for social work students to articulate their beliefs regarding research and practice via completing the items on the instrument, playing a key role in contributing to the psychometric development in practice, and potentially having contributed to the understanding of social work students' perspectives on empirically-based practice. It is believed that offering an incentive or a tangible reward for participating in the study could not be done without obtaining the email addresses or names of students who chose to participate; therefore, participants were not offered a reward for their participation. The decision to not offer a prize for participation was based on the assumption that students' anonymity would yield greater participation than students having the opportunity of possibly winning some reward for their participation. In consideration of human subject review issues and ethics, the potential psychometric benefits to the social work profession's measurement and understanding of the construct

substantially out–weighed the slight risk posed to students who participate in the study.

RESULTS

Subject Matter Experts

Data provided by the SMEs was examined to determine how much agreement there was regarding which constructs the GRBS items measure. Of the 20 SMEs who were sent materials and requested to participate in the study, eight SMEs (40%) completed and returned the SME task that they were asked to perform.

Subject Matter Expert Demographic Data

Demographic data for the SMEs is slightly limited because not all of the participants completed a demographic form. Two (25%) of the eight SMEs who completed the task did not complete demographic data forms. One of the SMEs who did not complete the demographic information stated that he was not provided with a demographic form. This SME printed his name and University at which he worked. The second SME who did not complete the demographic form printed his return address on the envelope that was used to return the materials. Consequently the researcher was able to obtain some of the relevant demographic data via viewing websites that contained the participants' information.

Table 3 provides descriptive statistics regarding the SMEs' education, practice experience, years of social work experience, and gender. The table contains a percentage column which includes all SMEs who participated in the study and a valid percentage column that only includes the SMEs for whom data was available. Unless otherwise stated, it is the valid percentage column that is being referenced in this text. The SME demographic data was calculated using Microsoft Excel 2007.

To reiterate, SMEs were asked to participate because of their experience in teaching and/or conducting research. All of the participants who completed the SME task held doctorate degrees. Six of the SMEs (85.7%) have doctorate degrees in social

work. Approximately one-third of the SMEs have master's degrees in fields other than social work; however, all SMEs (100%) held MSWs. Two-thirds of the SMEs were currently employed in education, while one SME currently was employed in research and another in management/administration. On average, the SMEs had 25 years of social work experience. The years of social work experience among the SME sample ranged from 12 to 37. Social work education (100%), child welfare (50%), and mental health (50%) were the most common areas of work experience. Of the eight SMEs who participated, only one was female (12.5%).

Table 3. Subject Matter Expert Demographic Data (N = 8)

	Frequency	Percentage of SMEs	Percentage of SMEs (Valid)	SMEs with Missing Responses
Bachelor's Degree ¹				
BSW	2	25.0%	28.6%	1
Other Bachelor's Degree	6	75.0%	85.7%	1
Master's Degree ²				
MSW	8	100.0%	100.0%	0
Other Master's Degree	3	37.5%	37.5%	0
Doctorate Degree ³				
Doctorate in Social Work	6	75.0%	85.7%	1
Other Doctorate Degree	1	12.5%	14.3%	1
Practice Experience				
Chemical Dependency	2	25.0%	33.3%	2
Child Welfare	3	37.5%	50.0%	2
Corrections	2	25.0%	33.3%	2
Developmental Disabilities	1	12.5%	16.7%	2
Geriatrics	1	12.5%	16.7%	2
Medical Social Work	2	25.0%	33.3%	2
Mental Health	3	37.5%	50.0%	2
School Social Work	1	12.5%	16.7%	2
Social Work Education	6	75.0%	100.0%	2
Other	1	12.5%	16.7%	2
Gender				
Female	1	12.5%	12.5%	0
Male	7	87.5%	87.5%	0
Current Employment				
Education	4	50.0%	66.7%	2
Management/Administration	1	12.5%	16.7%	2
Research	1	12.5%	16.7%	2
Years of Social Work Experience				
Mean	25			2
Median	24			2
Maximum	37			2
Minimum	12			2

¹One SME had both a BSW and a Bachelor's Degree in another field²Three SMEs had both an MSW and a Master's Degree in another field³All SMEs had doctorate degrees, it was unknown if one of the SMEs doctorate degrees were in Social Work

BSW = Bachelor's Degree in Social Work, MSW = Master's Degree in Social Work, SMEs = Subject Matter Experts

Subject Matter Experts: Judgment of Items and Constructs

Subject matter experts reviewed items on the GRBS and matched each item with one construct that they believed the item was measuring. The percentage of agreement amongst the SMEs is used to preliminarily determine the extent to which items in the GRBS measure constructs they were intended to measure. Items were viewed as having some preliminary salience for a particular construct if the agreement amongst SMEs was 50% or greater. If there was less than 50% agreement amongst the SMEs, the item was discarded from the GRBS. To reiterate, eight SMEs participated in this study. The percentage of SMEs who assigned a particular item to a construct was calculated using Microsoft Excel 2007.

Table 4 provides the percentage of SMEs who rated each GRBS item as measuring a particular construct. The columns in Table 4 represent the four constructs which the items on the GRBS are hypothesized to measure. The rows in Table 4 represent each of 74 items on the GRBS. The intersection of a column and a row provides the percentage of SMEs who matched a GRBS item to a particular construct. Due to space limitations, the actual GRBS statements are not printed in the table. To identify the GRBS items, readers are directed to Appendix J, where the “Item ID Number” can be used to locate the specific GRBS statements. In Table 4 there are black boxes around items which were initially hypothesized to load on the same construct. Appendix J also contains the a priori hypothetical factor structure of the GRBS. Table 4 can be compared to Appendix J to examine the consistency between the a priori factor structure hypothesized by the researcher and the SME assignments of items to constructs.

Table 4. Subject Matter Experts: Judgment of Items and Constructs^{1, 2, 3, 4} (N = 8)

Item ID Number	Agency Support for Research	General Value of Research for Social Work Practice	Quality of Social Work Research	The Use of Research in Social Work Interventions
Item 4	87.5%	12.5%	0.0%	0.0%
Item 12	100.0%	0.0%	0.0%	0.0%
Item 17	62.5%	37.5%	0.0%	0.0%
Item 20	37.5%	37.5%	0.0%	25.0%
Item 24	100.0%	0.0%	0.0%	0.0%
Item 38	100.0%	0.0%	0.0%	0.0%
Item 39 ⁵	50.0%	25.0%	12.5%	0.0%
Item 44	75.0%	0.0%	0.0%	25.0%
Item 45	100.0%	0.0%	0.0%	0.0%
Item 46	100.0%	0.0%	0.0%	0.0%
Item 48	100.0%	0.0%	0.0%	0.0%
Item 50	25.0%	62.5%	0.0%	12.5%
Item 51	100.0%	0.0%	0.0%	0.0%
Item 53	100.0%	0.0%	0.0%	0.0%
Item 56	87.5%	0.0%	0.0%	12.5%
Item 58	100.0%	0.0%	0.0%	0.0%
Item 59 ⁵	75.0%	12.5%	0.0%	0.0%
Item 61 ⁵	62.5%	0.0%	25.0%	0.0%
Item 70	100.0%	0.0%	0.0%	0.0%
Item 2	0.0%	75.0%	0.0%	25.0%
Item 7	0.0%	12.5%	0.0%	87.5%
Item 8	37.5%	50.0%	12.5%	0.0%
Item 9	0.0%	87.5%	0.0%	12.5%
Item 10	0.0%	62.5%	12.5%	25.0%
Item 13	0.0%	62.5%	37.5%	0.0%
Item 14	50.0%	12.5%	0.0%	37.5%
Item 30	0.0%	12.5%	0.0%	87.5%
Item 31	0.0%	62.5%	0.0%	37.5%
Item 40	0.0%	62.5%	25.0%	12.5%
Item 42	0.0%	62.5%	0.0%	37.5%
Item 43	25.0%	62.5%	12.5%	0.0%
Item 54	0.0%	37.5%	0.0%	62.5%
Item 62	0.0%	75.0%	0.0%	25.0%
Item 64	0.0%	100.0%	0.0%	0.0%
Item 68	12.5%	87.5%	0.0%	0.0%
Item 69 ⁵	0.0%	87.5%	0.0%	0.0%
Item 71	0.0%	87.5%	0.0%	12.5%
Item 73	50.0%	37.5%	0.0%	12.5%
Item 74	0.0%	62.5%	0.0%	37.5%

Table 4. Subject Matter Experts: Judgment of Items and Constructs^{1,2,3,4} (N = 8) (cont'd)

Item ID Number	Agency Support for Research	General Value of Research for Social Work Practice	Quality of Social Work Research	The Use of Research in Social Work Interventions
Item 11	0.0%	0.0%	100.0%	0.0%
Item 15	0.0%	0.0%	100.0%	0.0%
Item 16	0.0%	0.0%	100.0%	0.0%
Item 18	0.0%	0.0%	100.0%	0.0%
Item 22	0.0%	0.0%	100.0%	0.0%
Item 23	12.5%	25.0%	62.5%	0.0%
Item 25	0.0%	12.5%	87.5%	0.0%
Item 26	0.0%	0.0%	100.0%	0.0%
Item 29	0.0%	0.0%	100.0%	0.0%
Item 32	0.0%	0.0%	100.0%	0.0%
Item 33	0.0%	12.5%	87.5%	0.0%
Item 37	0.0%	0.0%	100.0%	0.0%
Item 41	0.0%	0.0%	100.0%	0.0%
Item 47	0.0%	0.0%	100.0%	0.0%
Item 55	0.0%	50.0%	50.0%	0.0%
Item 57	0.0%	0.0%	87.5%	12.5%
Item 60	0.0%	50.0%	25.0%	25.0%
Item 65	0.0%	37.5%	62.5%	0.0%
Item 66 ⁵	0.0%	0.0%	87.5%	0.0%
Item 67	0.0%	75.0%	25.0%	0.0%
Item 1	0.0%	37.5%	0.0%	62.5%
Item 3	0.0%	12.5%	0.0%	87.5%
Item 5	0.0%	75.0%	12.5%	12.5%
Item 6	0.0%	12.5%	25.0%	62.5%
Item 19 ⁵	0.0%	25.0%	0.0%	62.5%
Item 21	0.0%	12.5%	12.5%	75.0%
Item 27 ⁵	0.0%	0.0%	0.0%	87.5%
Item 28	0.0%	25.0%	12.5%	62.5%
Item 34	0.0%	37.5%	0.0%	62.5%
Item 35	0.0%	0.0%	25.0%	75.0%
Item 36	0.0%	12.5%	25.0%	62.5%
Item 49	12.5%	0.0%	0.0%	87.5%
Item 52	12.5%	0.0%	12.5%	75.0%
Item 63	0.0%	0.0%	12.5%	87.5%
Item 72	0.0%	25.0%	0.0%	75.0%

¹The intersection of a column and a row (cell) provides the percentage of SMEs who matched a GRBS item to a particular construct

²Items were viewed as having some preliminary salience for a particular construct if the agreement amongst SMEs was 50% or greater

³View Appendix J, where the "Item ID Number" can be used to locate the specific GRBS Likert statements

⁴There are black boxes around items which are hypothesized to load on the same construct

⁵Values in this row do not add up to 100% because one SME believed that this item did not measure any of the constructs

Overall, there is fairly strong agreement amongst the SMEs regarding which GRBS items are measuring which GRBS constructs. For 73 of the 74 items (98.6% of the items), at least 50% of the SMEs agree on which items are measuring which constructs. Eighty-six percent (64 of 74 items) of the SMEs ratings were congruent with the factor structure initially hypothesized/specified by the researcher (for 64 items, at least 50% of the SMEs believed the items were measuring the same constructs that the researcher intended for the items to measure). To some extent, this serves as pre-factor analytic, preliminary support for the factor structure of the GRBS items. Item 20 was the only item for which there was less than 50% agreement among the SMEs. Item 20 was originally hypothesized to measure the student's perspective of the agency's support for research.

Although there was agreement among the SMEs regarding which items are measuring which constructs, several of the SME item ratings were not congruent with the factor structure that was initially hypothesized by the researcher. Nine items (Items 50, 7, 14, 30, 54, 73, 60, 67, and 5) that at least 50% of the SMEs agreed on, were not rated as measuring constructs that the researcher intended for them to measure. For example, Items 7 and 30 were hypothesized by the researcher as measuring the construct of "General Value of Research for Social Work Practice;" however, 87.5% of the SMEs agreed that these items were measuring the construct of "The Use of Research in Social Work Interventions." Item 67 was hypothesized as measuring the construct of "Quality of Social Work Research," yet 75% of the SMEs believed that this item was measuring the "General Value of Research for Social Work Practice."

The SMEs were equally split with regard to which construct item 55 was measuring. Half of the SMEs rated item 55 as measuring the "General Value of

Research for Social Work Practice,” the other 50% believed item 55 measured the “Quality of Social Work Research.” This suggests that two constructs, rather than one, may be measured by item 55. Discrepant items (50, 7, 14, 30, 54, 73, 60, 67, and 5) do not support the factor structure that was initially hypothesized by the researcher. The SME ratings and consequent discrepancies with the initial hypothetical factor structure may have some relevance for altering or re-specifying the a priori model, prior to CFA, regarding which GRBS items are measuring which GRBS constructs.

Pilot Study

The pilot study sample consists of 24 participants. Given the small number of participants in the pilot study, the data must be interpreted with great caution.

Pilot Study Demographic Data

Table 5 contains frequencies of the demographic variables which were collected from the pilot study sample. Unless otherwise stated, it is the valid percentage column that is being referenced in this text. The pilot study sample was predominantly Caucasian (91.3%) and female (87%). All of the participants were currently enrolled in an MSW program. The pilot study contained no one who reported themselves as having Hispanic or Latino ethnicity. Approximately three-fourths of the sample was full-time students. All of the participants have completed at least one graduate level research course. Almost half (47.8%) of the participants reported having completed two graduate level research courses. One-quarter of the sample reported having completed at least one graduate level statistics course. Only one participant reported not having completed an undergraduate research or statistics course.

Table 5. Pilot Study Demographic Data (N = 24 MSW Students)

	Frequency	Percentage of Participants	Percentage of Participants (Valid)	Participants with Missing Responses
Program of Study				
Full-Time	17	70.8%	73.9%	1
Part-Time	6	25.0%	26.1%	1
Graduate Research Courses (Completed) ¹				
One	12	50.0%	52.2%	1
Two	11	45.8%	47.8%	1
Graduate Statistics Courses (Completed)				
Zero	18	75.0%	75.0%	0
One	3	12.5%	12.5%	0
Two	3	12.5%	12.5%	0
Undergraduate Research Courses (Completed)				
Zero	1	4.2%	4.3%	1
One	12	50.0%	52.2%	1
Two	6	25.0%	26.1%	1
Three	2	8.3%	8.7%	1
Four	2	8.3%	8.7%	1
Undergraduate Statistics Courses (Completed)				
Zero	1	4.2%	4.2%	0
One	19	79.2%	79.2%	0
Two	4	16.7%	16.7%	0
Gender				
Female	20	83.3%	87.0%	1
Male	3	12.5%	13.0%	1
Race				
African-American/Black	1	4.2%	4.3%	1
Caucasian	21	87.5%	91.3%	1
Other Race	1	4.2%	4.3%	1
Ethnicity				
Hispanic or Latino	0	0.0%	0.0%	5
Not Hispanic or Latino	19	79.2%	100%	5

¹One participant reported having completed 42 graduate research courses this value was expunged from the data

Table 6 contains measures of central tendency for pilot study demographic variables measured at the interval-ratio level. On average, the pilot study sample had two and a half years of experience in the human service field. The months of human service experience ranged from 0 to 78. The average number of credit

hours completed by participants was 54, suggesting that on average the pilot study participants were near completion of the MSW curriculum. The average age of the participants in the pilot study was 32 years. Both the mean and median age were nearly identical.

Table 6. Pilot Study Demographic Data – Measures of Central Tendency (N = 24 MSW Students)

	Minimum	Maximum	Mean	Median	Standard Deviation
Months of Employment in a Human Service Position	0	78	30.29	24	24.14
Number of Graduate Research Courses (Completed) ¹	1	2	1.48	1.00	0.51
Number of Graduate Statistics Courses (Completed)	0	2	0.38	0.00	0.71
Number of Undergraduate Research Courses (Completed) ²	0	4	1.65	1.00	1.03
Number of Undergraduate Statistics Courses (Completed)	0	2	1.13	1.00	0.49
Completed Credit Hours in Current SWK Program ³	12	60	54	60	10.91
Age	23	50	32.3	32.0	7.6

¹One participant reported having completed 42 graduate research courses, this value was expunged from the data and considered missing

²Response for one participant is missing

³Responses for two participants are missing

Pilot Study: Variability in Responses

For each of the 74 items completed by the pilot study participants, at least three of the response options (strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree) were selected. The pilot sample did not unanimously select one response option for any of the 74 GRBS items.

Pilot Study: Preliminary Cronbach's Alpha for GRBS Constructs

For each of the four subscales (Agency Support for Research, General Value of Research for Social Work Practice, Quality of Social Work Research, and The Use of Research in Social Work Interventions) in the GRBS, the coefficient alpha was computed and items whose removal could improve the coefficient alpha were documented. To save space, item numbers rather than item statements are used throughout the manuscript. Appendix J can be used to find the specific item content that corresponds to the item numbers. The Coefficient alphas are based on a sample of 24 students. Listwise deletion was used for the computation of Cronbach's alpha.

Agency Support for Research

There were 19 items hypothesized to load on the construct of Agency Support for Research. The initial coefficient alpha for the construct of Agency Support for Research was .777. The scale's coefficient alpha increased to .821 after item 24 was removed for the subscale.

General Value of Research for Social Work Practice

The construct called General Value of Research for Social Work Practice contained 20 items which are believed to have theoretical justification for belonging to this construct. This subscale has a Cronbach's alpha of .898. The SPSS output reported that coefficient alpha could increase to .901 if item 31 was removed from the scale. Because the coefficient alpha would not increase substantially if item 31 were removed, no further items were removed from this subscale.

Quality of Social Work Research

The removal of five items (items 26, 25, 29, 57, and 22; items are listed in the order they were removed) from the Quality of Social Work Research construct

changed its Cronbach's alpha from .670 to .801. Of the five items, item 26 brought the largest increase in coefficient alpha (.042) once removed.

The Use of Research in Social Work Interventions

Prior to the removal of two items from The Use of Research in Social Work Interventions construct, the Cronbach's alpha was .772. After items 35 and 21 were removed, the coefficient alpha improved to .815. In the pilot study, further removal of items from the construct would not have improved the coefficient alpha.

Based on the Cronbach's alphas for each of the constructs in the pilot study, minor changes were made to several of the items. Reliability estimates (Cronbach's alphas) improved via the removal of items 21 and 29 from the Use of Research in Social Work Interventions construct and the Quality of Social Work Research construct, respectively. Both of these items were negatively worded.

Negatively worded items are phrased in such a way that they represent the lack of a latent variable (DeVellis, 2003). DeVellis stated, "Personal experience with community-based samples suggests to me that the disadvantages of items worded in an opposite direction outweigh any benefits" (p. 70). Shultz and Whitney (2005) maintained that statements containing the word "not" can be problematic for test takers. The items' lack of contribution to the internal consistency of their respective scales could be associated with their negative wording. The word "not" was removed from items 21 and 29. When administered to the online sample, items 21 and 29 will no longer require reverse scoring.

Negative words should be emphasized via capitalization to increase the likelihood that it will be noticed by the test taker (Shultz & Whitney, 2005). The word "negatively" in items 11 and 26 will be capitalized. Item 11 contains a double negative. Double negatives tend to confuse test takers (DeVellis, 2003). Therefore,

the word “not” was removed from this item. After the online administration of the GRBS, item 11 requires reverse scoring. Item 17 was too long. The phrase “in the agency,” was removed from item 17 to increase its lucidity (DeVellis, 2003). Items 11, 18, 24, and 26 require reverse scoring. Reverse scoring was conducted using the “Recode into different variables...” function in SPSS.

Preliminary Analysis (N=118): Principal Component Analysis

To aid in determining the tenability of the four construct a priori model which was originally hypothesized for the CFA, two PCAs were performed on the first 118 cases in the study. The first PCA was restricted to two constructs and the second PCA was restricted to three constructs. Mean substitution was used to replace missing values in both PCAs. The sample size of 118 does not include cases that participated in the pilot study. The MSW and BSW students who comprise the PCA sample completed the GRBS between the dates of May 5, 2008 and July 8, 2008.

Preliminary Analysis Sample: Demographic Data

Table 7 contains the demographic data of the 118 MSW and BSW participants which comprise the preliminary analysis sample. Many of the sample responses for demographic variables are missing. Therefore, it was not possible to capture the true characteristics of the sample. The overwhelming majority of the sample was female, Caucasian, and not Hispanic. To some extent this speaks to the external validity of the convenience sample, because most schools of social work are predominantly female and Caucasian. Approximately 80% of the sample consists of MSW students; the other 20% of the sample were pursuing BSW degrees. Slightly over 60% of the samples were full-time students. Most of the participants have not completed a graduate level statistics course. This is not surprising since the IUSSW at IUPUI does not require MSW students to complete a graduate level statistics course. Three-

fourths of the sample reported having completed at least one graduate level research course. Again this is to be expected since the IUSSW at IUPUI requires MSW students to complete two graduate level research courses.

Table 7. Preliminary Analysis Demographic Data: MSW and BSW Students (N = 118)

	Frequency	Percentage of Participants	Percentage of Participants (Valid)	Participants with Missing Responses
Social Work Degree Currently Being Pursued				
MSW	67	56.8%	79.8%	34
BSW	17	14.4%	20.2%	34
Program of Study				
Full-Time	52	44.1%	62.7%	35
Part-Time	31	26.3%	37.3%	35
Graduate Research Courses (Completed) ¹				
Zero	17	14.5%	25.0%	49
One	23	19.7%	33.8%	49
Two	28	23.9%	41.2%	49
Graduate Statistics Courses (Completed)				
Zero	58	49.2%	80.6%	46
One	13	11.0%	18.1%	46
Two	1	0.8%	1.4%	46
Undergraduate Research Courses (Completed)				
Zero	6	5.1%	8.7%	49
One	35	29.7%	50.7%	49
Two	19	1.7%	27.5%	49
Three	2	1.7%	2.9%	49
Four	6	5.1%	8.7%	49
Seven	1	0.8%	1.4%	49
Undergraduate Statistics Courses (Completed)				
Zero	9	7.6%	12.3%	45
One	50	42.4%	68.5%	45
Two	14	11.9%	19.2%	45
Gender				
Female	77	65.3%	91.7%	34
Male	7	5.9%	8.3%	34
Race				
African-American/Black	6	5.1%	7.1%	33
Biracial	1	0.8%	1.2%	33
Caucasian	77	65.3%	90.6%	33
Other Race	1	0.8%	1.2%	33
Ethnicity				
Hispanic or Latino	2	1.7%	2.4%	36
Not Hispanic or Latino	80	67.8%	97.6%	36

¹One case reported having completed 18 graduate research courses; this response was omitted from the data

MSW = Master's Degree in Social Work

BSW = Bachelor's Degree in Social Work

Table 8 contains the measures of central tendency for the preliminary analysis sample demographic variables measured at the interval–ratio level. Due to the tendency for outliers to influence the mean (Healey, 2005), the mean is not the best measure of central tendency for the preliminary analysis demographic data. In all demographic variables the distribution is positively skewed. In contrast to the mean, the median is not influenced by outliers (Kirk, 1999); therefore the median is the best indicator of the variables’ true central tendency (for this particular sample). There are 36 to 49 missing responses for each of the seven variables in table 8. Relative to the pilot study, there is more variability in the responses because the preliminary analysis included MSW and BSW students. There were a number of participants who did not respond to the demographic questions.

Table 8. Preliminary Analysis Sample Demographic Data – Measures of Central Tendency (N = 118)

	Minimum	Maximum	Mean	Median	Standard Deviation
Months of Employment in a Human Service Position	0	300	32.83	12	56.73
Number of Graduate Research Courses (Completed) ¹	0	18	1.40	1	2.18
Number of Graduate Statistics Courses (Completed)	0	2	0.21	0	0.44
Number of Undergraduate Research Courses (Completed) ²	0	7	1.59	1	2.17
Number of Undergraduate Statistics Courses (Completed)	0	2	1.06	1	0.56
Completed Credit Hours in Current SWK Program ³	0	108	37	34	22
Age	20	61	32.9	29	10.2

¹One participant reported having completed 42 graduate research courses; this value was expunged from the data

²Response for one participant is missing

³Responses for two participants are missing

Principal Component Analysis: Restricted to Two Constructs

To determine the number of constructs which the 74 GRBS items are measuring, the following PCA results were examined: the amount of variance that each extracted construct accounts for, the cumulative percentage of variance that all of the extracted constructs account for, scree plot, and structure coefficients (factor loadings from the structure matrix).

Kaiser–Meyer–Olkin and Bartlett’s Test of Sphericity

The Kaiser–Meyer–Olkin (KMO) statistic examines the magnitude of correlation coefficients in comparison to the magnitude of partial correlation coefficients

(Norušis, 2006). Ideally, the KMO should be close to one (Kaiser, 1974; Norušis, 2006). Kaiser classifies KMO values at .90 or above, .80 or above, .70 or above, .60 or above, .50 or above, and under .50 as “marvelous,” “meritorious,” “middling,” “mediocre,” “miserable,” and “unacceptable,” respectively. The KMO value for the present study was .716, therefore garnering a ‘middling’ rank and surpassing the acceptability threshold of .50. The null hypothesis in Bartlett’s Test of Sphericity states that correlation coefficients are all equal to zero in the population from which the sample came (Norušis, 2006). In the current study, Bartlett’s test of sphericity was statistically significant with a chi-square of 3546.108 (2701, $N = 118$), $p = 4.89e-026$. In SPSS, “[t]he negative number after the letter e tells you how many places to move the decimal point to the left” (Norušis, 2006, p. 116). Therefore, the probability level of the Bartlett test is equal to 0.00000000000000000000000000489. The probability level of $4.89e-026$ means that less than five out of over 1 billion samples would obtain data as extreme as this if the null hypothesis was accurate (Norušis, 2006). Unless it is especially unwieldy to do so, for example in a table or path diagram, throughout this manuscript the exact probability levels of null hypothesis significance tests will be reported (APA, 2001). To reiterate, unless otherwise noted any probability level below 0.05 is considered statistically significant.

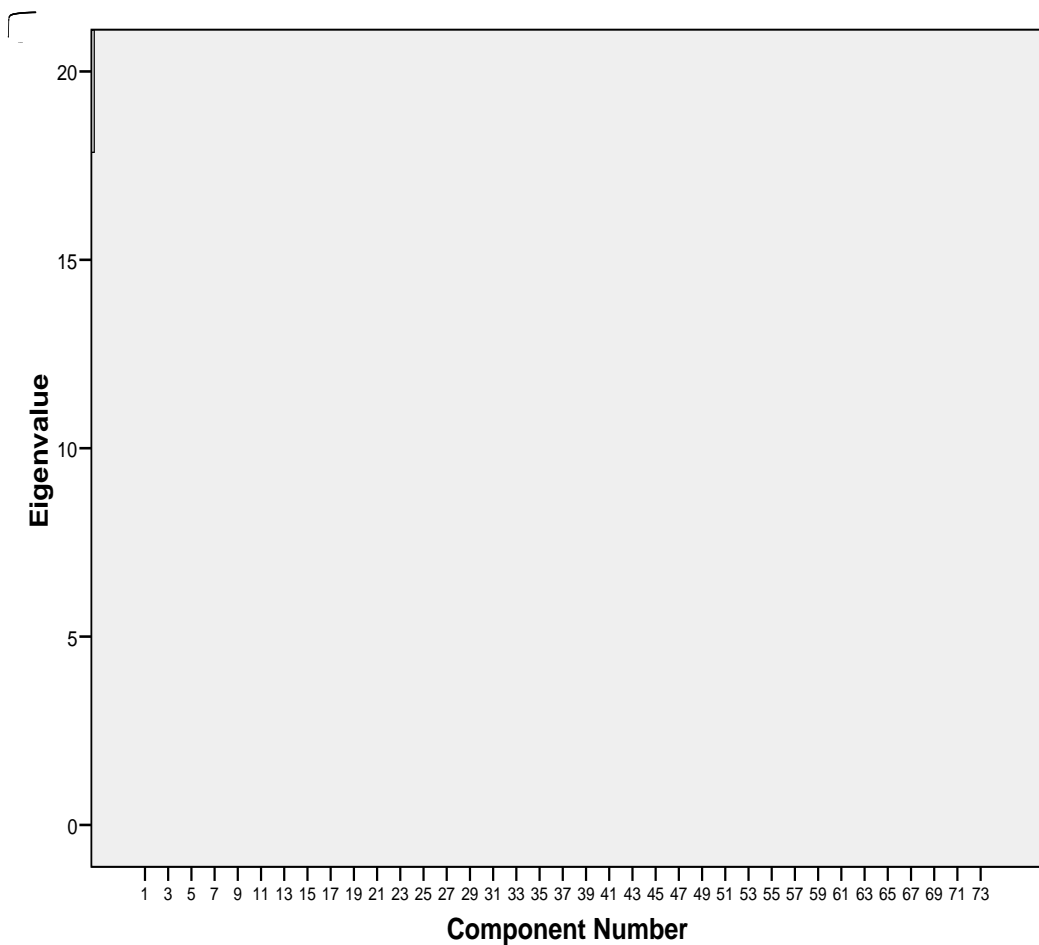
Principal Component Analysis Results: Two Constructs

Although 20 constructs had eigenvalues above one, the PCA was restricted to two constructs. The promax rotation converged after three iterations. The first and second constructs accounted for 23.39 and 7.25 percent of the variance, respectively. The first two constructs explained 30.64% of the total variance.

The scree plot is a visual method that is used to aid in determining the number of constructs to retain (Shultz & Whitney, 2005). Eigenvalues of the constructs are

located on the vertical/Y-axis of the scree plot. The constructs (components) themselves are located on the horizontal/X-axis of the scree plot. DeVellis (2003, p. 115) cites Cattell (1966) and stated that “Cattell’s criterion calls for retaining those factors that lie above the elbow of the plot.” The scree plot shown below in Figure 1 supports the retention of two constructs. The elbow in the scree plot (of Figure 1) is located at the fourth construct and has an eigenvalue of 3.170. The argument could also be made that the elbow lies at the third or fifth construct. There is a small break between the fourth and fifth constructs. Although the scree plot is superior to the eigenvalue above or equal to one method, one of the problems associated with using the scree plot to determine the number of constructs to retain is that the scree plot is subjective (Russell, 2002).

Figure 1. GRBS scree plot derived from a principal component analysis that was restricted to two constructs



Almost all relevant information can be obtained from the structure, pattern, and construct correlation matrices (Nunnally & Bernstein, 1994). Issues pertaining to the interpretation of factor loadings (unless otherwise specified factor loadings refer to structure coefficients) have been described previously in this manuscript. The structure matrix provides the correlation between scale items and the constructs (Norusis, 2006; Nunnally & Bernstein, 1994). Ideally, there would be high correlations between the GRBS items and the constructs they represent. It is also worthwhile to reiterate that an item is considered empirically salient for a construct if that item has a factor loading at or above .30 (Brown, 2006; Shultz & Whitney, 2005; Thompson, 2004).

Table 9 contains the structure coefficients (factor loadings) of the GRBS items which were used in the PCA. In order to identify the GRBS items with empirical and theoretical salience, a number of steps were followed. The structure matrix was examined to first determine which GRBS items have salient factor loadings on either of the two constructs. Some of the GRBS items cross-loaded on both constructs. In such cases, the researcher eliminated the items and did not assign them to either construct or assigned the item to the construct for which it had most theoretical relevance. Shultz and Whitney (2005) stated that both of these options are acceptable for addressing cross-loading items.

After the empirically salient items on each of the two constructs were identified, the researcher reviewed the salient items on each of the constructs to determine thematic similarities among the items on each construct (Shultz & Whitney, 2005). The names of the two constructs were based on thematic similarities among the salient items which loaded on each construct. The first construct was named “General Value of Research for Social Work Practice.” The second construct was named “Values and Attitudes toward Research in Social Work Practice.” The GRBS items which were considered empirically and theoretically salient for one of the two constructs are bolded in Table 9.

The structure matrix in Table 9 shows that the bolded GRBS items are sufficiently correlated with the “General Value of Research for Social Work Practice” construct. Likewise, the bolded GRBS items are also adequately correlated with the “Values and Attitudes toward Research in Social Work Practice” construct. The positive correlations between the GRBS items and the constructs they represent, means that as the constructs (latent variables) increase, so do the ratings on the representative items, and as the constructs decrease so do the ratings on items which represent them. Recall

that factor analysis is premised on the fact that constructs that are not directly observable, but can be observed via examining the construct's influence on a variable that can be observed (Long, 1983). For example, social work students' perception of the "General Value of Research for Social Work Practice" cannot be directly observed and quantified. However the "General Value of Research for Social Work Practice" can ultimately be determined via evaluating the relationships among items which are collectively hypothesized to measure the construct (Long, 1983).

Table 9. GRBS Structure Matrix: Two-Factor Model^{abcd}

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 13: Competence in research will allow a social worker to contribute more to the profession.	0.599	0.364
Item 74: Adopting social work practice that is supported by research protects clients from harm.	0.599	0.362
Item 3: A social worker is far more likely to recommend appropriate interventions if they have a positive attitude toward research.	0.598	0.242
Item 6: Effective social work interventions are evidence-based.	0.574	0.113
Item 31: Research helps social workers predict client behavior.	0.567	0.282
Item 5: Applying research findings to practice is an important aspect of the social work profession.	0.564	0.123
Item 43: Expertise in research is vital to a career in social work.	0.549	0.446
Item 36: Social work interventions are greatly enhanced by the use of standardized instruments.	0.542	0.214
Item 9: Research can be an effective tool for empowering oppressed populations.	0.530	0.278
Item 50: Research is needed for social service programs to obtain funding.	0.514	0.464
Item 21: Research courses help students implement social work interventions.	0.507	0.285
Item 2: Relying on research is better than relying on practice wisdom.	0.493	-0.032
Item 68: Social workers are far less likely to be sued if they apply research findings to their practice.	0.488	0.222

Table 9. GRBS Structure Matrix: Two-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 35: An intervention should only be used after it has been thoroughly evaluated in research studies.	0.469	0.266
Item 71: Research is essential for developing effective social policies.	0.447	0.191
Item 1: The best social work education teaches students to locate research about intervention effectiveness.	0.434	0.085
Item 52: Social work interventions should be guided by detailed manuals or protocols.	0.422	0.241
Item 56: Managed care is an incentive for agencies to train their employees in empirically supported treatments.	0.393	0.291
Item 27: Social workers must be able to explain to clients what the research says about a particular treatment recommendation.	0.386	0.194
Item 7: Research is useful for explaining treatment recommendations to clients.	0.383	0.161
Item 33: Social work journals only publish trustworthy research.	0.345	0.314
Item 19: The effects of a social work intervention must be evaluated.	0.327	0.093
Item 15: Social workers conduct research in an honest manner.	0.282	0.279
Item 14: Insurance companies are more likely to reimburse social workers who base their interventions on research.	0.261	0.237
Item 25: It is rare to find flaws in social work research.	0.131	0.083
Item 55: Research done by social workers has greatly improved the social work profession.	0.580	0.726

Table 9. GRBS Structure Matrix: Two-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 61: Social work supervisors typically have some expertise in research.	0.399	0.721
Item 53: Social work administrators encourage social work practitioners to review research on social problems.	0.304	0.706
Item 46: The NASW code of ethics plays a big role in making agencies want to adopt research based treatments.	0.406	0.693
Item 45: Social workers are frequently required by their agencies to read research studies.	0.252	0.688
Item 32: The social work profession produces excellent research.	0.359	0.688
Item 41: Compared to psychology, social work research is highly credible.	0.193	0.664
Item 48: Agencies require social workers to produce research.	0.195	0.607
Item 57: Research produced by social workers is well respected by other professional helpers.	0.221	0.599
Item 60: Social work research effectively explains problems experienced by social work clients.	0.526	0.590
Item 47: Social work researchers are highly competent.	0.353	0.581
Item 51: Agencies are supportive of social workers who wish to engage in research.	0.138	0.578
Item 58: Social service agencies encourage social workers to use research to guide their interventions.	0.307	0.551

Table 9. GRBS Structure Matrix: Two-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 20: Social workers can influence agency policies, if they are knowledgeable about research methods.	0.459	0.545
Item 44: Employers expect social workers to know what interventions are empirically supported.	0.366	0.533
Item 37: Social work is known for producing unbiased research.	0.276	0.523
Item 29: Social work research is rigorous enough to be called scientific.	0.235	0.510
Item 59: Social work practicum supervisors expect students to have some expertise in research.	0.264	0.504
Item 38: Agencies allow social workers time to locate relevant research studies.	0.176	0.480
Item 72: Social work interventions can be enhanced by qualitative research.	0.428	0.479
Item 67: Social work research is highly relevant for today's social problems.	0.352	0.478
Item 22: Social work researchers are self-critical.	0.239	0.459
Item 39: Social work students who know research tend to get better practicum placements.	0.410	0.447
Item 18Recoded: Social work research is of very poor quality.	-0.096	-0.441
Item 65: Peer reviewed social work journals are an excellent source of knowledge for direct practitioners.	0.327	0.429

Table 9. GRBS Structure Matrix: Two-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice ^d (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 70: Social service agencies want to hire social workers who know how to evaluate client outcomes.	0.392	0.410
Item 16: Social work researchers are good at what they do.	0.299	0.398
Item 63: Practice guidelines are an excellent way to select effective social work interventions.	0.257	0.391
Item 17: A social worker who understands research, can encourage an agency to conduct research.	0.291	0.384
Item 23: Published social work research is understandable.	0.345	0.366
Item 8: Social workers with research knowledge get higher pay.	0.186	0.362
Item 12: Human service organizations are willing to pay for their employees to be trained in evidence-based practice.	0.070	0.349
Item 66: Students should trust social work research.	0.109	0.295
Item 24Recoded: Agencies prevent social workers from implementing empirically supported treatment.	-0.033	-0.211
Item 11Recoded: Research produced by social workers is NEGATIVELY influenced by values.	-0.019	-0.136
Item 26Recoded: Social work research is NEGATIVELY influenced by politics.	0.080	-0.098

^aPrincipal component analysis was used as the extraction method

^bPromax was used as the rotation method

^cThe principal component analysis was restricted to two constructs

^dThe factor loadings are actually structure coefficients

In the pattern matrix, the pattern coefficients (regression weights) represent the amount of change that occurs in the scale item when there is a unit increase in the construct that the item represents (Nunnally & Bernstein, 1994). Table 10 contains the pattern coefficients for the GRBS items on two constructs. The factor loadings on the structure or pattern matrices can be examined to determine salience at the .30 level (Thompson, 2004). Similar to the structure matrix, the pattern matrix and its pattern coefficients underscore the close relationships between the GRBS items and their respective constructs. In the pattern matrix, the GRBS items are bolded if they are salient for one of the two constructs.

Table 10. GRBS Pattern Matrix: Two-Factor Model^{abcde}

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 28: The most successful social work practitioners use interventions that are supported by research.	0.821	-0.110
Item 10: Social work practice is best when it is based on research findings.	0.813	-0.261
Item 34: Using interventions based on research is the best way to help disadvantaged populations.	0.795	-0.042
Item 49: Empirically supported interventions should always be the first treatment offered to clients.	0.760	-0.056
Item 54: Research provides the best answers to treatment issues encountered in social work practice.	0.731	0.019
Item 40: Knowing research makes you a better practitioner.	0.706	0.036
Item 6: Effective social work interventions are evidence-based.	0.696	-0.240
Item 2: Relying on research is better than relying on practice wisdom.	0.687	-0.381
Item 30: Research is excellent evidence for determining what interventions help clients.	0.677	0.109
Item 5: Applying research findings to practice is an important aspect of the social work profession.	0.676	-0.221
Item 69: Research is a valuable part of social work education.	0.657	0.051
Item 3: A social worker is far more likely to recommend appropriate interventions if they have a positive attitude toward research.	0.640	-0.083

Table 10. GRBS Pattern Matrix: Two-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 73: Research course work is an excellent way to prepare social work students for problems encountered in agency settings.	0.640	0.058
Item 36: Social work interventions are greatly enhanced by the use of standardized instruments.	0.584	-0.083
Item 31: Research helps social workers predict client behavior.	0.572	-0.009
Item 62: Basic social work helping skills are greatly enhanced by research.	0.567	0.243
Item 74: Adopting social work practice that is supported by research protects clients from harm.	0.560	0.077
Item 13: Competence in research will allow a social worker to contribute more to the profession.	0.559	0.080
Item 4: Program administrators must be knowledgeable about research methods.	0.536	0.160
Item 1: The best social work education teaches students to locate research about intervention effectiveness.	0.527	-0.183
Item 9: Research can be an effective tool for empowering oppressed populations.	0.524	0.012
Item 64: Research studies are a powerful tool for helping social workers understand disadvantaged populations.	0.513	0.303
Item 68: Social workers are far less likely to be sued if they apply research findings to their practice.	0.506	-0.035
Item 21: Research courses help students implement social work interventions.	0.488	0.037
Item 71: Research is essential for developing effective social policies.	0.472	-0.049

Table 10. GRBS Pattern Matrix: Two-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 42: Scientific data is essential when advocating for policy reform.	0.471	0.254
Item 35: An intervention should only be used after it has been thoroughly evaluated in research studies.	0.450	0.037
Item 43: Expertise in research is vital to a career in social work.	0.434	0.226
Item 7: Research is useful for explaining treatment recommendations to clients.	0.406	-0.045
Item 52: Social work interventions should be guided by detailed manuals or protocols.	0.403	0.037
Item 27: Social workers must be able to explain to clients what the research says about a particular treatment recommendation.	0.387	-0.002
Item 19: The effects of a social work intervention must be evaluated.	0.377	-0.098
Item 50: Research is needed for social service programs to obtain funding.	0.375	0.273
Item 56: Managed care is an incentive for agencies to train their employees in empirically supported treatments.	0.331	0.122
Item 33: Social work journals only publish trustworthy research.	0.250	0.187
Item 14: Insurance companies are more likely to reimburse social workers who base their interventions on research.	0.189	0.141
Item 15: Social workers conduct research in an honest manner.	0.189	0.184

Table 10. GRBS Pattern Matrix: Two-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 25: It is rare to find flaws in social work research.	0.120	0.022
Item 41: Compared to psychology, social work research is highly credible.	-0.194	0.762
Item 45: Social workers are frequently required by their agencies to read research studies.	-0.131	0.755
Item 53: Social work administrators encourage social work practitioners to review research on social problems.	-0.074	0.743
Item 61: Social work supervisors typically have some expertise in research.	0.044	0.698
Item 48: Agencies require social workers to produce research.	-0.153	0.685
Item 51: Agencies are supportive of social workers who wish to engage in research.	-0.210	0.685
Item 32: The social work profession produces excellent research.	0.013	0.681
Item 46: The NASW code of ethics plays a big role in making agencies want to adopt research based treatments.	0.073	0.656
Item 57: Research produced by social workers is well respected by other professional helpers.	-0.113	0.656
Item 55: Research done by social workers has greatly improved the social work profession.	0.285	0.581
Item 47: Social work researchers are highly competent.	0.077	0.542

Table 10. GRBS Pattern Matrix: Two-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 58: Social service agencies encourage social workers to use research to guide their interventions.	0.037	0.532
Item 18Recoded: Social work research is of very poor quality.	0.172	-0.528
Item 38: Agencies allow social workers time to locate relevant research studies.	-0.091	0.527
Item 29: Social work research is rigorous enough to be called scientific.	-0.032	0.526
Item 37: Social work is known for producing unbiased research.	0.014	0.516
Item 59: Social work practicum supervisors expect students to have some expertise in research.	0.011	0.498
Item 44: Employers expect social workers to know what interventions are empirically supported.	0.129	0.467
Item 22: Social work researchers are self-critical.	0.008	0.455
Item 60: Social work research effectively explains problems experienced by social work clients.	0.305	0.436
Item 12: Human service organizations are willing to pay for their employees to be trained in evidence-based practice.	-0.144	0.422
Item 20: Social workers can influence agency policies, if they are knowledgeable about research methods.	0.245	0.421
Item 67: Social work research is highly relevant for today's social problems.	0.148	0.404

Table 10. GRBS Pattern Matrix: Two-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Values and Attitudes toward Research in Social Work Practice (Construct 2)
Item 8: Social workers with research knowledge get higher pay.	0.003	0.361
Item 65: Peer reviewed social work journals are an excellent source of knowledge for direct practitioners.	0.147	0.355
Item 72: Social work interventions can be enhanced by qualitative research.	0.248	0.353
Item 63: Practice guidelines are an excellent way to select effective social work interventions.	0.079	0.351
Item 16: Social work researchers are good at what they do.	0.130	0.332
Item 66: Students should trust social work research.	-0.055	0.324
Item 39: Social work students who know research tend to get better practicum placements.	0.246	0.322
Item 17: A social worker who understands research, can encourage an agency to conduct research.	0.129	0.318
Item 70: Social service agencies want to hire social workers who know how to evaluate client outcomes.	0.247	0.285
Item 24Recoded: Agencies prevent social workers from implementing empirically supported treatment.	0.100	-0.261
Item 23: Published social work research is understandable.	0.215	0.257
Item 26Recoded: Social work research is NEGATIVELY influenced by politics.	0.175	-0.187
Item 11Recoded: Research produced by social workers is NEGATIVELY influenced by values.	0.068	-0.171

^aPrincipal component analysis was used as the extraction method

^bPromax was used as the rotation method

^cThe principal component analysis was restricted to two constructs

^dThe rotation converged after 3 iterations

^eThe factor loadings are actually pattern coefficients

Cronbach's Alphas: Two-Factor GRBS Model

With the GRBS items now having both empirical and theoretical salience on two separate constructs, the Cronbach's alphas for the two subscales were determined. Listwise deletion was used to adjust for missing values. The first GRBS subscale called "General Value of Research for Social Work Practice" has 33 items and a Cronbach's alpha of .938. Deleting an item from this subscale would only increase the coefficient alpha by .001. The second construct called "Values and Attitudes toward Research in Social Work Practice" has 21 items and a Cronbach's alpha of .902. Scales with coefficient alphas within the .80 and .90 range are considered "very good" (DeVellis, 2003). DeVellis stated that scales far beyond .90 may need to be reduced. In comparison to the coefficient alphas that were hypothesized for the original four-factor a priori model ("Quality of Social Work Research," "General Value of Research for Social Work Practice," "The Use of Research in Social Work Interventions," and "Agency Support for Research"), the data suggest that the two-factor model ("General Value of Research for Social Work Practice" and "Values and Attitudes toward Research in Social Work Practice") derived from theory and PCA is competitive and possibly plausible.

Pros and Cons of the GRBS Two-Factor Model

There are a number of advantages and disadvantages to the two-factor GRBS model. The two-factor model has coefficient alphas above .900, structure/pattern coefficients above .30, and the first factor has strong theoretical support, given the content of the items which load on it. Further PCA support for the two-factor model comes from the amount of variance that the "General Value of Research for Social Work Practice" and "Values and Attitudes toward Research in Social Work Practice" factors explain in comparison to the other factors. To recap, these two factors each

explain 23.39 and 7.25% of the variance. The third and fourth factors each explain 4% of the variance. The fifth and sixth factors each explain 3% of the variance. The constructs that explain less variance are not as important as constructs that explain more variance (Nunnally & Bernstein, 1994), hence the support for the two-factor model.

Despite the advantages, there are several problems associated with the two-factor GRBS model. The correlation between the two constructs is .508. If two constructs have a correlation at .500 the researcher may want to consider combining the two constructs into one (Nunnally & Bernstein, 1994). The .508 correlation between the construct in the two factor model is a slight weakness. For empirical and theoretical reasons and because the observed correlation just surpasses the .500 threshold by .008, the two constructs will remain distinct entities. Another problem is associated with the theoretical premise of the second construct in the two-factor model. In other words, the items composing the second construct lack a common unifying theme (theoretically they don't all seem to be measuring the same thing). The name given to the second construct on the two-factor model is the best name that can be found to explain the structure/pattern coefficients. While this construct ("Values and Attitudes toward Research in Social Work Practice") has coefficients above .30 and a Cronbach's alpha above .900, the content of the items suggest that they may not be measuring the same thing, even though the empirical evidence suggests otherwise.

Principal Component Analysis: Restricted to Three Constructs

To further investigate the tenability of the two-factor model and the possibility of a three-factor model, a PCA was conducted where the constructs were restricted to three components.

Kaiser–Meyer–Olkin and Bartlett’s Test of Sphericity

For the three–factor model, the KMO estimate and Bartlett’s test of sphericity statistic does not differ from the values reported above.

Principal Component Analysis Results: Three Constructs

When the PCA was restricted to three components, the analysis converged after seven iterations.

From the two to three–factor models, the scree plot does not change. Likewise, the components still account for the same amount of variance. The third component explains 4.55% of the variance and the first three factors collectively account for 35.19% of the total variance. Every time a construct is added more of the total variance is explained. It requires all 74 GRBS items to explain 100% of the total variance.

Structure coefficients of the three–factor GRBS model are listed in Table 11. As was the case with the two–factor model, items are considered empirically salient if they have a structure coefficient at or above .30. In Table 11 items are bolded only if they have both empirical and theoretical salience. For each of the three constructs, the research identified themes that all of the empirically salient items had in common and named the factors accordingly. Just like the two–factor model, salient (bolded) items on the first construct are all positively correlated with the “General Value of Research for Social Work Practice.” The second construct in the three factor model has salient items that positively correlate with the construct called “Agency Support for Research.” Finally, the construct called “Quality of Social Work Research” positively correlates with salient items on the third construct. The structure matrix in the PCA that was restricted to three constructs resulted in the elimination of 21 GRBS items.

Table 11. GRBS Structure Matrix: Three-Factor Model^{abcd}

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 28: The most successful social work practitioners use interventions that are supported by research.	0.770	0.246	0.377
Item 34: Using interventions based on research is the best way to help disadvantaged populations.	0.754	0.246	0.512
Item 49: Empirically supported interventions should always be the first treatment offered to clients.	0.753	0.320	0.290
Item 54: Research provides the best answers to treatment issues encountered in social work practice.	0.720	0.282	0.508
Item 30: Research is excellent evidence for determining what interventions help clients.	0.719	0.374	0.483
Item 40: Knowing research makes you a better practitioner.	0.701	0.282	0.513
Item 10: Social work practice is best when it is based on research findings.	0.686	0.081	0.305
Item 62: Basic social work helping skills are greatly enhanced by research.	0.677	0.473	0.477
Item 69: Research is a valuable part of social work education.	0.650	0.253	0.540

Table 11. GRBS Structure Matrix: Three-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 73: Research course work is an excellent way to prepare social work students for problems encountered in agency settings.	0.638	0.258	0.524
Item 4: Program administrators must be knowledgeable about research methods.	0.622	0.416	0.338
Item 3: A social worker is far more likely to recommend appropriate interventions if they have a positive attitude toward research.	0.617	0.233	0.222
Item 13: Competence in research will allow a social worker to contribute more to the profession.	0.608	0.349	0.297
Item 6: Effective social work interventions are evidence-based.	0.580	0.054	0.247
Item 74: Adopting social work practice that is supported by research protects clients from harm.	0.575	0.261	0.458
Item 36: Social work interventions are greatly enhanced by the use of standardized instruments.	0.566	0.223	0.168
Item 5: Applying research findings to practice is an important aspect of the social work profession.	0.564	0.052	0.274

Table 11. GRBS Structure Matrix: Three-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 42: Scientific data is essential when advocating for policy reform.	0.562	0.381	0.548
Item 31: Research helps social workers predict client behavior.	0.561	0.219	0.342
Item 43: Expertise in research is vital to a career in social work.	0.549	0.431	0.334
Item 2: Relying on research is better than relying on practice wisdom.	0.541	0.003	-0.017
Item 21: Research courses help students implement social work interventions.	0.527	0.302	0.184
Item 9: Research can be an effective tool for empowering oppressed populations.	0.519	0.209	0.348
Item 50: Research is needed for social service programs to obtain funding.	0.511	0.451	0.335
Item 68: Social workers are far less likely to be sued if they apply research findings to their practice.	0.506	0.225	0.176
Item 35: An intervention should only be used after it has been thoroughly evaluated in research studies.	0.502	0.318	0.102

Table 11. GRBS Structure Matrix: Three-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 27: Social workers must be able to explain to clients what the research says about a particular treatment recommendation.	0.441	0.306	-0.059
Item 52: Social work interventions should be guided by detailed manuals or protocols.	0.436	0.249	0.167
Item 1: The best social work education teaches students to locate research about intervention effectiveness.	0.415	-0.022	0.305
Item 56: Managed care is an incentive for agencies to train their employees in empirically supported treatments.	0.407	0.310	0.167
Item 7: Research is useful for explaining treatment recommendations to clients.	0.387	0.136	0.184
Item 19: The effects of a social work intervention must be evaluated.	0.357	0.131	0.021
Item 14: Insurance companies are more likely to reimburse social workers who base their interventions on research.	0.254	0.215	0.200
Item 45: Social workers are frequently required by their agencies to read research studies.	0.249	0.754	0.267
Item 53: Social work administrators encourage social work practitioners to review research on social problems.	0.294	0.749	0.325

Table 11. GRBS Structure Matrix: Three-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 46: The NASW code of ethics plays a big role in making agencies want to adopt research based treatments.	0.407	0.746	0.313
Item 48: Agencies require social workers to produce research.	0.207	0.708	0.150
Item 61: Social work supervisors typically have some expertise in research.	0.370	0.700	0.467
Item 51: Agencies are supportive of social workers who wish to engage in research.	0.125	0.619	0.241
Item 32: The social work profession produces excellent research.	0.308	0.614	0.545
Item 41: Compared to psychology, social work research is highly credible.	0.134	0.593	0.504
Item 44: Employers expect social workers to know what interventions are empirically supported.	0.377	0.588	0.221
Item 58: Social service agencies encourage social workers to use research to guide their interventions.	0.304	0.585	0.261
Item 38: Agencies allow social workers time to locate relevant research studies.	0.194	0.577	0.089

Table 11. GRBS Structure Matrix: Three-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 57: Research produced by social workers is well respected by other professional helpers.	0.186	0.574	0.386
Item 37: Social work is known for producing unbiased research.	0.258	0.519	0.317
Item 59: Social work practicum supervisors expect students to have some expertise in research.	0.237	0.474	0.353
Item 39: Social work students who know research tend to get better practicum placements.	0.417	0.473	0.238
Item 8: Social workers with research knowledge get higher pay.	0.216	0.469	0.011
Item 22: Social work researchers are self-critical.	0.220	0.449	0.287
Item 18Recoded: Social work research is of very poor quality.	-0.051	-0.384	-0.348
Item 12: Human service organizations are willing to pay for their employees to be trained in evidence-based practice.	0.033	0.302	0.279
Item 24Recoded: Agencies prevent social workers from implementing empirically supported treatment.	-0.023	-0.215	-0.106

Table 11. GRBS Structure Matrix: Three-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 26 Recoded: Social work research is NEGATIVELY influenced by politics.	0.089	-0.104	-0.029
Item 67: Social work research is highly relevant for today's social problems.	0.247	0.231	0.763
Item 64: Research studies are a powerful tool for helping social workers understand disadvantaged populations.	0.605	0.389	0.712
Item 55: Research done by social workers has greatly improved the social work profession.	0.530	0.625	0.645
Item 60: Social work research effectively explains problems experienced by social work clients.	0.472	0.464	0.615
Item 72: Social work interventions can be enhanced by qualitative research.	0.369	0.338	0.572
Item 33: Social work journals only publish trustworthy research.	0.272	0.123	0.570
Item 47: Social work researchers are highly competent.	0.294	0.471	0.557
Item 65: Peer reviewed social work journals are an excellent source of knowledge for direct practitioners.	0.260	0.276	0.556

Table 11. GRBS Structure Matrix: Three-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 66: Students should trust social work research.	0.023	0.108	0.523
Item 29: Social work research is rigorous enough to be called scientific.	0.175	0.401	0.501
Item 20: Social workers can influence agency policies, if they are knowledgeable about research methods.	0.423	0.470	0.488
Item 23: Published social work research is understandable.	0.294	0.239	0.477
Item 71: Research is essential for developing effective social policies.	0.401	0.032	0.459
Item 63: Practice guidelines are an excellent way to select effective social work interventions.	0.203	0.275	0.456
Item 15: Social workers conduct research in an honest manner.	0.229	0.145	0.438
Item 70: Social service agencies want to hire social workers who know how to evaluate client outcomes.	0.361	0.334	0.409
Item 17: A social worker who understands research, can encourage an agency to conduct research.	0.254	0.306	0.386

Table 11. GRBS Structure Matrix: Three-Factor Model^{abcd} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 16: Social work researchers are good at what they do.	0.264	0.327	0.382
Item 25: It is rare to find flaws in social work research.	0.112	0.027	0.168
Item 11Recoded: Research produced by social workers is NEGATIVELY influenced by values.	0.007	-0.091	-0.159

^aPrincipal component analysis was used as the extraction method

^bPromax was used as the rotation method

^cThe principal component analysis was restricted to three constructs

^dThe factor loadings are actually structure coefficients

Table 12 contains the pattern coefficients for the three-factor GRBS model. Similar to Table 11, the coefficients in Table 12 are bolded if they are theoretically and empirically salient for a particular construct. Unlike the structure matrix, the pattern matrix showed items 12, 16, and 17 as not being empirically salient (having coefficients below .30). The non-salient pattern coefficients for items 12 and 17 are not surprising since these two items barely passed the .30 threshold in the structure matrix. To reiterate, all of the items in the pattern matrix have theoretical salience and all but three have empirical salience for their respective factors. Twenty-one items that were originally on the GRBS were not considered to be salient via the pattern matrix. It is worthwhile to mention that for empirical and/or theoretical reasons, none of the negatively worded items were placed on the final three-factor model or considered salient on any of the constructs. This analysis has thus far confirmed DeVellis's (2003) apprehension about using negatively worded items on scales.

Table 12. GRBS Pattern Matrix: Three-Factor Model^{abcde}

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 28: The most successful social work practitioners use interventions that are supported by research.	0.783	-0.074	0.034
Item 49: Empirically supported interventions should always be the first treatment offered to clients.	0.781	0.059	-0.107
Item 10: Social work practice is best when it is based on research findings.	0.758	-0.232	0.039
Item 2: Relying on research is better than relying on practice wisdom.	0.751	-0.162	-0.308
Item 34: Using interventions based on research is the best way to help disadvantaged populations.	0.691	-0.122	0.233
Item 3: A social worker is far more likely to recommend appropriate interventions if they have a positive attitude toward research.	0.657	0.017	-0.099
Item 6: Effective social work interventions are evidence-based.	0.651	-0.210	0.024
Item 54: Research provides the best answers to treatment issues encountered in social work practice.	0.634	-0.063	0.231
Item 36: Social work interventions are greatly enhanced by the use of standardized instruments.	0.620	0.041	-0.145

Table 12. GRBS Pattern Matrix: Three-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 5: Applying research findings to practice is an important aspect of the social work profession.	0.616	-0.219	0.070
Item 30: Research is excellent evidence for determining what interventions help clients.	0.616	0.066	0.161
Item 40: Knowing research makes you a better practitioner.	0.605	-0.058	0.248
Item 13: Competence in research will allow a social worker to contribute more to the profession.	0.569	0.140	-0.033
Item 4: Program administrators must be knowledgeable about research methods.	0.545	0.206	-0.008
Item 27: Social workers must be able to explain to clients what the research says about a particular treatment recommendation.	0.540	0.274	-0.431
Item 35: An intervention should only be used after it has been thoroughly evaluated in research studies.	0.536	0.209	-0.241
Item 21: Research courses help students implement social work interventions.	0.533	0.148	-0.132
Item 68: Social workers are far less likely to be sued if they apply research findings to their practice.	0.532	0.060	-0.103

Table 12. GRBS Pattern Matrix: Three-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 69: Research is a valuable part of social work education.	0.530	-0.089	0.324
Item 62: Basic social work helping skills are greatly enhanced by research.	0.530	0.208	0.137
Item 31: Research helps social workers predict client behavior.	0.522	-0.029	0.105
Item 73: Research course work is an excellent way to prepare social work students for problems encountered in agency settings.	0.520	-0.073	0.306
Item 74: Adopting social work practice that is supported by research protects clients from harm.	0.467	-0.023	0.245
Item 9: Research can be an effective tool for empowering oppressed populations.	0.465	-0.031	0.139
Item 43: Expertise in research is vital to a career in social work.	0.442	0.250	0.019
Item 19: The effects of a social work intervention must be evaluated.	0.438	0.046	-0.208

Table 12. GRBS Pattern Matrix: Three-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 52: Social work interventions should be guided by detailed manuals or protocols.	0.433	0.117	-0.089
Item 1: The best social work education teaches students to locate research about intervention effectiveness.	0.418	-0.278	0.221
Item 7: Research is useful for explaining treatment recommendations to clients.	0.392	-0.020	0.005
Item 50: Research is needed for social service programs to obtain funding.	0.384	0.287	0.032
Item 56: Managed care is an incentive for agencies to train their employees in empirically supported treatments.	0.373	0.204	-0.097
Item 42: Scientific data is essential when advocating for policy reform.	0.364	0.101	0.332
Item 14: Insurance companies are more likely to reimburse social workers who base their interventions on research.	0.175	0.119	0.066
Item 26Recoded: Social work research is NEGATIVELY influenced by politics.	0.171	-0.150	-0.049

Table 12. GRBS Pattern Matrix: Three-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 45: Social workers are frequently required by their agencies to read research studies.	-0.038	0.786	-0.043
Item 48: Agencies require social workers to produce research.	-0.020	0.786	-0.168
Item 53: Social work administrators encourage social work practitioners to review research on social problems.	-0.005	0.744	0.017
Item 46: The NASW code of ethics plays a big role in making agencies want to adopt research based treatments.	0.158	0.708	-0.057
Item 51: Agencies are supportive of social workers who wish to engage in research.	-0.152	0.662	0.038
Item 38: Agencies allow social workers time to locate relevant research studies.	0.036	0.645	-0.197
Item 61: Social work supervisors typically have some expertise in research.	0.040	0.603	0.196
Item 58: Social service agencies encourage social workers to use research to guide their interventions.	0.094	0.555	-0.015

Table 12. GRBS Pattern Matrix: Three-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 44: Employers expect social workers to know what interventions are empirically supported.	0.214	0.550	-0.110
Item 57: Research produced by social workers is well respected by other professional helpers.	-0.130	0.530	0.227
Item 8: Social workers with research knowledge get higher pay.	0.142	0.530	-0.278
Item 41: Compared to psychology, social work research is highly credible.	-0.269	0.525	0.414
Item 32: The social work profession produces excellent research.	-0.058	0.482	0.372
Item 37: Social work is known for producing unbiased research.	0.023	0.463	0.113
Item 59: Social work practicum supervisors expect students to have some expertise in research.	-0.011	0.398	0.192
Item 22: Social work researchers are self-critical.	0.009	0.397	0.117
Item 39: Social work students who know research tend to get better practicum placements.	0.297	0.383	-0.064

Table 12. GRBS Pattern Matrix: Three-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 18Recoded: Social work research is of very poor quality.	0.234	-0.344	-0.316
Item 12: Human service organizations are willing to pay for their employees to be trained in evidence-based practice.	-0.197	0.270	0.260
Item 24Recoded: Agencies prevent social workers from implementing empirically supported treatment.	0.092	-0.228	-0.055
Item 67: Social work research is highly relevant for today's social problems.	-0.134	-0.074	0.858
Item 66: Students should trust social work research.	-0.276	-0.069	0.683
Item 33: Social work journals only publish trustworthy research.	0.036	-0.147	0.614
Item 65: Peer reviewed social work journals are an excellent source of knowledge for direct practitioners.	-0.022	0.059	0.542
Item 64: Research studies are a powerful tool for helping social workers understand disadvantaged populations.	0.334	0.034	0.538
Item 72: Social work interventions can be enhanced by qualitative research.	0.099	0.098	0.484

Table 12. GRBS Pattern Matrix: Three-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 29: Social work research is rigorous enough to be called scientific.	-0.150	0.268	0.461
Item 47: Social work researchers are highly competent.	-0.038	0.298	0.450
Item 60: Social work research effectively explains problems experienced by social work clients.	0.178	0.210	0.443
Item 15: Social workers conduct research in an honest manner.	0.039	-0.055	0.442
Item 63: Practice guidelines are an excellent way to select effective social work interventions.	-0.048	0.114	0.432
Item 23: Published social work research is understandable.	0.078	0.031	0.426
Item 71: Research is essential for developing effective social policies.	0.301	-0.262	0.424
Item 55: Research done by social workers has greatly improved the social work profession.	0.192	0.387	0.392
Item 17: A social worker who understands research, can encourage an agency to conduct research.	0.049	0.164	0.293

Table 12. GRBS Pattern Matrix: Three-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
Item 20: Social workers can influence agency policies, if they are knowledgeable about research methods.	0.176	0.281	0.287
Item 16: Social work researchers are good at what they do.	0.058	0.189	0.276
Item 70: Social service agencies want to hire social workers who know how to evaluate client outcomes.	0.175	0.158	0.260
Item 11Recoded: Research produced by social workers is NEGATIVELY influenced by values.	0.122	-0.058	-0.193
Item 25: It is rare to find flaws in social work research.	0.058	-0.066	0.168

^aPrincipal component analysis was used as the extraction method

^bPromax was used as the rotation method

^cThe principal component analysis was restricted to three constructs

^dThe rotation converged after 7 iterations

^eThe factor loadings are actually pattern coefficients

Cronbach's Alphas: Three-Factor GRBS Model

The three RSBPS subscales all have Cronbach's alphas that surpass the .80 threshold. The "General Value of Research for Social Work Practice" construct has 26 items and a coefficient alpha of .935. The "Agency Support for Research Construct" has 14 items and a Cronbach's alpha of .875. The construct measuring the "Quality of Social Work Research" has 13 items and a Cronbach's alpha of .836. The scale length was not reduced via the Cronbach's alpha, because the Cronbach's alpha

would not increase substantially if any items were eliminated. According to DeVellis's (2003) standards, the internal consistency of each of these three constructs is considered "very good." Based on the PCA and Cronbach's alphas, the three-factor GRBS model has theoretical and empirical support, and therefore is competitive with and possibly superior to the previously discussed two and four-factor models. The researcher is hypothesized that the three-factor GRBS model is indeed superior to both the two and four-factor models.

Pros and Cons of the GRBS Three-Factor Model

The three-factor RSPBS model has several benefits and costs. The three-factor model is beneficial because the PCAs and the Cronbach's alphas provide substantial empirical support for the factorial structure of the GRBS. Compared to the two-factor model, the three-factor model has stronger theoretical support. The items on each of the three constructs directly relate to the themes for which they are named. In contrast to the four-factor model, the first construct of the three-factor model ("General Value of Research for Social Work Practice") is essentially a combination of both the "General Value of Research for Social Work Practice" and "The Use of Research in Social Work Interventions" constructs that were present in the original four-factor model. This is not surprising to the researcher because when the GRBS items and constructs were being organized, such a possibility had been considered given the content of the two factors. Another advantage of the three-factor model is the orthogonal nature of the three constructs. As can be seen in Table 13, all of the correlation coefficients amongst the three factors are below the .500 threshold articulated by Nunnally and Bernstein (1994). Therefore, the three-factor model has empirical support for being separate and distinct constructs. Recall that while the two-factor model had theoretical distinctiveness, it lacked empirical distinction.

Table 13. GRBS: Three-Factor Correlation Matrix^{abc}

	General Value of Research for Social Work Practice (Construct 1)	Agency Support for Research (Construct 2)	Quality of Social Work Research (Construct 3)
General Value of Research for Social Work Practice (Construct1)	1	0.391	0.478
Agency Support for Research (Construct 2)		1	0.417
Quality of Social Work Research (Construct 3)			1

^aPrincipal component extraction method

^bPromax rotation

^cPCA is restricted to three components

As is true with all of the potential models discussed so far, the three-factor model is not without its limitations. If constructs are less relevant because they explain less variance (Nunnally & Bernstein, 1994), it would seem that factors that explain approximately the same amount of variance are equally relevant. This reasoning poses a problem for the three-factor model because factors three and four explain nearly the same amount of variance, yet only factor three was retained. While the retention of the third factor can be explained by theoretical reasons, ideally the third factor would explain considerably more variance than the fourth factor. The weak coefficients of items 12, 16, and 17 on pattern and/or structure matrices are also noteworthy disadvantages of the three-factor model.

GRBS: Preliminary Discriminant Validity

Previously it was stated that, relative to the SWLS, PCA and CFA will be used to evaluate the discriminant validity of the GRBS. For the preliminary analysis, a simple correlation matrix was computed to evaluate the discriminant validity of the GRBS. Computing the correlation coefficients among the latent variable scores of the three-factor GRBS model and the latent variable scores on the SWLS are appropriate

because factor analytic methods involve the examination of correlations (Nunnally & Bernstein, 1994). For the discriminant validity of the RSPWBS subscales to be supported in this preliminary investigation, the GRBS subscales should have weak correlation coefficients when compared to the one-dimensional SWLS. A weak correlation coefficient is operationally defined as a Pearson's r that ranges between 0.0 and 0.3 (Healey, 2005). Table 14 is a correlation matrix which identifies the correlation coefficients and significance tests amongst the GRBS subscales and the SWLS.

Table 14. GRBS Subscale Correlations with the SWLS: Preliminary Discriminant Validity

		General Value of Research for Social Work Practice	Agency Support for Research	Quality of Social Work Research	Satisfaction with Life
General Value of Research for Social Work Practice	r	1	0.83	0.91	0.05
	p		2.78e-31	3.81e-47	0.650
	N	117	117	117	85
Agency Support for Research	r		1	0.85	0.07
	p			6.60e-34	0.538
	N		117	117	85
Quality of Social Work Research	r			1	0.06
	p				0.598
	N			117	85
Satisfaction with Life	r				1
	p				
	N				85

r = Correlation Coefficient

p = Probability Level

N = Sample Size

The discriminant validity of the GRBS subscales is supported by the weak correlations between the latent variable scores of the GRBS subscales and the SWLS. When the SWLS (a theoretically orthogonal construct) is correlated with the three GRBS subscales the largest correlation coefficient is 0.07, indicating that there is no empirical relationship between the SWLS and the GRBS subscales. The latent variable scores of the GRBS subscales all have a weak correlation coefficient/relationship with the latent variable scores on the SWLS. In contrast, the latent variable scores of the three GRBS subscales all have strong empirical relationships with correlation coefficients of 0.83, 0.85, and 0.91. Additionally, the null hypothesis that the correlation coefficient is equal to zero in the population could not be rejected for any of the correlations between the SWLS and the GRBS subscales. The correlation matrix in Table 14 and theory indicate that the three GRBS subscales and the SWLS have no empirical or theoretical relationship (do not measure the same construct), hence offering support for the GRBS's discriminant validity.

Primary Analysis (N=199): Principal Component Analysis

The pros and cons of the two and three factor models have been explored previously, via PCAs on a sample of 118 MSW and BSW students. There were theoretical and/or empirical justifications for both the two and three factor models. To further examine and determine the factor structure of the GRBS, a PCA without construct restrictions, was conducted on a sample of 199 participants. The sample of 199 cases consists of the previous 118 participants (online sample), plus an additional 81 cases (classroom sample).

Primary Analysis Sample: Demographic Data

At least theoretically, the 81 participants in the primary analysis differ from the 118 participants in the preliminary analysis on several key variables. In contrast to the 118 participants in the preliminary analysis, the 81 participants in the primary analysis completed the GRBS in the classroom with other participants and the researcher present and were completely new to the MSW and BSW programs at IUPUI. The additional 81 cases completed the GRBS between the dates of July 9, 2008 and September 15, 2008. Table 15 contains the demographic data for the entire 199 case GRBS sample. The overwhelming majority of the sample is MSW students, full-time, Caucasian, female, and not Hispanic or Latino.

Table 15. Primary Analysis Demographic Data: MSW and BSW Students (N = 199)

	Frequency	Percentage of Participants	Percentage of Participants (Valid)	Participants with Missing Responses
Social Work Degree Currently Being Pursued				
MSW	129	64.8%	78.7%	35
BSW	35	17.6%	21.3%	35
Program of Study				
Full-Time	131	65.8%	80.4%	36
Part-Time	32	16.1%	19.6%	36
Graduate Research Courses (Completed)				
Zero	87	43.7%	58.8%	51
One	29	14.6%	19.6%	51
Two	28	14.1%	18.9%	51
Four	1	0.5%	0.7%	51
Ten	1	0.5%	0.7%	51
Eleven	1	0.5%	0.7%	51
Eighteen	1	0.5%	0.7%	51
Graduate Statistics Courses (Completed)				
Zero	133	66.8%	88.1%	48
One	15	7.5%	9.9%	48
Two	2	1.0%	1.3%	48
Three	1	0.5%	0.7%	48
Undergraduate Research Courses (Completed)				
Zero	25	12.6%	16.9%	51
One	75	37.7%	50.7%	51
Two	33	16.6%	22.3%	51
Three	5	2.5%	3.4%	51
Four	7	3.5%	4.7%	51
Seven	1	0.5%	0.7%	51
Thirty-Three	1	0.5%	0.7%	51
Fifty	1	0.5%	0.7%	51
Undergraduate Statistics Courses (Completed)				
Zero	20	10.1%	13.2%	47
One	110	55.3%	72.4%	47
Two	21	10.6%	13.8%	47
Eight	1	0.5%	0.7%	47
Gender				
Female	151	75.9%	92.1%	35
Male	13	6.5%	7.9%	35

Race				
African–American/Black	20	10.1%	12.1%	34
Biracial	2	1.0%	1.2%	34
Caucasian	139	69.8%	84.2%	34
Other Race	4	2.0%	2.4%	34
Ethnicity				
Hispanic or Latino	3	1.5%	1.9%	42
Not Hispanic or Latino	154	77.4%	98.1%	42

MSW = Master's Degree in Social Work

BSW = Bachelor's Degree in Social Work

Table 16 contains primary sample variables that are measured at the interval–ratio level. With the exception of graduate level statistics courses completed by the sample, the variables contain outliers. On average (median) the sample has completed one undergraduate research course and one undergraduate statistics course. The age variable has some particularly high values, hence the positive skew (Healey, 2005). In fact, all of the demographic variables with a continuous level of measurement are positively skewed (some variables are more positively skewed than others).

Table 16. Primary Analysis Demographic Data: Measures of Central Tendency (N = 199)

	Mean	Median	Standard Deviation	Maximum	Minimum
Months of Employment in a Human Service Position	27.96	6.00	52.91	300	0
Graduate Research Courses (Completed)	0.86	0.00	2.01	18	0
Graduate Statistics Courses (Completed)	0.15	0.00	0.44	3	0
Undergraduate Research Courses (Completed)	1.85	1.00	4.88	50	0
Undergraduate Statistics Courses (Completed)	1.05	1.00	0.77	8	0
Completed Credit Hours in Current SWK Program	23.38	13	23.62	115	0
Age	30.30	27.0	9.7	63	20

Independent samples T–tests are used to evaluate the null hypotheses that the population means for the demographic variables are equal (Kirk, 1999). The independent samples t–tests were used to compare the means of the first sample of 118 participants to the means of the second sample of 81 participants. For the independent samples t–test, because the size of the two samples exceeds 40, the normality assumption is not a cause for concern (Norusis, 2006, pp. 136 – 137). The homogeneity of variance assumption was evaluated via Levene’s test. If the null hypothesis of equivalent population variances is rejected, the “Equal variances not assumed” alpha value would be used (Norusis, 2006). To reduce the likelihood of committing a type I error, a Bonferroni adjustment was applied to the observed significance levels of the pairwise comparison t–tests (Gonzales, 2009). Via the Bonferroni adjustment the desired alpha level of 0.05 will be divided by the number of pairwise comparisons (7); therefore, the observed alpha levels for the t–tests must be below 0.0071 to be considered statistically significant at the 0.05 alpha level.

Table 17 provides the results of the independent samples t–test for the demographic variables of the two cohorts. As has been stated previously, the second sample of 81 participants were all new to their respective MSW and BSW programs, therefore, it was not surprising to find that the first sample (N=118) had completed significantly more graduate research courses and total credit hours in their respective BSW and MSW programs. Cohen’s *d* (1988) was calculated for the age variable and a medium effect size of .5613 was obtained. To obtain Cohen’s *d* the researcher wrote the formula in an Excel 2007 file. Therefore, with regard to age, on average the first sample of 118 participants was over half a standard deviation above the second sample of 81 participants. With the exception of age and the anticipated differences

with regard to coursework, the participants all came from the same population, hence the ability to combine the two independent samples.

An alternative to conducting multiple *t*-tests with a Bonferroni adjustment is to use a multivariate analysis of variance (MANOVA) for the seven dependent variables. Similar to the Bonferroni adjustment, MANOVA is used to reduce the type I error rate associated with multiple variables (Weinfurt, 1995). In the MANOVA the independent variable or factor has only two levels the first data collection involving online participation and the second data collection involving classroom participation. The seven dependent variables used in the MANOVA are the same dependent variables that were used in the Bonferroni adjusted multiple *t*-tests. The total sample size in the MANOVA was 135, with 63 participants in the online data collection cohort and the remaining 72 in the classroom data collection cohort. The equality of covariance matrices assumption was not satisfied with a Box's *M* of 216.576 ($F = 7.3$, $p = 1.15e-28$). Save nine participants, the two cohorts are balanced. Violating the equality of variance assumption has substantially less impact on the alpha level when the cohorts being compared are fairly equal (Norūsis, 2006). Levene's tests for equality of variances were statistically insignificant for six of the seven dependent variables (probability levels between 0.80 and .462). Only the completed credit hours in the current social work program variable had a probability level of 0.00003.

The MANOVA results were consistent with the Bonferroni adjusted multiple *t*-tests. The omnibus test for the MANOVA has a Pillai's Trace and partial eta squared of .327 ($F = 8.815$, $p = 8.229e-09$). Identical to the *t*-tests, the MANOVA yielded results showing the two data collection methods/cohorts as having statistically significant differences on the number of completed graduate level research courses ($p = 0.007$, Hedge's $g = 0.47$), the number of completed social work credit hours ($p =$

$7.86e-12$, Hedge's $g = 1.29$), and age ($p = 0.013$, Hedge's $g = 0.43$). For each of the three aforementioned dependent variables, the means and standard deviations were higher in the online cohort. Hedge's g (Hedges & Olkin, 1985) was calculated via a formula that the researcher wrote in Excel 2007. As indicated by the partial eta squared, almost one-third of the variance in the dependent variables can be explained by the data collection method. The hedge's g values for graduate level research, completed social work credit hours, and age have small to moderate, large, and small to moderate effect sizes according to Cohen's (1988) d standards, respectively. Hedge's g uses the same effect size classification scheme as Cohen's d (Kirk, 1999). When reporting partial eta squared, a pairwise measure of effect size should also be provided (Henson, 2006), hence the computation of Hedge's g .

A chi-square statistic was used to test the null hypothesis that the proportion of BSW and MSW students are equal in the first and second data collections; $\chi^2(1, N = 199) = .125, p = .724$. The minimum expected count is 17.07 and no cells had an expected count less than five. Because of the large probability level, the null hypothesis cannot be rejected. This finding further supports the combination of the two samples.

Table 17. Demographic Variables of Two Samples that Comprise the Final Sample: Independent Samples T-Tests ($n_1 = 118$, $n_2 = 81$)

Demographic Variable	F	Sig.	t	df	Sig. ^{3,4}	95% Confidence Interval of the Difference		M of 1 st Sample ¹ ; $n_1 = 118$	M of 2 nd Sample ¹ ; $n_2 = 81$
						Lower	Upper		
Graduate Research Courses	0.855	0.357	3.16	146	0.002	0.38	1.65	1.41 (2.17)	0.39 (1.72)
Undergraduate Research Courses	2.663	0.105	-0.60	146	0.551	-2.07	1.11	1.59 (1.20)	2.08 (6.59)
Graduate ² Statistics Courses	8.784	0.004	1.69	147	0.094	-0.02	0.26	0.21 (0.44)	0.09 (0.43)
Undergraduate Statistics Courses	0.009	0.925	0.24	150	0.808	-0.22	0.28	1.07 (0.56)	1.04 (0.92)
Completed Program Credit Hours (SWK Program)	3.705	0.056	7.40	150	9.1e-12	20.11	34.76	37.28 (22.0)	9.84 (23.7)
Human Service Employment (Months)	1.857	0.175	1.14	153	0.256	-7.10	26.45	32.83 (56.7)	23.15 (48.7)
Age ²	8.527	0.004	3.57	156	4.8e-4	2.35	8.17	32.88 (10.2)	27.62 (8.46)

¹Standard deviations are in parentheses

²Values are based on the assumption of unequal variances

³Bonferroni Adjustment: To be statistically significant at the 0.05 level, the observed alpha level must be below 0.0071

⁴2-tailed

M = Mean

n_1 = Sample size of the first sample

n_2 = Sample size of the second sample

*Principal Component Analysis: One-Factor Model – No Construct Restrictions,**N=199*

To reiterate, a PCA was conducted on the sample of 199. The PCA uses a promax rotation, places no restrictions on the number of components to be extracted (save the eigenvalue above one criterion), and uses a mean imputation strategy.

Kaiser–Meyer–Olkin and Bartlett’s Test of Sphericity

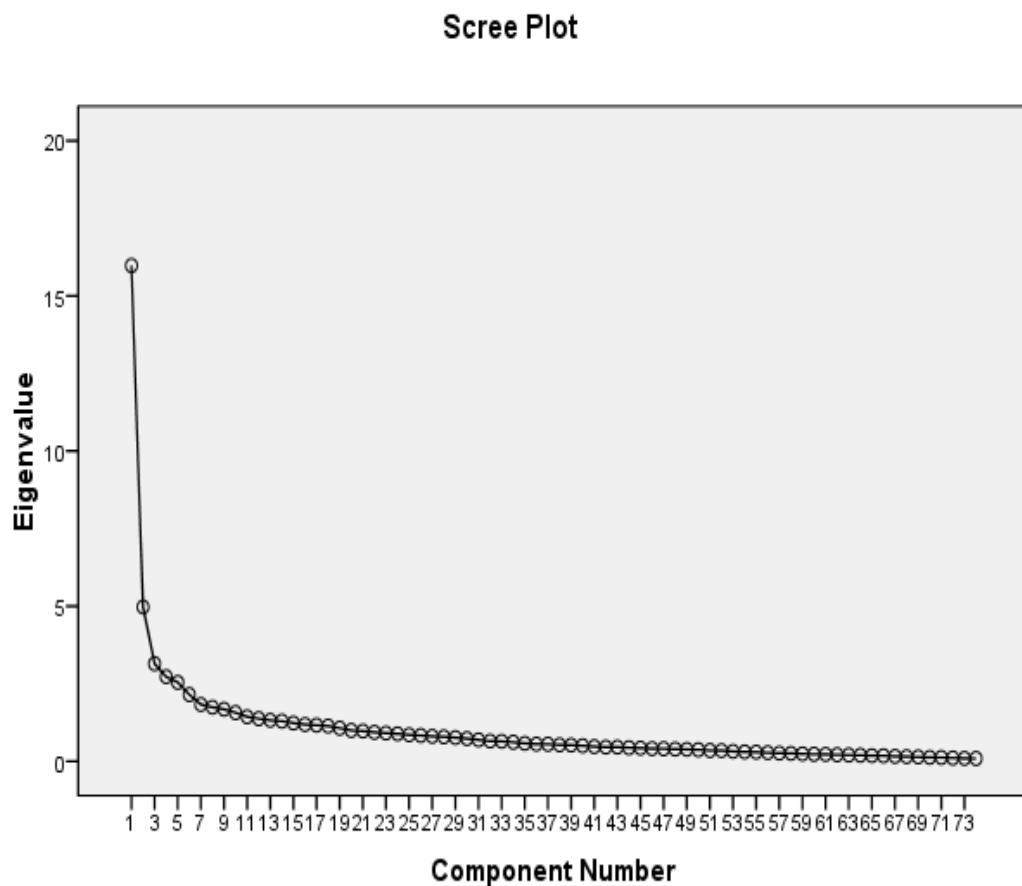
The Kaiser–Meyer–Olkin (KMO) statistic yields a value of .832. A KMO of .832 is considered “meritorious” by Kaiser (1974) and is indicative of the appropriateness of factor analysis (Norušis, 2006). Bartlett’s test of sphericity was statistically significant with a chi-square of 5741.408 (2701, $N = 199$), $p = 1.12e-220$. Given the statistically significant alpha level of Bartlett’s test of sphericity, the alternative hypothesis that the correlation coefficients are not all equivalent to zero in the population remains tenable (Norušis, 2006).

Principal Component Analysis Results: No Construct Restrictions, N=199

The PCA converged after 63 iterations. Based on the results of the current PCA, one construct will be retained. A one-factor scale should explain substantially more variance than any other constructs (Kaplan & Saccuzzo, 1997). The first construct explains 21.59% of the scale’s variance; that is over three times as much variance as the second factor. The second, third, fourth, fifth, and sixth constructs account for 6.72%, 4.25%, 3.68%, 3.44%, and 2.90% of the scale’s variance, respectively. The Kaiser criterion extracted 19 constructs. The first and second constructs had eigenvalues of 15.98 and 4.97, respectively. The goal of factor analysis is to explain the most amount of variance with as few constructs as possible (Nunnally & Bernstein, 1994). The amount of variance explained by the first construct, the lack of variance explained by successive constructs, and the scree plot support the extraction

of the first factor. Figure 2 provides the scree plot for the PCA sample of 199 participants. Of the 19 constructs extracted based on Kaiser's criterion, the first construct has the highest correlation with the second factor. The correlation between the first two constructs is .469. The correlations between the first factor and all other constructs are not high enough to consider combining them (Nunnally & Bernstein, 1994); therefore, there is empirical justification for the first construct being distinct from the others. A quick comment about the selected rotation method; the choice of an oblique rotation method is confirmed by the fact that several factor correlations exceed .3 ($r_{1,9}$; $r_{2,11}$; $r_{3,17}$...) (Nunnally & Bernstein, 1994).

Figure 2. GRBS scree plot derived from a principal component analysis (N = 199)



The loadings on the structure matrix provide compelling empirical and theoretical justification for the first factor measuring the construct of “General Value of Research for Social Work Practice.” At this point in the psychometric evaluation of the GRBS’s factor structure, it is important to reiterate that the structure matrix is an indicator of the correlation between an item and the construct on which that item loads (Nunnally & Bernstein, 1994). The structure coefficients on the first factor all exceed the .30 threshold which is required for an item to be considered salient for a particular construct (Brown, 2006; Bryant & Yarnold, 1995; Shultz & Whitney, 2005; Thompson, 2004). There are 27 empirically and theoretically salient items in the GRBS one-factor structure matrix. Structure coefficients for the first six constructs are provided in Table 18.

Table 18. GRBS Structure Matrix: One-Factor Model^{abcde}

GRBS Items	General Value of Research for Social Work Practice	2	3	4	5	6
Item 28: The most successful social work practitioners use interventions that are supported by research.	.764	.345	.177	.229	.286	.389
Item 10: Social work practice is best when it is based on research findings.	.758	.354	.173	.237	.102	.366
Item 34: Using interventions based on research is the best way to help disadvantaged populations.	.745	.498	.225	.267	.309	.285
Item 30: Research is excellent evidence for determining what interventions help clients.	.730	.534	.221	.191	.406	.431
Item 13: Competence in research will allow a social worker to contribute more to the profession.	.638	.370	.242	.079	.298	.461
Item 6: Effective social work interventions are evidence-based.	.634	.343	.117	.146	-.053	.285
Item 5: Applying research findings to practice is an important aspect of the social work profession.	.609	.416	.207	.195	.072	.404
Item 40: Knowing research makes you a better practitioner.	.599	.516	.236	.090	.189	.543
Item 49: Empirically supported interventions should always be the first treatment offered to clients.	.588	.413	.287	.179	.008	.286
Item 9: Research can be an effective tool for empowering oppressed populations.	.580	.428	.187	.368	.151	.220
Item 54: Research provides the best answers to treatment issues encountered in social work practice.	.568	.502	.253	.139	.273	.330
Item 64: Research studies are a powerful tool for helping social workers understand disadvantaged populations.	.466	.777	.288	.273	.346	.303
Item 71: Research is essential for developing effective social policies.	.406	.644	.093	.358	.016	.277
Item 72: Social work interventions can be enhanced by qualitative research.	.351	.641	.141	.221	.122	.335
Item 62: Basic social work helping skills are greatly enhanced by research.	.455	.634	.460	.027	.200	.294
Item 69: Research is a valuable part of social work education.	.469	.629	.220	.116	.289	.270

Table 18. GRBS Structure Matrix: One-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice	2	3	4	5	6
Item 74: Adopting social work practice that is supported by research protects clients from harm.	.223	.624	.278	.121	.004	.330
Item 73: Research course work is an excellent way to prepare social work students for problems encountered in agency settings.	.404	.619	.277	.108	.176	.173
Item 67: Social work research is highly relevant for today's social problems.	.140	.618	.207	.298	.391	.026
Item 65: Peer reviewed social work journals are an excellent source of knowledge for direct practitioners.	.317	.615	.289	.133	.268	.146
Item 55: Research done by social workers has greatly improved the social work profession.	.458	.598	.394	.207	.568	.333
Item 42: Scientific data is essential when advocating for policy reform.	.508	.585	.171	.315	.367	.467
Item 60: Social work research effectively explains problems experienced by social work clients.	.283	.581	.412	.087	.481	.288
Item 50: Research is needed for social service programs to obtain funding.	.299	.559	.317	.361	.204	.437
Item 70: Social service agencies want to hire social workers who know how to evaluate client outcomes.	.273	.543	.295	-.057	.042	.300
Item 63: Practice guidelines are an excellent way to select effective social work interventions.	.263	.514	.304	.127	.000	.059
Item 53: Social work administrators encourage social work practitioners to review research on social problems.	.191	.228	.768	.097	.213	.090
Item 45: Social workers are frequently required by their agencies to read research studies.	.141	.201	.753	.101	.292	.197
Item 58: Social service agencies encourage social workers to use research to guide their interventions.	.173	.316	.686	.110	.163	.254
Item 61: Social work supervisors typically have some expertise in research.	.127	.436	.681	.112	.245	.158
Item 48: Agencies require social workers to produce research.	.103	.066	.636	-.024	.300	.066
Item 59: Social work practicum supervisors expect students to have some expertise in research.	.079	.422	.607	-.018	.142	-.084

Table 18. GRBS Structure Matrix: One-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice	2	3	4	5	6
Item 46: The NASW code of ethics plays a big role in making agencies want to adopt research based treatments.	.275	.362	.604	.171	.271	.099
Item 44: Employers expect social workers to know what interventions are empirically supported.	.296	.359	.591	.067	.113	.420
Item 38: Agencies allow social workers time to locate relevant research studies.	.096	.062	.561	.083	.108	.247
Item 51: Agencies are supportive of social workers who wish to engage in research.	.144	.110	.547	.067	.380	.127
Item 57: Research produced by social workers is well respected by other professional helpers.	.180	.290	.535	.073	.267	-.024
Item 41: Compared to psychology, social work research is highly credible.	.158	.333	.491	.072	.482	-.038
Item 15: Social workers conduct research in an honest manner.	.211	.318	.110	.787	.162	.179
Item 16: Social work researchers are good at what they do.	.296	.234	.259	.727	.339	.073
Item 17: A social worker who understands research, can encourage an agency to conduct research.	.321	.427	.144	.485	.154	.478
Item 22: Social work researchers are self-critical.	.184	.300	.353	.473	.060	.279
Item 32: The social work profession produces excellent research.	.230	.275	.358	.222	.779	.157
Item 29: Social work research is rigorous enough to be called scientific.	.189	.344	.219	.197	.585	.102
Item 47: Social work researchers are highly competent.	.406	.315	.338	.385	.554	.020
Item 19: The effects of a social work intervention must be evaluated.	.287	.294	.105	.001	.017	.647
Item 27: Social workers must be able to explain to clients what the research says about a particular treatment recommendation.	.416	.124	.281	.030	.196	.623
Item 4: Program administrators must be knowledgeable about research methods.	.459	.395	.365	.278	.162	.551

Table 18. GRBS Structure Matrix: One-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice	2	3	4	5	6
Item 3: A social worker is far more likely to recommend appropriate interventions if they have a positive attitude toward research.	.456	.397	.216	.202	-.024	.507
Item 31: Research helps social workers predict client behavior.	.355	.359	.063	.124	.330	.469
Item 21: Research courses help students implement social work interventions.	.441	.264	.225	.109	.329	.230
Item 43: Expertise in research is vital to a career in social work.	.340	.427	.428	.165	.118	.335
Item 39: Social work students who know research tend to get better practicum placements.	.101	.235	.412	.153	.085	.189
Item 18 Recoded: Social work research is of very poor quality.	-.062	-.029	.048	-.044	.025	-.055
Item 11 Recoded: Research produced by social workers is NEGATIVELY influenced by values.	-.136	-.051	.036	-.066	.020	-.104
Item 24 Recoded Agencies: prevent social workers from implementing empirically supported treatment.	-.044	-.101	-.074	.014	.131	-.028
Item 2: Relying on research is better than relying on practice wisdom.	.350	.164	.044	.115	-.089	.316
Item 52: Social work interventions should be guided by detailed manuals or protocols.	.155	.211	.254	.060	.092	.016
Item 35: An intervention should only be used after it has been thoroughly evaluated in research studies.	.461	.217	.369	.065	.165	.312
Item 36: Social work interventions are greatly enhanced by the use of standardized instruments.	.393	.282	.266	.144	.264	.278
Item 14: Insurance companies are more likely to reimburse social workers who base their interventions on research.	.178	.208	.053	.151	.093	.211
Item 25: It is rare to find flaws in social work research.	.111	.004	.062	.134	.073	-.007
Item 33: Social work journals only publish trustworthy research.	.325	.383	.131	.460	.284	.100
Item 66: Students should trust social work research.	.048	.429	.167	.435	.280	.176

Table 18. GRBS Structure Matrix: One-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice	2	3	4	5	6
Item 68: Social workers are far less likely to be sued if they apply research findings to their practice.	.264	.270	.121	.085	.062	.195
Item 7: Research is useful for explaining treatment recommendations to clients.	.323	.189	.186	.074	.172	.279
Item 1: The best social work education teaches students to locate research about intervention effectiveness.	.367	.287	-.034	.282	.075	.174
Item 56: Managed care is an incentive for agencies to train their employees in empirically supported treatments.	.345	.285	.199	.155	.188	.247
Item 8: Social workers with research knowledge get higher pay.	.165	.183	.266	.062	.093	.192
Item 37: Social work is known for producing unbiased research.	.113	.369	.378	.048	.276	.266
Item 12: Human service organizations are willing to pay for their employees to be trained in evidence-based practice.	.046	.096	.189	.051	.241	-.005
Item 23: Published social work research is understandable.	.288	.305	.124	.276	.229	.183
Item 26 Recoded: Social work research is NEGATIVELY influenced by politics.	.069	.065	-.061	.028	-.023	.092
Item 20: Social workers can influence agency policies, if they are knowledgeable about research methods.	.381	.437	.351	.255	.276	.368

^aPrincipal component analysis was used as the extraction method

^bPromax was used as the rotation method

^cThe PCA was not restricted with regard to the number of constructs

^dThe rotation converged after 63 iterations

^eThe factor loadings are actually structure coefficients

It is worth reiterating that the pattern coefficients represent the amount of change that will occur in the items, when there is a one unit increase in the construct (Nunnally & Bernstein, 1994). The one-factor GRBS pattern matrix provides both theoretical and empirical support for a one-factor model which measures the “General Value of Research for Social Work Practice.” However, the pattern matrix differs from the structure matrix in that the empirical support is less compelling for the pattern matrix. In the structure matrix there were 27 GRBS items with coefficients above .30. The pattern matrix only has 11 items with coefficients above the minimum threshold of .30, less than half of the salient items in the structure matrix. The difference between the structure and pattern matrices are attributable to the oblique rotation method that was employed (Thompson, 2004). Only orthogonal rotation methods produce uncorrelated factors (Kahn, 2006; Nunnally & Bernstein, 1994), hence the lack of coefficient congruence between the two matrices. Table 19 provides the pattern coefficients for the first six constructs of the GRBS one-factor model.

Table 19. GRBS Pattern Matrix: One-Factor Model^{abcde}

GRBS Items	General Value of Research for Social Work Practice					
		2	3	4	5	6
Item 6: Effective social work interventions are evidence-based.	.790	.007	.014	-.046	-.220	.029
Item 10: Social work practice is best when it is based on research findings.	.743	-.116	-.022	.011	-.119	-.001
Item 28: The most successful social work practitioners use interventions that are supported by research.	.740	-.059	-.048	.031	.082	.044
Item 34: Using interventions based on research is the best way to help disadvantaged populations.	.686	.101	-.147	.070	-.004	-.138
Item 30: Research is excellent evidence for determining what interventions help clients.	.612	.236	-.117	-.093	.171	.178
Item 9: Research can be an effective tool for empowering oppressed populations.	.573	.190	.048	.163	.060	-.100
Item 5: Applying research findings to practice is an important aspect of the social work profession.	.541	.061	.122	.025	-.118	.237
Item 49: Empirically supported interventions should always be the first treatment offered to clients.	.503	.091	.071	.084	-.174	-.144
Item 40: Knowing research makes you a better practitioner.	.398	.226	-.037	-.177	.020	.209
Item 13: Competence in research will allow a social worker to contribute more to the profession.	.397	-.036	-.006	-.095	.062	.309
Item 54: Research provides the best answers to treatment issues encountered in social work practice.	.354	.205	-.076	-.073	.105	-.055
Item 71: Research is essential for developing effective social policies.	.165	.828	-.111	.105	-.123	.040
Item 64: Research studies are a powerful tool for helping social workers understand disadvantaged populations.	.071	.799	-.162	.068	.155	-.009
Item 72: Social work interventions can be enhanced by qualitative research.	.040	.787	-.096	-.019	.025	.170
Item 62: Basic social work helping skills are greatly enhanced by research.	.053	.674	.148	-.147	.015	-.027

Table 19. GRBS Pattern Matrix: One-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice	2	3	4	5	6
Item 73: Research course work is an excellent way to prepare social work students for problems encountered in agency settings.	.041	.665	-.005	-.063	-.096	-.119
Item 67: Social work research is highly relevant for today's social problems.	-.238	.652	-.077	.119	.262	-.218
Item 69: Research is a valuable part of social work education.	.087	.647	-.064	-.084	.066	-.016
Item 65: Peer reviewed social work journals are an excellent source of knowledge for direct practitioners.	.061	.579	.056	-.057	.086	-.087
Item 70: Social service agencies want to hire social workers who know how to evaluate client outcomes.	.021	.556	.077	-.170	-.195	.148
Item 74: Adopting social work practice that is supported by research protects clients from harm.	-.087	.481	-.003	-.065	-.200	.144
Item 63: Practice guidelines are an excellent way to select effective social work interventions.	.092	.473	.125	.026	-.161	-.137
Item 60: Social work research effectively explains problems experienced by social work clients.	-.042	.447	.141	-.139	.362	.154
Item 50: Research is needed for social service programs to obtain funding.	-.113	.419	.011	.275	-.001	.264
Item 53: Social work administrators encourage social work practitioners to review research on social problems.	.012	-.112	.893	.075	-.010	-.066
Item 45: Social workers are frequently required by their agencies to read research studies.	-.122	-.116	.849	.002	.203	.096
Item 58: Social service agencies encourage social workers to use research to guide their interventions.	-.074	.028	.795	.005	.043	.147
Item 48: Agencies require social workers to produce research.	.010	-.181	.629	-.079	.218	-.010
Item 38: Agencies allow social workers time to locate relevant research studies.	.026	-.304	.564	.021	-.014	.119
Item 44: Employers expect social workers to know what interventions are empirically supported.	.040	.041	.557	-.102	-.047	.200

Table 19. GRBS Pattern Matrix: One-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice	2	3	4	5	6
Item 59: Social work practicum supervisors expect students to have some expertise in research.	-.020	.245	.555	-.077	-.024	-.210
Item 61: Social work supervisors typically have some expertise in research.	-.150	.253	.530	.100	-.029	.014
Item 57: Research produced by social workers is well respected by other professional helpers.	.108	-.011	.497	-.069	.020	-.123
Item 51: Agencies are supportive of social workers who wish to engage in research.	.020	-.125	.491	.057	.156	.157
Item 46: The NASW code of ethics plays a big role in making agencies want to adopt research based treatments.	.106	.138	.449	.147	.006	-.113
Item 41: Compared to psychology, social work research is highly credible.	.028	.087	.306	-.160	.289	-.296
Item 15: Social workers conduct research in an honest manner.	-.077	.069	-.065	.858	-.004	-.103
Item 16: Social work researchers are good at what they do.	.084	-.148	.123	.779	.150	-.142
Item 47: Social work researchers are highly competent.	.288	.020	.150	.323	.316	-.217
Item 32: The social work profession produces excellent research.	-.154	.061	.150	.073	.824	.018
Item 29: Social work research is rigorous enough to be called scientific.	.031	.049	.103	.017	.716	.131
Item 55: Research done by social workers has greatly improved the social work profession.	.051	.388	.067	-.013	.414	.070
Item 19: The effects of a social work intervention must be evaluated.	.041	.122	.029	-.165	.012	.862
Item 27: Social workers must be able to explain to clients what the research says about a particular treatment recommendation.	.233	-.324	.125	-.053	.129	.508
Item 17: A social worker who understands research, can encourage an agency to conduct research.	-.022	.165	-.070	.320	.005	.445

Table 19. GRBS Pattern Matrix: One-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice	General Value of Research for Social Work Practice				
		2	3	4	5	6
Item 31: Research helps social workers predict client behavior.	-.003	.147	-.332	.039	.278	.395
Item 3: A social worker is far more likely to recommend appropriate interventions if they have a positive attitude toward research.	.155	.109	.051	-.002	-.146	.384
Item 21: Research courses help students implement social work interventions.	.160	-.010	-.079	.003	.071	-.051
Item 39: Social work students who know research tend to get better practicum placements.	-.189	-.062	.198	.098	-.101	-.058
Item 43: Expertise in research is vital to a career in social work.	.099	.251	.124	-.008	-.207	-.058
Item 66: Students should trust social work research.	-.182	.246	.012	.242	.178	.139
Item 18 Recoded: Social work research is of very poor quality.	.119	-.063	-.036	-.019	-.130	.070
Item 11 Recoded Research: produced by social workers is NEGATIVELY influenced by values.	-.001	-.054	-.041	.026	-.134	.091
Item 52: Social work interventions should be guided by detailed manuals or protocols.	-.058	.271	.150	-.023	.055	-.092
Item 2: Relying on research is better than relying on practice wisdom.	.164	-.111	-.120	-.027	-.202	.069
Item 36: Social work interventions are greatly enhanced by the use of standardized instruments.	.028	.012	.092	.063	.288	-.001
Item 35: An intervention should only be used after it has been thoroughly evaluated in research studies.	.343	.079	.215	-.046	-.023	.091
Item 14: Insurance companies are more likely to reimburse social workers who base their interventions on research.	.016	-.047	-.064	-.001	-.093	.010
Item 42: Scientific data is essential when advocating for policy reform.	.208	.413	-.148	.009	.203	.236
Item 25: It is rare to find flaws in social work research.	.315	-.372	-.055	-.014	-.069	-.140

Table 19. GRBS Pattern Matrix: One-Factor Model^{abcde} (cont'd)

GRBS Items	General Value of Research for Social Work Practice	2	3	4	5	6
Item 33: Social work journals only publish trustworthy research.	.225	.096	-.061	.205	.216	-.083
Item 37: Social work is known for producing unbiased research.	-.123	.191	.018	-.137	.119	.020
Item 68: Social workers are far less likely to be sued if they apply research findings to their practice.	.172	.078	.045	-.022	-.018	.017
Item 7: Research is useful for explaining treatment recommendations to clients.	.195	-.151	.190	.011	.157	.090
Item 1: The best social work education teaches students to locate research about intervention effectiveness.	.137	.041	-.093	.098	-.004	-.132
Item 56: Managed care is an incentive for agencies to train their employees in empirically supported treatments.	.183	-.032	-.050	.164	.172	-.079
Item 8: Social workers with research knowledge get higher pay.	-.037	-.133	.001	.083	-.052	.038
Item 12: Human service organizations are willing to pay for their employees to be trained in evidence-based practice.	-.070	.106	.145	-.142	.175	-.145
Item 22: Social work researchers are self-critical.	-.040	.050	.264	.351	-.167	.076
Item 4: Program administrators must be knowledgeable about research methods.	.090	.111	.217	.186	-.081	.350
Item 23: Published social work research is understandable.	.018	.061	-.093	.131	.024	-.207
Item 26 Recoded: Social work research is NEGATIVELY influenced by politics.	.037	-.214	-.005	-.145	.131	.298
Item 20: Social workers can influence agency policies, if they are knowledgeable about research methods.	.007	.111	.168	.148	.038	.303
Item 24 Recoded: Agencies prevent social workers from implementing empirically supported treatment.	-.076	-.089	-.095	.002	.169	-.034

^aPrincipal component analysis was used as the extraction method

^bPromax was used as the rotation method

^cThe PCA was not restricted with regard to the number of constructs

^dThe rotation converged after 63 iterations

^eThe factor loadings are actually pattern coefficients

The differences in coefficient salience between the structure (referred to as S) and pattern (sometimes referred to as P or B) matrices beg the question, “Which matrix should be used?” There is some lack of agreement regarding the use of the structure or pattern matrices (Brown, 2006). Brown stated that in applied research the pattern matrix is typically promulgated and used to interpret constructs. According to Gorsuch (1983):

Although P is basic to the theory of factor analysis, it does not show the relationship of variables to the factors but of the factors to the variables. To use P for interpretation, the meaning of the factors should already be known. (p. 207)

Moreover, Gorsuch stated that the structure coefficients incorporate the variance of overlapping constructs, while the pattern coefficients do not take into account such relationships. Because the structure matrix is the fundamental matrix for interpreting constructs (Gorsuch, 1983; Kahn, 2006) and for the aforementioned reasons, the PCAs in this study view the structure matrix as the primary source for interpreting the factors. The coefficient alphas of the salient structure and pattern matrices were examined and reported.

Cronbach’s Alphas: One-Factor GRBS Model

The 27 salient GRBS items in the structure matrix have a Cronbach’s alpha of .926 – a reliability estimate that is considered “very good” (DeVellis, 2003). Removing one of the 27 items from the model would not increase the coefficient alpha beyond .926. A corrected item–total correlation is a Pearson correlation coefficient between an item and the sum of the other items on a scale (Norušis, 2006). The corrected item–total correlations for the one factor model (based on the structure matrix) ranged from .346 (item 7) to .690 (item 30). The 11 salient items from the pattern matrix yield a coefficient alpha of .892. Again, Cronbach’s alphas between .8 and .9 are considered “very good” (DeVellis, 2003). The coefficient alpha could not be improved by

removing one of the 11 items from the scale. The corrected item–total correlations ranged from .534 to .717. After conducting a PCA, a high Cronbach’s alpha provides further support for the RWPBS’s one–dimensionality (Cortina, 1993).

Pros and Cons of the GRBS One–Factor Model

The overwhelming strengths of the one–factor GRBS model are the factor structure that is supported by the PCA structure matrix and the coefficient alpha of .926. The one–factor model accounts for three times more variance than the next biggest factor. The one–factor model does not correlate with any other factors beyond .500 and is therefore distinct from other constructs (Nunnally & Bernstein, 1994).

The Favored A Priori GRBS Model

When CFA is conducted, the original four–factor model and the PCA informed two and three–factor models will be compared to the one–factor model. The goodness–of–fit indices for these three competing models will be examined. The researcher hypothesized that the aforementioned PCA informed one–factor model (called General Value of Research for Social Work Practice) will have superior goodness–of–fit indices when compared to the competing two, three, and four–factor models. The one–factor, structure matrix informed, GRBS model was the favored a priori model in the CFA. However, the ultimate decision regarding whether the GRBS should contain one, two, three, or four factors (and the content of those factors) depends on empiricism as well as theory.

Confirmatory Factor Analysis

“The fit of a preferred model is more impressive when that fit occurs in the context of testing several rival models, especially when some of the rival models are theoretically plausible” (Thompson, 2004, p. 115). When compared to PCA, a benefit of CFA is its ability to use goodness–of–fit statistics to examine which hypothesized

factors best explain the data (Bryant, 2000). To further evaluate the factor structure of the GRBS, CFAs are conducted for each of the one, two, three, and four-factor models. These models all have very strong theoretical and in some cases empirical justification (PCA informed). Confirmatory factor analysis will be used to compare the hypothesized factor structures of the aforementioned models via goodness-of-fit statistics. The factor structure/model that is ultimately selected for the GRBS will be described in greater detail via reporting pattern coefficients/factor loadings, z-scores/statistical significance, path diagram, etc. Table 20 contains the Hu and Bentler (1999) recommended goodness-of-fit statistics and other descriptive information for the one, two, three, and four-factor models. Table 21 displays the Akaike information criterion (AIK) statistics for the five GRBS models. The CFAs were computed using the LISREL 8.80 Trial software. To reiterate, the CFAs were computed using the SIMPLIS syntax command language. Appendix L contains the SIMPLIS syntax that was written to compute the CFAs in this study.

Hu and Bentler Goodness-of-Fit Statistics

Table 20. Confirmatory Factor Analysis: GRBS Goodness-of-Fit Statistics (Recommended by Hu & Bentler, 1999)

Goodness-of-Fit Statistics (Hu and Bentler)	^a One-Factor Model: 11 Items	^a One-Factor Model: 27 Items	^a ^e Two-Factor Model: 54 Items	^a ^b ^c ^g Three-Factor Model: 53 Items	^a ^b ^c ^d ^g Four-Factor Model: 74 Items
Degrees of Freedom	44	324	1376	1322	2621
Satorra-Bentler Scaled Chi-Square (SBX ²)	81.65 (P = 0.00048)	920.02 (P = 0.0)	4186.04 (P = 0.0)	3383.79 (P = 0.0)	5766.11 (P = 0.0)
Non-Normed Fit Index (NNFI)	0.96	0.84	0.78	0.80	0.78
Comparative Fit Index (CFI)	0.97	0.85	0.78	0.81	0.87
Root Mean Square Error of Approximation (RMSEA)	0.066	0.096	0.10	0.095	0.083
Standardized RMR (SRMR)	0.068	0.11	0.11	0.11	0.11

^aGeneral Value of Research for Social Work Practice Work^bAgency Support for Research^cQuality of Social Work Research^dThe Use of Research in Social Work Interventions^eAttitudes and Values Toward Research in Social^fN = 199^gN = 174^hRidge option taken with ridge constant = 0.100*One-Factor Model, 11 Items*

The following frequently cited goodness-of-fit statistics are currently recommended to evaluate the fit between hypothetical models and data – CFI, NNFI (TLI), RMSEA, and SRMR (Hu & Bentler, 1999). The CFI, NNFI, RMSEA, and SRMR should be near 0.95, 0.95, 0.06, and 0.08, respectively. Of all the GRBS models, the one-factor model with 11 items has the best goodness-of-fit indices. The one-factor, 11 item model measures the “General Value of Research for Social Work Practice” and meets the criteria set forth by Hu and Bentler. Hu and Bentler have stated that their cutoff criteria are somewhat limited when a sample size equals or is less than 250. The one-factor, 11 item model did not have a good fit to the actual data

with regard to the Satorra–Bentler chi–square statistic (81.65). The chi–square shows that there is a statistically significant difference between the data and the factor structure hypothesized by the one–factor model. In fact, none of the GRBS models had a good fit with regard to the Satorra–Bentler chi–square statistic.

One–Factor Model, 27 Items

The 27 item, one–factor model also measures the “General Value of Research for Social Work Practice” and to some extent is indicative of a good fit; however the goodness–of–fit indices do not meet the thresholds articulated by Hu and Bentler. The 27 item, one–factor model does come close to meeting more liberal cutoffs that have been articulated by others. For example, the SRMR has a value of 0.11. Standardized root mean square residual values below 0.10 are typically considered good (Kline, 2005). With regard to the CFI, a model with a value less than 0.90 requires further improvement (Bentler & Bonnett, 1980). While the one–factor, 27 item model does not meet the more liberal requirement, the 0.90 threshold is somewhat close to the observed CFI value of 0.85. The more liberal, cutoff criteria for the RMSEA is 0.08 or smaller (Brown & Cudeck, 1993). The one–factor, 27 item GRBS model has a RMSEA of 0.09. Similar to the more liberal cutoff for the CFI, the one–factor 27 item model approximates the more liberal cutoff criteria for the RMSEA but it does not satisfy it. Brown and Cudeck (1993) stated that they “would not want to employ a model with a RMSEA greater than 1.0” (p. 144). The one–factor model’s RMSEA is not equal to nor does it exceed 1.0.

Two, Three, and Four-Factor Models

The comparative goodness-of-fit statistics (CFI and NNFI) compare the hypothesized GRBS models to a model that suggests all of the correlations in the data are equal to zero (Tanaka, 1993). The closer to 1.0 a comparative fit statistic is, the better the GRBS model fits the data (Bryant & Yarnold, 1995). Relative to the two and three-factor GRBS models, the one and four-factor GRBS models are better with regard to the CFI and NNFI comparative fit indices. The one-factor GRBS models have CFIs 0.97 and 0.85, while the two and three factor models have CFIs of 0.78 and 0.81, respectively. The four-factor RSWPB model has a CFI of 0.87. Therefore, when compared to the null model, the one and four-factor models are better. When the NNFI is taken into consideration, the one-factor models are superior to all of the two, three, and four-factor models.

The RMSEA is a goodness-of-fit statistic that penalizes a model according to the freely estimated parameters/*df* (Brown, 2006). The closer the RMSEA is to zero, the better the model fits the data (Brown, 2006). As it pertains to the freely estimated parameters, again the 11 item, one-factor model has a RMSEA value that suggests it is superior to the other GRBS models. The SRMR is a fit statistic that compares the model-implied variance-covariance matrix to the sample variance covariance matrix; the lower the SRMR value, the better the hypothesized GRBS model fits the data (Brown, 2006). With the exception of the one-factor 11 item model, all of the hypothesized GRBS models have SRMR values of 0.11, therefore with regard to absolute fit, the 11 item one-factor model has clear superiority.

Akaike Information Criterion (AIC) Goodness-of-Fit Statistics

Table 21. Confirmatory Factor Analysis: GRBS Akaike Information Criterion Goodness-of-Fit Statistics

Akaike Information Criterion (AIC) Goodness-of-Fit Statistics	^{ae} One-Factor Model: 11 Items	^{ae} One-Factor Model: 27 Items	^{ae} ^h Two-Factor Model: 54 Items	^{abc} ^{gh} Three-Factor Model: 53 Items	^{abcd} ^{gh} Four-Factor Model: 74 Items
Degrees of Freedom	44	324	1376	1322	2621
Independence AIC	1259.19	4402.98	14581.12	12064.97	26507.54
Model AIC	125.65	1028.02	4404.04	3601.79	6074.11
Saturated AIC	132	756	2970	2862	5550
Independence CAIC	1306.42	4518.9	14812.96	12285.4	26815.31
Model CAIC	220.11	1259.86	4872.01	4055.13	6714.6
Saturated CAIC	415.36	2378.87	9345.56	8813.61	17091.38

^aGeneral Value of Research for Social Work Practice Work

^bAgency Support for Research

^cQuality of Social Work Research

^dThe Use of Research in Social Work Interventions

^eAttitudes and Values Toward Research in Social

^fN = 199

^gN = 174

^hRidge option taken with ridge constant = 0.100

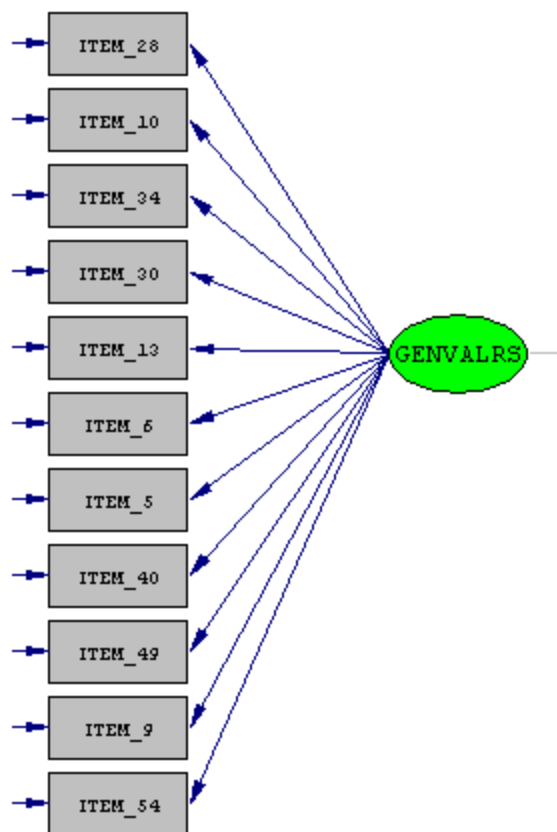
The AIC is one of other statistics which allows the researcher to examine models which were factor analyzed from the same sample (Kline, 2005). The hypothesized factor structure with the lowest AIC is the factor structure that has the highest probability of being replicated (Kline, 2005). Due to the potential to capitalize on error, Kline stated that with reasonably equal overall fit, as complexity increases the likelihood of a model being replicated decreases. The one-factor, 11 item model has the smallest AICs. Regardless of whether the RSPWBS model has a saturated or independent AIC, the 11 item, one-factor model is superior to all other GRBS models.

GRBS One-Factor 11 Item Model: Parameter Estimates

Given the Hu and Bentler (1999) cutoff criteria and the AIC goodness-of-fit statistics, the CFA results overwhelmingly support the factor structure of the

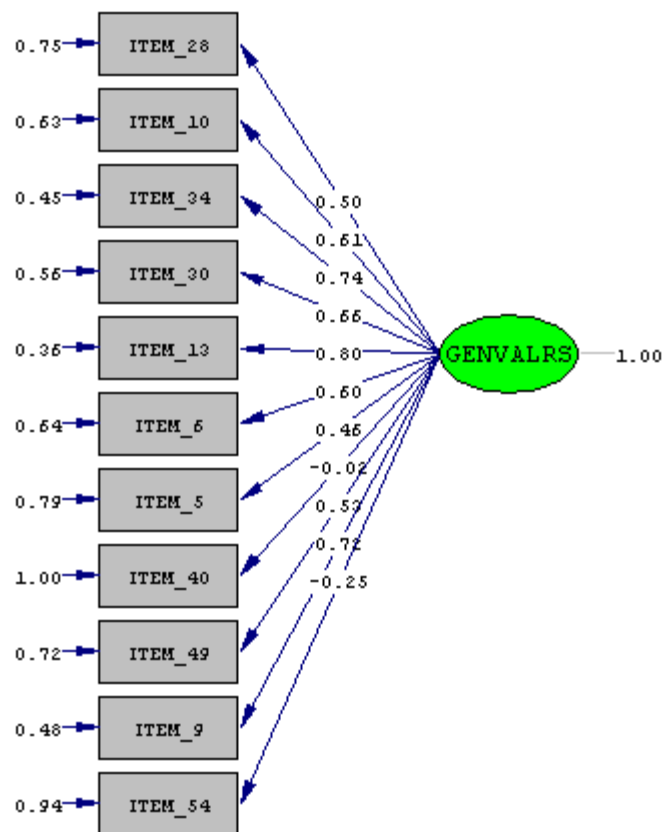
RSPWBS one-factor, 11 item model. Now, the freely estimated parameters will be displayed in a series of path diagrams that represent the relationships between the construct of “General Value of Research for Social Work Practice” and the following GRBS items: 28, 10, 34, 30, 13, 6, 5, 40, 49, 9, and 54. With regard to the 11 item GRBS model; figures three, four, and five are path diagrams that represent the model’s conceptual design, standardized estimates, and z-scores (statistical significance of the parameters), respectively.

Figure 3. Path Diagram: Concept of the GRBS, One-Factor Model, 11 Items



As can be seen in Figure 3, the one-factor, 11 item GRBS model has no correlated error and simply conveys that the construct of “General Value of Research for Social Work Practice” is hypothesized as being the cause of the responses on the items or observed variables. Error is also considered as being a cause of the responses on the items; hence, the arrows on the left side of the items (DeVellis, 2003, p. 15; for a brief discussion of how latent variables are acknowledged as the “cause” of item responses).

Figure 4. Path Diagram: Standardized Regression Coefficients for the GRBS, One-Factor Model, 11 Items



The regression coefficients for the one-factor 11 item model are shown in Figure 4. The regression coefficients represent the amount of change there is in the GRBS items when there is a one unit increase in the “General Value of Research for Social Work Practice” construct (Brown, 2006). Almost all of the regression coefficients

suggest that the construct is associated with a substantial change in the GRBS items. Items 13, 9, and 34 have the largest regression coefficients, suggesting that when there is a one unit increase in the construct, these items will have the largest changes. However, items 54 and 40 are problematic because the regression coefficients are small and negative. Regression coefficients that are totally standardized represent the correlation between an GRBS item and the “General Value of Research for Social Work Practice” construct (Brown, 2006). The small and negative regression coefficients suggest two things. First, the construct is not associated with a large change in the item. Second, as the construct increases the responses to the items decrease. Items 54 and 40 are positively worded; therefore, there should be a positive correlation between the each of these items and construct. Items 54 and 40 are also associated with a large amount of error as well, 0.94 and 1.00, respectively. Due to the small regression coefficients and the negative correlation in a final version of the scale, these two items could be considered for removal (the items’ theoretical contribution should also be considered prior to removing them from the scale).

Figure 5. Path Diagram: Z-Scores for the GRBS, One-Factor Model, 11 Items

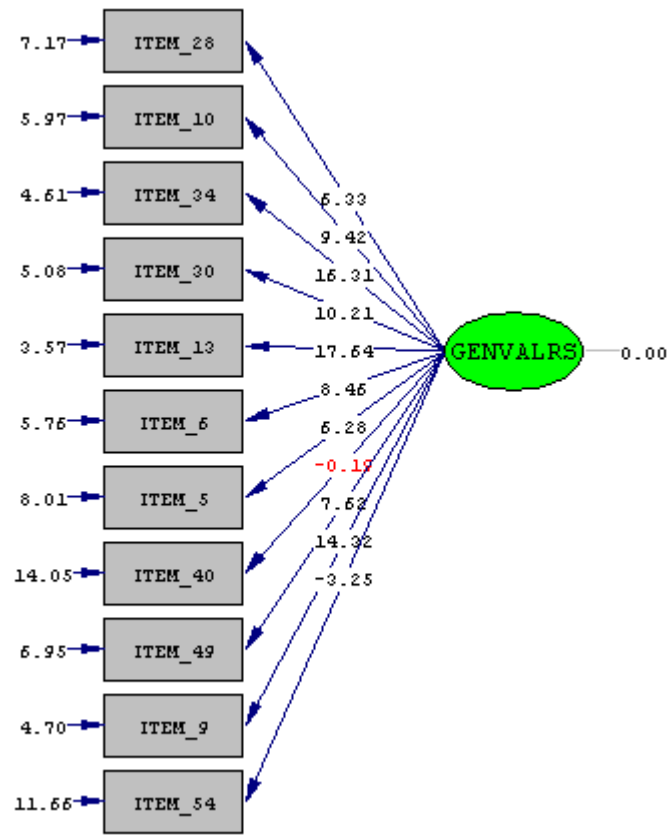


Figure 6 provides the z-scores of the parameter estimates for the one-factor 11 item GRBS model. Any parameter estimates beyond the absolute value of 1.96 are considered statistically significant at the 0.05 level. The null hypothesis tested was that the regression coefficient is equal to zero in the population (Brown, 2006). Statistically significant parameters have black font, and statistically insignificant parameters have red font. With regard to statistical significance, item 40 is eligible to be removed from the scale because it is the only regression coefficient that is not statistically significant.

The Factor Structure of the Gregory Research Beliefs Scale

Thus far, to aid in developing a theoretically and empirically strong factor structure for the GRBS, PCAs and CFAs have been employed. The factor structure of the GRBS will consist of the aforementioned one-factor model that has 27 items and

measures the “General Value of Research for Social Work Practice.” The GRBS’s factor structure is the one–factor, 27 item model for the following reasons: 1) all of the items share a common theme regarding the value of research for social work practice (theoretical justification); 2) the PCA yielded salient structure coefficients that all exceed the .30 threshold; 3) the coefficient alpha for the model is .926; 4) via CFA the model has overall superior goodness–of–fit indices to the two, three, and four factor models (see Tables 23 and 24); 5) before reducing the current model to 11 items, the researcher would like to see the current factor structure examined in an independent sample factor analysis of at least 200 participants. Because the PCA was used to inform the a priori CFA models, some of CFA results need to be viewed cautiously. The following quote by Kline (2005) outlines some of the dangers of using PCA to inform a priori CFA models:

It is not entirely appropriate to specify a CFA model based on results of an exploratory factor analysis (EFA) and to estimate the former using the same data. That is, the CFA would not in this case “confirm” the results of EFA. This is because EFA results are subject to capitalize on change variation, and specification of a CFA model based on EFA outcomes and analyzed with the same data may just compound this problem. (pp. 204 – 205)

The one–factor 27 item model will be used to examine the discriminant (divergent) validity, concurrent criterion validity, and known–groups criterion validity of the GRBS. To some extent this problem is minimized in the current study because not all of the a priori models were informed by PCA (four–factor GRBS model). The problem cited by Kline (2005) is also mitigated by the fact that for some of the models on which the PCA were performed, the CFA was conducted after obtaining a larger sample size of independent participants (two–factor and three–factor GRBS models). Although there are some mitigating factors regarding the use of PCA to inform the CFA models, the researcher chooses to take a more conservative approach by basing the final results more on the PCA than the PCA informed CFA.

Consequently, despite its superior goodness-of-fit statistics, the 11 item GRBS model will not be adopted as the factor structure for the PCA because the one-factor 11 item GRBS model's goodness-of-fit statistics could at least partially be a product of capitalizing on the chance variation that Kline spoke about (this caveat applies to the one-factor 27 item GRBS model as well). After the GRBS is completed by an independent sample, analyses can be conducted on both of the one-factor models; however, if the independent sample only completes 11 items there is no opportunity to examine the 27 item one-factor model. With concern for factor invariance, at this early stage of the GRBS's factor structure it is best to maintain all 27 items until a factor analysis on an independent sample shows that the 11 item model is superior.

GRBS: Discriminant Validity

Principal component analysis and CFA will be used to determine the discriminant validity of the GRBS. Prior to PCA and CFA, a correlation coefficient will be calculated for the factor scores of the GRBS and the SWLS. The construct scores are obtained via summing all of the items on a scale (DeVellis, 2003). The correlation coefficient between the GRBS and the SWLS is .148 ($p = .058$). A correlation coefficient of .148 means there is a weak relationship between the two scales (Healey, 2005). Additionally, the null hypothesis that the correlation coefficient between the scales is equal to zero in the population could not be rejected and is still tenable. This preliminary result supports the discriminant validity of the GRBS. With regard to the correlation coefficient, there is no theoretical or empirical support for an association between the GRBS and the SWLS. Therefore, the correlation coefficient provides some evidence that the GRBS does not measure a construct that it was not meant to measure. Based on this finding, the PCA and CFA was conducted.

Principal Component Analysis

Table 22 provides the structure coefficients for the PCA that was conducted with the GRBS and the SWLS. There are seven components with eigenvalues greater than one. Of these seven extracted components, the SWLS has salient ($r \geq 0.30$) structure coefficients on only the third component. On this third component, none of the GRBS items have salient structure coefficients.

Table 22. Discriminant Validity: GRBS–SWLS Structure Matrix^{abc}

GRBS and SWLS Items	1	2	Satisfaction with Life Scale	4	5	6	7
Item 10: Social work practice is best when it is based on research findings.	.817	.349	.089	.342	.362	.337	.324
Item 28: The most successful social work practitioners use interventions that are supported by research.	.770	.389	.105	.412	.506	.360	.207
Item 49: Empirically supported interventions should always be the first treatment offered to clients.	.729	.443	.109	.245	.309	.415	.092
Item 34: Using interventions based on research is the best way to help disadvantaged populations.	.714	.545	-.043	.379	.529	.452	.251
Item 6: Effective social work interventions are evidence-based.	.707	.242	.086	.259	.286	.035	.535
Item 54: Research provides the best answers to treatment issues encountered in social work practice.	.678	.523	-.004	.427	.607	.356	.115
Item 3: A social worker is far more likely to recommend appropriate interventions if they have a positive attitude toward research.	.529	.472	.194	.133	.462	.435	.224
Item 64: Research studies are a powerful tool for helping social workers understand disadvantaged populations.	.411	.756	-.011	.554	.462	.397	.334
Item 73: Research course work is an excellent way to prepare social work students for problems encountered in agency settings.	.331	.736	.008	.233	.526	.587	.223
Item 62: Basic social work helping skills are greatly enhanced by research.	.385	.717	.051	.356	.356	.598	.279
Item 71: Research is essential for developing effective social policies.	.382	.704	.094	.451	.163	.099	.304

Table 22. Discriminant Validity: GRBS–SWLS Structure Matrix^{abc} (cont'd)

GRBS and SWLS Items	1	2	Satisfaction with Life Scale	4	5	6	7
Item 9: Research can be an effective tool for empowering oppressed populations.	.565	.660	.064	.283	.344	.173	.278
Item 69: Research is a valuable part of social work education.	.351	.639	.012	.488	.489	.433	.361
Item 77: I am satisfied with my life.	.154	-.031	.813	.117	.092	-.087	.237
Item 76: The conditions of my life are excellent.	.090	.007	.801	.100	.017	-.005	.094
Item 75: In most ways my life is close to ideal.	.094	.121	.746	.132	.013	-.135	.277
Item 79: If I could live my life over, I would change almost nothing.	.030	-.019	.724	.131	.229	.007	-.116
Item 78: So far I have gotten the important things I want in life.	.050	.235	.710	-.040	.085	.146	.113
Item 55: Research done by social workers has greatly improved the social work profession.	.290	.395	.136	.774	.401	.433	.303
Item 42: Scientific data is essential when advocating for policy reform.	.447	.420	.053	.737	.283	.307	.325
Item 72: Social work interventions can be enhanced by qualitative research.	.263	.569	.237	.664	.286	.088	.241
Item 30: Research is excellent evidence for determining what interventions help clients.	.603	.479	.017	.660	.449	.391	.350
Item 40: Knowing research makes you a better practitioner.	.607	.388	.024	.624	.421	.354	.306

Table 22. Discriminant Validity: GRBS–SWLS Structure Matrix^{abc} (cont'd)

GRBS and SWLS Items	1	2	Satisfaction with Life Scale	4	5	6	7
Item 31: Research helps social workers predict client behavior.	.348	.303	.164	.382	.726	.271	.235
Item 7: Research is useful for explaining treatment recommendations to clients.	.468	.274	.040	.037	.658	.101	.178
Item 21: Research courses help students implement social work interventions.	.302	.359	-.027	.245	.643	.606	.013
Item 20: Social workers can influence agency policies, if they are knowledgeable about research methods.	.218	.288	.032	.435	.617	.409	.501
Item 43: Expertise in research is vital to a career in social work.	.261	.331	-.075	.383	.196	.680	.202
Item 36: Social work interventions are greatly enhanced by the use of standardized instruments.	.451	.236	.036	.198	.366	.602	.241
Item 13: Competence in research will allow a social worker to contribute more to the profession.	.461	.278	.171	.463	.518	.546	.540
Item 65: Peer reviewed social work journals are an excellent source of knowledge for direct practitioners.	.217	.386	.113	.423	.227	.237	.785
Item 5: Applying research findings to practice is an important aspect of the social work profession.	.589	.435	.182	.206	.400	.302	.706

^aPrincipal Component Analysis

^bPromax Rotation

^cThe rotation converged after 15 iterations

Table 23 shows the correlations between all of the seven extracted components. The SWLS construct (the third component) has weak correlations with every other extracted component. Via the PCA, the GRBS and SWLS items diverge on different constructs and the SWLS construct has no empirical relationship to the other GRBS

loaded constructs; consequently there is empirical evidence for the discriminant validity of the GRBS.

Table 23. Discriminant Validity: PCA Component Correlation Matrix^{ab}

Component	1	2	Satisfaction with Life Scale	4	5	6	7
1	1.000	.446	.089	.338	.460	.300	.335
2		1.000	.065	.378	.424	.401	.265
3			1.000	.080	.089	-.022	.140
4				1.000	.352	.279	.329
5					1.000	.487	.230
6						1.000	.155
7							1.000

^aPrincipal Component Analysis

^bPromax Rotation

Confirmatory Factor Analysis

Confirmatory factor analysis can be used to determine discriminant validity by comparing the goodness-of-fit statistics of a two-factor model (that shows two measures as measuring different constructs – divergence) and a one factor (that shows the two measures as measuring the same construct – convergence) (Bryant, 2000; Judd, Jessor, & Donovan, 1986). In the case where discriminant validity is being evaluated, the divergent model should have better goodness-of-fit indices than the convergent model. In CFA, the correlation between the two constructs can also be used as an indicator of discriminant validity (Brown, 2006). For the purposes of this study, a single construct was represented by forcing a factor covariance of 1.00; this was the same methodology that was used by Judd and others (1986).

To test the discriminant validity of the 27-item GRBS model, two CFAs were computed. The first model allowed the GRBS and SWLS construct covariance to be freely estimated. The second model forced the GRBS and SWLS constructs to have a covariance of 1.00. Table 24 shows the goodness-of-fit indices and the factor covariances of the two hypothesized CFA models. The standardized solution path

diagrams of the two aforementioned models are located in Figures 6 (freely estimated covariance) and 7 (covariance fixed to 1.00). Despite the fact that the correlation coefficient and PCA supported the discriminant validity of the 27-item GRBS model, the CFA does not provide compelling support for GRBS's discriminant validity. When the factor covariances (or correlations) are allowed to be freely estimated, the coefficient is 0.91, thereby implying that the 27 item GRBS model lacks discriminant validity (Brown, 2006). Although the model with freely estimated factor covariances has some slightly better goodness-of-fit statistics, many of the fit indices are the same for the two models, implying that the model lacks discriminant validity. Therefore, among the correlation coefficients of the latent variable scores, the PCA and the CFA, there is some empirical support for the discriminant validity of the GRBS; however, the CFA results suggest otherwise. The results are mixed for the discriminant validity of the 27-item, one-factor GRBS model.

Table 24. GRBS Discriminant Validity: Goodness-Fit-Indices and Factor Covariances

Goodness-of-Fit Statistics	^{abc} Two-Factor Model: Factor Covariance Freely Estimated	^{abc} Two-Factor Model: Factor Covariance Fixed to 1.00
Satorra-Bentler Scaled Chi-Square	1064.69 (P = 0.0)	1079.08 (P = 0.0)
Root Mean Square Error of Approximation (RMSEA)	0.089	0.09
Standardized RMR	0.10	0.18
Non-Normed Fit Index (NNFI)	0.87	0.87
Comparative Fit Index (CFI)	0.88	0.88
Independence AIC	5572.85	5572.85
Model AIC	1194.69	1207.08
Saturated AIC	1056	1056
Independence CAIC	5704.24	5704.24
Model CAIC	1461.57	1469.87
Saturated CAIC	3223.94	3223.94
Correlation between Factors	0.91	0.96

^a27 Items^bN = 165^cLatent variables are scaled

Figure 6. Discriminant Validity Path Diagram: GRBS, One-Factor Model, 23 Items, Covariance Freely Estimated, Stand. Sol.

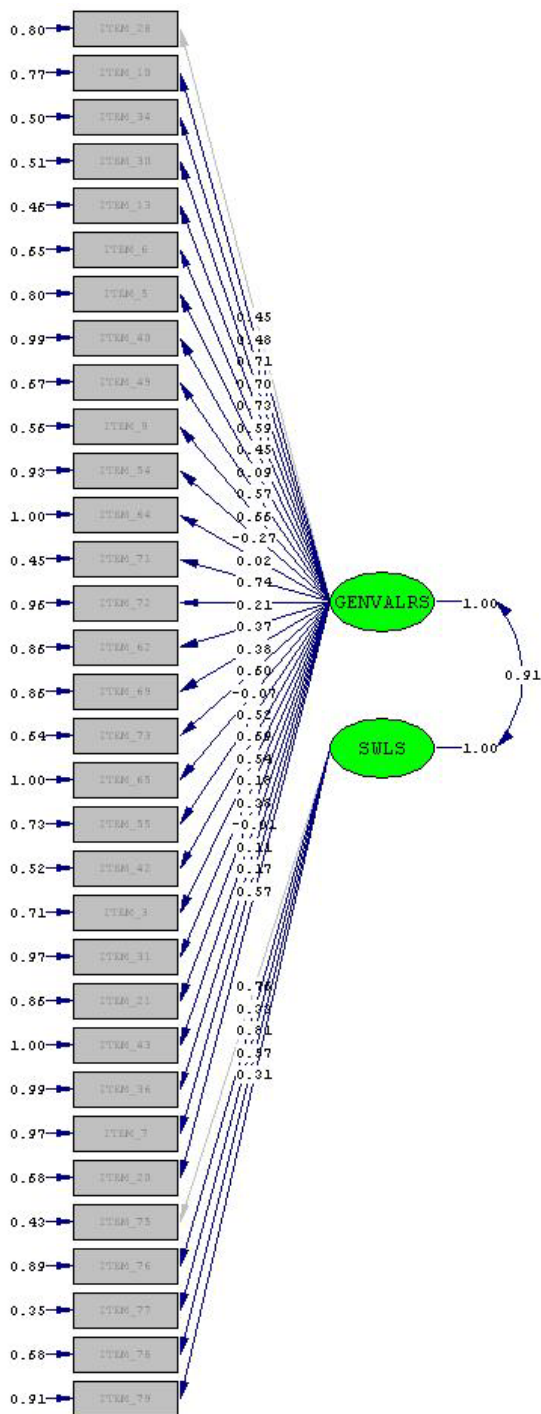
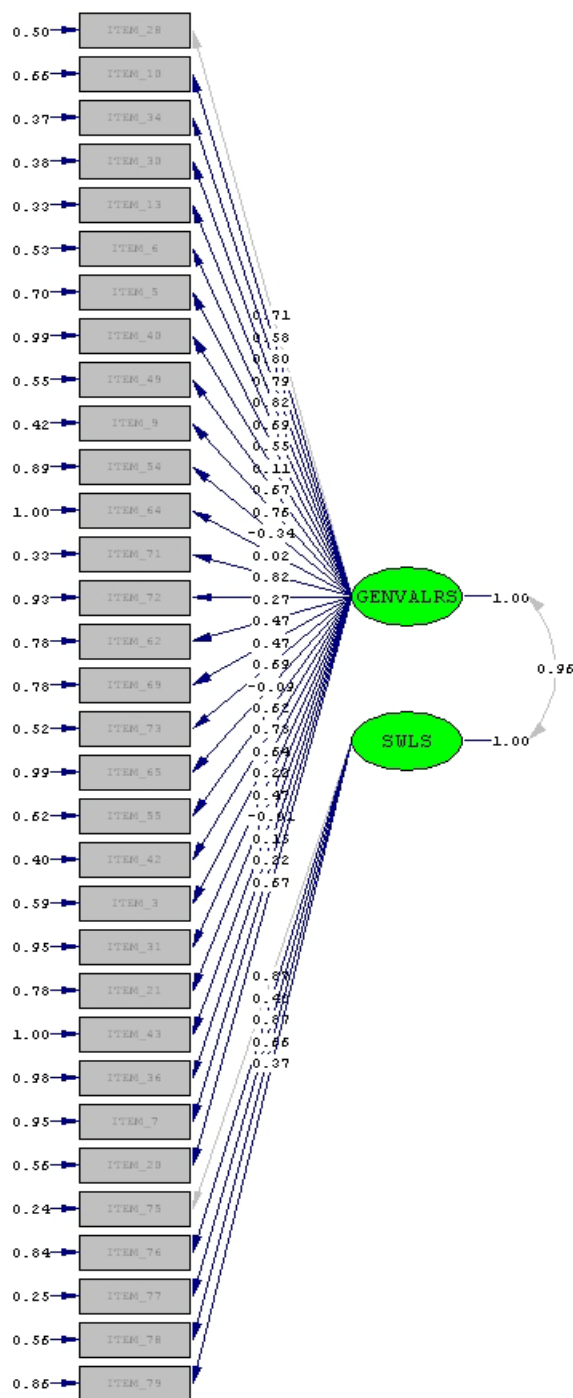


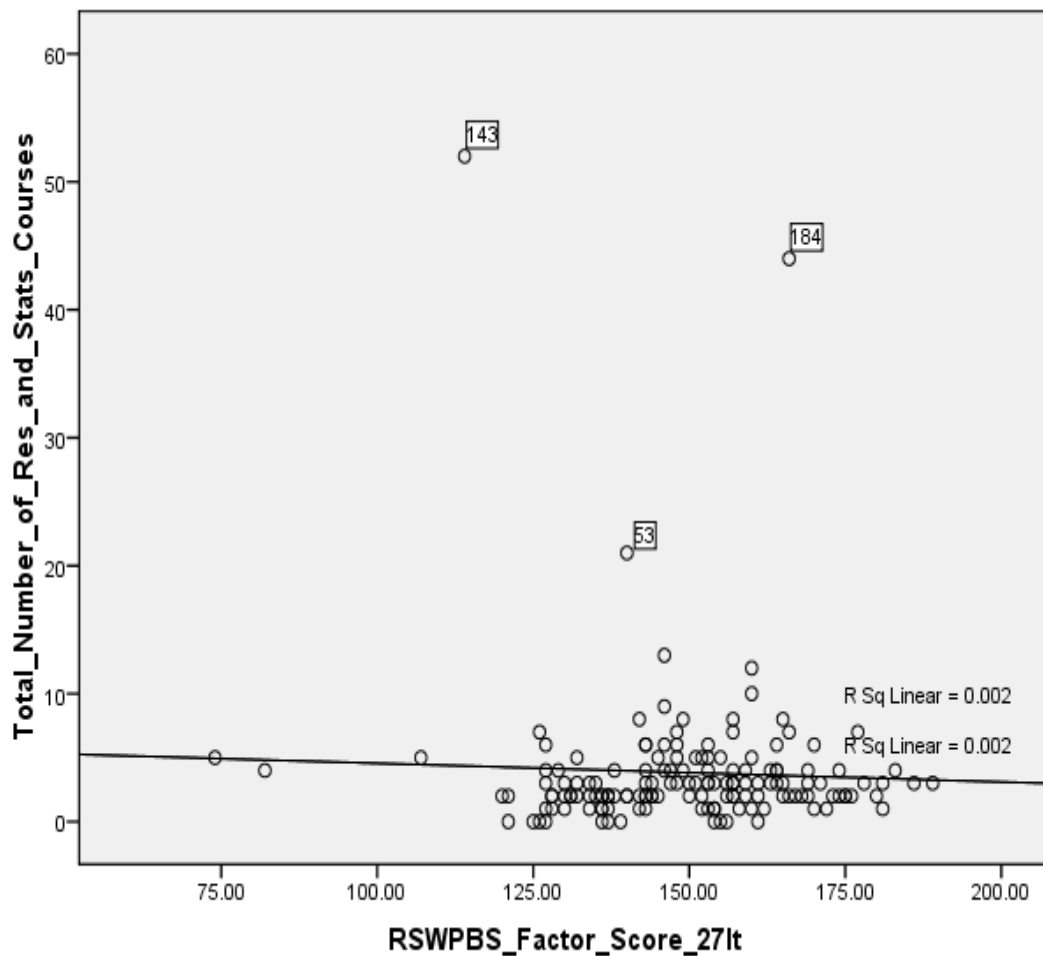
Figure 7. Path Diagram: Discriminant Validity of the GRBS, One-Factor Model, 23 Items, Covariance Fixed to 1.00, Stand. Sol.



GRBS: Concurrent Criterion Validity

Concurrent validity can be examined via regression (Bryant, 2000); therefore, the present study will use bivariate linear regression to examine the concurrent criterion validity of the GRBS. The GRBS latent variable scores are the predictor variable and the total number of research courses are the criterion. If the null hypothesis that the correlation coefficient between the predictor and the criterion is equal to zero cannot be rejected, then the null hypothesis that the predictor (regression coefficient) is equal to zero cannot be rejected either (Norušis, 2006). The relationship between the RSPWBS construct scores and the total number of research and statistics courses will first be examined via a scatterplot. Because the null hypothesis of linear regression states that there is an absence of a linear relationship between the two variables, a scatterplot was first used to see if the data points coalesced around a straight line (Norušis, 2006). Figure 8 contains the scatterplot for the GRBS construct scores and the total number of research and statistics courses.

Figure 8. Scatterplot: GRBS Factor Scores and Total Number of Research and Statistics Courses: No Cases Removed



When the GRBS factor scores (X) and total number of research and statistic scores (Y) were plotted on scatter diagram, there was no relationship between the two variables. Because outliers have a substantial influence on the correlation coefficient (Norušis, 2006) and can create a type II error, outlying data cases were identified and removed from the data set. Figure 9 shows the scatterplot after cases 184, 143, and 53 were deleted.

Figure 9. Scatterplot: GRBS Factor Scores and Total Number of Research and Statistics Courses: Cases 184, 143, and 53 Removed

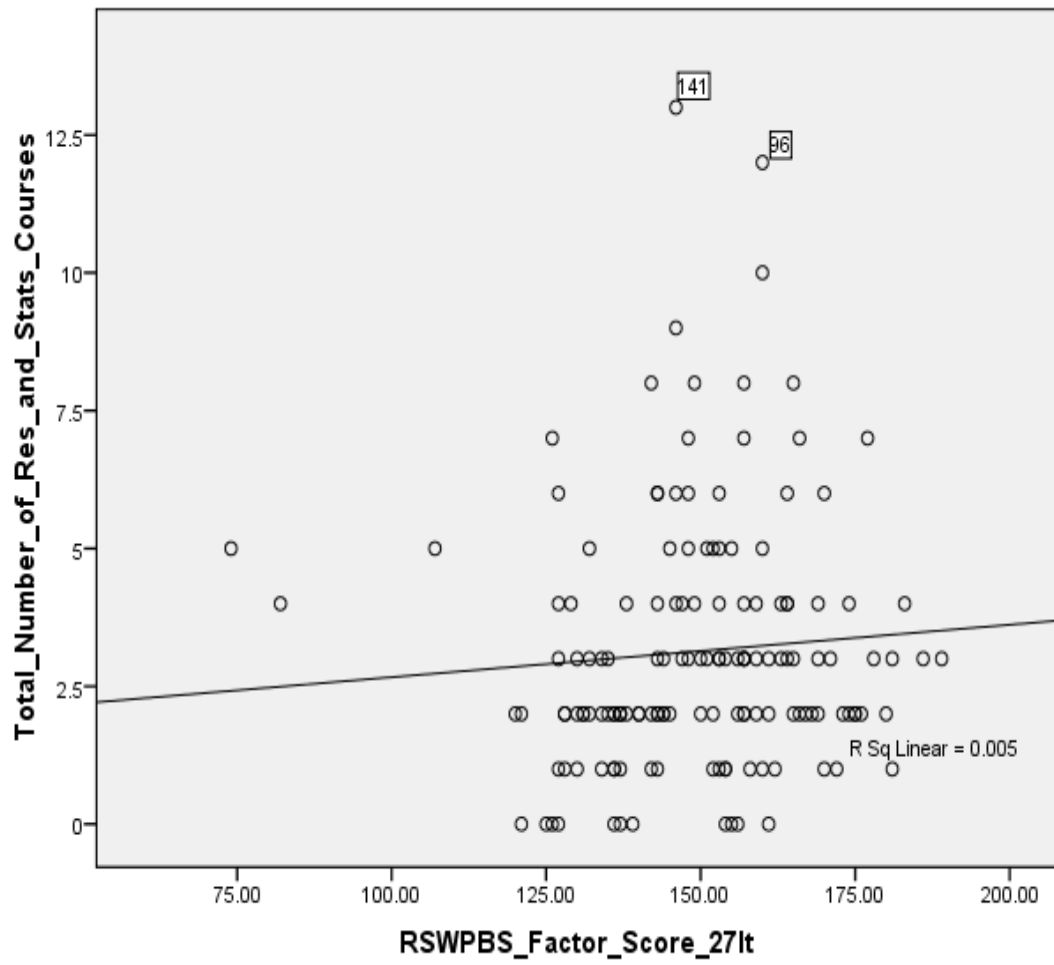


Figure 10 shows the scatterplot after cases 141 and 96 were removed from the data.

Figure 10. GRBS Factor Scores and Total Number of Research and Statistics Courses: Cases 141 and 96 Removed

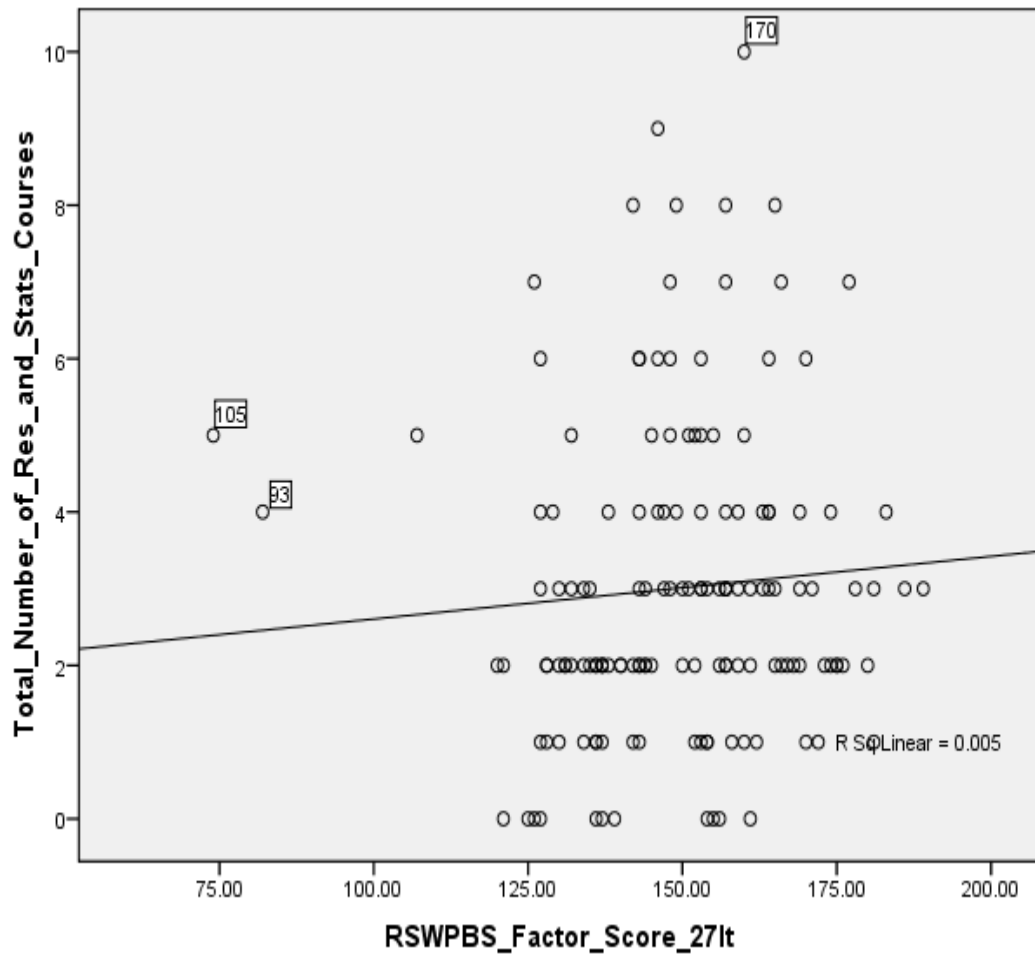


Figure 11. Scatterplot: GRBS Factor Scores and Total Number of Research and Statistics Courses: Cases 170, 105, and 93 Removed

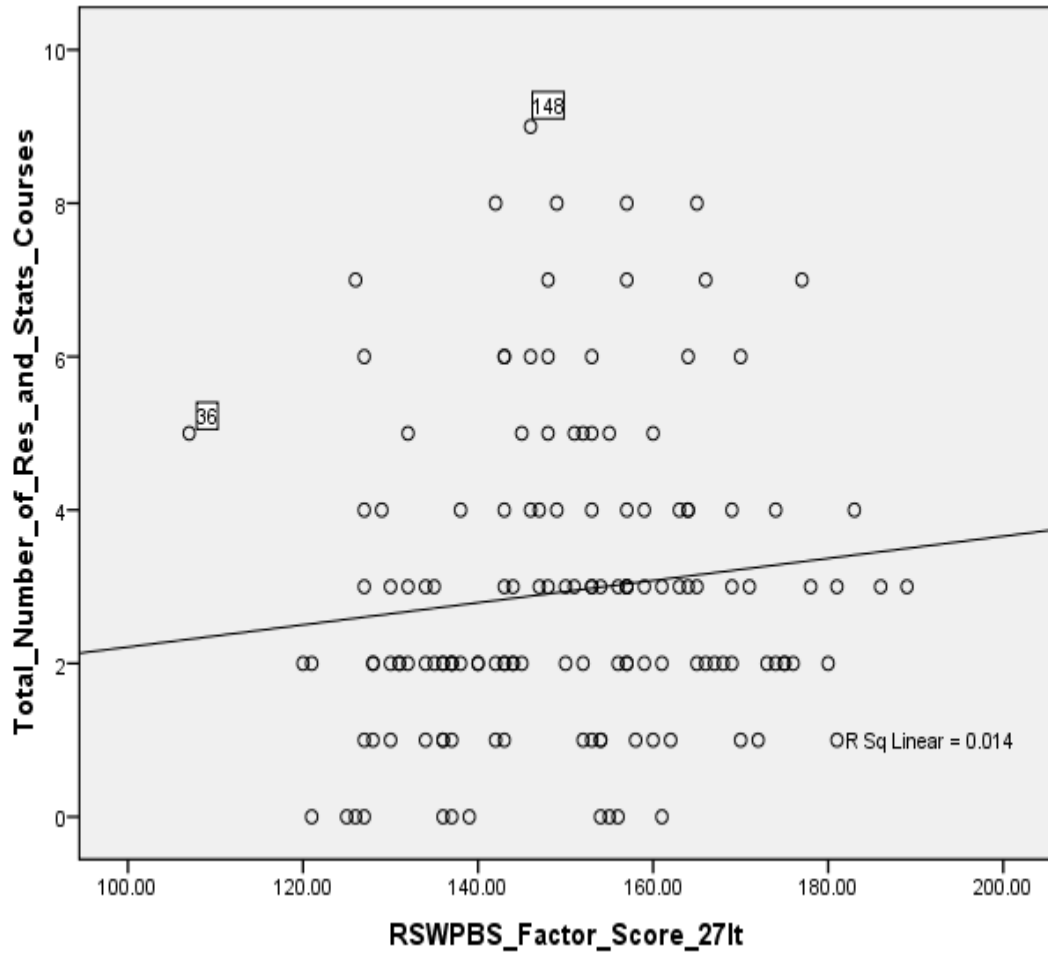


Figure 11 shows the scatterplot and remaining outliers after cases 170, 105, and 93 were expunged from the data.

Figure 12. Scatterplot: GRBS Factor Scores and Total Number of Research and Statistics Courses: Cases 148 and 36 Removed

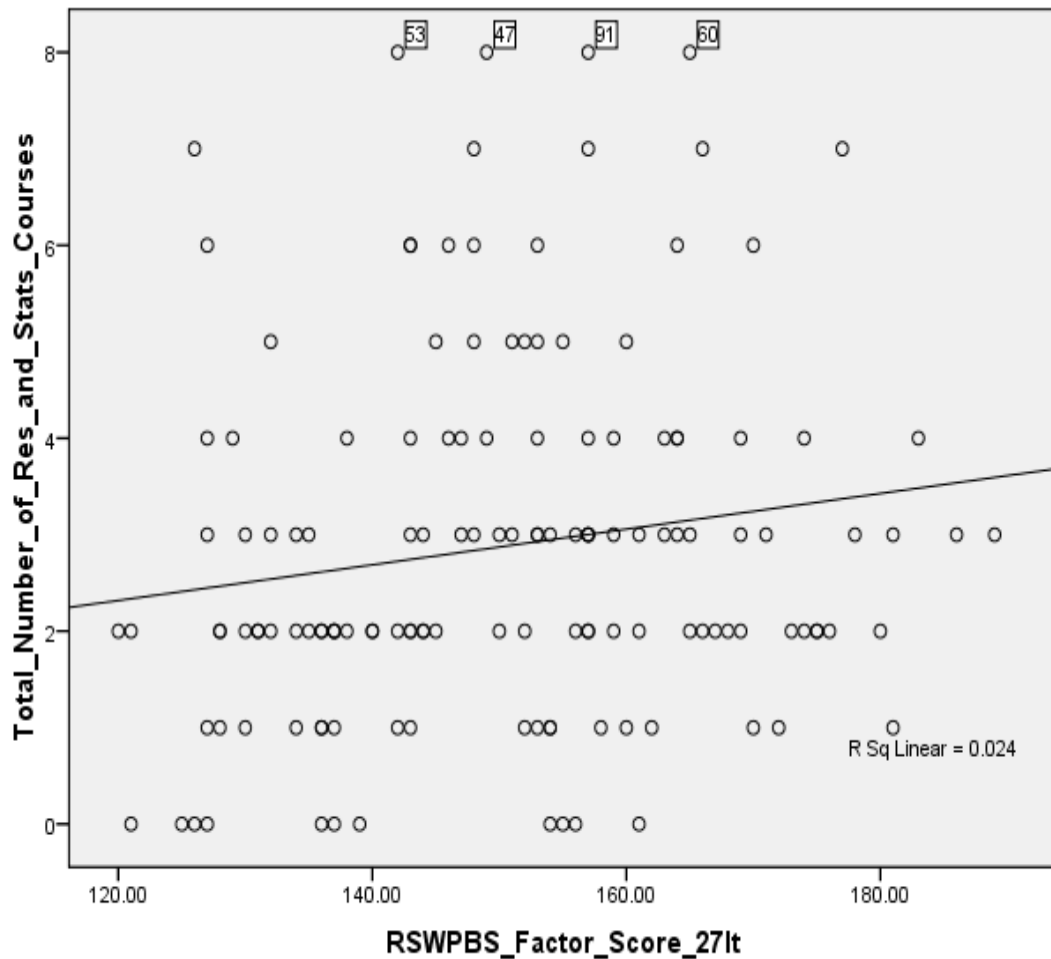


Figure 12 is a scatterplot with cases 148 and 36 removed. Since the removal of cases from Figure A, the scatterplot begins to show more of a linear relationship between the two variables. Prior to the correlation coefficient being computed cases, 91, 60, 53, and 47 were removed from the dataset.

Correlation Coefficient

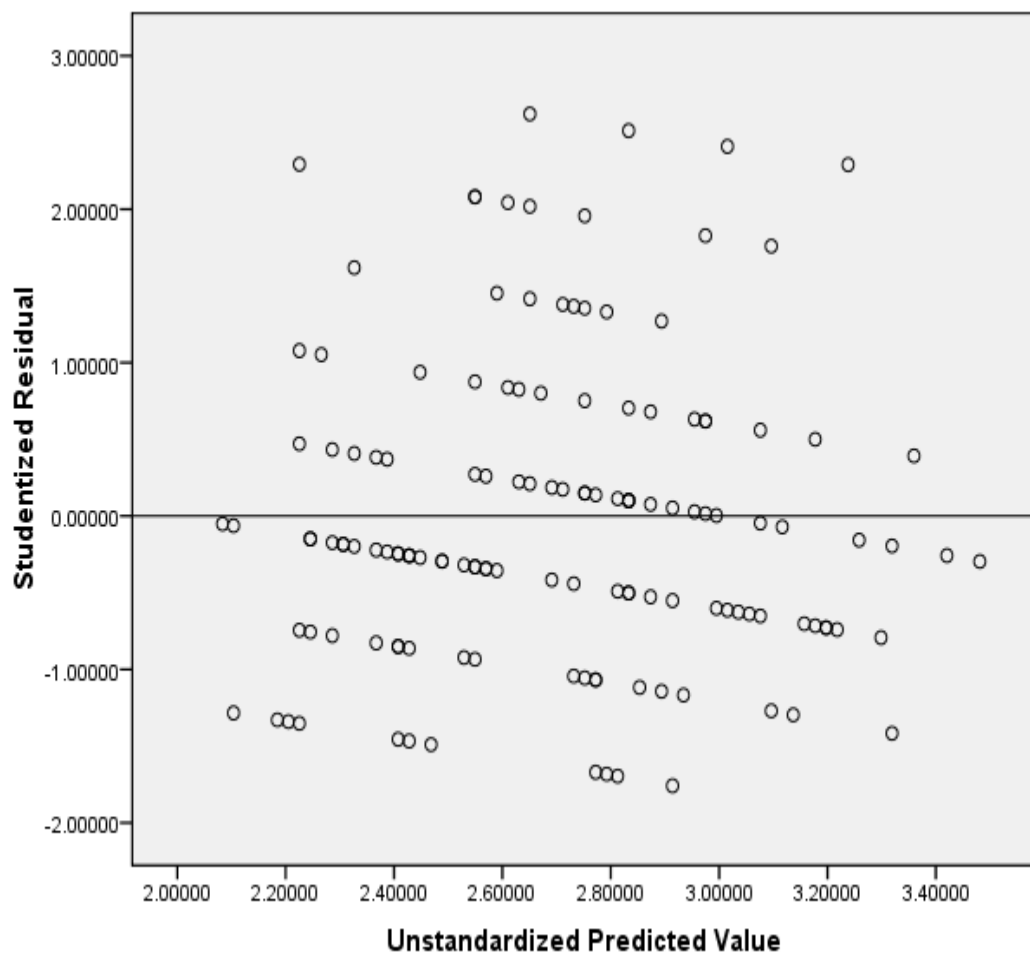
After the removal of outliers and the employment of listwise deletion, 137 cases were used in the computation of the correlation coefficient. A positive and statistically significant correlation between the GRBS factors and the research and statistics courses would be indicative of the GRBS having some level of concurrent criterion validity. The correlation coefficient between the predictor and criterion is .191 (considered weak by Healey, 2005) and statistically significant with a probability

level of 0.025. With a significant correlation coefficient between the predictor and criterion, bivariate linear regression analysis were be conducted. Not surprisingly, after the scatterplots were used to eliminate outliers, the regression based casewise diagnostics did not detect any aberrant cases.

Bivariate Linear Regression

To further test the assumptions of the linear regression analysis, a scatterplot of the studentized residuals (Y axis) and the unstandardized predicted value (X axis) were examined in (see Figure 13). The random dispersion of data points around zero implies that there is a linear relationship between the GRBS construct scores and the total number of completed research and statistics courses.

Figure 13. GRBS Concurrent Criterion Validity: Scatterplot of Studentized Residuals and Predicted Values



The normality assumption was examined via a histogram and a normality plot of studentized residuals. Both the histogram (Figure 14) and normality plot (Figure 15) show the data as being fairly normally distributed.

Figure 14. GRBS Construct Validity: Studentized Residuals Histogram

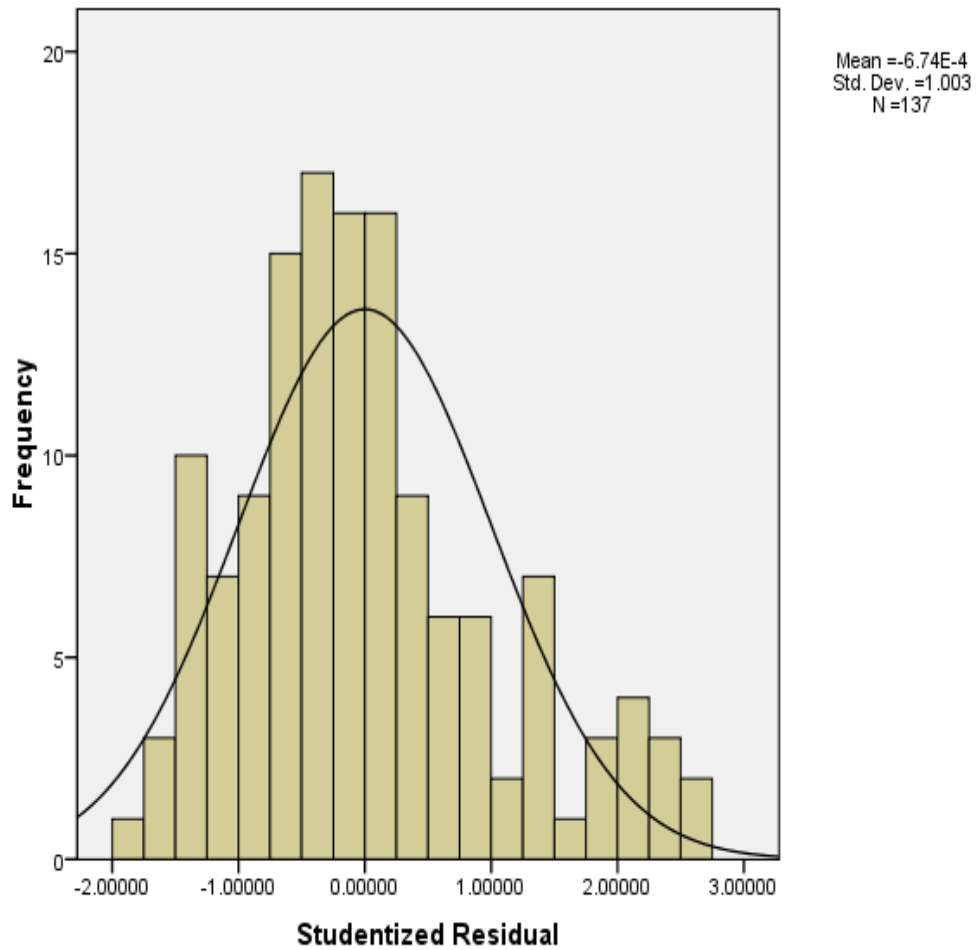
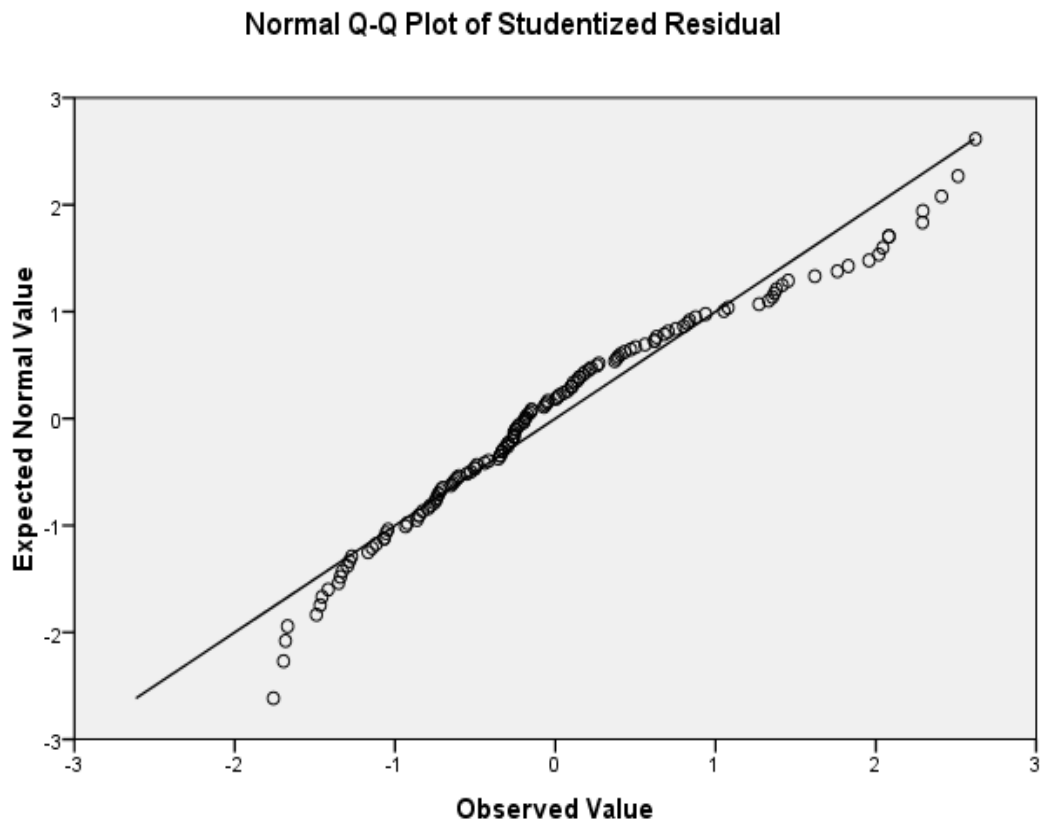


Figure 15. GRBS Construct Validity: Studentized Residuals Normality Plot



The concurrent criterion validity of the GRBS was validated using the GRBS making a statistically significant contribution to the prediction of the total number of research and statistics courses taken by the participants. The multiple correlation coefficient (R) represents the correlation between the observed and predicted values of the total number of research and statistics scores (Norušis, 2006). The multiple correlation coefficient in the present analysis is 0.191. The multiple coefficient of determination (R^2) is 0.036. Therefore, the GRBS explains only three percent of the variance in the total number of completed statistics and research courses.

Representing only a minuscule decrease of 0.007, the adjusted R^2 is 0.029, again implying that the GRBS only explains about 3 percent of the variance in completed research and statistics courses. The small difference between the R^2 and adjusted R^2

shows that the sample size ($N = 184$) is adequate for the regression model (Norušis, 2006). This amount of variance explained by the GRBS is undesirable.

Table 25 contains the ANOVA table for the bivariate linear regression. With an F value of 5.106, one can expect to see a multiple correlation coefficient of 0.191 or bigger about two times out of 100 when the null hypothesis is correct (Norušis, 2006).

Table 25. GRBS: Linear Regression ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.167	1	14.167	5.106	.025 ^a
	Residual	374.562	135	2.775		
	Total	388.730	136			

a. Predictors: (Constant), GRBS Factor Scores

b. Dependent Variable: Total Number of Research and Statistics Courses

As a standardized coefficient (beta), the GRBS is significantly different from zero in the population with a p -value of 0.025. The positive coefficient means that as the latent variable score on the GRBS increases, the number of courses completed by social work students increases as well (Norušis, 2006). In summary, the GRBS is a statistically significant predictor of a theoretically relevant criterion variable (total number of research and statistic courses completed); hence establishing its concurrent criterion validity. Table 26 contains information regarding the GRBS as a regression coefficient.

Table 26. GRBS: Linear Regression Coefficient

Model	Regression Coefficient ^a							
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		
	B	Std. Error	Beta			Lower Bound	Upper Bound	
1	(Constant)	-0.347	1.356		-0.256	0.798	-3.029	2.335
	GRBS Factor Score	0.02	0.009	0.191	2.26	0.025	0.003	0.038

^aDependent Variable: Total Number of Research and Statistics Courses

Via the unstandardized regression coefficient and constant/intercept in Table 26, a regression equation can be used to predict the number of research and statistics courses that a social work student has completed. Unstandardized regression coefficients have the greatest utility when the original metric of the variable needs to be represented (Licht, 1995). Therefore, an unstandardized regression equation will be used to predict the number of completed courses for a social work student who obtained an GRBS factor score of 147 (the actual median score on the GRBS is 144). The GRBS factor scores range from 27 to 189. The unstandardized regression equation/least squares formula is as follows: $\hat{Y} = bx + a$ (Healey, 2005). The total number of completed research and statistics courses to be predicted is represented by \hat{Y} . The regression coefficient or slope of the GRBS factor score is represented by b . A social work student's hypothetical score on the GRBS is x . The intercept is symbolized by a . The following unstandardized regression equation shows how the predicted number of courses was obtained.

$$\begin{aligned}
 \hat{Y} &= bx + a \\
 &= 0.02 (144) + (-0.347) \\
 &= 2.94 + (-0.347) \\
 &= 2.593
 \end{aligned}$$

The actual number of completed research and statistics courses for a case with an GRBS score of 144 is 4, hence a residual of 1.407. The residual represents the difference between the observed and predicted value of the total number of completed research and statistics courses (Norušis, 2006). The smaller the residual, the better the prediction. The residual of 1.407 is not bad; however a residual of zero would be preferable.

GRBS: Known–Groups Validity

There are a number of ways to assess a scale's known–groups validity. Although Bryant (2000) refers to it as discriminant validity (criterion groups), he maintained that known–groups validity can be evaluated by determining if two distinct groups can be distinguished via their responses on a scale. This method of examining known–groups validity requires that each participant only be classified into one of the two groups prior to analysis. For the present study the GRBS will be used to determine known–groups validity via examining if the participant responses on the GRBS are significantly different for BSW and MSW students.

An independent samples *t*–test was computed for the BSW ($M = 148.77$, $SD = 17.45$) and MSW ($M = 148.45$, $SD = 19.03$) student populations. Although theory would indicate otherwise, there is no statistically significant difference between the two samples, $t(162) = 0.09$, $p = .928$ (two–tailed), $d = -0.0175$. The independent samples *t*–test did not support the known–groups validity of the GRBS; any difference between the two samples are attributable to chance. Since statistical significance is a product of effect and sample size (Rosnow & Rosenthal, 2003), the non–significant findings are not surprising given such a low Cohen's *d*.

Logistic regression can also be used to examine validity (Bryant, 2000). The estimation terminated after four iterations with a $-2 \log$ likelihood of 170.050. The

overall test was not significant, $X^2(1, N = 164) = 0.008, p = .928$. The null hypothesis that the coefficient is equal to zero in the population cannot be rejected. The GRBS was not a statistically significant predictor of BSW and MSW group membership. Of the social work students in the sample, all were classified by the logistic regression as being MSW students. Therefore, all of the MSW students were correctly classified, while none of the BSW students were correctly classified. The overall percentage correct was 78.7. The logistic regression analysis did not support the known-groups validity of the GRBS.

DISCUSSION AND CONCLUSIONS

Strengths

Given the current psychometric status of scales that measure research regarding social work practice, the GRBS makes a substantial contribution to measurement regarding the general value of research for social work practice. In stark contrast to currently available scales, the GRBS has an empirically validated factor structure via PCA (structure coefficients with both empirical and theoretical salience), a high coefficient alpha of .926, evidence of concurrent criterion validity via bivariate linear regression, and evidence of discriminant construct validity via Pearson's correlation coefficient and PCA. Although the CFA showed that the 11-item competing model had superior goodness-of-fit indices, the current one-factor, 27 item GRBS factor structure brings the social work profession closer to testing theories via structural equation modeling because the measurement portion of the GRBS is superior to that of the K-RRI (see Brown, 2006 for discussion regarding measurement and structural aspects of structural equation modeling).

Several strengths of this study can be found not only in the statistical analyses, but in the research design. The current study was supported by the use of a pilot study, diverse data collection methods (online and classroom), incorporation of subject matter experts, a sample size of 199, and a quasi-cross validation method (via examining the factor structure and reliability coefficients prior to and after the entire 199 case sample was collected). With regard to online data collection, various measures were taken to improve the online response rate – reminders, the researcher's direct contact information, and cover letters (informed consent) were all employed.

Although the pilot sample of this study could be considered a limitation by some, the researcher does not share this view. The researcher's stance is that a pilot study involving 79 psychometric observations of 24 participants is superior to a psychometric study without any pilot or preliminary observations. In the context of this specific study, the potential for harm does not necessarily come from the small sample size ($N = 24$), instead the potential for harm pertains to what decisions the researcher makes regarding the small sample size. No major or sweeping changes were made on the basis of the pilot study. The pilot study was used to make an initial impression of the GRBS's internal consistency. The pilot study showed the four GRBS constructs as all having Cronbach's alphas above 0.80. None of the coefficient alphas obtained after the pilot study were below 0.80, implying that the coefficient alphas of the pilot study were fairly stable after larger samples were used with different factor structures. The reliability findings from the pilot study are supported by recent literature (Hertzog, 2008) which states that if a sample of 25 to 40 participants has a coefficient alpha of 0.75, the population will likely have an alpha of 0.70 or greater.

Limitations

As it currently stands with 27 items, the GRBS is superior to all of the current social work scales measuring the same construct; however, the GRBS can still benefit from further psychometric testing and refinement. The CFAs computed in this study showed that the most parsimonious model (model with the fewest estimated parameters) had better goodness-of-fit statistics than the current GRBS factor structure. Such a finding suggests that the GRBS may benefit from future factor analytic evaluation. The GRBS did not demonstrate known-groups validity via a test of mean difference or logistic regression. The discriminant validity of the GRBS was

not supported via CFA; thus, the results for the GRBS's discriminant validity are mixed.

There are a number of other factors that limit the findings of the present study. As was mentioned previously, the CFA results are somewhat suspect because the way in which some of the a priori models were informed led the potential to maximize chance variation (Kline, 2005). This factor was mitigated by relying almost exclusively on the results of the PCA to inform the factor structure of the GRBS. Although chance variation may have been maximized, the outcome on the final GRBS factor structure was inconsequential. The fact that there was a smaller sample of BSW participants than MSW students and the total absence of doctoral students may have substantially reduced the possibility of finding statistically significant mean differences between the social work student cohorts (increased type II error).

There are a number of limitations pertaining to sampling that could have had considerable influence on the ultimate findings. In retrospect, when evaluating the known-groups validity of the GRBS, it may have been preferential to compare social work student responses to persons who are completely distinct from the social work profession. Rather than comparing BSW to MSW students, perhaps comparing social work students to non-social work students would have been a better gauge of the GRBS's known-groups validity. The sample size in this study is considered large ($N \geq 100$) (Healey, 2005). However, a sample size exceeding 199 could have further decreased the likelihood of type II errors and improved the external validity of results. The convenient sampling method used in this study is certainly a limitation. The sampling method that was employed in this study violated the assumption of random sampling that tests of statistical inference are contingent upon (Kirk, 1999). This

limitation is somewhat mitigated by the fact that behavioral researchers frequently employ sampling methods that are not based on probability (Healey, 2005).

Applications

The GRBS can be used in numerous ways to improve the social work profession and ultimately improve social work practice. With the author's written consent, accredited schools of social work (and social work departments) can use the GRBS to evaluate social work students' accomplishment of specific CSWE (2008) policies pertaining to research and social work practice [2.1.6, 2.1.10, and 2.1.10(d)]. With regard to research and social work practice the GRBS could be used in cross-sectional and longitudinal research designs, by social work educators/administrators, to co-facilitate the CSWE (2008) mandate pertaining to assessment (4.0). Social work educators, who are interested in improving their students' perception of research and social work practice, could use the GRBS to reliably and validly measure the effects of educational interventions. Likewise schools and departments of social work could potentially use the GRBS to measure student changes in various NASW (2008) policies associated with attitudes toward research and social work practice (4.01, 5.01, and 5.02). Furthermore, although not accredited by the CSWE, doctoral programs in social work could use the GRBS to obtain reliable and valid measures of doctoral students' attitudes toward research and social work practice throughout the completion of their doctoral coursework. While the GRBS has not yet been systematically evaluated with social work practitioners in an agency setting, human service employers may someday benefit from using the GRBS to evaluate the beliefs of current or prospective social work employees. Additional empirical uses of the GRBS are alluded to in the "Future Research" portion of this section.

Future Research

Despite the strengths of the GRBS, there is still room for psychometric evaluation and improvement. To determine if a short version (i.e., 11-item one-factor GRBS) of the GRBS is tenable a CFA should be computed in a new sample of at least 200 social work students. To further evaluate the known-groups validity of the GRBS, responses from social work students should be compared (via statistical inference tests of mean difference or group membership such as logistic regression, discriminant function analysis, or possibly cluster analysis) to responses from a completely orthogonal sample such as business, art, or anthropology students.

The present study supports the GRBS factor structure in BSW and MSW social work students. Future studies should use factor analytic methods (PCA and/or CFA) to determine the stability of the current factor structure of the GRBS (factor invariance, Brown, 2006) according to social work academic setting, race, gender, profession, social work degree being pursued, and social work specialization (clinical/micro vs. policy/macro). The GRBS should also be administered to social work practitioners and researchers to further determine factor invariance as well as to make inferences about the value of research for social work in those populations.

Future research needs to continue to examine the convergent and divergent construct validity of the GRBS. Given the results of the present study, discriminant validity should be examined via CFA to further evaluate the divergent construct validity of the RWPBS. The convergent construct validity of the GRBS could also be examined via comparing it to a scale that measures some theoretically relevant variable pertaining to research, i.e., math anxiety.

After the measurement aspect of the GRBS is totally validated, the GRBS could be used in structural equation modeling to test theories pertaining to social work

students' performance in research and statistics courses. In such structural equation models, the "General Value of Research for Social Work Practice" would be an exogenous variable that is hypothesized to be predictive of or causally related to the aforementioned endogenous variables. If a particular theory required it, the "General Value of Research for Social Work Practice" could be an endogenous latent variable or a latent variable with both exogenous and endogenous properties (both a predictor and criterion). In conclusion, while worthy of further psychometric evaluation, the GRBS meets or surpasses the contemporary standards for scale reliability and factorial validity (discriminant construct validity and concurrent criterion validity are also supported). Given the construct that the GRBS measures and the lack of psychometric validity in other scales, the GRBS makes a meaningful contribution to social work practice.

Appendix A

Literature Search Log

Research and Generalist Social Work Practice: Measurement of Students' Beliefs – Search Log
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<p>Date: 1/14/2006</p> <p style="text-align: right;"><u>Search Number: 1</u></p> <p><u>Journal:</u> Journal of Social Work Education</p> <p><u>Search Engine:</u> EbscoHost</p> <p><u>Subject:</u> 'MSW Student and JN "Journal of Social Work Education"'</p> <p>Articles Obtained</p>

<p>Date: 6/5/2006</p> <p style="text-align: right;"><u>Search Number: 2</u></p> <p><u>Search Engine:</u> EbscoHost</p> <p><u>Subject:</u> "Pracitioner beliefs about research"</p>
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<p>Date: 6/5/2006</p> <p style="text-align: right;"><u>Search Number: 3</u></p> <p><u>Search Engine:</u> EbscoHost</p> <p><u>Subject:</u> "Social Work Research and Practitioners"</p> <p>Articles Obtained</p>												
<table> <tr> <td style="vertical-align: top; padding-right: 10px;">1</td> <td>Cheetman, J. (1997). The role of research in health and mental health social work. <i>Social Work in Healthcare</i>, 25 (1/2), 135 – 158.</td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">2</td> <td>Ell, K. R. (1997). The national institutes on health: A partner in advancing social work intervention research [Electronic Version]. <i>Social Work Research</i>, 21 (3), 181 – 185.</td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">3</td> <td>Epstein, L. (1996). The trouble with research–practitioner idea [Electronic Version]. <i>Social Work Research</i>, 20 (2), 113 – 117.</td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">4</td> <td>Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence–based practice. <i>Social Work Research</i>, 29 (3), 131 – 135.</td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">5</td> <td>Kirwin, P. M. (1994). The search for universal meanings: Issues in measurement. <i>Social Work</i>, 39 (4), 466 – 468.</td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">6</td> <td>Proctor, E. K. (2003). Evidence for practice: Challenges, opportunities, and access. <i>Social Work Research</i>, 27 (4), 195 – 196.</td> </tr> </table>	1	Cheetman, J. (1997). The role of research in health and mental health social work. <i>Social Work in Healthcare</i> , 25 (1/2), 135 – 158.	2	Ell, K. R. (1997). The national institutes on health: A partner in advancing social work intervention research [Electronic Version]. <i>Social Work Research</i> , 21 (3), 181 – 185.	3	Epstein, L. (1996). The trouble with research–practitioner idea [Electronic Version]. <i>Social Work Research</i> , 20 (2), 113 – 117.	4	Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence–based practice. <i>Social Work Research</i> , 29 (3), 131 – 135.	5	Kirwin, P. M. (1994). The search for universal meanings: Issues in measurement. <i>Social Work</i> , 39 (4), 466 – 468.	6	Proctor, E. K. (2003). Evidence for practice: Challenges, opportunities, and access. <i>Social Work Research</i> , 27 (4), 195 – 196.
1	Cheetman, J. (1997). The role of research in health and mental health social work. <i>Social Work in Healthcare</i> , 25 (1/2), 135 – 158.											
2	Ell, K. R. (1997). The national institutes on health: A partner in advancing social work intervention research [Electronic Version]. <i>Social Work Research</i> , 21 (3), 181 – 185.											
3	Epstein, L. (1996). The trouble with research–practitioner idea [Electronic Version]. <i>Social Work Research</i> , 20 (2), 113 – 117.											
4	Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence–based practice. <i>Social Work Research</i> , 29 (3), 131 – 135.											
5	Kirwin, P. M. (1994). The search for universal meanings: Issues in measurement. <i>Social Work</i> , 39 (4), 466 – 468.											
6	Proctor, E. K. (2003). Evidence for practice: Challenges, opportunities, and access. <i>Social Work Research</i> , 27 (4), 195 – 196.											

7	Proctor, E. K. (2003). Research to inform the development of social work interventions. <i>Social Work Research</i> , 27 (1), 3 – 5.
8	Rosen, A. (1996). The scientific practitioner revisited: Some obstacles and prerequisites for fuller implementation in practice [Electronic Version]. <i>Social Work Research</i> , 20 (2), 105 – 111.

9	Rosenthal, J. A. (1994). Reliability and social work [Electronic Version]. <i>Social Work Research</i> , 18 (2), 115 – 121.
10	Schilling, R. F. (1997). Developing intervention research programs in social work [Electronic Version]. <i>Social Work Research</i> , 21 (3), 173 – 180.

Date: 6/9/2006		<u>Search Number: 4</u>
		<u>Journal:</u> Journal of Social Work Education
		<u>Subject:</u> "Attitudes toward research and JN" Journal of Social Work Education
		<u>Time Span:</u> 01/01/1990 to Present
		<u>Search Engine:</u> Ebscohost

Date: 6/9/2006		<u>Search Number: 5</u>
		<u>Search Engine:</u> EbscoHost
		<u>Subject:</u> "Research and Social Work Practitioner"
		Articles Obtained
11	Feit, M. D. (2003). Toward a definition of social work practice: Reframing the dichotomy. <i>Research on Social Work Practice</i> , 13 (3), 357 – 365.	
12	Franklin, C. G. (1999). Research on practice: Better than you think? <i>Social Work in Education</i> , 21, (1), 3 – 9.	
13	Gilgun, J. F. (2005). The four cornerstones of evidence-based practice in social work. <i>Research on Social Work Practice</i> , 15 (1), 52 – 61.	

Date: 6/9/2006		<u>Search Number: 6</u>
		Search Engine: EbscoHost
		Subject: "Social Work and Attitudes toward research"
		Articles Obtained
14	Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. <i>Journal of Social Work Education</i> , 27 (1), 34 – 41.	

15	Olsen, L. (1990). Integrating a practice orientation into the research curriculum: The effect on knowledge and attitudes [Electronic Version]. <i>Journal of Social Work Education</i> , 26 (2), 155 – 161.
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Date: 6/15/2006	<u>Search Number: 7</u>
	Search Engine: EbscoHost Subject: "MSW Student and JN 'Journal of Social Work Education'" Articles Obtained
16	Green, R. G., Bretzin, A., Leininger, C., & Stauffer, R. (2001). Research learning attributes of graduate students in social work, psychology, and business. <i>Journal of Social Work Education</i> , 37 (2), 333 – 341.

Date: 6/15/2006	<u>Search Number: 8</u>
	Search Engine: EbscoHost Subject: "Social Work Research and Students" Articles Obtained
17	Holden, G., Barker, K., Meenaghan, T., & Rosenberg, G. (1999). Research self–efficacy: A new possibility for educational outcomes assessment. <i>Journal of Social Work Education</i> , 35 (3), 463 – 476.

Date: 6/20/2006	<u>Search Number: 9</u>
	Search Engine: EbscoHost Subject: "MSW Students and Research" Articles Obtained

Date: 6/20/2006	<u>Search Number: 10</u>
	<u>Journal:</u> Journal of Social Work Education <u>Subject:</u> "MSW Student and Reasearch and JN" Journal of Social Work Education Electronic Journal on EbscoHost Articles Obtained
18	Reamer, F. G. (1992). The place of empiricism in social work [Electronic Version]. <i>Journal of social work education</i> , 28 (3), 257 – 260.
19	Royse, D., & Rompf, E. L. (1992). Math anxiety: A comparison of social work and non–social work students [Electronic Version]. <i>Journal of Social Work Education</i> , 28

(3), 270 – 278.

Date:
6/20/2006

Search Number: 11

Search Engine: Expanded Academic ASAP

Subject: "Social Work Students and Research"

Date:
10/4/2006

Search Number: 12

Search Engine: EbscoHost

Subject: "Scales and Social work"

Date:
10/4/2006

Search Number: 13

Search Engine: MetaSearch

Subject: "Measurement and Social Work Student" in
"General"

PubMed = 11 sources

Purdue Univ (W Lafayette) = 1 source

Date:
10/4/2006

Search Number: 14

Search Engine: MetaSearch

Subject: "Psychometric and Social Work and Research" in
"General"

Indiana Univ (IUCAT) = 1 source

PubMed = 26 sources

Purdue Univ (W Lafayette) = 4 sources

Date:
10/4/2006

Search Number: 15

Search Engine: MetaSearch

Subject: "Scales and Social Work" in "General"

Indiana Univ (IUCAT) = 5 sources

PubMed = 100 sources

Purdue Univ (W Lafayette) = 4 sources

Date:
10/10/2006

Search Number: 16

Journal: Journal of Social Work Education

Subject: "Attitudes toward research and JN" Journal of Social
Work Education

Time Span: 03/01/1994 to Present

Search Engine: Ebscohost
 Articles Obtained
 No relevant findings

Date:
 10/10/2006 Search Number: 17
Journal: Social Work Research
Subject: "Social work and attitudes toward research and JN
 'Social Work Research'"
Search Engine: Ebscohost
 Articles Obtained
 No Relevant Findings

Date:
 10/10/2006 Search Number: 18
Journal: Social Work Research
Subject: "Social work research and students and JN 'Social
 Work Research'"
Search Engine: Ebscohost

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 10/10/2006 Search Number: 19
Journal: Social Work Research
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Appendix B

Student Beliefs about Research and Social Work Practice: A Content Analysis				
ID #	Student Beliefs about Research & Social Work Practice: Content	Hypothesized Factor	Source	Page #
1	"Some social work students wonder why research is required in a professional curriculum that is preparing them to be practitioners"	The Nature of Social Work & it's Relation to Research	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4
2	"Research methodology might be important for academic sociologist and psychologists, but these students ask 'Why use up so much of social work education on research methods when my helping skills are still not fully developed'"	The Nature of Social Work & it's Relation to Research	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4
3	"Some students expect research to be cold...: qualities that did not attract them to the social work field"	The Nature of Social Work & it's Relation to Research	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4
4	"Some students expect research to be ...aloof...: qualities that did not attract them to the social work field"	The Nature of Social Work & it's Relation to Research	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4

5	"Some students expect research to be ...mechanistic: qualities that did not attract them to the social work field"	The Nature of Social Work & it's Relation to Research	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4
6	"Social work tends to be associated with such qualities as warmth, involvement, compassion, humanism, and commitment"	The Nature of Social Work & it's Relation to Research	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4
7	"They realize that our field needs more evidence to guide practitioners about what interventions really help or hinder the attainment of their noble goals"	Research & Social Work Interventions	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4
8	"...it is through research that they could develop the evidence base for practice."	Value/Importance/Usefulness of Research in Social Work Practice	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4
9	"...it is through research that they could develop the evidence base for practice."	Research & Social Work Interventions	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4
10	"Rather than continue to practice with interventions of unknown and untested effects, they decided they could do more to help disadvantaged people and pursue social justice by conducting	Research & Social Work Interventions	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	4

research..."

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| 11 | <p>"Rather than continue to practice with interventions of unknown and untested effects, they decided they could do more to help disadvantaged people and pursue social justice by conducting research..."</p> <p>"...conducting research that builds our knowledge</p> | <p>Value/Importance/Usefulness of Research in Social Work Practice</p> | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 4 |
| 12 | <p>profession's knowledge base and consequently results in the delivery of more effective services to clients..."</p> <p>"...conducting research that builds our knowledge</p> | <p>Research & Social Work Interventions</p> | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 4 |
| 13 | <p>profession's knowledge base and consequently results in the delivery of more effective services to clients..."</p> | <p>Value/Importance/Usefulness of Research in Social Work Practice</p> | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 4 |
| 14 | <p>"Thus, social work research seeks to accomplish the same humanistic goals as social work practice;"</p> | <p>The Nature of Social Work & it's Relation to Research</p> | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 5 |

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| 15 | "...and like practice, social work research is a compassionate...endeavor." | The Nature of Social Work & it's Relation to Research | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 5 |
| 16 | "...and like practice, social work research is a ...practical...endeavor." | The Nature of Social Work & it's Relation to Research | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 5 |
| 17 | "...and like practice, social work research is a ...problem solving...endeavor." | The Nature of Social Work & it's Relation to Research | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 5 |
| 18 | "...you are likely to encounter numerous situations in your career when you'll use your research expertise and perhaps wish you had more of it." | Value/Importance/Usefulness of Research in Social Work Practice | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 5 |
| 19 | "...you may supervise a clinical program whose continued funding requires you to conduct a scientific evaluation of its effects on clients." | Value/Importance/Usefulness of Research in Social Work Practice | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 5 |
| 20 | "You may provide direct service and want to use single-case design methodology to evaluate scientifically your own effectiveness or the effects certain interventions are | Research & Social Work Interventions | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 5 |

having on your clients."

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| 21 | <p>"You may provide direct service and want to use single-case design methodology to evaluate scientifically your own effectiveness or the effects certain interventions are having on your clients."</p> | Value/Importance/Usefulness of Research in Social Work Practice | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 5 |
| 22 | <p>"You may be involved in community organizing or planning and want to conduct a scientific survey to assess a community's greatest needs."</p> | Value/Importance/Usefulness of Research in Social Work Practice | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 5 |
| 23 | <p>"You may be administering a program and be required, in order to be accountable to the public, to document scientifically that your program is delivering its intended amounts and types of services."</p> | Value/Importance/Usefulness of Research in Social Work Practice | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 5 |
| 24 | <p>"You may be engaged in social reform efforts and need scientific data to expose the harmful effects of current welfare policies and thus persuade legislators to enact more humanitarian welfare legislation."</p> | Value/Importance/Usefulness of Research in Social Work Practice | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 5 |

25	Even if I accept the notion that social work research is valuable,...	Value/Importance/Usefulness of Research in Social Work Practice	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	5
26	...I still believe that researchers should do their thing, and I'll do mine.'	The Nature of Social Work & it's Relation to Research	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	5
27	"Some agencies provide interventions that research has found to be ineffective. Some day you may even work in such an agency and be expected to provide such interventions."	Research & Social Work Interventions	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	5
28	"Some agencies provide interventions that research has found to be ineffective. Some day you may even work in such an agency and be expected to provide such interventions."	Ethics	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	5
29	"By understanding research...you can increase your practice effectiveness."	Research & Social Work Interventions	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	5
30	"By understanding research...you can increase your practice effectiveness."	Value/Importance/Usefulness of Research in Social Work Practice	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	5

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| 31 | "By ...reading studies that provide new evidence on what is and is not effective, you can increase your practice effectiveness." | Research & Social Work Interventions | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 5 |
| 32 | "By ...reading studies that provide new evidence on what is and is not effective, you can increase your practice effectiveness." | Value/Importance/Usefulness of Research in Social Work Practice | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 5 |
| 33 | "There is a vast range in the quality of social work research...that gets produced and published. Some of it is excellent, and some of it probably should have never been published." | Trustworthiness of Social Work Research | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 9 |
| 34 | "It is not hard to find studies that violate some of the fundamental principles that you will learn in this book." | Trustworthiness of Social Work Research | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 9 |
| 35 | "The unevenness in the quality of the studies in social work and allied fields has a variety of causes. = Biases...amongst researchers are only partial explanations." | Trustworthiness of Social Work Research | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 9 |
| 36 | "The unevenness in the quality of the studies in social work and allied fields has a variety of causes. = ...varying degrees of competence amongst researchers are only partial explanations." | Trustworthiness of Social Work Research | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 9 |

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| 37 | <p>"Many weak studies are produced not because their authors were biased or did not know better, but because agency constraints kept them from conducting stronger studies."</p> | Trustworthiness of Social Work Research | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 9 |
| 38 | <p>"Many weak studies are produced not because their authors were biased or did not know better, but because agency constraints kept them from conducting stronger studies."</p> <p>"...if social work practitioners are going to be guided by the findings of social work research studies, then they must understand social work research methods well enough to distinguish studies with adequate scientific methodologies and findings of little credibility."</p> | Agency | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 9 |
| 39 | <p>"...if social work practitioners are going to be guided by the findings of social work research studies, then they must understand social work research methods well enough to distinguish studies with adequate scientific methodologies and findings of little credibility."</p> | Trustworthiness of Social Work Research | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 9 to 10 |
| 40 | <p>"...an understanding of research methods will help you critically appraise...research produced by others,..."</p> | Value/Importance/Usefulness of Research in Social Work Practice | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 10 |
| 41 | <p>"...an understanding of research methods will help you ...use research produced by others,..."</p> | Value/Importance/Usefulness of Research in Social Work Practice | <p>Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5th ed.). Belmont, CA: Thomson Learning.</p> | 10 |

- 42 "...an understanding of research methods will help you ...communicate with researchers to help them ensure that their work is responsive to the needs of practice..."
Value/Importance/Usefulness of Research in Social Work Practice
Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning. 10
- 43 "...an understanding of research methods will help you ...foster an agency environment conducive to carrying out good and relevant studies."
Agency
Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning. 10
- 44 "...an understanding of research methods will help you ...foster an agency environment conducive to carrying out good and relevant studies."
Value/Importance/Usefulness of Research in Social Work Practice
Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning. 10
- 45 "...the value of understanding research methods so that you might determine which studies are sufficiently credible to guide your practice."
Value/Importance/Usefulness of Research in Social Work Practice
Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning. 10
- 46 "Social workers also need to be able to critically appraise the methodologies of studies conducted by authors who attack the entire social work profession..."
Value/Importance/Usefulness of Research in Social Work Practice
Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning. 10
- 47 "Social workers also need to be able to critically appraise the methodologies of studies conducted by authors who attack the...social welfare enterprise."
Value/Importance/Usefulness of Research in Social Work Practice
Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning. 10

- 48 "We should not be seen as a profession of antiscientific practitioners disregarding methodological principles, because this will lead to others to decide whether our clients would be better off if we all went out of business."
"...the practitioner who conforms only to ongoing practices without keeping abreast of the latest research in his or her field is not doing everything possible to provide clients with the best possible service."
- 49 "...the practitioner who conforms only to ongoing practices without keeping abreast of the latest research in his or her field is not doing everything possible to provide clients with the best possible service."
- 50 "...well-established, traditional social work services have often been found to be ineffective..."
- 51 "The main reason to use research is compassion for our clients."
- Value/Importance/Usefulness of Research in Social Work Practice
- Value/Importance/Usefulness of Research in Social Work Practice
- Ethics
- Value/Importance/Usefulness of Research in Social Work Practice
- Value/Importance/Usefulness of Research in Social Work Practice
- Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning.
- Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning.
- Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning.
- Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning.
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53	"If the services we provide are not effective and others are, then we are harming our clients by perpetuating our current services."	Ethics	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	11
54	"We are waisting their time (and perhaps money) by allowing their problems to go on without the best possible treament."	Ethics	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	11
55	"We are waisting their time (and perhaps money) by allowing their problems to go on without the best possible treament."	Value/Importan ce/Usefulness of Research in Social Work Practice	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	11
56	"Because we are inattentive to the literature, we deny our clients a service opportunity that might better help them."	Value/Importan ce/Usefulness of Research in Social Work Practice	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	11
57	"Because we are inattentive to the literature, we deny our clients a service opportunity that might better help them."	Ethics	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	11
58	"...why students preparing to become practitioners should know research methods so they can use and contribute to such studies."	Value/Importan ce/Usefulness of Research in Social Work Practice	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	17

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| 59 | "They will be able to use face-to-face contact with people, especially for treatment planning." | Research & Social Work Interventions | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 18 |
| 60 | "They will be able to use face-to-face contact with people, especially for treatment planning." | Value/Importance/Usefulness of Research in Social Work Practice | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 18 |
| 61 | "During assessment...Research concepts about topics such as measurement error, reliability, validity, and the principles of sampling will help them evaluate the quality and meaning of the clinical data they collect and help them collect those data in ways that enhance their quality."
"During assessment...Research concepts about topics such as measurement error, reliability, validity, and the principles of sampling will help them evaluate the quality and meaning of the clinical data they collect and help them collect those data in ways that enhance their quality." | Value/Importance/Usefulness of Research in Social Work Practice | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 18 |
| 62 | "During assessment...Research concepts about topics such as measurement error, reliability, validity, and the principles of sampling will help them evaluate the quality and meaning of the clinical data they collect and help them collect those data in ways that enhance their quality." | Psychosocial Assessment | Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning. | 18 |

- 63 "The Code of Ethics of the National Association of Social Workers specifically requires social workers to keep current with ...practice-related research in the professional literature..." Ethics 18
- 64 "The Code of Ethics of the National Association of Social Workers specifically requires social workers to ...critically examine practice-related research in the professional literature ..." Ethics 18
- 65 "The Code of Ethics of the National Association of Social Workers specifically requires social workers to ...include evidence-based knowledge as part of the knowledge base for their practice." Ethics 18
- 66 "When we use research discriminantly, we help uphold and advance the values and mission of the profession and thus are more ethical in our practice." Ethics 18
- 67 "...social work students quite commonly approach research methodology with skepticism about the ethics of many research studies." Ethics 18
- Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning.
- Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning.
- Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning.
- Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning.

68	"...our professional Code of Ethics bears on our responsibility to understand, use, and contribute to research."	Ethics	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	18
69	"...social work research offers all social workers and opportunity to make a difference in the problems they confront."	Value/Importance/Usefulness of Research in Social Work Practice	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	18
70	"Scientific inquiry safeguards against the potential dangers of relying exclusively on tradition, authority, common sense, or the popular media as the sources of knowledge to guide social work practice."	Value/Importance/Usefulness of Research in Social Work Practice	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	24
71	"It [Scientific inquiry] also helps safeguard against errors we might make when we attempt to build our practice wisdom primarily through our own practice experiences and unsystematic observations."	Value/Importance/Usefulness of Research in Social Work Practice	Rubin, A., & Babbie, E. R. (2005). <i>Research methods for social work</i> (5 th ed.). Belmont, CA: Thomson Learning.	24
72	Why do I have to take research.'	The Nature of Social Work & it's Relation to Research	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	4

73	I don't want to do research.'		Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	4
74	"...many [students] do not see the necessity for the course [research]."	Reasons for Choosing SWK	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	5
75	no other part of the social work curriculum has been so consistently received by students with as much groaning, moaning, eye-rolling, bad-mouthing, hyperventillation, and waiver-strategizing as the research course'	General Value of Research for Social Work Practice	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	5
76	"social work students' disinterest in research – what he calls the 'resistance phenomenon'"	Reasons for Choosing SWK	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	5
77	"...there is widespread belief amongst social workers that the same person cannot be both a good researcher and a good practitioner."	Reasons for Choosing SWK	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	5
78	"Online psychology which adopted the Scientist–Professional Training Model shortly after World War II, the dual emphasis on research and practice has not received the same emphasis in social	Quality of Social Work Research	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	5

work until fairly recent times."

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| 79 | "...it is quite apparent to me that many students come into social work because they are math phobic." | Reasons for Choosing SWK | Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning. | 5 |
| 80 | "These students [social work] are math avoiders and have selected social work because their perception that there will be fewer required courses in research and statistics here than elsewhere." | Reasons for Choosing SWK | Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning. | 6 |
| 81 | "It is clear that at least some students choose this field because of their anxiety about math." | Reasons for Choosing SWK | Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning. | 6 |
| 82 | "...a sizeable proportion of students coming into this field not only want to help vulnerable populations but also want to do it with as little involvement with research and statistics as possible." | Reasons for Choosing SWK | Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning. | 6 |

83	<p>"You need to have a basic knowledge of how research is conducted, or could be conducted, to help you to evaluate the strengths and weaknesses of the published research."</p> <p>"Research studies can be biased or flawed for a lot of different reasons, and you might not be able to detect these reasons without a basic understanding of research methodology"</p>	Value/Importance/Usefulness of Research in Social Work Practice	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	6
84	<p>"Research studies can be biased or flawed for a lot of different reasons, and you might not be able to detect these reasons without a basic understanding of research methodology"</p> <p>"Research studies can be biased or flawed for a lot of different reasons, and you might not be able to detect these reasons without a basic understanding of research methodology"</p>	Value/Importance/Usefulness of Research in Social Work Practice	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	6
85	<p>"Research studies can be biased or flawed for a lot of different reasons, and you might not be able to detect these reasons without a basic understanding of research methodology"</p> <p>"Second social workers are accountable for their interventions. As a professional you must be able to determine whether the intervention you are using with a client is making any difference."</p>	Trustworthiness of Social Work Research	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	6
86	<p>"Second social workers are accountable for their interventions. As a professional you must be able to determine whether the intervention you are using with a client is making any difference."</p> <p>"...the Council on Social Work Education (CSWE),...requires research as one of the five required professional content areas."</p>	Research & Social Work Interventions	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	7
87	<p>"...the Council on Social Work Education (CSWE),...requires research as one of the five required professional content areas."</p>	The Nature of Social Work & it's Relation to Research	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	8

88	"The clear expectation is that students will move from a position of only being able to consume research to being able to evaluate practice systematically."	The Nature of Social Work & it's Relation to Research	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	8
89	"You also need to be comfortable with...consuming...research because otherwise you may not be practicing the most effective treatment."	Research & Social Work Interventions	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	9
90	"You also need to be comfortable with ...conducting research because otherwise you may not be practicing the most effective treatment."	Research & Social Work Interventions	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	9
91	"Social workers who do not keep current on the literature are research in their fields are in danger of practicing primitive, if not incompetent, social work."	Ethics	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	9
92	"...social workers need to be able to inform clients why, on the basis of empirical studies, one particular treatment is recommended over another."	Research & Social Work Interventions	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	9
93	"...social workers need to be able to inform clients why, on the basis of empirical studies, one particular treatment is recommended over another."	Value/Importance/Usefulness of Research in Social Work Practice	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning.	9

94	"...empirically based social work practice exposes fraud and quackery and those who make questionable claims of effectiveness."	Value/Importance/Usefulness of Research in Social Work Practice	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thompson Learning.	9
95	"...you need competence in research methods to help you achieve your potential as a contributing member of the social work profession."	Value/Importance/Usefulness of Research in Social Work Practice	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thompson Learning.	9 to 10
96	"...I've—always—wanted—to—be—just—a—clinician' wishes that he or she understood a little more about research."	The Nature of Social Work & it's Relation to Research	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thompson Learning.	10
97	"By knowing research, you position yourself to reach higher goals and even to increase your income."	Value/Importance/Usefulness of Research in Social Work Practice	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thompson Learning.	10
98	"By knowing research, you position yourself to reach higher goals and even to increase your income."	Agency	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thompson Learning.	10
99	"Our professions's future self—respect depends upon your use of research in an empirically based practice."	Value/Importance/Usefulness of Research in Social Work Practice	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thompson Learning.	10
100	"Our professions's future self—respect depends upon your use of research in an empirically based practice."	The Nature of Social Work & it's Relation to Research	Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thompson Learning.	10

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| 101 | "While it is often convenient to think of social work practice and research as completely separate and distinct, they both share a logical problem-solving process." | The Nature of Social Work & it's Relation to Research | Royse, D. (1999). <i>Research methods in social work</i> (3 rd ed.). Belmont, CA: Wadsworth/Thomson Learning. | 37 |
| 102 | "We have a responsibility to evaluate the effectiveness of our interventions before we use them with clients;" | Research & Social Work Interventions | Grinnell, R. M. (1997). <i>Social work research and evaluation: Quantitative and qualitative approaches</i> (5 th ed.). Itasca, Ill: F. E. Peacock Publishers. | 20 |
| 103 | "We have a responsibility to evaluate the effectiveness of our interventions before we use them with clients;" | Ethics | Grinnell, R. M. (1997). <i>Social work research and evaluation: Quantitative and qualitative approaches</i> (5 th ed.). Itasca, Ill: F. E. Peacock Publishers. | 20 |
| 104 | "...we must also ensure that the interventions we select are the best possible ones,..." | Research & Social Work Interventions | Grinnell, R. M. (1997). <i>Social work research and evaluation: Quantitative and qualitative approaches</i> (5 th ed.). Itasca, Ill: F. E. Peacock Publishers. | 20 |

- 105 "Consuming research findings—reading with understanding in order to utilize the findings—is the most important research role a social worker can play." Research & Social Work Interventions Grinnell, R. M. (1997). *Social work research and evaluation: Quantitative and qualitative approaches* (5th ed.). Itasca, Ill: F. E. Peacock Publishers. 21
- 106 "...fewer still disseminate the information to the profession as a whole by writing manuscripts to submit to professional journals for possible publication." Quality of Social Work Research Grinnell, R. M. (1997). *Social work research and evaluation: Quantitative and qualitative approaches* (5th ed.). Itasca, Ill: F. E. Peacock Publishers. 21
- 107 "Some agencies provide interventions that research has found to be ineffective. Some day you may even work in such an agency and be expected to provide such interventions." Agency Rubin, A., & Babbie, E. R. (2005). *Research methods for social work* (5th ed.). Belmont, CA: Thomson Learning. 5
- 108 "...three complementary research—related goals : (1) the research consumer, (2) the creator and disseminator of knowledge, and (3) the contributing partner." The Nature of Social Work & it's Relation to Research Grinnell, R. M. (1997). *Social work research and evaluation: Quantitative and qualitative approaches* (5th ed.). Itasca, Ill: F. E. Peacock Publishers. 20

- 109 "The findings from research yield better informed, less biased decisions than the guessing hunches, intuition, and personal experience that were previously used." Value/Importance/Usefulness of Research in Social Work Practice Neuman, W. L., & Kreuger, L. W. (2003). *Social work research methods: Qualitative and quantitative applications*. Boston, MA: Allyn & Bacon. 17
- 110 "Numerous people make use of social work research techniques." Value/Importance/Usefulness of Research in Social Work Practice Neuman, W. L., & Kreuger, L. W. (2003). *Social work research methods: Qualitative and quantitative applications*. Boston, MA: Allyn & Bacon. 17
- 111 "As a student, these skills [research] work to make you better consumers and integrators of the information with which you are presented ." Value/Importance/Usefulness of Research in Social Work Practice Cournoyer, D. E., & Klein, W. C. (2000). *Research methods for social work*. Needham Heights, MA: Allyn & Bacon. 2
- 112 "Social workers tend to participate in science in all its knowledge–generating phases, and also in the task of using the knowledge of science to achieve goals of the profession such as social justice." The Nature of Social Work & it's Relation to Research Cournoyer, D. E., & Klein, W. C. (2000). *Research methods for social work*. Needham Heights, MA: Allyn & Bacon. 3
- 113 "Social work is an applied profession, and, as such, social work reserarch questions must have relevance in the lives of the people served by social workers." The Nature of Social Work & it's Relation to Research Cournoyer, D. E., & Klein, W. C. (2000). *Research methods for social work*. Needham Heights, MA: Allyn & Bacon. 86

- 114 "It is important for social workers to be able to describe people and things, predict relationships, and explain outcomes given particular actions." General Value of Research for Social Work Practice Cournoyer, D. E., & Klein, W. C. (2000). *Research methods for social work*. Needham Heights, MA: Allyn & Bacon. 86 to 87
- 115 "Social workers need to be familiar with a broad range of research designs because they are involved in all aspects of the scientific process." General Value of Research for Social Work Practice Cournoyer, D. E., & Klein, W. C. (2000). *Research methods for social work*. Needham Heights, MA: Allyn & Bacon. 87
- 116 "...three forms of inference...description, explanation, and prediction..." Value/Importance/Usefulness of Research in Social Work Practice Cournoyer, D. E., & Klein, W. C. (2000). *Research methods for social work*. Needham Heights, MA: Allyn & Bacon. 87
- 117 "If you have been hired as a community organizer, you need to accurately describe your community of interest..." Value/Importance/Usefulness of Research in Social Work Practice Cournoyer, D. E., & Klein, W. C. (2000). *Research methods for social work*. Needham Heights, MA: Allyn & Bacon. 88
- 118 "Once our practice interests have been adequately described, we are usually interested in being able to predict outcomes based on conditions or events that might be present in the social environment." Value/Importance/Usefulness of Research in Social Work Practice Cournoyer, D. E., & Klein, W. C. (2000). *Research methods for social work*. Needham Heights, MA: Allyn & Bacon. 88

119	"Explanation, the third and final kind of inference that we wish to make in social work practice, involves moving beyond prediction to an understanding of the underlying causes that result in behaviors of interests."	Value/Importance/Usefulness of Research in Social Work Practice	Cournoyer, D. E., & Klein, W. C. (2000). <i>Research methods for social work</i> . Needham Heights, MA: Allyn & Bacon.	88
120	"One of the purposes [of social work research] is description."	Purpose of Social Work Research	York, R. O. (1998). <i>Conducting social work research: An experimental approach</i> . Needham Heights, MA: Allyn & Bacon.	22
121	"A second purpose of social work research is explanation."	Purpose of Social Work Research	York, R. O. (1998). <i>Conducting social work research: An experimental approach</i> . Needham Heights, MA: Allyn & Bacon.	22
122	"A third purpose of social work research is evaluation."	Purpose of Social Work Research	York, R. O. (1998). <i>Conducting social work research: An experimental approach</i> . Needham Heights, MA: Allyn & Bacon.	22
123	"Another of the four major purposes of social work research is exploration."	Purpose of Social Work Research	York, R. O. (1998). <i>Conducting social work research: An experimental approach</i> . Needham Heights, MA: Allyn & Bacon.	23

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| 124 | ...three forms of inference...description, explanation, and prediction..." | Purpose of Social Work Research | Cournoyer, D. E., & Klein, W. C. (2000). <i>Research methods for social work</i> . Needham Heights, MA: Allyn & Bacon. | 87 |
| 125 | "If you have been hired as a community organizer, you need to accurately describe your community of interest..." | Purpose of Social Work Research | Cournoyer, D. E., & Klein, W. C. (2000). <i>Research methods for social work</i> . Needham Heights, MA: Allyn & Bacon. | 88 |
| 126 | "Once our practice interests have been adequately described, we are usually interested in being able to predict outcomes based on conditions or events that might be present in the social environment."
"Explanation, the third and final kind of inference that we wish to make in social work practice, involves moving beyond prediction to an understanding of the underlying causes that result in behaviors of interests." | Purpose of Social Work Research | Cournoyer, D. E., & Klein, W. C. (2000). <i>Research methods for social work</i> . Needham Heights, MA: Allyn & Bacon. | 88 |
| 127 | "Explanation, the third and final kind of inference that we wish to make in social work practice, involves moving beyond prediction to an understanding of the underlying causes that result in behaviors of interests." | Purpose of Social Work Research | Cournoyer, D. E., & Klein, W. C. (2000). <i>Research methods for social work</i> . Needham Heights, MA: Allyn & Bacon. | 88 |
| 128 | "Social work research is a means of gaining relevant knowledge through the use of the principles of scientific inquiry." | The Nature of Social Work & it's Relation to Research | York, R. O. (1998). <i>Conducting social work research: An experimental approach</i> . Needham Heights, MA: Allyn & Bacon. | 2 |

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| 129 | "Social workers rely on others' research findings." | Quality of Social Work Research | Weinbach, R. W., & Grinnell, R. M. (2001). <i>Statistics for social workers</i> (5 th ed.). Needham Heights, MA: Allyn & Bacon. | 2 |
| 130 | "We use the results of others' statistical analyses of their research data to inform our practice decision making." | General Value of Research for Social Work Practice | Weinbach, R. W., & Grinnell, R. M. (2001). <i>Statistics for social workers</i> (5 th ed.). Needham Heights, MA: Allyn & Bacon. | 2 |
| 131 | "Understanding the results of statistical analysis increases the likelihood that we will use the most effective and efficient practice interventions with our clients and helps us avoid those that lack adequate statistical support." | General Value of Research for Social Work Practice | Weinbach, R. W., & Grinnell, R. M. (2001). <i>Statistics for social workers</i> (5 th ed.). Needham Heights, MA: Allyn & Bacon. | 2 |
| 132 | "Social workers need to evaluate their practice effectiveness." | General Value of Research for Social Work Practice | Weinbach, R. W., & Grinnell, R. M. (2001). <i>Statistics for social workers</i> (5 th ed.). Needham Heights, MA: Allyn & Bacon. | 2 |
| 133 | "The most important reason that social workers should understand social work research methods is that this knowledge can be used to improve social work practice." | Value/Importance/Usefulness of Research in Social Work Practice | York, R. O. (1997). <i>Building basic competencies in social work research: An experiential approach</i> . Needham Heights, MA: Allyn & Bacon. | 2 |

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|-----|--|---|--|---|
| 134 | "In social work, the code of ethics requires that the professional social worker employ methods that are effective to the extent that such knowledge is known." | Ethics | York, R. O. (1997). <i>Building basic competencies in social work research: An experiential approach</i> . Needham Heights, MA: Allyn & Bacon. | 2 |
| 135 | "Practice that is clearly out of the bounds of the standard body of knowledge of a profession is the primary basis for a malpractice suit." | Ethics | York, R. O. (1997). <i>Building basic competencies in social work research: An experiential approach</i> . Needham Heights, MA: Allyn & Bacon. | 2 |
| 136 | "Practice that is clearly out of the bounds of the standard body of knowledge of a profession is the primary basis for a malpractice suit." | Value/Importance/Usefulness of Research in Social Work Practice | York, R. O. (1997). <i>Building basic competencies in social work research: An experiential approach</i> . Needham Heights, MA: Allyn & Bacon. | 2 |
| 137 | "Thus, if you wish to become a professional social worker or to continue in the profession, you must maintain your knowledge of what is more or less effective in practice." | Research & Social Work Interventions | York, R. O. (1997). <i>Building basic competencies in social work research: An experiential approach</i> . Needham Heights, MA: Allyn & Bacon. | 2 |

- 138 "Thus, if you wish to become a professional social worker or to continue in the profession, you must maintain your knowledge of what is more or less effective in practice." Ethics York, R. O. (1997). *Building basic competencies in social work research: An experiential approach*. Needham Heights, MA: Allyn & Bacon. 2
- 139 "The basic record keeping tasks of social work practice – process recording, memoing, and case reporting – are quite similar to the process of data analysis used by the social worker." The Nature of Social Work & its Relation to Research Padgett, D. (1998). *Qualitative methods in social work research: Challenges and rewards*. Thousand Oaks, CA: Sage Publications. 13
- 140 "Of the various methods of data collection in research, qualitative interviewing in particular bears a strong resemblance to a therapeutic interview." The Nature of Social Work & its Relation to Research Padgett, D. (1998). *Qualitative methods in social work research: Challenges and rewards*. Thousand Oaks, CA: Sage Publications. 13
- 141 "The business of science is to discover the 'true' nature of reality and how it 'truly' works." Philosophy of Science (Positivism) Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications. 19
- 142 "It is both possible and essential for the inquirer to adopt a distant, noninteractive posture. Values and other biasing and confounding factors are thereby automatically excluded from" Philosophy of Science (Positivism) Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage 20

	influencing the outcomes."		publications.	
143	"...questions and/or hypotheses are stated in advance and in propositional form and subjected to empirical tests (falsification) under carefully controlled conditions."	Philosophy of Science (Positivism)	Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 17 – 27). Newbury Park, CA: Sage publications.	20
144	"...hewing to objectivity as a 'regulatory ideal' but recognizing that it cannot be achieved in any absolute sense."	Philosophy of Science (Postpositivism)	Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 17 – 27). Newbury Park, CA: Sage publications.	21
145	"...reality exists but can never be fully apprehended."	Philosophy of Science (Postpositivism)	Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 17 – 27). Newbury Park, CA: Sage publications.	23

- 146 "...objectivity remains a regulatory ideal, but it can only be approximated..."
- Philosophy of Science (Postpositivism)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 23
- 147 "Nature cannot be seen as it 'really is' or 'really works' except through a value window."
- Philosophy of Science (Critical Theory)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 24
- 148 "The tasks of inquiry is, by definition, to raise people (the oppressed) to a level of 'true consciousness.'
- Philosophy of Science (Critical Theory)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 24
- 149 "...subjectivist because inquiry acts are intimately related to the values of the inquirere."
- Philosophy of Science (Critical Theory)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 24

- 150 "If the aim of inquiry is to transform the (real) world by raising the consciousness of participants so that they are energized and facilitated transformation..."
- Philosophy of Science (Critical Theory)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 24
- 151 "Critical theorists (ideologists) take a dialogic approach that seeks to eliminate false consciousness and rally participants around a common (true?) point of view."
- Philosophy of Science (Critical Theory)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 24
- 152 "subjectivist, in the sense that values mediate inquiry."
- Philosophy of Science (Critical Theory)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 25
- 153 "'Realtiy' exist only in the context of a mental framework (construct) for thinking about it."
- Philosophy of Science (Constructivism)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 25

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|-----|--|---|---|----|
| 154 | "...inquiry cannot be value free." | Philosophy of Science
(Constructivism
) | Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 17 – 27). Newbury Park, CA: Sage publications. | 25 |
| 155 | "Many constructions are possible." | Philosophy of Science
(Constructivism
) | Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 17 – 27). Newbury Park, CA: Sage publications. | 25 |
| 156 | "Realities are multiple and they exist in people's minds." | Philosophy of Science
(Constructivism
) | Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 17 – 27). Newbury Park, CA: Sage publications. | 26 |
| 157 | "If realities exist only in respondents' minds, subjective interaction seems to be the only way to access them." | Philosophy of Science
(Constructivism
) | Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 17 – 27). Newbury Park, CA: Sage publications. | 26 |

- 158 "...the constructivist proceeds in ways that aim to identify the variety of constructions that exist and bring them into as much consensus as possible."
- Philosophy of Science (Constructivism)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 26
- 159 "Relativist – realities exist in the form of multiple mental constructions,..."
- Philosophy of Science (Constructivism)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 27
- 160 "Subjectivist – inquirer and inquired into are fused into a single (monistic) entity."
- Philosophy of Science (Constructivism)
- Guba, E. C. (1990). The alternative paradigm dialog. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 17 – 27). Newbury Park, CA: Sage publications.
- 27
- 161 "Valid research was distinguished from invalid research in terms of the extent to which the proper procedures were properly applied."
- Philosophy of Science (Positivism)
- Smith, J. K. (1990). Alternative research paradigms and the problem of criteria. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 167 – 187). Newbury Park, CA: Sage publications.
- 169

- 162 "...valid studies were procedurally correct, inept studies were procedurally flawed."
- Philosophy of Science (Positivism)
- Smith, J. K. (1990). Alternative research paradigms and the problem of criteria. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 167 – 187). Newbury Park, CA: Sage publications.
- 169
- 163 "This ideal is in large measure directed at how researchers undertake and carry out their research in that it requires them to be precise, unbiased, open, honest, receptive to criticism, and so on."
- Philosophy of Science (Postpositivism)
- Smith, J. K. (1990). Alternative research paradigms and the problem of criteria. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 167 – 187). Newbury Park, CA: Sage publications.
- 171
- 164 "Those who have been open, honest, and unbiased, or at least more so than others, have made an undistorted or at least less distorted contact with reality..."
- Philosophy of Science (Postpositivism)
- Smith, J. K. (1990). Alternative research paradigms and the problem of criteria. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 167 – 187). Newbury Park, CA: Sage publications.
- 172
- 165 "There is a knowable truth."
- Philosophy of Science (Positivism)
- Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications.
- 189

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|-----|---|--|---|------------|
| 166 | "This assumes that there is one knowable truth that can be discovered when we use proper methods well." | Philosophy of Science (Positivism) | Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 188 – 197). Newbury Park, CA: Sage publications. | 189 to 190 |
| 167 | "Values can be excised from the research process." | Philosophy of Science (Positivism) | Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 188 – 197). Newbury Park, CA: Sage publications. | 190 |
| 168 | "Good research must empower people by helping them to see the historical meaning of events and to place themselves, their institutions, and their roles in historical context." | Philosophy of Science (Critical Theory) | Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 188 – 197). Newbury Park, CA: Sage publications. | 190 |
| 169 | "Research is a process in which the researcher uncovers his or her own as well as others' truths." | Philosophy of Science (Critical Theory/Constructivist) | Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), <i>The paradigm dialog</i> (pp. 188 – 197). Newbury Park, CA: Sage publications. | 190 |

- 170 "Thus, good research must include a self-revelation." Philosophy of Science (Critical Theory/Constructivist) Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications. 190
- 171 "Research is the process of uncovering what people believe to be true (regardless of any absolute truth)." Philosophy of Science (Critical Theory/Constructivist) Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications. 190
- 172 "...good research is honest, open inquiry, where the researcher searches for alternative explanations and is self-critical." Philosophy of Science (Postpositivism) Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications. 191
- 173 "...good research is honest, open inquiry, where the researcher searches for alternative explanations and is self-critical." Trustworthiness of Social Work Research Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications. 191

- 174 "Sloppy research is that which starts with an idea and goes forth in the real world to gather evidence to supporting that idea, without being systematic in searching for a wide range of alternative explanations and versions of the truth, and without trying to be self-critical."
Quality of Social Work Research
Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications. 191
- 175 "Sloppy research is that which starts with an idea and goes forth in the real world to gather evidence to supporting that idea, without being systematic in searching for a wide range of alternative explanations and versions of the truth, and without trying to be self-critical."
Trustworthiness of Social Work Research
Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications. 191
- 176 "Would a critical scientist judge, a constructivist judge or a post-empiricist judge have different criteria? For post-empiricist judges, the best case is the one that can document an honest, open, and careful procedure for arriving at the description of the beliefs that people hold."
Philosophy of Science (Postpositivism)
Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications. 192

- 177 "Would a critical scientist judge, a constructivist judge or a post-empiricist judge have different criteria?...Constructivist judges are happy with descriptions of the varied and multiple realities that are socially constructed."
- Philosophy of Science (Constructivism)
- Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications. 192
- 178 "Would a critical scientist judge, a constructivist judge or a post-empiricist judge have different criteria?...So, good research is that which uncovers those manipulations, thus empowering people to see ways to control their own destinies."
- Philosophy of Science (Critical Theory)
- Smith, J. K. (1990). Goodness criteria: Are they objective or judgement calls. In Guba, E. G. (Ed.), *The paradigm dialog* (pp. 188 – 197). Newbury Park, CA: Sage publications. 192
- 179 "Social workers continually strive to increase their professional knowledge and skills and to apply them in practice."
- Ethics
- National Association of Social Workers. (1996). *Code of ethics of the national association of social workers*. Washington, DC: Author. 5
- 180 "Social workers should aspire to contribute to the knowledge base of the profession."
- Ethics
- National Association of Social Workers. (1996). *Code of ethics of the national association of social workers*. Washington, DC: Author. 5

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|-----|--|--------|---|----|
| 181 | <p>"When generally recognized standards do not exist with respect to an emerging area of practice, social workers should exercise careful judgment and take responsible steps (including appropriate education, research, training, consultation, and supervision) to ensure the competence of their work and to protect clients from harm."</p> <p>"Social workers should critically examine and keep current with emerging knowledge relevant to social work. Social workers should routinely review the professional literature and participate in continuing education relevant to social work practice and social work ethics."</p> | Ethics | <p>National Association of Social Workers. (1996). <i>Code of ethics of the national association of social workers</i>. Washington, DC: Author.</p> | 6 |
| 182 | <p>"Social workers should base practice on recognized knowledge, including empirically based knowledge, relevant to social work and social work ethics."</p> | Ethics | <p>National Association of Social Workers. (1996). <i>Code of ethics of the national association of social workers</i>. Washington, DC: Author.</p> | 16 |
| 183 | <p>"Social workers should base practice on recognized knowledge, including empirically based knowledge, relevant to social work and social work ethics."</p> | Ethics | <p>National Association of Social Workers. (1996). <i>Code of ethics of the national association of social workers</i>. Washington, DC: Author.</p> | 16 |

184	"Social workers should monitor and evaluate policies, the implementation of programs, and practice interventions."	Ethics	National Association of Social Workers. (1996). <i>Code of ethics of the national association of social workers</i> . Washington, DC: Author.	18
185	"Social workers should promote and facilitate evaluation and research to contribute to the development of knowledge."	Ethics	National Association of Social Workers. (1996). <i>Code of ethics of the national association of social workers</i> . Washington, DC: Author.	18
186	"Social workers should critically examine and keep current with emerging knowledge relevant to social work and fully use evaluation and research evidence in their professional practice."	Ethics	National Association of Social Workers. (1996). <i>Code of ethics of the national association of social workers</i> . Washington, DC: Author.	18
187	"Evaluate research studies, apply research findings to practice, and evaluate their own practice interventions."	Research & Social Work Interventions	Council on Social Work Education. (2001). <i>Educational policy and accreditation standards</i> . Washington, DC: Author.	9
188	"The content prepares students to develop, use, and effectively communicate empirically based knowledge, including evidence-based interventions."	Research & Social Work Interventions	Council on Social Work Education. (2001). <i>Educational policy and accreditation standards</i> . Washington, DC: Author.	12

- 189 "Research knowledge is used by students to provide high-quality services; to initiate change; to improve practice, policy, and social service delivery; and to evaluate their own practice."
 Research & Social Work Interventions
 Council on Social Work Education. (2001). *Educational policy and accreditation standards*. Washington, DC: Author. 12
- 190 "Social workers should critically examine and keep current with emerging knowledge relevant to social work and fully use evaluation and research evidence in their professional practice."
 Research & Social Work Interventions
 National Association of Social Workers. (1996). *Code of ethics of the national association of social workers*. Washington, DC: Author. 18
- 191 "Social workers continually strive to increase their professional knowledge and skills and to apply them in practice."
 Research & Social Work Interventions
 National Association of Social Workers. (1996). *Code of ethics of the national association of social workers*. Washington, DC: Author. 5
- 192 "When generally recognized standards do not exist with respect to an emerging area of practice, social workers should exercise careful judgment and take responsible steps (including appropriate education, research, training, consultation, and supervision) to ensure the competence of their work and to protect clients from harm."
 Research & Social Work Interventions
 National Association of Social Workers. (1996). *Code of ethics of the national association of social workers*. Washington, DC: Author. 6

- 193 "Social workers should critically examine and keep current with emerging knowledge relevant to social work. Social workers should routinely review the professional literature and participate in continuing education relevant to social work practice and social work ethics."
- Research & Social Work Interventions
- National Association of Social Workers. (1996). *Code of ethics of the national association of social workers*. Washington, DC: Author.
- 16
- 194 "Social workers should base practice on recognized knowledge, including empirically based knowledge, relevant to social work and social work ethics."
- Research & Social Work Interventions
- National Association of Social Workers. (1996). *Code of ethics of the national association of social workers*. Washington, DC: Author.
- 16
- 195 "Social workers should monitor and evaluate policies, the implementation of programs, and practice interventions."
- Research & Social Work Interventions
- National Association of Social Workers. (1996). *Code of ethics of the national association of social workers*. Washington, DC: Author.
- 18
- 196 "Social workers should critically examine and keep current with emerging knowledge relevant to social work and fully use evaluation and research evidence in their professional practice."
- Research & Social Work Interventions
- National Association of Social Workers. (1996). *Code of ethics of the national association of social workers*. Washington, DC: Author.
- 18

- 197 "Faculty and practitioners, however, perceive students as less favorably disposed to the incorporation of research than do the students themselves." General Value of Research for Social Work Practice Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41. 1
- 198 "THE relationship of social work practice to social work research has long been ambivalent." The Nature of Social Work & it's Relation to Research Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41. 1
- 199 "Demands for greater accountability and more integration of research into the social work curriculum also have helped push the profession in a more scientific direction" General Value of Research for Social Work Practice Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41. 1
- 200 "The low priority assigned to research in social work education has been justified traditionally by the claim that social work students had no interest in it" Student/Faculty Perceptions of Research in Social Work Education Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41. 2
- 201 "The findings of still another study indicated that practitioners tended to believe that research can counter the values of casework" The Nature of Social Work & it's Relation to Research Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41. 2

- 202 "...most of the research participants also favored inclusion of methodological content in nonresearch courses (i.e., classes in theory and practice)."
- Use of Research for Social Work Interventions
- Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41.
- 4
- 203 "...the claim that students are uninterested in research is unsupported by the evidence."
- Student/Faculty Perceptions of Research in Social Work Education
- Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41.
- 4
- 204 "Mutschler (1984) has suggested that the following four–factors influence research use by practitioners: (1) perceived relevance, (2) utility for immediate action of decision makers, (3) involvement of practitioners, and (4) organizational context. "
- Student/Faculty Perceptions of Research in Social Work Education
- Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41.
- 5
- 205 "First, they convey a message to students that they do not expect students to be serious about research. Second, faculty and practitioners may feel constrained to limit research content in the curriculum. In doing so, they also convey a negative message to students about the place of research in social work practice."
- Student/Faculty Perceptions of Research in Social Work Education
- Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41.
- 5

- 206 "First, they convey a message to students that they do not expect students to be serious about research. Second, faculty and practitioners may feel constrained to limit research content in the curriculum. In doing so, they also convey a negative message to students about the place of research in social work practice." "First, they convey a message to students that they do not expect students to be serious about research. Second, faculty and practitioners may feel constrained to limit research content in the curriculum. In doing so, they also convey a negative message to students about the place of research in social work practice."
- Student/Faculty Perceptions of Research in Social Work Education
- Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41.
- 5
- 207 "First, they convey a message to students that they do not expect students to be serious about research. Second, faculty and practitioners may feel constrained to limit research content in the curriculum. In doing so, they also convey a negative message to students about the place of research in social work practice."
- Student/Faculty Perceptions of Research in Social Work Education
- Lazar, A. (1991). Faculty, practitioner, and student attitudes toward research [Electronic Version]. *Journal of Social Work Education*, 27 (1), 34 – 41.
- 5
- 208 "...many schools of social work are attempting to integrate education in practice and research..."
- Use of Research for Social Work Interventions
- Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education.
- 29

- 209 "All these activities have the common objectives of improving the ways of generating social work knowledge, of disseminating the results of research more effectively, and of equipping practitioners with the skills they need to utilize research in their practice."
- Use of Research for Social Work Interventions
- Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education. 29
- 210 "Attempts to change the place of research in social work must begin with faculty."
- Student/Faculty Perceptions of Research in Social Work Education
- Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education. 29

- 211 "MSW students knew significantly more about research than BSW students, and doctoral students knew significantly more than MSW students."
- General Value of Research for Social Work Practice
- Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education. 36
- 212 "This finding of widespread belief in research appears to contradict what research professors often assume about their non doctoral students, namely, that they are not research-oriented."
- Student/Faculty Perceptions of Research in Social Work Education
- Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education. 37

- 213 "Many social work students do not or think they do not have the skills to use research." Value/Importance/Usefulness of Research in Social Work Practice Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education. 37
- 214 "...students who initially believed in the importance of research may be those who chose to enroll in research courses." Value/Importance/Usefulness of Research in Social Work Practice Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education. 37

- 215 "Students with extensive exposure to research tended to be as cynical as those with virtually no exposure."
- Trustworthiness of Social Work Research
- Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education.
- 38
- 216 "It may be as students acquire more exposure to and knowledge about research they learn to appreciate the potential importance of research and knowledge building for the profession and the potential usefulness of research findings."
- Value/Importance/Usefulness of Research in Social Work Practice
- Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education.
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- 217 "Their [undegraduate social workers] cynicism may stem from a lack of understanding about the role of research in the profession." Value/Importance/Usefulness of Research in Social Work Practice Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education. 38
- 218 "It is now known whether the orientation of BSW students remains the same or changes as they pursue their undergraduate education, nor whether undergraduate students with a negative orientation to research choose not to pursue graduate education." General Value of Research for Social Work Practice Kirk, S. A., & Rosenblatt, A. (1981). Research knowledge and orientation amongst social work students. In Briar, S., Weissman, H., & Rubin, A. (Eds.), *Research utilization in social work education* (pp. 29 – 39). New York: Council on Social Work Education. 38
- 219 "Although social work students have consistently been characterized as hesitant, reluctant, and resistant by their research professors, it was assumed that most social work research faculty had not had the opportunity to closely observe the reactions of research students in other disciplines." The Nature of Social Work & it's Relation to Research Green, R. G., Bretzin, A., Leininger, C., & Stauffer, R. (2001). Research learning attributes of graduate students in social work, psychology, and business. *Journal of Social Work Education*, 37 (2), 333 – 341. 340

- 220 "WHEN SUMMARIZING OBSERVATIONS and reactions to having taught the required research and statistics courses, social work faculty have consistently emphasized students' low levels of preparation, motivation, and achievement"
- 221 "Irwin Epstein, for example, a 30-year veteran of teaching research courses, describes his students as 'research reluctant.'"
- Student/Faculty Perceptions of Research in Social Work Education
- Student/Faculty Perceptions of Research in Social Work Education
- Green, R. G., Bretzin, A., Leininger, C., & Stauffer, R. (2001). Research learning attributes of graduate students in social work, psychology, and business. *Journal of Social Work Education*, 37 (2), 333 – 341.
- Green, R. G., Bretzin, A., Leininger, C., & Stauffer, R. (2001). Research learning attributes of graduate students in social work, psychology, and business. *Journal of Social Work Education*, 37 (2), 333 – 341.
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- 222 "This literature encourages research faculty to anticipate the importance of student research reluctance in the planning and teaching of their courses. Accordingly, faculty are advised to emphasize group process variables in their teaching and presentation of research content, to facilitate and model humor and self-disclosure, to focus their courses on the practical rather than the theoretical, and to replace the traditional deductive emphasis of research teaching with more inductive experiential approaches to student learning"
- 223 "The significance of such investigations for the issue of research utilization is predicated on the assumption that students' orientation toward research generalizes to their post-student practice years. The validity of this assumption, however has yet to be established."
- Student/Faculty Perceptions of Research in Social Work Education
- Use of Research for Social Work Interventions
- Green, R. G., Bretzin, A., Leininger, C., & Stauffer, R. (2001). Research learning attributes of graduate students in social work, psychology, and business. *Journal of Social Work Education*, 37 (2), 333 – 341.
- Rosen, A., & Mutschler, E. (1982). Social work students' and practitioners' orientation to research. *Journal of Education for Social Work*, 18 (3), 62 – 68.
- 333 to 334
- 62

- 224 "...practitioners seldom view research as capable of providing answers or guidelines to practice–relevant concerns." Value/Importance/Usefulness of Research in Social Work Practice Rosen, A., & Mutschler, E. (1982). Social work students' and practitioners' orientation to research. *Journal of Education for Social Work, 18* (3), 62 – 68. 63
- 225 "...practitioners have little exposure to research–based practice literature and are generally unable to evaluate its methodological soundness or draw proper implications for practice." Value/Importance/Usefulness of Research in Social Work Practice Rosen, A., & Mutschler, E. (1982). Social work students' and practitioners' orientation to research. *Journal of Education for Social Work, 18* (3), 62 – 68. 63
- 226 "Such findings may suggest a failure of social work education to instill in practitioners the attitudes and knowledge that are conducive to research utilization, or they may reflect failure of the research orientation learned in school to carry over into practice." Use of Research for Social Work Interventions Rosen, A., & Mutschler, E. (1982). Social work students' and practitioners' orientation to research. *Journal of Education for Social Work, 18* (3), 62 – 68. 63
- 227 "Such findings may suggest a failure of social work education to instill in practitioners the attitudes and knowledge that are conducive to research utilization, or they may reflect failure of the research orientation learned in school to carry over into practice." Use of Research for Social Work Interventions Rosen, A., & Mutschler, E. (1982). Social work students' and practitioners' orientation to research. *Journal of Education for Social Work, 18* (3), 62 – 68. 63

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| 228 | "...it became evident that workers had selected and used procedures in practice evaluation based on their preceived clinical relevance." | Value/Importance/Usefulness of Research in Social Work Practice | Rosen, A., & Mutschler, E. (1982). Social work students' and practitioners' orientation to research. <i>Journal of Education for Social Work, 18</i> (3), 62 – 68. | 67 |
| 229 | "It is generally agreed that social work practice should be scientifically based and that research could be an essential component of professional social work education." | The Nature of Social Work & it's Relation to Research | Siegel, D. H. (1983). Can research and practice be integrated in social work education? <i>Journal of Education for Social Work, 19</i> (3), 12 – 19. | 12 |
| 230 | "The need for research in social work practice is well established." | The Nature of Social Work & it's Relation to Research | Siegel, D. H. (1983). Can research and practice be integrated in social work education? <i>Journal of Education for Social Work, 19</i> (3), 12 – 19. | 12 |
| 231 | "In order to develop more effective practice, it is necessary to identify empirically validated interventions." | Research & Social Work Interventions | Siegel, D. H. (1983). Can research and practice be integrated in social work education? <i>Journal of Education for Social Work, 19</i> (3), 12 – 19. | 12 |
| 232 | "In order to develop more effective practice, it is necessary to identify empirically validated interventions." | Value/Importance/Usefulness of Research in Social Work Practice | Siegel, D. H. (1983). Can research and practice be integrated in social work education? <i>Journal of Education for Social Work, 19</i> (3), 12 – 19. | 12 |

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| 233 | "Analytic skills such as those stressed in research courses are vital if social workers are to cope effectively with the complexities in the social welfare field." | Value/Importance/Usefulness of Research in Social Work Practice | Siegel, D. H. (1983). Can research and practice be integrated in social work education? <i>Journal of Education for Social Work, 19</i> (3), 12 – 19. | 12 |
| 234 | "The survival of the profession may depend in part on developing an empirical foundation." | Value/Importance/Usefulness of Research in Social Work Practice | Siegel, D. H. (1983). Can research and practice be integrated in social work education? <i>Journal of Education for Social Work, 19</i> (3), 12 – 19. | 12 |
| 235 | "The survival of the profession may depend in part on developing an empirical foundation." | The Nature of Social Work & it's Relation to Research | Siegel, D. H. (1983). Can research and practice be integrated in social work education? <i>Journal of Education for Social Work, 19</i> (3), 12 – 19. | 12 |
| 236 | "...intergrating research and practice is an important task." | Value/Importance/Usefulness of Research in Social Work Practice | Siegel, D. H. (1983). Can research and practice be integrated in social work education? <i>Journal of Education for Social Work, 19</i> (3), 12 – 19. | 12 |

- 237 "...practitioners typically are not conducting evaluations or empirical studies of their own interventions, using research findings in their practice, reading research articles, or assessing research findings critically."
- THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. The worker makes maximum use of research findings; ..."
- THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ... collects data systematically in order to monitor the intervention process;..."
- Use of Research for Social Work Interventions
- Characteristics of an Evidence Based Practitioner
- Characteristics of an Evidence Based Practitioner
- Siegel, D. H. (1983). Can research and practice be integrated in social work education? *Journal of Education for Social Work, 19* (3), 12 – 19.
- Siegel, D. H. (1983). Can research and practice be integrated in social work education? *Journal of Education for Social Work, 19* (3), 12 – 19.
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- THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ...empirically demonstrates whether or not interventions are effective;..."
- 240 Characteristics of an Evidence Based Practitioner Siegel, D. H. (1983). Can research and practice be integrated in social work education? *Journal of Education for Social Work, 19* (3), 12 – 19. 13
- THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ...specifies problems, interventions, and outcomes in terms that are concrete, observable, and measureable;..."
- 241 Characteristics of an Evidence Based Practitioner Siegel, D. H. (1983). Can research and practice be integrated in social work education? *Journal of Education for Social Work, 19* (3), 12 – 19. 13
- THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ...measures outcomes;..."
- 242 Characteristics of an Evidence Based Practitioner Siegel, D. H. (1983). Can research and practice be integrated in social work education? *Journal of Education for Social Work, 19* (3), 12 – 19. 13

- 243 THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ...uses research logic and methods in defining clients' problems, ..."
- Characteristics of an Evidence Based Practitioner
- Siegel, D. H. (1983). Can research and practice be integrated in social work education? *Journal of Education for Social Work, 19* (3), 12 – 19. 13
- 244 THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ... formulating practice questions, collecting assessment data, ..."
- Characteristics of an Evidence Based Practitioner
- Siegel, D. H. (1983). Can research and practice be integrated in social work education? *Journal of Education for Social Work, 19* (3), 12 – 19. 13
- 245 THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ...collecting assessment data, ..."
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- 246 THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ...evaluating intervention effectiveness,..."
- Characteristics of an Evidence Based Practitioner
- Siegel, D. H. (1983). Can research and practice be integrated in social work education? *Journal of Education for Social Work, 19* (3), 12 – 19.
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- 247 THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ...using evidence; ..."
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- 248 THESE STATEMENTS ARE ALREADY IN A SCALE CALLED "PLANS TO DO EMPIRICALLY BASED PRACTICE (SEE SIEGAL, 1985). "Empirically based practice has several characteristics. ...sees research as a tool to be used in practice."
- Characteristics of an Evidence Based Practitioner
- Siegel, D. H. (1983). Can research and practice be integrated in social work education? *Journal of Education for Social Work, 19* (3), 12 – 19.
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| 249 | "Research is important because of the promise it holds for the discovery of new, useful information." | Value/Importance/Usefulness of Research in Social Work Practice | Rosenblatt, A., & Kirk, S. A. (1981). Cumulative effect of research courses on knowledge and attitudes of social work students. <i>Journal of Education for Social Work, 17</i> (2), 26 – 34. | 33 |
| 250 | "The importance of research at the undergraduate level is becoming apparent." | Value/Importance/Usefulness of Research in Social Work Practice | Basom, R. E., Iancono–Harris, D. A., & Kraybill, D. B. (1982). Statistically speaking: Social work students are significant. <i>Journal of Education for Social Work, 18</i> (2), 20 – 26. | 20 |
| 251 | "Demands for professional accountability especially at the direct service level where most baccalaureate social workers are, make it imperative that we evaluate social work interventions." | Value/Importance/Usefulness of Research in Social Work Practice | Basom, R. E., Iancono–Harris, D. A., & Kraybill, D. B. (1982). Statistically speaking: Social work students are significant. <i>Journal of Education for Social Work, 18</i> (2), 20 – 26. | 20 |
| 252 | "Demands for professional accountability especially at the direct service level where most baccalaureate social workers are, make it imperative that we evaluate social work interventions." | Research & Social Work Interventions | Basom, R. E., Iancono–Harris, D. A., & Kraybill, D. B. (1982). Statistically speaking: Social work students are significant. <i>Journal of Education for Social Work, 18</i> (2), 20 – 26. | 20 |

- 253 "Widely held assumptions about social work students, both inside and outside the profession, include the following: Social work students have negative attitudes toward the role and relevance of research."
- 254 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...The preceive research to be irrelevant to the acquisition of helping skills, and thus for social work practice."
- 255 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...Social work students not only enter research courses with bad attitudes, they also are weak in quantitative skills."
- 256 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...They have always hated math and have little aptitude for numerical analysis."
- Student/Faculty Perceptions of Research in Social Work Education
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- Basom, R. E., Iancono–Harris, D. A., & Kraybill, D. B. (1982). Statistically speaking: Social work students are significant. *Journal of Education for Social Work, 18* (2), 20 – 26.
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- 257 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...Social work students have selected social work as a profession because they perceive it as nonquantitative and as a way to avoid the rigors of more 'hard, scientific' disciplines."
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- 258 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...In other words, social work students select a 'softer' profession because it's congruent with their qualitative aptitudes and personal characteristics."
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- 259 "Widely held assumptions about social work students, both inside and outside the profession, include the following: Social work students have negative attitudes toward the role and relevance of research."
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- 260 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...The preceive research to be irrelevant to the acquisition of helping skills, and thus for social work practice."
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- 261 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...Social work students not only enter research courses with bad attitudes, they also are weak in quantitative skills."
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- 262 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...They have always hated math and have little aptitude for numerical analysis."
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- 263 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...Social work students have selected social work as a profession because they perceive it as nonquantitative and as a way to avoid the rigors of more 'hard, scientific' disciplines."
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- 264 "Widely held assumptions about social work students, both inside and outside the profession, include the following:...In other words, social work students select a 'softer' profession because it's congruent with their qualitative aptitudes and personal characteristics."
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- 265 "when students perceive that empirically based practice themes are presented in a research course, they have more positive attitudes toward research, evaluate their research courses more favorably, and are more likely to plan to intergrate research into their practice."
- Student/Faculty Perceptions of Research in Social Work Education
- Siegel, D. H. (1985). Effective teaching of empirically based practice. *Social Work Research and Abstracts, 21*, 40 – 48.
- 40

- 266 "...it is imperative for social workers to demonstrate empirically the effectiveness of their interventions for two reasons."
- 267 "First, funding sources, overwhelmed by competing claims for money, are demanding data on which to base decisions about whose needs are the greatest and which service providers can most effectively and efficiently meet those needs."
- 268 "Second, in the light of scarce resources, it is unconscionable for social workers to assert, simply on the basis of faith, that their efforts to help have the intended effects, for, in doing so, social workers may be waisting precious dollars by engaging in useless or even harmful activities."
- 269 "Second, in the light of scarce resources, it is unconscionable for social workers to assert, simply on the basis of faith, that their efforts to help have the intended effects, for, in doing so, social workers may be waisting precious dollars by engaging in useless or even harmful
- Use of Research for Social Work Interventions
- Value/Importance/Usefulness of Research in Social Work Practice
- Value/Importance/Usefulness of Research in Social Work Practice
- Ethics
- Siegel, D. H. (1985). Effective teaching of empirically based practice. *Social Work Research and Abstracts*, 21, 40 – 48.
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- Siegel, D. H. (1985). Effective teaching of empirically based practice. *Social Work Research and Abstracts*, 21, 40 – 48.
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270	"Past studies have demonstrated that social workers do not like research, do not see its usefulness, and are not likely to read reports of research "	Value/Importance/Usefulness of Research in Social Work Practice	Olsen, L. (1990). Integrating a practice orientation into the research curriculum: The effect on knowledge and attitudes [Electronic Version]. <i>Journal of Social Work Education</i> , 26 (2), 155 – 161.	1
271	"Past studies have demonstrated that social workers do not like research, do not see its usefulness, and are not likely to read reports of research "	Student/Faculty Perceptions of Research in Social Work Education	Olsen, L. (1990). Integrating a practice orientation into the research curriculum: The effect on knowledge and attitudes [Electronic Version]. <i>Journal of Social Work Education</i> , 26 (2), 155 – 161.	1

- 272 "students who complete a graduate program that stresses the integration of research and practice may leave that program with more favorable attitudes toward research than they had when they began their training." Student/Faculty Perceptions of Research in Social Work Education Olsen, L. (1990). Integrating a practice orientation into the research curriculum: The effect on knowledge and attitudes [Electronic Version]. *Journal of Social Work Education*, 26 (2), 155 – 161. 4
- 273 "Results, effectiveness of practices, and demonstrable outcomes are essential to funding and job security." Value/Importance/Usefulness of Research in Social Work Practice Kurtz, D. (1999). Research on practice: Better than you think [Electronic Version]. *Social Work in Education*, 21(1), 3 – 9. 1
- 274 "Assumptions for empirically based practice include a need for social workers to learn research methods and be able to apply them in practice..." Assumptions of Empirically Based Social Work Practice Kurtz, D. (1999). Research on practice: Better than you think [Electronic Version]. *Social Work in Education*, 21(1), 3 – 9. 1 to 2
- 275 "Assumptions for empirically based practice include...a need for social workers to be savvy consumers of research knowledge by gleaning the "best practices" from research studies and thus applying the most effective interventions..." Assumptions of Empirically Based Social Work Practice Kurtz, D. (1999). Research on practice: Better than you think [Electronic Version]. *Social Work in Education*, 21(1), 3 – 9. 2

- 276 "Assumptions for empirically based practice include...an ethical commitment of social workers to monitor and evaluate the effectiveness of their own individual practices through use of outcome measurement and single-case design methods..."
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- 277 "Assumptions for empirically based practice include...the need for social workers to participate in generating research studies that will demonstrate the effectiveness of existing social work practices..."
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- 278 "Assumptions for empirically based practice include...the need for practitioners to develop and test new practices as they evolve..."
- Assumptions of Empirically Based Social Work Practice
- Kurtz, D. (1999). Research on practice: Better than you think [Electronic Version]. *Social Work in Education*, 21(1), 3 – 9.
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- 279 "The scientist-practitioner framework encouraged social workers to rigorously evaluate the effects of intervention with clients by using research strategies associated with single-subject design."
- Assumptions of Empirically Based Social Work Practice
- Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence-based practice. *Social Work Research*, 29 (3), 131 – 135.
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- 280 "Assumptions for empirically based practice include...a need for social workers to be savvy consumers of research knowledge by gleaning the "best practices" from research studies and thus applying the most effective interventions..."
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- 281 "Assumptions for empirically based practice include...an ethical commitment of social workers to monitor and evaluate the effectiveness of their own individual practices through use of outcome measurement and single–case design methods..."
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- 282 "Assumptions for empirically based practice include...the need for social workers to participate in generating research studies that will demonstrate the effectiveness of existing social work practices..."
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- 283 "Assumptions for empirically based practice include...the need for practitioners to develop and test new practices as they evolve..."
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Kurtz, D. (1999). Research on practice: Better than you think [Electronic Version]. *Social Work in Education*, 21(1), 3 – 9. 2

- 284 "The integration of science and intervention is an important, yet elusive, goal in social work practice and research." The Nature of Social Work & it's Relation to Research Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence-based practice. *Social Work Research*, 29 (3), 131 – 135. 131
- 285 "In an oft-cited paper dating to the early 20th century, Flexner (1915) grappled with the question of whether social work was a legitimate profession. He also noted the relatively weak integration between research and practice that characterized early social intervention." The Nature of Social Work & it's Relation to Research Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence-based practice. *Social Work Research*, 29 (3), 131 – 135. 131
- 286 "...EBP involves a series of steps that includes locating empirical evidence about an intervention..." Assumptions of Empricially Based Social Work Practice Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence-based practice. *Social Work Research*, 29 (3), 131 – 135. 133
- 287 "...EBP involves a series of steps that includes...carefully appraising the validity and utility of this evidence..." Assumptions of Empricially Based Social Work Practice Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence-based practice. *Social Work Research*, 29 (3), 131 – 135. 133

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| 288 | "...EBP involves a series of steps that includes...and applying the results of such an appraisal in an ethical fashion..." | Assumptions of Empirically Based Social Work Practice | Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence-based practice. <i>Social Work Research</i> , 29 (3), 131 – 135. | 133 |
| 289 | "...EBP involves a series of steps that includes locating empirical evidence about an intervention..." | Research & Social Work Interventions | Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence-based practice. <i>Social Work Research</i> , 29 (3), 131 – 135. | 133 |
| 290 | "...EBP involves a series of steps that includes...and applying the results of such an appraisal in an ethical fashion..." | Ethics | Jenson, J. M. (2005). Connecting science to intervention: Advances, challenges, and the promise of evidence-based practice. <i>Social Work Research</i> , 29 (3), 131 – 135. | 133 |
| 291 | "...drawing on knowledge of research methods, the reader must critically review and evaluate the effectiveness of potential interventions." | Research & Social Work Interventions | Proctor, E. K. (2001). Building and consolidating knowledge for practice. <i>Social Work Research</i> , 25 (4), 195 – 197. | 195 |

292	"Yet for most social workers, time and resource constraints make it all but impossible to locate...relevant research on a case-by-case basis."	Agency	Proctor, E. K. (2001). Building and consolidating knowledge for practice. <i>Social Work Research</i> , 25 (4), 195 – 197).	195
293	"Yet for most social workers, time and resource constraints make it all but impossible to...assemble...relevant research on a case-by-case basis."	Agency	Proctor, E. K. (2001). Building and consolidating knowledge for practice. <i>Social Work Research</i> , 25 (4), 195 – 197).	195
294	"Yet for most social workers, time and resource constraints make it all but impossible to ...integrate...relevant research on a case-by-case basis."	Agency	Proctor, E. K. (2001). Building and consolidating knowledge for practice. <i>Social Work Research</i> , 25 (4), 195 – 197).	195
295	"Yet for most social workers, time and resource constraints make it all but impossible to ...critically assess...relevant research on a case-by-case basis."	Agency	Proctor, E. K. (2001). Building and consolidating knowledge for practice. <i>Social Work Research</i> , 25 (4), 195 – 197).	195
296	"Yet for most social workers, time and resource constraints make it all but impossible to ...apply the relevant research on a case-by-case basis."	Agency	Proctor, E. K. (2001). Building and consolidating knowledge for practice. <i>Social Work Research</i> , 25 (4), 195 – 197).	195

- 297 **"Empirically-based practice** can take various forms; however, common underlying beliefs and assumptions can be identified.[1] The most encompassing of these beliefs is that social work research (and, by implication, **practice**) **should be based** on the canons of conventional science—an empiricist epistemology, realist ontology, and a deterministic view of human nature." The relevance of research to practice is not found in the conduct of research-based evaluations or in accommodating the assumptions and methodological desiderata of the empirical model...Thus, the social worker's greatest need is to understand, evaluate, assess, analyze, and use this information in ways that will serve their clients.
- 298 "...students **should** learn how theory and research construct and maintain individual and social problems..."
- 299
- The Nature of Social Work & it's Relation to Research
- Assumptions of Empricially Based Social Work Practice
- Value/Importan ce/Usefulness of Research in Social Work Practice
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 1
- 2
- 3

- 300 "...students *should* learn...how models of inquiry influence *practice* knowledge..."
- Trustworthiness of Social Work Research
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3
- 301 "...students *should* learn...how underlying value positions are expressed through research."
- Trustworthiness of Social Work Research
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3
- 302 "They must also learn that research and evaluation are not limited to determining effectiveness but can be an important means of facilitating empowerment and social change."
- Value/Importance/Usefulness of Research in Social Work Practice
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3
- 303 "Is social work primarily a technology-driven methodology, or is it a set of ideas, values, and beliefs about individuals and society?"
- The Nature of Social Work & it's Relation to Research
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3

- 304 "Is the purpose of social work *practice* the prediction and control of behavior..."
- The Nature of Social Work & it's Relation to Research
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3
- 305 "Is the purpose of social work practice...human emancipation, empowerment, and social change."
- The Nature of Social Work & it's Relation to Research
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3
- 306 "*Empirically-based practice* corresponds to an individualistic, method-driven view of social work, whose objectives are prediction and control."
- The Nature of Social Work & it's Relation to Research
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3
- 307 "*Empirically-based practice* corresponds to an individualistic, method-driven view of social work, whose objectives are prediction and control."
- Assumptions of Empricially Based Social Work Practice
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3

- 308 "By oversubscribing to the empirical model, we risk valuing effectiveness questions over moral ones, goal achievement over goal worthiness, and empirical data over personal, lived experience."
- The Nature of Social Work & it's Relation to Research
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3
- 309 "Research and evaluation *should* be participatory, emancipatory, and social change-oriented and, moreover, conducted within the context of social work values."
- The Nature of Social Work & it's Relation to Research
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3
- 310 "*Empirically-based practice* is a legitimate part of social work education."
- The Nature of Social Work & it's Relation to Research
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3
- 311 "*Empirically-based practice* is a legitimate part of social work education."
- Beliefs about Research and Social Work Practitce/EBP in Social Work Education
- Witkin, S. L. (1992). Should empirically-based practice be taught in BSW and MSW programs? No [Electronic Version]! *Journal of Social Work Education, 28* (3), 265 – 269.
- 3

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|-----|---|---|--|----|
| 312 | "Certainly, no responsible social worker would state that we should not use relevant research in our practice." | Assumptions of Empirically Based Social Work Practice | Gilgun, J. F. (2005). The four cornerstones of evidence-based practice in social work. <i>Research on Social Work Practice, 15</i> (1), 52 – 61. | 58 |
| 313 | "Yet in work with clients, social workers need to know far more than what is available in research reports. Therefore, in addition to relevant research, we have to depend on values as represented in the National Association of Social Workers Code of Ethics,..." | Ethics | Gilgun, J. F. (2005). The four cornerstones of evidence-based practice in social work. <i>Research on Social Work Practice, 15</i> (1), 52 – 61. | 58 |
| 314 | "Is social work best viewed as a positivistic endeavor?" | Philosophy of Science (Positivism) | Gilgun, J. F. (2005). The four cornerstones of evidence-based practice in social work. <i>Research on Social Work Practice, 15</i> (1), 52 – 61. | 58 |
| 315 | "Effective practitioners base their work on conceptual frameworks drawn from the best available research..." | Assumptions of Empirically Based Social Work Practice | Gilgun, J. F. (2005). The four cornerstones of evidence-based practice in social work. <i>Research on Social Work Practice, 15</i> (1), 52 – 61. | 59 |
| 316 | "...U.S. social work practice will benefit from increased research activity,..." | Assumptions of Empirically Based Social Work Practice | Gilgun, J. F. (2005). The four cornerstones of evidence-based practice in social work. <i>Research on Social Work Practice, 15</i> (1), 52 – 61. | 59 |

- 317 “Like nursing administrators, social work administrators have the responsibility to allow social worker practitioners to have the time to become familiar with research relevant to their practice.” Agency Gilgun, J. F. (2005). The four cornerstones of evidence-based practice in social work. *Research on Social Work Practice, 15* (1), 52 – 61. 59
- 318 “On one hand, social workers are enjoined to do EBP, and, on the other, they do not have the time and resources to deepen their understanding of research relevant to their practice.” Agency Gilgun, J. F. (2005). The four cornerstones of evidence-based practice in social work. *Research on Social Work Practice, 15* (1), 52 – 61. 59
- 319 "...the report calls for more research training for social work students with an emphasis on utilization and proficiency in methods and analytic techniques (particularly at the graduate level),..." Beliefs about Research and Social Work Practitce/EBP in Social Work Education Witkin, S. L. (1995). Whither social work research? An essay review. *Social Work, 40* (3), 424 – 428. 426
- 320 "...the report advocates for strengthening accreditation standards pertaining to research and the integration of research and practice,..." Beliefs about Research and Social Work Practitce/EBP in Social Work Education Witkin, S. L. (1995). Whither social work research? An essay review. *Social Work, 40* (3), 424 – 428. 426
- 321 "The report is also valuable to the extent that it helps others view social work as a profession that has a significant and important research dimension." Beliefs about Research and Social Work Practitce/EBP in Social Work Education Witkin, S. L. (1995). Whither social work research? An essay review. *Social Work, 40* (3), 424 – 428. 427

- 322 "The report is also valuable to the extent that it helps others view social work as a profession that has a significant and important research dimension."
Assumptions of Empricially Based Social Work Practice Witkin, S. L. (1995). Whither social work research? An essay review. *Social Work, 40* (3), 424 – 428. 427
- 323 "The report is also valuable to the extent that it helps others view social work as a profession that has a significant and important research dimension."
The Nature of Social Work & it's Relation to Research Witkin, S. L. (1995). Whither social work research? An essay review. *Social Work, 40* (3), 424 – 428. 427
- 324 "Social work has always struggled with its research identity. Unlike related disciplines and professions such as psychology, sociology, and psychiatry, social work has no unique subject matter or methodology."
The Nature of Social Work & it's Relation to Research Witkin, S. L. (1995). Whither social work research? An essay review. *Social Work, 40* (3), 424 – 428. 427
- 325 "...many social work professionals contend that scientific research is an inadequate source of knowledge for practice."
Assumptions of Empricially Based Social Work Practice Faver, C. A., Fox, M. F., Hunter, M. S., & Shannon, C. (1986). Research and practice: Orientations of social work educators. *Social Work*, [Volume and Issue not provided–July–August], 282 – 286. 283

- 326 "Today, wherever professional social workers turn to – to consumers,...– the request is that same: show that your efforts on behalf of clients are beneficial, that your intereventions are effective, that your clients are helped, and that your work makes a difference."
Value/Importance/Usefulness of Research in Social Work Practice
Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. *Social Work, 21*, 121 – 124. 121
- 327 "Today, wherever professional social workers turn to –...to public and private funding bodies...– the request is that same: show that your efforts on behalf of clients are beneficial, that your intereventions are effective, taht your clients are helped, and that your work makes a difference."
Value/Importance/Usefulness of Research in Social Work Practice
Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. *Social Work, 21*, 121 – 124. 121
- 328 "Today, wherever professional social workers turn to –...to their professional colleagues...– the request is that same: show that your efforts on behalf of clients are beneficial, that your intereventions are effective, taht your clients are helped, and that your work makes a difference."
Value/Importance/Usefulness of Research in Social Work Practice
Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. *Social Work, 21*, 121 – 124. 121
- 329 "One way to achieve accountability in practice is to evaluate professional intervention and to have social workers incorporate the resulting knowledge into their practice."
Value/Importance/Usefulness of Research in Social Work Practice
Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. *Social Work, 21*, 121 – 124. 121

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|-----|--|---|---|-----|
| 330 | <p>"The barriers to the production of good evaluative research which are described elsewhere are both methodological and political."</p> | Trustworthiness
of Social Work
Research | <p>Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. <i>Social Work, 21</i>, 121 – 124.</p> | 121 |
| 331 | <p>"Obstacles to the utilization of research findings are created by researchers who fail to translate their findings into specific recommendations that would be useful to program administration, by program administrators who resist the organizational and programmatic changes suggested by evaluation, and by practitioners whose biases regarding their favorite technique may make it difficult for them to interpret objectively relevant research."</p> | Agency | <p>Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. <i>Social Work, 21</i>, 121 – 124.</p> | 121 |

- 332 "Obstacles to the utilization of research findings are created by researchers who fail to translate their findings into specific recommendations that would be useful to program administration, by program administrators who resist the organizational and programmatic changes suggested by evaluation, and by practitioners whose biases regarding their favorite technique may make it difficult for them to interpret objectively relevant research."
- Agency
- Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. *Social Work, 21*, 121 – 124.
- 121
- 333 "...past surveys of practitioners have found that although they say they value research, their effective utilization of research is minimal."
- Assumptions of Empricially Based Social Work Practice
- Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. *Social Work, 21*, 121 – 124.
- 121
- 334 "Obviously other factors not included in this study can influence patterns of utilization...It can be speculated, for example, that an important variable might be a knowledge of research methodology; that those social workers with greater competence in research may be more likely to produce and consume social work research."
- Use of Research for Social Work Interventions
- Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. *Social Work, 21*, 121 – 124.
- 123 to 124

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|-----|--|--|---|-----|
| 335 | "Also, the organizational climate of an agency can stimulate or inhibit the involvement of its practitioners in research." | Agency | Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. <i>Social Work, 21</i> , 121 – 124. | 124 |
| 336 | "Agencies that have a commitment to the systemic application and evaluation of practice may demand that workers stay involved in as producers and consumers of research." | Agency | Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. <i>Social Work, 21</i> , 121 – 124. | 124 |
| 337 | "A social worker who questions the effectiveness of his interventions may become more involved in producing, utilizing, or consuming research." | Value/Importance/Usefulness of Research in Social Work Practice | Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. <i>Social Work, 21</i> , 121 – 124. | 124 |
| 338 | "A fourth factor that could influence patterns of utilization is that the schools of social work and the manner in which they teach research and statistics vary greatly." | Student/Faculty Perceptions of Research in Social Work Education | Kirk, S. A., Osmalov, M. J., & Fischer, J. (1976). Social workers' involvement in research. <i>Social Work, 21</i> , 121 – 124. | 124 |

- 339 "Unless courses offer a more sophisticated level of learning than he is used to, and Walsh indicates that this is not always the case, 'the better prepared student takes this as a negative cue concerning the relationship of social work practice to intellectual knowledge.' Under these conditions, the student is less inclined to assume a questioning investigatory attitude which is a vital part of research."
- Student/Faculty Perceptions of Research in Social Work Education
- Casselman, B. L. (1972). On the practitioner's orientation toward research. *Smith College Studies in Social Work*, 42, 211 – 233.
- 212
- 340 "Walsh asserted that the student received a negative cue regarding research's place in practice because of the emphasis placed on field work in the curriculum."
- Student/Faculty Perceptions of Research in Social Work Education
- Casselman, B. L. (1972). On the practitioner's orientation toward research. *Smith College Studies in Social Work*, 42, 211 – 233.
- 229
- 341 "'Do more scientifically oriented students, he wondered, go into more academic and less service oriented disciplines?'"
- Reasons for Choosing SWK
- Casselman, B. L. (1972). On the practitioner's orientation toward research. *Smith College Studies in Social Work*, 42, 211 – 233.
- 227
- 342 "Gockel discovered that students with the highest academic performance were least likely to be interested in social work as a career."
- Reasons for Choosing SWK
- Casselman, B. L. (1972). On the practitioner's orientation toward research. *Smith College Studies in Social Work*, 42, 211 – 233.
- 228

343	"If we then follow Warkov and Gockel's findings, this means that social work attracts fewer students who are likely to participate in research."	Reasons for Choosing SWK	Casselmann, B. L. (1972). On the practitioner's orientation toward research. <i>Smith College Studies in Social Work</i> , 42, 211 – 233.	228
344	"Thus persons who did research were viewed as being less interested in helping people, and researchers did not express a desire to be helpful as often as did non-researchers."	Reasons for Choosing SWK	Casselmann, B. L. (1972). On the practitioner's orientation toward research. <i>Smith College Studies in Social Work</i> , 42, 211 – 233.	228

Appendix C

Satisfaction with Life Scale (Diener et al., 1985) Items & Response Format

Items

1. In most ways my life is close to ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Response Format: Likert 7 Point Scale

- Strongly Disagree (1)
- Disagree (2)
- Slightly Disagree (3)
- Neither Agree no Disagree (4)
- Slightly Agree (5)
- Agree (6)
- Strongly Agree (7)

Appendix D

Invited Subject Matter Experts: Names and Contact Information				
ID Number	Last Name	First Name	Email Address	Mailing Address
1	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
2	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
3	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
4	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
5	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
6	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
7	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity

8	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
9	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
10	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
11	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
12	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
13	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
14	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
15	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity

16	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
17	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
18	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
19	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity
20	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity	Removed to maintain the participant's anonymity

Appendix E^{1, 2, 3}

Gregory Research Beliefs Scale – Items and Constructs

Item ID Number	GRBS Test Item	Hypothesized Construct
1	Employers favor social workers who have knowledge of research.	Agency Support for Research ⁴
2	Human service organizations are willing to pay for their employees to be trained in evidence-based practice.	Agency Support for Research
3	Employers pay social workers more when social workers are knowledgeable about research.	Agency Support for Research
4	Social workers can influence agency policies if they are knowledgeable about research methods.	Agency Support for Research
5	Agencies prevent social workers from implementing empirically supported treatment.	Agency Support for Research
6	Agencies allow social workers time to locate relevant research studies.	Agency Support for Research
7	Social work students who know research tend to get better practicum placements.	Agency Support for Research
8	Employers expect social workers to know what interventions are empirically supported.	Agency Support for Research
9	Social workers are frequently required by their agencies to read research studies.	Agency Support for Research
10	The NASW code of ethics plays a big role in making agencies want to adopt research based treatments.	Agency Support for Research

11	Agencies require social workers to produce research.	Agency Support for Research
12	Agencies are supportive of social workers who wish to engage in research.	Agency Support for Research
13	Social work administrators encourage social work practitioners to review research on social problems.	Agency Support for Research
14	Managed care is an incentive for agencies to train their employees in empirically supported treatments.	Agency Support for Research
15	Social service agencies encourage social workers to use research to guide their interventions.	Agency Support for Research
16	Social work practicum supervisors expect students to have some expertise in research.	Agency Support for Research
17	Social work supervisors typically have some expertise in research.	Agency Support for Research
18	Social service agencies want to hire social workers who know how to evaluate client outcomes.	Agency Support for Research
19	Research course work is an excellent way to prepare social work students for problems encountered in agency settings.	Agency Support for Research
20	A social worker who understands research can encourage an agency to conduct research in the agency.	Agency Support for Research

1	Relying on research is better than relying on practice wisdom.	General Value of Research for Social Work Practice ⁵
2	Program administrators must be knowledgeable about research methods.	General Value of Research for Social Work Practice

3	Applying research findings to practice is an important aspect of the social work profession.	General Value of Research for Social Work Practice
4	Research is useful for explaining treatment recommendations to clients.	General Value of Research for Social Work Practice
5	A social worker who understands research is better able to apply research findings.	General Value of Research for Social Work Practice
6	Social workers with research knowledge get higher pay.	General Value of Research for Social Work Practice
7	Research can be an effective tool for empowering oppressed populations.	General Value of Research for Social Work Practice
8	Social work practice is best when it is based on research findings.	General Value of Research for Social Work Practice
9	Competence in research will allow a social worker to contribute more to the profession.	General Value of Research for Social Work Practice
10	Managed care companies are more likely to reimburse social workers who base their interventions on research.	General Value of Research for Social Work Practice
11	Research helps social workers predict client behavior.	General Value of Research for Social Work Practice
12	Knowing research makes you a better practitioner.	General Value of Research for Social Work Practice
13	Scientific data is essential when advocating for policy reform.	General Value of Research for Social Work Practice
14	Expertise in research is vital to a career in social work.	General Value of Research for Social Work Practice

15	Research is needed for social service programs to obtain funding.	General Value of Research for Social Work Practice
16	Research provides the best answers to treatment issues encountered in social work practice.	General Value of Research for Social Work Practice
17	Research studies are a powerful tool for helping social workers understand disadvantaged populations.	General Value of Research for Social Work Practice
18	Clients have the best outcomes when they receive treatment that is supported by research.	General Value of Research for Social Work Practice
19	Social workers are far less likely to be sued if they apply research findings to their practice.	General Value of Research for Social Work Practice
20	Research is essential for developing effective social policies.	General Value of Research for Social Work Practice
21	Adopting social work practice that is supported by research protects clients from harm.	General Value of Research for Social Work Practice
22	Social workers can find useful information by reviewing research studies.	General Value of Research for Social Work Practice
<hr/>		
1	The social work profession is known for producing high quality research.	Quality of Social Work Research ⁶
2	Studies produced by social workers have a huge effect on client populations.	Quality of Social Work Research
3	Research produced by social workers is not negatively influence by values.	Quality of Social Work Research
4	Social workers conduct research in an honest manner.	Quality of Social Work Research

5	Social work researchers are good at what they do.	Quality of Social Work Research
6	Social work research is of very poor quality.	Quality of Social Work Research
7	Social work researchers are self-critical.	Quality of Social Work Research
8	Published social work research is understandable.	Quality of Social Work Research
9	Published social work studies are not interesting to social work students.	Quality of Social Work Research
10	It is rare to find flaws in social work research.	Quality of Social Work Research
11	Social work research is not negatively influenced by politics.	Quality of Social Work Research
12	Social work research is not rigorous enough to be called scientific.	Quality of Social Work Research
13	The social work profession produces excellent research.	Quality of Social Work Research
14	Social work journals only publish trustworthy research.	Quality of Social Work Research
15	The current status of social work research will advance the profession.	Quality of Social Work Research
16	Social work is known for producing unbiased research.	Quality of Social Work Research

17	Compared to psychology, social work research is highly credible.	Quality of Social Work Research
18	Social work researchers are highly competent.	Quality of Social Work Research
19	Research done by social workers has greatly improved the social work profession.	Quality of Social Work Research
20	Research produced by social workers is well respected by other professional helpers.	Quality of Social Work Research
21	Social work research effectively explains problems experienced by social work clients.	Quality of Social Work Research
22	Peer reviewed social work journals are an excellent source of knowledge for direct practitioners.	Quality of Social Work Research
23	Social work research is highly relevant for today's social problems.	Quality of Social Work Research
24	Research is a valuable part of social work education.	Quality of Social Work Research
25	Students should trust social work research.	Quality of Social Work Research

1	The best social work education teaches students to locate research about intervention effectiveness.	The Use of Research in Social Work Interventions ⁷
2	A social worker is far more likely to recommend appropriate interventions if they have a positive attitude toward research.	The Use of Research in Social Work Interventions
3	Effective social work interventions are evidence-based.	The Use of Research in Social Work Interventions

4	The most effective social work interventions are the result of many rigorous studies.	The Use of Research in Social Work Interventions
5	The effects of a social work intervention must be evaluated.	The Use of Research in Social Work Interventions
6	Research courses do not help students implement social work interventions.	The Use of Research in Social Work Interventions
7	Social workers must be able to explain to clients what the research says about a particular treatment recommendation.	The Use of Research in Social Work Interventions
8	The most successful social work practitioners use interventions that are supported by research.	The Use of Research in Social Work Interventions
9	Research is excellent evidence for determining what interventions help clients.	The Use of Research in Social Work Interventions
10	A career in social work should involve both reading and applying research findings to practice.	The Use of Research in Social Work Interventions
11	Using interventions based on research is the best way to help disadvantaged populations.	The Use of Research in Social Work Interventions
12	An intervention should only be used after it has been thoroughly evaluated in research studies.	The Use of Research in Social Work Interventions
13	Social work interventions are greatly enhanced by the use of standardized instruments.	The Use of Research in Social Work Interventions
14	Conducting research is a crucial component of social work practice.	The Use of Research in Social Work Interventions
15	Scientific studies help social workers to determine what interventions are successful.	The Use of Research in Social Work Interventions

16	Empirically supported interventions should always be the first treatment offered to clients.	The Use of Research in Social Work Interventions
17	It is better to base social work interventions on research, rather than tradition.	The Use of Research in Social Work Interventions
18	Basic social work helping skills are greatly enhanced by research.	The Use of Research in Social Work Interventions
19	Practice guidelines are an excellent way to select effective social work interventions.	The Use of Research in Social Work Interventions
20	Social work interventions can be enhanced by qualitative research.	The Use of Research in Social Work Interventions
21	Social work interventions should be guided by detailed manuals or protocols.	The Use of Research in Social Work Interventions
22	Social workers must quantitatively evaluate their clients' outcomes before they can be called good practitioners.	The Use of Research in Social Work Interventions

¹The factor structure seen in this appendix was hypothesized before the deletion of 15 items from the GRBS

²All of the items seen in this appendix were not distributed to the pilot study

³All of the items seen in this appendix were not rated by SMEs



⁴Agency Support for Research – Items belonging to this construct represent the agencies' views of research in social work practice, implications for hiring or recruiting social work talent, and expectations regarding the agency expectations about research and social work practice.



⁵General Value of Research for Social Work Practice – This construct is represented by items which reflect the benefits and advantages of applying research to social work practice.

⁶Quality of Social Work Research – This construct represents the scientific rigor, worth, and status of both social work research and researchers.

⁷Use of Research in Social Work Interventions – Items belonging to this construct reflect specific ways in which research is applied to social work interventions and the various ways that research influences social work interventions.

Appendix F

Inbox: RE: Survey for MSW Students (227 of 319)  

Mark as: Move | Copy Back to Inbox  

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Date: Mon, 5 May 2008 14:57:35 -0400 [05/05/2008 02:57:35 PM EDT]
From: "Westhuis, David J" <dwesthuis@iupui.edu>
To: "Gregory Jr, Virgil Lee" <virgil@iupui.edu>
Subject: RE: Survey for MSW Students
Headers: [Show All Headers](#)

You have my permission to do this. You might want to make up an email for me and I can send it out under my name or you can go directly to the MSW listserv. Timing here is an important issue. They have just been surveyed on the whole MSW program and I am afraid they might get the two surveys confused and this could impact your response rate. Let me know what you want to do.

Dave

-----Original Message-----

From: Gregory Jr, Virgil Lee
 Sent: Friday, May 02, 2008 2:05 PM
 To: Westhuis, David J
 Subject: Survey for MSW Students

Hello Dr. Westhuis. For my dissertation I have developed a scale that measures social work students perceptions regarding research and social work practice. I would like to administer this survey to MSW students at IUPUI. I am now ready to distribute the survey to MSW students. With your permission, I would like to do so.

If I have your permission to distribute this survey online to MSW students (via email, a link to the survey monkey website will be in the text of the message). How should I go about sending the MSW students the email and survey link that invites them to participate. Do I need to meet with someone? Or should I email someone the cover letter and link to my survey? I have also forwarded an email from the IRB that states that my study has been approved.

Thanks again,

Virgil

--

Virgil Gregory Jr., MSW,LSW; PhD Candidate (IUSSW) Indiana University Purdue University Indianapolis

Appendix G

Irene Queiro-Tajalli, Ph.D.
 Executive Director of BSW Program
 Professor
 Indiana University School of Social Work

Study Proposal: Online Survey for IUPUI MSW and BSW students

I would like to use the IUPUI BSW listserv to elicit participation in my survey pertaining to social work students' beliefs about research and social work practice. The scale that I am seeking to validate is the Research and Social Work Practice Belief Scale (RSWPBS). The listserv message that will be sent to the BSW students will have a link to the website where the RSWPBS and the Satisfaction with Life Scale (SWLS) can be taken. I will also be collecting demographic data from each participant regarding the number of research courses taken, the undergraduate status (freshman, sophomore, etc.), age, gender, race, amount of human service experience.

I will send three reminders for students to take the survey in two week intervals, with the first reminder coming two weeks after the initial message is posted to the listserv. An informed consent will be attached to all emails which will be sent to the listserv. I am also seeking to include IUPUI MSW students in the sample as well. If you allow me to use the IUPUI BSW listserv to ask students if they would like to participate in the survey I would proceed to do the following things with their responses.

I will examine the scales factor structure via confirmatory factor analysis (CFA) and principal component analysis (PCA). Various multivariate statistics will be used to determine the concurrent criterion validity of the RSWPBS. Coefficient/Cronbach's alpha statistics will be computed for each of the factors in the RSWPBS. Confirmatory factor analysis and PCA will be used to examine the RSWPBS's discriminant validity with regard to the SWLS. Other statistical computations may be completed depending on the data that is retrieved.

Students' names and email addresses will not be elicited, collected, or required to participate in the survey. I will be asking the IRB to waive the participants' signature from the informed consent.

Your time and consideration is greatly appreciated. Please express your acceptance or refusal of this proposal by checking one of the boxes below.

Virgil L. Gregory Jr.,
 MSW, LSW, PhD Candidate

Accept Refuse

Irene Queiro-Tajalli, Ph.D.


3/10/08
 Date


Appendix H



Mark as: Move | Copy [Back to Inbox](#) 

[Delete](#) | [Reply](#) | [Reply to All](#) | [Forward](#) | [Redirect](#) | [View Thread](#) | [Message Source](#) | [Save as](#) | [Print](#) | [Report as Spam](#)

Date: Sun, 14 Oct 2007 16:16:10 -0400 [10/14/2007 04:16:10 PM EST]

From: "Patchner, Michael" 

To: "Gregory Jr, Virgil Lee" 

Cc: "Westhuis, David J" , "Queiro-Tajalli, Irene R." 

Subject: Re: MSW and BSW Student Sample

Headers: [Show All Headers](#)

This message was written in a character set (utf-8) other than your own.
If it is not displayed correctly, [click here](#) to open it in a new window.

Virgil,

Sure, from my perspective it ok as long as your Committee's and the IRB approve. Make sure David Westhuis and Irene Queiro-Tajalli are aware of your study and approve of your surveying their students.

I wish you all the best with your research.

Mike Patchner

Sent from my BlackBerry Wireless Handheld

——— Original Message ———

From: Gregory Jr, Virgil Lee

To: Patchner, Michael

Sent: Sun Oct 14 12:02:40 2007

Subject: MSW and BSW Student Sample

Hello Dr. Patchner. My dissertation is on the development of a scale that reliably and validly measures social work students attitudes toward the function of research in social work practice.

I intend to examine the scales factor structure and divergent construct validity, both with a confirmatory factor analysis (CFA) and a principal component analysis. I also plan to examine the scale's internal consistency via Cronbach's/coefficient alpha, and use other multivariate statistics to determine the scale's concurrent criterion validity.

I was seeking your approval regarding my ability to use IUSSW MSW and BSW students as a sample. The survey would be conducted online via survey monkey. I was a little unsure who I should direct my question to

and I also sent Dr. Westhuis a similar email. I have attached the abstract from my research proposal and would be willing to meet with you to further discuss the request or provide any other information that you might need.

Respectfully,

Virgil

—

Virgil Gregory Jr., MSW,LSW; PhD Candidate (IUSSW)
Indiana University Purdue University Indianapolis

Appendix I

Items Eliminated from the GRBS

1. The current status of social work research will advance the profession.
 2. Studies produced by social workers have a huge effect on client populations.
 3. Published social work studies are not interesting to social work students.
 4. Conducting research is a crucial component of social work practice.
 5. Scientific studies help social workers to determine what interventions are successful.
 6. A social worker who understands research is better able to apply research findings.
 7. Employers favor social workers who have knowledge of research.
 8. Employers pay social workers more when social workers are knowledgeable about research.
 9. It is better to base social work interventions on research, rather than tradition.
 10. The social work profession is known for producing high quality research.
 11. A career in social work should involve both reading and applying research findings to practice.
 12. Social workers must quantitatively evaluate their clients' outcomes before they can be called good practitioners.
 13. Social workers can find useful information by reviewing research studies.
 14. Clients have the best outcomes when they receive treatment that is supported by research.
 15. Research produced by social workers is not negatively influence by values.
-

Appendix J^{1,2,3}**GRBS – Four Factor Model Hypothesized Factor Structure**

Item ID Number	GRBS Test Item	Hypothesized Construct
4	Program administrators must be knowledgeable about research methods.	Agency Support for Research ⁴
12	Human service organizations are willing to pay for their employees to be trained in evidence-based practice.	Agency Support for Research
17	A social worker who understands research can encourage an agency to conduct research in the agency.	Agency Support for Research
20	Social workers can influence agency policies if they are knowledgeable about research methods.	Agency Support for Research
24	Agencies prevent social workers from implementing empirically supported treatment.	Agency Support for Research
38	Agencies allow social workers time to locate relevant research studies.	Agency Support for Research
39	Social work students who know research tend to get better practicum placements.	Agency Support for Research
44	Employers expect social workers to know what interventions are empirically supported.	Agency Support for Research
45	Social workers are frequently required by their agencies to read research studies.	Agency Support for Research
46	The NASW code of ethics plays a big role in making agencies want to adopt research based treatments.	Agency Support for Research

48	Agencies require social workers to produce research.	Agency Support for Research
50	Research is needed for social service programs to obtain funding.	Agency Support for Research
51	Agencies are supportive of social workers who wish to engage in research.	Agency Support for Research
53	Social work administrators encourage social work practitioners to review research on social problems.	Agency Support for Research
56	Managed care is an incentive for agencies to train their employees in empirically supported treatments.	Agency Support for Research
58	Social service agencies encourage social workers to use research to guide their interventions.	Agency Support for Research
59	Social work practicum supervisors expect students to have some expertise in research.	Agency Support for Research
61	Social work supervisors typically have some expertise in research.	Agency Support for Research
70	Social service agencies want to hire social workers who know how to evaluate client outcomes.	Agency Support for Research
<hr/>		
2	Relying on research is better than relying on practice wisdom.	General Value of Research for Social Work Practice ⁵
7	Research is useful for explaining treatment recommendations to clients.	General Value of Research for Social Work Practice

8	Social workers with research knowledge get higher pay.	General Value of Research for Social Work Practice
9	Research can be an effective tool for empowering oppressed populations.	General Value of Research for Social Work Practice
10	Social work practice is best when it is based on research findings.	General Value of Research for Social Work Practice
13	Competence in research will allow a social worker to contribute more to the profession.	General Value of Research for Social Work Practice
14	Insurance companies are more likely to reimburse social workers who base their interventions on research.	General Value of Research for Social Work Practice
30	Research is excellent evidence for determining what interventions help clients.	General Value of Research for Social Work Practice
31	Research helps social workers predict client behavior.	General Value of Research for Social Work Practice
40	Knowing research makes you a better practitioner.	General Value of Research for Social Work Practice
42	Scientific data is essential when advocating for policy reform.	General Value of Research for Social Work Practice

43	Expertise in research is vital to a career in social work.	General Value of Research for Social Work Practice
54	Research provides the best answers to treatment issues encountered in social work practice.	General Value of Research for Social Work Practice
62	Basic social work helping skills are greatly enhanced by research.	General Value of Research for Social Work Practice
64	Research studies are a powerful tool for helping social workers understand disadvantaged populations.	General Value of Research for Social Work Practice
68	Social workers are far less likely to be sued if they apply research findings to their practice.	General Value of Research for Social Work Practice
69	Research is a valuable part of social work education.	General Value of Research for Social Work Practice
71	Research is essential for developing effective social policies.	General Value of Research for Social Work Practice
73	Research course work is an excellent way to prepare social work students for problems encountered in agency settings.	General Value of Research for Social Work Practice
74	Adopting social work practice that is supported by research protects clients from harm.	General Value of Research for Social Work Practice

11	Research produced by social workers is negatively influence by values.	Quality of Social Work Research ⁶
15	Social workers conduct research in an honest manner.	Quality of Social Work Research
16	Social work researchers are good at what they do.	Quality of Social Work Research
18	Social work research is of very poor quality.	Quality of Social Work Research
22	Social work researchers are self-critical.	Quality of Social Work Research
23	Published social work research is understandable.	Quality of Social Work Research
25	It is rare to find flaws in social work research.	Quality of Social Work Research
26	Social work research is negatively influenced by politics.	Quality of Social Work Research
29	Social work research is not rigorous enough to be called scientific.	Quality of Social Work Research
32	The social work profession produces excellent research.	Quality of Social Work Research
33	Social work journals only publish trustworthy research.	Quality of Social Work Research
37	Social work is known for producing unbiased research.	Quality of Social Work Research

41	Compared to psychology, social work research is highly credible.	Quality of Social Work Research
47	Social work researchers are highly competent.	Quality of Social Work Research
55	Research done by social workers has greatly improved the social work profession.	Quality of Social Work Research
57	Research produced by social workers is well respected by other professional helpers.	Quality of Social Work Research
60	Social work research effectively explains problems experienced by social work clients.	Quality of Social Work Research
65	Peer reviewed social work journals are an excellent source of knowledge for direct practitioners.	Quality of Social Work Research
66	Students should trust social work research.	Quality of Social Work Research
67	Social work research is highly relevant for today's social problems.	Quality of Social Work Research

1	The best social work education teaches students to locate research about intervention effectiveness.	The Use of Research in Social Work Interventions ⁷
3	A social worker is far more likely to recommend appropriate interventions if they have a positive attitude toward research.	The Use of Research in Social Work Interventions
5	Applying research findings to practice is an important aspect of the social work profession.	The Use of Research in Social Work Interventions

6	Effective social work interventions are evidence-based.	The Use of Research in Social Work Interventions
19	The effects of a social work intervention must be evaluated.	The Use of Research in Social Work Interventions
21	Research courses do not help students implement social work interventions.	The Use of Research in Social Work Interventions
27	Social workers must be able to explain to clients what the research says about a particular treatment recommendation.	The Use of Research in Social Work Interventions
28	The most successful social work practitioners use interventions that are supported by research.	The Use of Research in Social Work Interventions
34	Using interventions based on research is the best way to help disadvantaged populations.	The Use of Research in Social Work Interventions
35	An intervention should only be used after it has been thoroughly evaluated in research studies.	The Use of Research in Social Work Interventions
36	Social work interventions are greatly enhanced by the use of standardized instruments.	The Use of Research in Social Work Interventions
49	Empirically supported interventions should always be the first treatment offered to clients.	The Use of Research in Social Work Interventions

52	Social work interventions should be guided by detailed manuals or protocols.	The Use of Research in Social Work Interventions
63	Practice guidelines are an excellent way to select effective social work interventions.	The Use of Research in Social Work Interventions
72	Social work interventions can be enhanced by qualitative research.	The Use of Research in Social Work Interventions

¹The factor structure seen in this appendix was hypothesized after the deletion of 15 items from the GRBS

²The items seen in this appendix were distributed to the pilot study

³The items seen in this appendix were rated by SMEs

⁴Agency Support for Research – Items belonging to this construct represent the agencies' views of research in social work practice, implications for hiring or recruiting social work talent, and expectations regarding the agency expectations about research and social work practice.

⁵General Value of Research for Social Work Practice – This construct is represented by items which reflect the benefits and advantages of applying research to social work practice.

⁶Quality of Social Work Research – This construct represents the scientific rigor, worth, and status of both social work research and researchers.

⁷Use of Research in Social Work Interventions – Items belonging to this construct reflect specific ways in which research is applied to social work interventions and the various ways that research influences social work interventions.

Appendix K

SPSS Syntax for GRBS Statistical Analyses

*Final Sample Demographics.

```
FREQUENCIES VARIABLES=Gender Race Ethnicity Full_Part_Time
SWK_Degree Graduate_Research_Courses
  Undergraduate_Research_Courses Graduate_Statistics_Courses
Undergraduate_Statistics_Courses
  Completed_Program_Credit_Hours Human_Service_Employment Age
/STATISTICS=STDDEV SEMEAN MEAN MEDIAN
/ORDER=ANALYSIS.
```

*Final Sample Demographics – Minimum and Maximum.

```
FREQUENCIES VARIABLES=Gender Race Ethnicity Full_Part_Time
SWK_Degree Graduate_Research_Courses
  Undergraduate_Research_Courses Graduate_Statistics_Courses
Undergraduate_Statistics_Courses
  Completed_Program_Credit_Hours Human_Service_Employment Age
/STATISTICS=MINIMUM MAXIMUM
/ORDER=ANALYSIS.
```

*Final Sample Demographics – T-Tests to compare the means of the 118 case first sample and 81 case second sample with demographics as dependent variables.

```
T-TEST GROUPS=Data_Set_N_of_118(0 1)
/MISSING=ANALYSIS
/VARIABLES=Graduate_Research_Courses Undergraduate_Research_Courses
Graduate_Statistics_Courses
  Undergraduate_Statistics_Courses Completed_Program_Credit_Hours
Human_Service_Employment Age
/CRITERIA=CI(.95).
```

*Final Sample Demographics – Mann-Whitney U to compare the means of the 118 case first sample and 81 case second sample with demographics as dependent variables.

```
NPAR TESTS
/M-W= Graduate_Research_Courses Undergraduate_Research_Courses
Graduate_Statistics_Courses
  Undergraduate_Statistics_Courses Completed_Program_Credit_Hours
Human_Service_Employment Age BY
  Data_Set_N_of_118(0 1)
/STATISTICS=DESCRIPTIVES
/MISSING ANALYSIS.
```

*Final Sample PCA – No restrictions on the number of factors.

```
FACTOR
/VARIABLES Item_1 Item_2 Item_3 Item_4 Item_5 Item_6 Item_7 Item_8 Item_9
Item_10 Item_11Recoded
```

Item_12 Item_13 Item_14 Item_15 Item_16 Item_17 Item_18 Recoded Item_19
 Item_20 Item_21 Item_22
 Item_23 Item_24 Recoded Item_25 Item_26 Recoded Item_27 Item_28 Item_29
 Item_30 Item_31 Item_32
 Item_33 Item_34 Item_35 Item_36 Item_37 Item_38 Item_39 Item_40 Item_41
 Item_42 Item_43 Item_44
 Item_45 Item_46 Item_47 Item_48 Item_49 Item_50 Item_51 Item_52 Item_53
 Item_54 Item_55 Item_56
 Item_57 Item_58 Item_59 Item_60 Item_61 Item_62 Item_63 Item_64 Item_65
 Item_66 Item_67 Item_68
 Item_69 Item_70 Item_71 Item_72 Item_73 Item_74
 /MISSING MEANSUB
 /ANALYSIS Item_1 Item_2 Item_3 Item_4 Item_5 Item_6 Item_7 Item_8 Item_9
 Item_10 Item_11 Recoded
 Item_12 Item_13 Item_14 Item_15 Item_16 Item_17 Item_18 Recoded Item_19
 Item_20 Item_21 Item_22
 Item_23 Item_24 Recoded Item_25 Item_26 Recoded Item_27 Item_28 Item_29
 Item_30 Item_31 Item_32
 Item_33 Item_34 Item_35 Item_36 Item_37 Item_38 Item_39 Item_40 Item_41
 Item_42 Item_43 Item_44
 Item_45 Item_46 Item_47 Item_48 Item_49 Item_50 Item_51 Item_52 Item_53
 Item_54 Item_55 Item_56
 Item_57 Item_58 Item_59 Item_60 Item_61 Item_62 Item_63 Item_64 Item_65
 Item_66 Item_67 Item_68
 Item_69 Item_70 Item_71 Item_72 Item_73 Item_74
 /PRINT INITIAL KMO EXTRACTION ROTATION
 /FORMAT SORT
 /PLOT EIGEN
 /CRITERIA MINEIGEN(1) ITERATE(100)
 /EXTRACTION PC
 /CRITERIA ITERATE(100)
 /ROTATION PROMAX(4)
 /METHOD=CORRELATION.

*Chi-Square to test the null hypothesis of equal proportions with regard to SWK Degree and Data Collection Sample.

CROSSTABS

/TABLES=SWK_Degree BY Data_Set_N_of_118
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ
 /CELLS=COUNT EXPECTED ROW
 /COUNT ROUND CELL.

*Final Sample – Cronbach's Alpha for a one-factor model called the General Value of Research for Social Work Practice.

RELIABILITY

/VARIABLES=Item_5 Item_6 Item_28 Item_30 Item_34 Item_10 Item_13 Item_49
 Item_40 Item_54 Item_64
 Item_71 Item_72 Item_73 Item_69 Item_62 Item_65 Item_42 Item_3 Item_31
 Item_21 Item_43 Item_36

/SCALE('GRBS – General Value of Research for Social Work Practice – One Factor Model') ALL
 /MODEL=ALPHA
 /SUMMARY=TOTAL.

*Item 55 is added to the one-factor model called General Value of Research for Social Work Practice.

RELIABILITY

/VARIABLES=Item_5 Item_6 Item_28 Item_30 Item_34 Item_10 Item_13 Item_49
 Item_40 Item_54 Item_64

Item_71 Item_72 Item_73 Item_69 Item_62 Item_65 Item_42 Item_3 Item_31
 Item_21 Item_43 Item_36

Item_55

/SCALE('GRBS – General Value of Research for Social Work Practice – One Factor Model – Item '+ '55 Added') ALL
 /MODEL=ALPHA
 /SUMMARY=TOTAL.

*Item 7 is added to the one-factor model called General Value of Research for Social Work Practice.

RELIABILITY

/VARIABLES=Item_5 Item_6 Item_28 Item_30 Item_34 Item_10 Item_13 Item_49
 Item_40 Item_54 Item_64

Item_71 Item_72 Item_73 Item_69 Item_62 Item_65 Item_42 Item_3 Item_31
 Item_21 Item_43 Item_36

Item_55 Item_7

/SCALE('GRBS – General Value of Research for Social Work Practice – One Factor Model – Item '+ '7 Added') ALL
 /MODEL=ALPHA
 /SUMMARY=TOTAL.

*General Value of Research for Social Work Practice – One Factor Model – 27 Items.

RELIABILITY

/VARIABLES=Item_28 Item_10 Item_34 Item_30 Item_13 Item_6 Item_5 Item_40
 Item_49 Item_9 Item_54

Item_64 Item_71 Item_72 Item_62 Item_69 Item_73 Item_65 Item_55 Item_42
 Item_3 Item_31 Item_21

Item_43 Item_36 Item_7 Item_20

/SCALE('General Value of Research for Social Work Practice') ALL
 /MODEL=ALPHA
 /SUMMARY=TOTAL.

*General Value of Research for Social Work Practice – One Factor Model based on Pattern Coefficients.

RELIABILITY

/VARIABLES=Item_6 Item_10 Item_28 Item_34 Item_30 Item_9 Item_5 Item_49
 Item_40 Item_13 Item_54

/SCALE('General Value of Research for Social Work Practice – One-factor Model based no Pattern '+ 'Matrix') ALL

/MODEL=ALPHA

/SUMMARY=TOTAL.

*Syntax below is used to compute the factor score for the SWLS.

```
COMPUTE
SWLS_Factor_Score=SUM(Item_75,Item_76,Item_77,Item_78,Item_79).
EXECUTE.
```

*Syntax below is used to compute the factor score for the one-factor 27 item GRBS model.

```
COMPUTE
GRBS_Factor_Score_27It=SUM(Item_28,Item_10,Item_34,Item_30,Item_13,Item_6
,Item_5,Item_40,
Item_49,Item_9,Item_54,Item_64,Item_71,Item_72,Item_62,Item_69,Item_73,Item_6
5,Item_55,Item_42,
Item_3,Item_31,Item_21,Item_43,Item_36,Item_7,Item_20).
EXECUTE.
```

*Syntax below computes the correlation coefficient between the SWLS and the one-factor GRBS 27 item model, N = 199.

```
CORRELATIONS
/VARIABLES=GRBS_Factor_Score_27It SWLS_Factor_Score
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
```

*Syntax below computes the PCA for the discriminant validity of the one-factor GRBS 27 item model compared to the SWLS – Promax Rotation.

```
FACTOR
/VARIABLES Item_75 Item_76 Item_77 Item_78 Item_79 Item_28 Item_10
Item_34 Item_30 Item_13 Item_6
Item_5 Item_40 Item_49 Item_9 Item_54 Item_64 Item_71 Item_72 Item_62
Item_69 Item_73 Item_65
Item_55 Item_42 Item_3 Item_31 Item_21 Item_43 Item_36 Item_7 Item_20
/MISSING PAIRWISE
/ANALYSIS Item_75 Item_76 Item_77 Item_78 Item_79 Item_28 Item_10 Item_34
Item_30 Item_13 Item_6
Item_5 Item_40 Item_49 Item_9 Item_54 Item_64 Item_71 Item_72 Item_62
Item_69 Item_73 Item_65
Item_55 Item_42 Item_3 Item_31 Item_21 Item_43 Item_36 Item_7 Item_20
/PRINT INITIAL KMO EXTRACTION ROTATION
/FORMAT SORT
/PLOT EIGEN
/CRITERIA MINEIGEN(1) ITERATE(100)
/EXTRACTION PC
/CRITERIA ITERATE(100)
/ROTATION PROMAX(4)
/METHOD=CORRELATION.
```

*Syntax below computes the PCA for the discriminant validity of the one-factor GRBS 27 item model compared to the SWLS – Varimax Rotation.

FACTOR

```

/VARIABLES Item_75 Item_76 Item_77 Item_78 Item_79 Item_28 Item_10
Item_34 Item_30 Item_13 Item_6
  Item_5 Item_40 Item_49 Item_9 Item_54 Item_64 Item_71 Item_72 Item_62
Item_69 Item_73 Item_65
  Item_55 Item_42 Item_3 Item_31 Item_21 Item_43 Item_36 Item_7 Item_20
/MISSING PAIRWISE
/ANALYSIS Item_75 Item_76 Item_77 Item_78 Item_79 Item_28 Item_10 Item_34
Item_30 Item_13 Item_6
  Item_5 Item_40 Item_49 Item_9 Item_54 Item_64 Item_71 Item_72 Item_62
Item_69 Item_73 Item_65
  Item_55 Item_42 Item_3 Item_31 Item_21 Item_43 Item_36 Item_7 Item_20
/PRINT INITIAL KMO EXTRACTION ROTATION
/FORMAT SORT
/PLOT EIGEN
/CRITERIA MINEIGEN(1) ITERATE(100)
/EXTRACTION PC
/CRITERIA ITERATE(100)
/ROTATION VARIMAX
/METHOD=CORRELATION.

```

*Syntax below is used to sum all of the research and statistics courses that each case completed.

COMPUTE

```
Total_Number_of_Res_and_Stats_Courses=SUM(Graduate_Research_Courses,
```

```
Undergraduate_Research_Courses,Graduate_Statistics_Courses,Undergraduate_Statistics_Courses).
```

EXECUTE.

*Computes the factor score for the 11 Item One Factor GRBS Model.

COMPUTE

```
GRBS_One_Factor_11Items=SUM(ITEM_28,ITEM_10,ITEM_34,ITEM_30,ITEM_13,ITEM_6,ITEM_5,ITEM_40,
  ITEM_49,ITEM_9,ITEM_54).
```

EXECUTE.

*Computes the total number of Graduate Statistics and Research Courses for each case.

COMPUTE

```
Total_Number_of_Graduate_Stat_and_Res_Courses=SUM(Graduate_Research_Courses,
  Graduate_Statistics_Courses).
```

EXECUTE.

*Computes the total number of Undergraduate Statistics and Research Courses for each case.

COMPUTE

```
Total_Number_of_Undergraduate_Stat_and_Research_Courses=SUM(Undergraduate_Research_Courses,
```

Undergraduate_Statistics_Courses).
EXECUTE.

*Computes a scatterplot for the GRBS factors scores and the total number of research and statistics courses.

GRAPH

```
/SCATTERPLOT(BIVAR)=GRBS_Factor_Score_27It WITH
Total_Number_of_Res_and_Stats_Courses
/MISSING=LISTWISE.
```

*184, 143, and 53 were removed.

GRAPH

```
/SCATTERPLOT(BIVAR)=GRBS_Factor_Score_27It WITH
Total_Number_of_Res_and_Stats_Courses
/MISSING=LISTWISE.
```

*141 and 96 were removed.

GRAPH

```
/SCATTERPLOT(BIVAR)=GRBS_Factor_Score_27It WITH
Total_Number_of_Res_and_Stats_Courses
/MISSING=LISTWISE.
```

*170, 105, and 93 were removed.

GRAPH

```
/SCATTERPLOT(BIVAR)=GRBS_Factor_Score_27It WITH
Total_Number_of_Res_and_Stats_Courses
/MISSING=LISTWISE.
```

*148 and 36 removed.

GRAPH

```
/SCATTERPLOT(BIVAR)=GRBS_Factor_Score_27It WITH
Total_Number_of_Res_and_Stats_Courses
/MISSING=LISTWISE.
```

*91, 60, 53, and 47 removed.

GRAPH

```
/SCATTERPLOT(BIVAR)=GRBS_Factor_Score_27It WITH
Total_Number_of_Res_and_Stats_Courses
/MISSING=LISTWISE.
```

*Correlation coefficient between the GRBS factor score and the total number of research and stats courses.

CORRELATIONS

```
/VARIABLES=Total_Number_of_Res_and_Stats_Courses
GRBS_Factor_Score_27It
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
```

*Computes the linear regression between the GRBS factor score and the total number of research and stats courses.

REGRESSION

```

/MISSING LISTWISE
/STATISTICS COEFF OUTS CI R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT Total_Number_of_Res_and_Stats_Courses
/METHOD=ENTER GRBS_Factor_Score_27It
/CASEWISE PLOT(ZRESID) OUTLIERS(3)
/SAVE PRED COOK SRESID DFBETA SDBETA.

```

*Computes the standard deviation of the total number of research and statistics courses.

```

DESCRIPTIVES VARIABLES=Total_Number_of_Res_and_Stats_Courses
/STATISTICS=STDDEV.

```

*Regression assumption, LINEAR REALTIONSHIP, Plot of studentized residuals and predicted values.

GRAPH

```

/SCATTERPLOT(BIVAR)=PRE_1 WITH SRE_1
/MISSING=LISTWISE.

```

*Regression assumption, NORMALITY, Histogram.

GRAPH

```

/HISTOGRAM(NORMAL)=SRE_1.

```

*Regression assumption, NORMALITY, Normality Plot.

PPLOT

```

/VARIABLES=SRE_1
/NOLOG
/NOSTANDARDIZE
/TYPE=Q-Q
/FRACTION=BLOM
/TIES=MEAN
/DIST=NORMAL.

```

*T-test that compares the MSW and BSW students to see if there is a significant difference on the RSPWBS factor score.

```

T-TEST GROUPS=SWK_Degree(0 1)
/MISSING=ANALYSIS
/VARIABLES=GRBS_Factor_Score_27It
/CRITERIA=CI(.95).

```

*Mann-Whitney U Test to see if there is a significant difference on the RSPWBS factor score, sample sizes are very unequal.

NPAR TESTS

```

/M-W= GRBS_Factor_Score_27It BY SWK_Degree(0 1)
/MISSING ANALYSIS.

```

*Computes the descriptive statistics for the total number of research courses completed by sample.

```
DESCRIPTIVES VARIABLES=Total_Number_of_Res_and_Stats_Courses
/SAVE
/STATISTICS=MEAN STDDEV RANGE MIN MAX SEMEAN KURTOSIS
SKEWNESS.
```

```
*Computes the descriptive statistics for the the GRBS 27 Item factor scores.
DESCRIPTIVES VARIABLES=GRBS_Factor_Score_27It
/SAVE
/STATISTICS=MEAN STDDEV RANGE MIN MAX SEMEAN KURTOSIS
SKEWNESS.
```

```
*Discriptive statistics and frequencies for the GRBS 27 Item factor scores and the
total number of completed research and statistics courses.
FREQUENCIES VARIABLES=Total_Number_of_Res_and_Stats_Courses
GRBS_Factor_Score_27It
/STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM
SEMEAN MEAN MEDIAN MODE SUM SKEWNESS SESKEW
KURTOSIS SEKURT
/ORDER=ANALYSIS.
```

```
*Computes the logistic regression to determine if the GRBS factor can predict the
degrees (BSW or MSW) currently being pursued by the sample.
LOGISTIC REGRESSION VARIABLES SWK_Degree
/METHOD=ENTER GRBS_Factor_Score_27It
/SAVE=PRED DFBETA ZRESID
/CLASSPLOT
/PRINT=ITER(1) CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

```
*Multivariate Analysis of Variance (MANOVA) – for Two Different Data Collection
Methods – 7 Dependent Variables.
GLM Graduate_Research_Courses Undergraduate_Research_Courses
Graduate_Statistics_Courses
Undergraduate_Statistics_Courses Completed_Program_Credit_Hours
Human_Service_Employment Age BY
Survey_Method
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/EMMEANS=TABLES(Survey_Method) COMPARE ADJ(BONFERRONI)
/PRINT=DESCRIPTIVE ETASQ OPOWER HOMOGENEITY
/CRITERIA=ALPHA(.05)
/DESIGN= Survey_Method.
```

Appendix L

LISREL SIMPLIS Syntax for Hypothesized GRBS Factor Structures

GRBS ONE-FACTOR MODEL 27 ITEMS FROM STRUCTURE MATRIX

CFA GRBS ONE FACTOR 27 ITEMS

OBSERVED VARIABLES

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
ITEM_49 ITEM_9 ITEM_54 ITEM_64 ITEM_71 ITEM_72 ITEM_62 ITEM_69
ITEM_73 ITEM_65 ITEM_55 ITEM_42 ITEM_3 ITEM_31 ITEM_21 ITEM_43
ITEM_36 ITEM_7 ITEM_20

CORRELATION MATRIX FROM FILE GRBS.PCM

ASYMPTOTIC COVARIANCE MATRIX FROM FILE GRBS.ACC

SAMPLE SIZE = 199

LATENT VARIABLE

GENVALRS

RELATIONSHIPS

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
ITEM_49 ITEM_9 ITEM_54 ITEM_64 ITEM_71 ITEM_72 ITEM_62 ITEM_69
ITEM_73 ITEM_65 ITEM_55 ITEM_42 ITEM_3 ITEM_31 ITEM_21 ITEM_43
ITEM_36 ITEM_7 ITEM_20 = GENVALRS

LISREL OUTPUT MI RS

METHOD: MAXIMUM LIKELIHOOD

PATH DIAGRAM

END OF PROBLEM

GRBS ONE-FACTOR MODEL 11 ITEMS FROM PATTERN MATRIX
CFA GRBS ONE FACTOR 11 ITEMS

OBSERVED VARIABLES

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
ITEM_49 ITEM_9 ITEM_54

CORRELATION MATRIX FROM FILE GRBS.PCM

ASYMPTOTIC COVARIANCE MATRIX FROM FILE GRBS.ACC

SAMPLE SIZE = 199

LATENT VARIABLE

GENVALRS

RELATIONSHIPS

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
ITEM_49 ITEM_9 ITEM_54 = GENVALRS

LISREL OUTPUT MI RS

METHOD: MAXIMUM LIKELIHOOD

PATH DIAGRAM

END OF PROBLEM

GRBS THREE-FACTOR MODEL 53 ITEMS FROM STRUCTURE MATRIX
CFA GRBS THREE FACTOR 53 ITEMS

OBSERVED VARIABLES

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
 ITEM_49 ITEM_9 ITEM_54 ITEM_62 ITEM_69 ITEM_73 ITEM_3 ITEM_74
 ITEM_36 ITEM_42 ITEM_31 ITEM_43 ITEM_2 ITEM_21 ITEM_50 ITEM_68
 ITEM_7 ITEM_71 ITEM_45 ITEM_53 ITEM_46 ITEM_48 ITEM_61 ITEM_51
 ITEM_44 ITEM_58 ITEM_38 ITEM_59 ITEM_39 ITEM_8 ITEM_12 ITEM_17
 ITEM_67 ITEM_64 ITEM_55 ITEM_60 ITEM_72 ITEM_33 ITEM_47 ITEM_65
 ITEM_66 ITEM_29 ITEM_23 ITEM_15 ITEM_16

CORRELATION MATRIX FROM FILE GRBSCN.PCM

ASYMPTOTIC COVARIANCE MATRIX FROM FILE GRBSCN.ACC

SAMPLE SIZE = 174

LATENT VARIABLE

GENVALRS AGENCY QUALITY

RELATIONSHIPS

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
 ITEM_49 ITEM_9 ITEM_54 ITEM_62 ITEM_69 ITEM_73 ITEM_3 ITEM_74
 ITEM_36 ITEM_42 ITEM_31 ITEM_43 ITEM_2 ITEM_21 ITEM_50 ITEM_68
 ITEM_7 ITEM_71 = GENVALRS

ITEM_45 ITEM_53 ITEM_46 ITEM_48 ITEM_61 ITEM_51 ITEM_44 ITEM_58
 ITEM_38 ITEM_59 ITEM_39 ITEM_8 ITEM_12 ITEM_17 = AGENCY

ITEM_67 ITEM_64 ITEM_55 ITEM_60 ITEM_72 ITEM_33 ITEM_47 ITEM_65
 ITEM_66 ITEM_29 ITEM_23 ITEM_15 ITEM_16 = QUALITY

LISREL OUTPUT MI RS

METHOD: MAXIMUM LIKELIHOOD

PATH DIAGRAM

END OF PROBLEM

GRBS FOUR-FACTOR MODEL 74 ITEMS FROM STRUCTURE MATRIX
CFA GRBS FOUR FACTOR 74 ITEMS

OBSERVED VARIABLES

ITEM_1 ITEM_2 ITEM_3 ITEM_4 ITEM_5 ITEM_6 ITEM_7 ITEM_8 ITEM_9
 ITEM_10 ITEM_11 ITEM_12 ITEM_13 ITEM_14 ITEM_15 ITEM_16 ITEM_17
 ITEM_18 ITEM_19 ITEM_20 ITEM_21 ITEM_22 ITEM_23 ITEM_24 ITEM_25
 ITEM_26 ITEM_27 ITEM_28 ITEM_29 ITEM_30 ITEM_31 ITEM_32 ITEM_33
 ITEM_34 ITEM_35 ITEM_36 ITEM_37 ITEM_38 ITEM_39 ITEM_40 ITEM_41
 ITEM_42 ITEM_43 ITEM_44 ITEM_45 ITEM_46 ITEM_47 ITEM_48 ITEM_49
 ITEM_50 ITEM_51 ITEM_52 ITEM_53 ITEM_54 ITEM_55 ITEM_56 ITEM_57
 ITEM_58 ITEM_59 ITEM_60 ITEM_61 ITEM_62 ITEM_63 ITEM_64 ITEM_65
 ITEM_66 ITEM_67 ITEM_68 ITEM_69 ITEM_70 ITEM_71 ITEM_72 ITEM_73
 ITEM_74

CORRELATION MATRIX FROM FILE GRBSCN.PCM

ASYMPTOTIC COVARIANCE MATRIX FROM FILE GRBSCN.ACC

SAMPLE SIZE = 174

LATENT VARIABLE

GENVALRS AGENCY QUALITY SWKINTER

RELATIONSHIPS

ITEM_2 ITEM_7 ITEM_8 ITEM_9 ITEM_10 ITEM_13 ITEM_14 ITEM_30
 ITEM_31 ITEM_40 ITEM_42 ITEM_43 ITEM_54 ITEM_62 ITEM_64 ITEM_68
 ITEM_69 ITEM_71 ITEM_73 ITEM_74 = GENVALRS

ITEM_4 ITEM_12 ITEM_17 ITEM_20 ITEM_24 ITEM_38 ITEM_39 ITEM_44
 ITEM_45 ITEM_46 ITEM_48 ITEM_50 ITEM_51 ITEM_53 ITEM_56 ITEM_58
 ITEM_59 ITEM_61 ITEM_70 = AGENCY

ITEM_11 ITEM_15 ITEM_16 ITEM_18 ITEM_22 ITEM_23 ITEM_25 ITEM_26
 ITEM_29 ITEM_32 ITEM_33 ITEM_37 ITEM_41 ITEM_47 ITEM_55 ITEM_57
 ITEM_60 ITEM_65 ITEM_66 ITEM_67 = QUALITY

ITEM_1 ITEM_3 ITEM_5 ITEM_6 ITEM_19 ITEM_21 ITEM_27 ITEM_28
 ITEM_34 ITEM_35 ITEM_36 ITEM_49 ITEM_52 ITEM_63 ITEM_72 =
 SWKINTER

LISREL OUTPUT MI RS

METHOD: MAXIMUM LIKELIHOOD

PATH DIAGRAM

END OF PROBLEM

GRBS TWO-FACTOR MODEL 54 ITEMS FROM STRUCTURE MATRIX
CFA GRBS TWO FACTOR 54 ITEMS

OBSERVED VARIABLES

ITEM_34 ITEM_28 ITEM_54 ITEM_30 ITEM_49 ITEM_40 ITEM_62 ITEM_69
 ITEM_10 ITEM_73 ITEM_64 ITEM_4 ITEM_42 ITEM_13 ITEM_74 ITEM_3
 ITEM_6 ITEM_31 ITEM_5 ITEM_36 ITEM_9 ITEM_50 ITEM_21 ITEM_2
 ITEM_68 ITEM_35 ITEM_71 ITEM_1 ITEM_52 ITEM_56 ITEM_27 ITEM_7
 ITEM_19 ITEM_55 ITEM_61 ITEM_53 ITEM_46 ITEM_45 ITEM_32 ITEM_41
 ITEM_48 ITEM_57 ITEM_51 ITEM_58 ITEM_37 ITEM_29 ITEM_59 ITEM_38
 ITEM_22 ITEM_16 ITEM_63 ITEM_17 ITEM_8 ITEM_12

CORRELATION MATRIX FROM FILE GRBS.PCM

ASYMPTOTIC COVARIANCE MATRIX FROM FILE GRBS.ACC

SAMPLE SIZE = 199

LATENT VARIABLE

GENVALRS ATTVALUE

RELATIONSHIPS

ITEM_34 ITEM_28 ITEM_54 ITEM_30 ITEM_49 ITEM_40 ITEM_62 ITEM_69
 ITEM_10 ITEM_73 ITEM_64 ITEM_4 ITEM_42 ITEM_13 ITEM_74 ITEM_3
 ITEM_6 ITEM_31 ITEM_5 ITEM_36 ITEM_9 ITEM_50 ITEM_21 ITEM_2
 ITEM_68 ITEM_35 ITEM_71 ITEM_1 ITEM_52 ITEM_56 ITEM_27 ITEM_7
 ITEM_19 = GENVALRS

ITEM_55 ITEM_61 ITEM_53 ITEM_46 ITEM_45 ITEM_32 ITEM_41 ITEM_48
 ITEM_57 ITEM_51 ITEM_58 ITEM_37 ITEM_29 ITEM_59 ITEM_38 ITEM_22
 ITEM_16 ITEM_63 ITEM_17 ITEM_8 ITEM_12 = ATTVALUE

LISREL OUTPUT MI RS

METHOD: MAXIMUM LIKELIHOOD

PATH DIAGRAM

END OF PROBLEM

GRBS TWO-FACTOR MODEL 27 ITEMS AND SWLS DISC.
VALID.SCALED LATENT VARIABLE

CFA GRBS SWLS DISC VALID

OBSERVED VARIABLES

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
 ITEM_49 ITEM_9 ITEM_54 ITEM_64 ITEM_71 ITEM_72 ITEM_62 ITEM_69
 ITEM_73 ITEM_65 ITEM_55 ITEM_42 ITEM_3 ITEM_31 ITEM_21 ITEM_43
 ITEM_36 ITEM_7 ITEM_20 ITEM_75 ITEM_76 ITEM_77 ITEM_78 ITEM_79

CORRELATION MATRIX FROM FILE GRBSSWLSCN.PCM

ASYMPTOTIC COVARIANCE MATRIX FROM FILE GRBSSWLSCN.ACC

SAMPLE SIZE = 165

LATENT VARIABLE

GENVALRS SWLS

RELATIONSHIPS

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
 ITEM_49 ITEM_9 ITEM_54 ITEM_64 ITEM_71 ITEM_72 ITEM_62 ITEM_69
 ITEM_73 ITEM_65 ITEM_55 ITEM_42 ITEM_3 ITEM_31 ITEM_21 ITEM_43
 ITEM_36 ITEM_7 ITEM_20 = GENVALRS

ITEM_28 = 1* GENVALRS

ITEM_75 ITEM_76 ITEM_77 ITEM_78 ITEM_79 = SWLS

ITEM_75 = 1* SWLS

LISREL OUTPUT MI RS

METHOD: MAXIMUM LIKELIHOOD

PATH DIAGRAM

END OF PROBLEM

GRBS TWO-FACTOR MODEL 27 ITEMS AND SWLS DISC.
VALID.SCALED LATENT VARIABLE COV = 1

CFA GRBS SWLS DISC VALID COV IS 1

OBSERVED VARIABLES

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
 ITEM_49 ITEM_9 ITEM_54 ITEM_64 ITEM_71 ITEM_72 ITEM_62 ITEM_69
 ITEM_73 ITEM_65 ITEM_55 ITEM_42 ITEM_3 ITEM_31 ITEM_21 ITEM_43
 ITEM_36 ITEM_7 ITEM_20 ITEM_75 ITEM_76 ITEM_77 ITEM_78 ITEM_79

CORRELATION MATRIX FROM FILE GRBSSWLSCN.PCM

ASYMPTOTIC COVARIANCE MATRIX FROM FILE GRBSSWLSCN.ACC

SAMPLE SIZE = 165

LATENT VARIABLE

GENVALRS SWLS

RELATIONSHIPS

ITEM_28 ITEM_10 ITEM_34 ITEM_30 ITEM_13 ITEM_6 ITEM_5 ITEM_40
 ITEM_49 ITEM_9 ITEM_54 ITEM_64 ITEM_71 ITEM_72 ITEM_62 ITEM_69
 ITEM_73 ITEM_65 ITEM_55 ITEM_42 ITEM_3 ITEM_31 ITEM_21 ITEM_43
 ITEM_36 ITEM_7 ITEM_20 = GENVALRS

ITEM_28 = 1* GENVALRS

ITEM_75 ITEM_76 ITEM_77 ITEM_78 ITEM_79 = SWLS

ITEM_75 = 1* SWLS

SET THE COVARIANCES OF GENVALRS – SWLS TO 1

LISREL OUTPUT MI RS

METHOD: MAXIMUM LIKELIHOOD

PATH DIAGRAM

END OF PROBLEM

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Zastrow, C. (2000). *Introduction to social work and social welfare* (7th ed.). Belmont, CA: Wadsworth Publishing Company.

CURRICULUM VITAE

Virgil L. Gregory Jr.

Education

PhD in Social Work
Indiana University, IUPUI Campus
External Minor: Psychology
Dissertation Title:
Gregory Research Beliefs Scale:
Factor Structure and Psychometric Properties

MS in Social Work, May 2003
Indiana University, IUPUI Campus
Concentration: Interpersonal Practice

BA in Psychology, May 2001
Purdue University, IUPUI Campus
Specialization: Clinical Rehabilitation
Minor: Medical Sociology

License

Licensed Social Worker (LSW)

Practice/ Theoretical Orientation

Cognitive–Behavioral Therapy (Beck’s). Via graduate level coursework, workshops, work and practicum experience I have developed a cognitive–behavioral therapy practice orientation. I have also utilized other evidence–based models (i.e. motivational interviewing) depending on the population and individual(s) with whom I am working with.

Selected Clinical Course Work

Graduate

Intervention II: Cognitive–Behavioral Interventions • Cognitive–Behavioral Therapy for Severe Mental Illness (Independent Study) • Motivational Interviewing & Relapse Prevention (Independent Study) • Psychopathology • Application of the DSM–IV • Social Work Practice III: Individuals • Social Work Practice III: Groups • Social Work Practice III: Families • Social Work Practice in HIV • Social Work Theories of Human & Social Behavior • Interpersonal Social Work Practice: Theory & Research

Undergraduate

Introduction to Clinical Rehabilitation • Introduction to Counseling • Abnormal Psychology • Drugs and Behavior • Physiology of Behavior • Cognition • Stress and Health • Social Problems • Social Psychology • Life Span Development

Research & Clinical Interests

1. Cognitive-behavioral therapy for severe mental illness and substance use
2. Motivational interviewing for substance related disorders
3. Social work practice theories
4. Psychometric research (measures of typical performance)
5. Quantitative research methods

Peer Reviewed Publications

Gregory, V. (2009). Cognitive-Behavioral Therapy for Depression in Bipolar Disorder: A Meta-Analysis. [Manuscript Submitted for Publication]

Gregory, V. (in press). Cognitive-Behavioral Therapy for Schizophrenia: Applications to Social Work Practice. *Social Work in Mental Health*.

Gentle-Genitty, C.S., **Gregory, V.**, Pfahler, C., Thomas, M., Lewis, L., Campbell, K., et al. (2007). A critical review of theory in social work journals: A replication study. *Advances in Social Work*, 8 (1), 62 – 80.

Clinical Experience

6/06–9/07	Resource Coordinator Homeless Initiative Program (Clarian/Healthnet); Indianapolis, IN
7/03–4/05	Assessment Counselor Fairbanks Hospital; Indianapolis, IN
8/02–4/03	MSW Intern (Concentration) Gallahue Mental Health Center; Indianapolis, IN
1/02–5/02	MSW Intern (Foundation) Beacon House; Indianapolis, IN
1/01–5/01	Psychology Undergraduate Practicum Student Larue D. Carter Memorial Hospital; Indianapolis, IN

**Research
Coursework**

Graduate

Psychometric Theory (Independent Study) • Measurement Theory and Data Interpretation • Advanced Statistics • Intermediate Statistics • Statistical Inference • Advanced Social Work Research: Quantitative Methods • Evaluation Process for Social Work • Social Work Research: Interpersonal • Advanced Social Work Research: Qualitative Methods • Philosophy of Science

Undergraduate

Statistics • Data Analysis Using Spreadsheets • Introductory Lab in Psychology • Finite Mathematics

**Computer
Software
Skills**

SPSS • LISREL (Linear Structural Relationships – for CFA) • Excel • Power Point • Microsoft Word

Certificates

Access 2007 End – User Certificate	(Indiana University)	04/11/08
Excel 2007 End – User Certificate	(Indiana University)	04/24/08
Excel End – User Certificate	(Indiana University)	08/06/06

**Statistical
Computing
Skills**

Knowledge and skills in the statistical computation and interpretation of: relationships among variables, multivariate prediction and classification of variables, comparisons of hypothetical models to observed data, data reduction, and examination of statistically significant differences between and among means.

**Research
Experience**

02/06–12/06	Research Intern – Needs Assessment and Scale Development for Vulnerable Population Indiana University School of Social Work; Indianapolis, IN
01/06–06/06	Research Assistant – Scale Development for Social Work Education Indiana University School of Social Work; Indianapolis, IN
08/04–05/06	Research Assistant – Evaluation of Social Work Education/Curriculum Indiana University School of Social Work; Indianapolis, IN

08/05–05/06 **Doctoral Student – Phenomenological Study regarding Social Work Education**
Indiana University School of Social Work; Indianapolis, IN

08/05–12/05 **Doctoral Student – Psychometric Research**
Indiana University School of Social Work; Indianapolis, IN

08/01–09/03 **Survey Interviewer**
Public Opinion Laboratory; Indianapolis, IN

Volunteer Experience

2/12/07 **Indy Homeless Connect Volunteer**
Indy Homeless Connect; Indianapolis, IN

10/01–12/01 **Boys and Girls Club Volunteer**
Boys & Girls Club LeGore Unit; Indianapolis, IN

Personal Achievements

- Completion of the IUPUI Preparing Future Faculty (PFF) Summer Institute – 6/13/08
- Spirit of Inquiry Award – Indiana University School of Social Work – 4/24/08
- Completion of the IUPUI Preparing Future Faculty (PFF) Program – 12/05
- Dean’s List Spring of 2001
- Dean’s List Spring of 2000
- Dean’s List Fall of 1999
- Dean’s List Spring of 1999