

Development and Psychometric Properties of the Evidence-based Professional Practice Scale (EBPP-S)

Guillermo Bernal, PhD; Nayra del C. Rodríguez-Soto, BA

Objective: Evidence based-practice (EBP) is now being integrated into many systems of health care. To date, little research has been conducted in Puerto Rico regarding EBP. A brief measure of health provider for Evidence Based Professional Practice-Scale (EBPP-S) was developed to measure attitudes, behaviors and knowledge.

Methods: The study consisted in two phases. In the first phase the scale was developed and exploratory factor analyses (EFA) were conducted ($n = 65$). In the second phase, the EFA model was tested in another sample ($n = 86$) using confirmatory factor analysis (CFA). Both samples were drawn from mental health service providers.

Results: Three factors of the EBPP-S were identified in the first phase (1) attitudes, (2) behaviors, and (3) knowledge. The internal reliability for the 43-item scale using the Cronbach's α was .93. The principal dimensions of the scale were analyzed using a CFA. A three-factor model with 17 items was supported by the data. The results showed an internal consistency of .88 for the 17-item version of the scale.

Conclusion: The preliminary results for the EBPP-S are promising and the use of this scale to measure evidence based-practice is discussed. [*P R Health Sci J* 2010;4:385-390]

Key words: Evidence based-practice, Mental health professionals, Scale development

Evidence-based practice (EBP) is now being integrated into many systems of health care (1). First developed within medicine, the definition of EBP adopted by the Institute of Medicine (IOM) proposed an “integration of the best research evidence with the clinical expertise and patient values” (2). An implication of this approach to health care is that professionals need to be familiar with the current scientific literature. Also, professional expertise is fundamental requiring a basis understanding of patient preferences and values in such a way that evidence can inform care, while taking into account patient needs. Despite the vast amount of information, there are challenges faced with EBPs. Sackett et al. identified that geographical, organizational, legal, and behavioral barriers that does not permit the clinician to adhere to the practice (3).

Many disciplines involved in health care have adopted variants of the IOM definition of EBP. Currently, there are discipline specific EBPs in social work (4), education (5) nursing (6), and psychology (7). The dissemination and implementation of EBPs to improve the quality of professional services and outcomes may help to improve the quality of care in health and mental health service settings (8). However, these are only a handful of instruments to evaluate the degree to which professionals are willing to use EBP. Also, few measures are available that can serve as a resource to identify barriers in the implementation of EBP in health care settings.

The measurement of the EBP concept is critical to understand barriers and facilitators in the adoption of evidence-based practices. Currently, there are several instruments that attempt to measure attitudes toward EBP. These include: 1) EBP Questionnaire for physical therapists (9); 2) the evidence-based practice attitudes scale (EBPAS) for mental health providers (10); 3) the EBP questionnaire for nurses (11), 4) evidence-based practice belief scale (12) and 5) the evidence-based practice implementation scale (12). The questionnaire for physical therapists includes sub-scales that measure beliefs, attitudes, knowledge and behaviors, while the questionnaire for nurses measure only knowledge, practice, and attitudes. Two of these did not provide information on the psychometrics properties of these measures. However, the EBPAS demonstrated good internal consistency and reliability, but this instrument only measures attitudes toward EBP.

Knowledge on how attitudes, behaviors, and beliefs facilitate or impede adoption of EBP among professional providers is

Department of Psychology, University of Puerto Rico, Río Piedras Campus, San Juan, Puerto Rico

Address correspondence to: Guillermo Bernal, Institute for Psychological Research, University of Puerto Rico, Río Piedras Campus PO Box 23174, San Juan PR 00931-3174. Email: gbernal@ipsi.uprrp.edu

limited. Aarons reported that personal characteristics including demographic factors, such as level of education and amount professional experience were associated with attitudes (10). According to Fishbein & Azjen' attitudes, behaviors, and beliefs are associated (13). In their model, beliefs are purported to influence attitudes and behaviors. For example, a person might have a number of beliefs about EBP that influence the attitudes and behaviors towards its use or adoption. High educational level is positively correlated with endorsement of evidence-based treatment services, adoption of innovations, and attitudes toward adoption of EBP (10, 14 - 15).

In a comprehensive review of how well attitudes predict behavior, 88 attitudes behavior studies found that attitudes significantly moderate behavior (16). Self regulation of attitudes appear to play an important role in this process suggesting that attitudes and subjective norms are not enough determinants to predict action or behavior (17). Regarding EBP, favorable attitudes have been reported by practitioners (18). Yet beliefs and attitudes varied as a result of the level of education and year of graduation. Respondents who were recent graduates and had higher levels of education held more favorable opinions of EBP. Alternatively, in a national survey of professional psychologists who held favorable views of EBP, almost half of respondents reported not using EBPs in their practice and 39% held unfavorable views of EBP (19). In a national survey of psychologists in practice, a wide degree of variability was reported concerning manual-based treatments as guides to practice, with 25% reporting negative experiences and 45% feeling neutral about treatment manuals (20). These studies suggest that while there are divergent views on EBP, many trainees and practitioners are relatively supportive of EBP. It is not at all clear however, the degree to which positive attitudes actually translates into the behavior of adopting EBP in one's own practice.

EBPs is not accepted by all mental health providers. For example, some consider that EBP is not sensitive to the unique practice in social work since the organizational context may differ for social workers than for other types of mental health professionals (21). Muller and Bacon studied a multi-disciplinary group of practitioner's on knowledge and attitudes regarding aspects evidence-based practice and the use of practice guidelines (22). In their study, psychiatrists and psychologists consistently outperformed social workers in their knowledge of practice guidelines, use of research findings, and research methods in their practice.

To date, little research has been conducted in Puerto Rico regarding EBP. To our knowledge, there are no generic instruments to measure this construct that can serve as a basis to better understand beliefs, attitudes, and behaviors towards EBP. Thus, there are few resources available to measure whether or not progress is being made with the adoption of EBP. The purpose of this study was to develop a brief measure to assess beliefs, attitudes, and behaviors toward EBP for use in Puerto

Rico. While our sample group was comprised of mental health providers, the scale was constructed in such a way that it could be made specific for different disciplines (e.g., nursing, occupational therapy, medicine, psychiatry, mental health, etc.). We hypothesized that the scale to be developed would load well on the theoretically posited constructs of attitudes, behavior, and knowledge of the EBP.

Methods

Participants

In the first phase of the study, participants consisted of 65 mental health professionals and graduate students (49 females and 16 male) between the 20 to 68 years old (\bar{X} = 43; SD =12). The sample was selected by availability. Most of the participants had a doctoral degree (n =39; 60%), while others a completed a master's degree (n =19; 29%). About 51% of the respondents were employed full-time as psychologists, 23% were professors and psychologists, and 17% were graduate students. The primary disciplines of the respondents included clinical psychology (n =31; 48%), counseling (n =8; 11%) and industrial-organizational psychology (n =5; 8%). The "other" category included disciplines other than psychology (e.g. physicians, social workers, etc.). Also, there was a question regarding the type of services provided by the respondent, which were primarily clinical services.

In the second phase of the study, participants consisted of 86 professionals and graduate students (61 females and 25 male) between 23 and 80 years of age (\bar{X} = 45; SD =12). Most of the participants had a doctoral degree (n =32; 59%) while others had a master's degree (n =17; 32%). About 45% of the respondents were employed full-time as psychologists. The primary disciplines of the respondents included psychologists (n =36, 45%), social workers (n =20, 25%) and other health professional workers (n =10, 13%).

Scale Development Procedure

The preliminary development of the scale consisted in generating an initial pool of items based on reviews of the literature and/or evaluation of some measures (e.g. (10)). Subsequently, the team generated items based on the definition of EBPs and each of these items were carefully scrutinized against the EBPP definition. The research team was comprised of graduate and undergraduate students, and a faculty member. A total of 43 items were generated for use in the initial questionnaire. The items were designed to assess knowledge, attitudes, and behaviors related to EBPP. Of the 43 items, 23 focused on attitudes, 12 on behaviors and 8 on knowledge.

Respondents were asked to indicate their degree of agreement with the items pertaining to their knowledge, attitudes, and behaviors in adopting EBPP. Response options were as follows 1 = not at all, 2 = to a slight extent, 3 = to a moderate extent, 4 = to a great extent, and 5 = to a very great extent.

Measures

Socio-demographics questionnaire. Included participant personal information, such as age, sex, highest education level, and professional area.

Evidence Based Professional Practice-Scale (EBPP-S). The term “professional” was used as part of EBPP, so as to be inclusive of mental health disciplines such as counseling, nursing, psychology, psychiatry, social work, etc. The scale can be easily adapted to a specific discipline by changing the items to include the specific discipline (i.e, substitute “professional” for the social work, medical, nursing, psychology, etc.) prior to the word “practice”. This scale was design as a general instrument that could be used with different health provider’s. This scale was administered to all participants. The survey incorporated questions regarding provider’ demographic characteristics including gender, highest educational level, professional status and types of services provided, among others. The EBPP-S was used to assess three theoretical derived dimensions: knowledge, attitudes, and behaviors toward the use of EBPP. The knowledge items assesses the extent to which a person understands EBPP concepts. The attitudes items represents the extent to which a person would be willing to adopt or his/her openness toward adopting EBPP. The behavior items are supported by actions taken toward using or adopting EBPP.

Procedure

This study was approved by the institutional review board at the University of Puerto Rico, Río Piedras Campus. Letters explaining the study were provided with the questionnaire and informed consent was obtained prior to the administration. Participants did not receive compensation for their participation. The questionnaire was administered in a group format before a presentation on the topic or EBP. Prior to the formal presentation on EBP to mental health professionals in Puerto Rico, the first author invited professionals to complete the scale.

Data analytic strategies

Two separate factor analytic procedures were conducted. With the first sample ($n = 65$), an exploratory factor analysis was performed; while with the second ($n = 86$), a confirmatory factor analysis was conducted. Missing data procedure was used and three cases with more than three of the items missing were eliminated from the analysis.

An exploratory factor analysis was necessary because of the variety of variables. EFA were conducted with the Statistical Package for Social Sciences (SPSS, version 15) using principal axis factoring to partition error variance in the solution (23). To promote simple structure, items were retained on a factor if they loaded at least .40 on the primary factors and less that .40 on all other factors. Item-total correlation and scale reliabilities were also used to assess scale structure.

Subsequently, a confirmatory factor analysis was conducted to test the factor structure derived in the EFA. CFA is a method for testing the structure of items, scales, and measures (24). This is a statistical procedure to evaluate the goodness of fit of the model. It was performed using structural equation modeling (SEM), with maximum-likelihood estimation using analysis of moment structure (AMOS) software. Model fit was assessed using a combination of fit indicators including the X^2 and X^2/df ratio, the comparative fit index (CFI), the Tucker-Lewis index (TLI) and the root mean square error of approximation (RMSEA). Commonly accepted rules of thumb for fit indices in CFA include a CFI value greater than .90, and a RMSEA value of less than .10 (25). However, other authors mentioned that fit measures indicating excellent fit index include CFI and TLI values near .95 or greater, and a value of RMSEA near .06 or less (26). Also, item-total correlations and Cronbach’s alpha analysis of internal reliability were considered for the comprehensive evaluation of model fit.

Results

Exploratory Phase

The internal reliability for the 43-item scale using the Cronbach’s α was .93. A coefficient of .88 was observed for the attitudes sub-scale, and .88 and .83 for the behavior and knowledge sub-scales respectively. The correlation coefficient between each item and the total score for the EBPPS ranged from -.13 and .80. Construct validity for the EBPP-S was evaluated by means of and EFA using principal axis factoring with a Varimax with Kaiser normalization. The EFA initially produced 12 factors with eigen values >1 . Upon constraining the analysis to a three factor solution, these factors accounted for 49.1% of the variance.

With the objective of reducing the total number of items that loaded well on the theoretical sub-scales (attitudes, behaviors and knowledge), items were selected using the following criteria: 1) high loading on the appropriate factor, 2) inter-correlations between items and correlations between individualized items and total scale scores, and 3) non duplication of content. In this way, 19 items were eliminated from the original 43-item scale. Table 1 presents the results of the EFA. The primary factors that emerged from this analysis included three factors: (a) attitudes with seven items that explained 34.4% of the variance, Cronbach alpha .87; (b) behavior with eight items explained 8.4%, Cronbach alpha .83; and (c) knowledge with four items explained 6.3%, Cronbach alpha .90.

Confirmatory Phase

With 24 items selected from the exploratory phase, CFA were performed using SEM, with maximum likelihood estimation using AMOS software to evaluate the goodness of fit of the model. The goodness of fit of the original EBPP-S [X^2 (249)

= 481.08, NFI = 0.63, IFI=0.78, TLI = 0.77 , CFI=0.77, and RMSEA = 0.11] was not acceptable.

Given that the original model did not fit to the data, modifications were taken into account. However, with some modifications, the fit indices of the modified EBPP-S [χ^2 (108) = 154.06, NFI= 0.76, IFI=0.96, TLI = 0.95, CFI= .96, and RMSEA = .06] were acceptable, showing that the modified model provided a better fit to the data than the original one. Table 2 shows the goodness of fit indices for the original version and modified models. The goodness-of-fit indices for the modified model suggested that this model provided a better fit to the data than the original model (Figure 1).

Finally, the intercorrelation among subscale items was high and significant (Table 3), while the intercorrelations among subscale scores was low (Figure 1) suggesting that the constructs of attitudes, behavior and knowledge were relatively discrete. The internal consistency of the 17 item scale was .88. The alpha coefficients for attitude and knowledge was .89 and .90 respectively, while the alpha coefficients for behavior was .83. EBPP-S items and scoring are presented in appendix A.

Table 1. Factorial Weight of the EBPP’s Items by factor

Variables	Attitudes	Knowledge	Behavior
1. Practice is more worthwhile than evidence	.461	.101	.121
2. EBPPs are useful	.652	.246	.062
3. Beneficial to my clients	.750	.169	-.102
4. Strengthens quality of service	.808	.113	.107
5. Helps in decisions	.717	.315	.026
6. Promote a theoretical bias	.471	-.139	.056
7. Limit my professional practice	.537	-.183	-.176
8. Helpful in my practice	.811	.142	.245
9. Can incorporate EBPPs	.881	.214	.072
10. Guided by best available research	.684	.110	.119
11. Imposed particular treatment	.708	-.129	-.138
12. No space for clients decisions	.732	-.181	.103
13. Familiar with EBPPs	.177	.349	.294
14. Use EBPPs	.214	.352	.280
15. Practice based on my judgment	.062	.604	-.121
16. My team uses EBPPs	.286	.562	.379
17. Works to integrate research	.245	.619	-.119
18. Learned in academic preparation	.043	.693	.029
19. Research to design intervention	.086	.745	.179
20. Feel competent using EBPPs	.133	.711	.006
21. Use best available research	.415	.321	.507
22. The use of effective treatments	.199	.117	.441
23. The utility of interventions	.314	.106	.420
24. Best guidelines to improve practice	.215	.115	.421

Table 2. Goodness-of-fit indexes of the original vs. modified three factor model of the EBPP-S

Model	χ^2	Df	P	NFI	IFI	TLI	CFI	RMSEA
Original	481.02	249	.000	.63	.78	.77	.77	.11
Modified	154.06	108	.01	.75	.96	.95	.96	.06

Note: NFI = Normative Fit Index, IFI = Incremental Fit Index, TLI = Tucker Lewis Index, CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation

Discussion

The preliminary results with the EBPP-S are promising. The aim of the study was to develop and evaluate the psychometric properties of a scale for professionals in Puerto Rico regarding their attitudes, beliefs and behavior toward EBP. A related goal was to produce a relatively brief instrument that could be used to assess progress in adopting EBPPs. We expected the EBPP-S to have at least three dimensions based on the constructs of attitudes, behavior, and knowledge. The revised CFA with the theoretically derived three-factor model was supported by the data; this model required only minor modifications of the error terms. Furthermore, the reliability indices for the 17-item scale as well as for the subscales are quite good given the relatively limited sample size of the study.

Other investigators have evaluated the role of attitudes in EBPs. Aarons noted that the certain characteristics of health providers, such as education and professional experience in the field were associated with attitudes toward EBPs (10). More positive beliefs and attitudes are thought to influence behavior (13). With instruments that are psychometrically sound, it may be possible to explore such relationships and design training programs that can document the changes in attitudes toward EBPs. Thus, the multidimensionality of the EBPP-S offers unique possibilities for applied research in Puerto Rico. Differences in the dimensions identified in the EBPP-S can serve as a point of departure for designing particular areas of training in EBPs. Additionally, the scale can also be used to evaluate change from pre to post for training programs in EBPs.

Clearly, there are limitations to the study. The sample size was relatively small and the three-factor structure reported might not have the stability one would desire in optimal conditions. Also, the sample was one of convenience, which limits any claim of generalizability. Nevertheless, the fact that the study was conducted primarily with health professionals in the field was a key element in the development of the EBPP-S contributing to its ecological validity. Also, despite these limitations, this brief instrument produced relatively good indices worthy of further investigation.

Future studies are in order with the EBPP-S to further explore its psychometric properties that include larger and more diverse samples. It would be optimal to examine how this scale compares to those used in other contexts and its association to provider characteristics such as education, expertise, age, and training in EBPs. In addition, based on the factor model identified it may be possible to examine the relationship between attitudes, knowledge, and behavior in health and mental health care settings not only for heuristic theoretical reasons, but also for program development and practice.

Table 3. Inter-correlations between items for EBPP-S

#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	-																
2	.65**	-															
3	.54**	.71**	-														
4	.47**	.61**	.75**	-													
5	.42**	.53**	.60**	.65**	-												
6	.47**	.56**	.64**	.58**	.66**	-											
7	.12	.19	.24**	.07	.26**	.41**	-										
8	.08	-.06	-.30	.02	.06	.23*	.72**	-									
9	.00	-.02	.12	-.04	-.04	.15	.43**	.55**	-								
10	-.03	.19	.25**	-.07	.26*	.35**	.57**	.56**	.53**	-							
11	-.09	.13	.19	-.04	-.09	.03	.29**	.18	.17	.20	-						
12	.22	.28**	.20	.04	.22*	.38**	.41**	.40**	.30**	.60**	.29**	-					
13	.35**	.30**	.30**	.04	-.10	.18	.27*	.51**	.66**	.45**	.53**	.35**	-.52**	-			
14	.28**	.30**	.14	.04	.31**	.40**	.28**	.28**	.24*	.27*	-.03	.14	.31**	-			
15	.31**	.35**	.28**	-.09	.53**	.28**	.31**	.25*	.24*	.40**	-.02	.25	.26*	.71**	-		
16	.29**	.33**	.30**	.32**	.50**	.30**	.29**	.29**	.33**	.43**	-.12	.25*	.27*	.67**	.89**	-	
17	.17	.35**	.23**	.29**	.35**	.42**	.26**	.25**	.34**	.46**	.08	.27*	.25*	.48**	.70**	.71**	-

Note. **p < 0.01, two-tailed, *p < 0.05, two tailed.

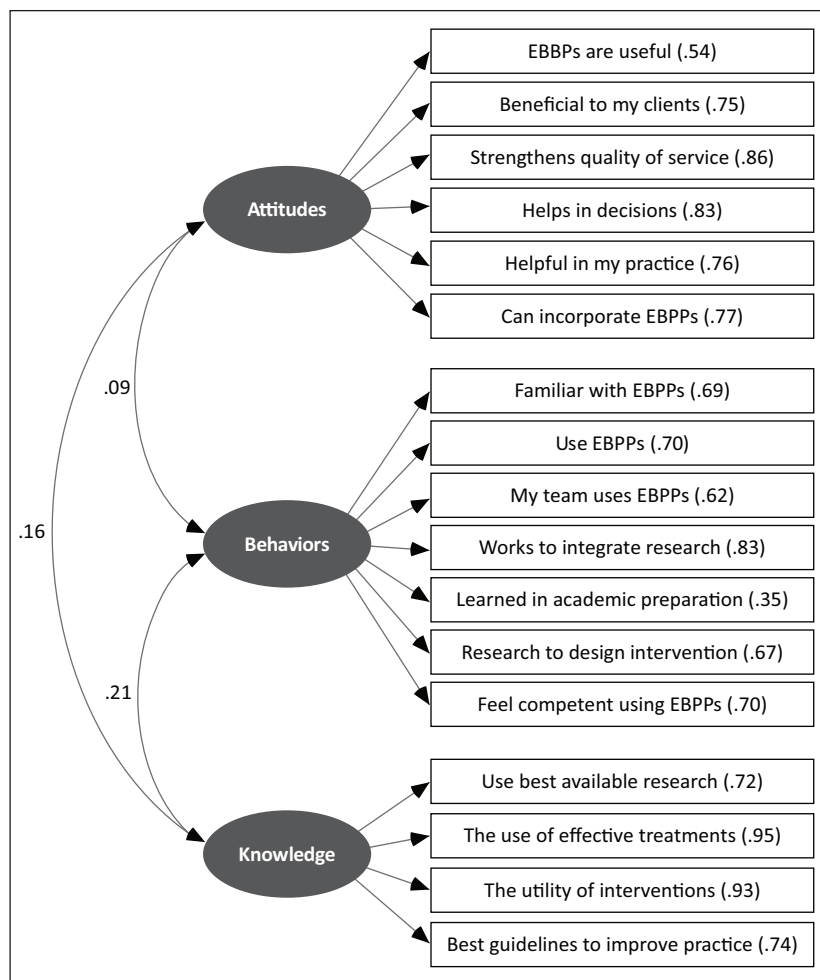


Figure 1. Modified version of the three-factor measurement model for the Evidence Based Professional Practice-Scale (EBPP-S)

Resumen

Objetivo: Las prácticas basadas en la evidencia (PBE) se han integrando a muchos sistemas de salud. Poca investigación, hasta el momento, se ha hecho sobre PBE en Puerto Rico. Se desarrolló una escala genérica de práctica profesional basada en la evidencia (PPBE) para medir actitudes, conductas y conocimiento. **Métodos:** El estudio consistió de dos fases. En la primera fase, se desarrolló la escala y se hizo una análisis exploratorio de factores (AEF; n = 65). En la segunda fase, el modelo del AFE se evaluó en otra muestra (n = 86) con un análisis confirmatorio de factores (ACF). Ambas muestras fueron con proveedores de servicios de salud mental. **Resultados:** Se identificaron tres factores en la escala de PPBE en la primera fase (1) actitudes, (2) conductas, y (3) conocimiento. La consistencia interna de la escala de 43 reactivos fue .93. Las dimensiones principales de la escala fueron analizadas utilizando el ACF. Un modelo de tres factores con 17 reactivos se apoyó por los datos. Los resultados indicaron una consistencia interna de .88 en la versión de 17 reactivos. **Conclusión:** Los resultados preliminares para la escala de PPBE son prometedores y la utilización de esta escala para medir PBE es discutido.

Acknowledgments

This research was supported in part by NIH-COR Grant T34-MH19134 and from the Institutional Funds for Research from the Dean of Graduate Studies and Research at the University of Puerto Rico, Río Piedras Campus. The authors are grateful to Christian Bravo, Karinnette Rivera and Verónica Vélez who over time made valuable contributions to the development of items in the original scale. Also, the authors wish to express their appreciation to the professionals who participated in this study and provided their valued perspectives and time. The authors also thank Drs. Carmen Rivera and Eduardo Cumba for their helpful suggestions and statistical advice.

References

1. Geddes J, Reynolds S, Streiner D, Szatmari P. Evidence based practice in mental health. *BMJ*. 1997;315(7121):1483-1484.
2. Institute of Medicine. *Crossing the quality chasm : a new health system for the 21st century*. Washington, D.C.: National Academy Press; 2001.
3. Sackett DL, Strauss SE, Richardson WS, Rosengerg W, Haynes RB. *Evidence Based Medicine*. 2nd ed. Eidenburg: Churchill Livingstone; 2000.
4. Rosen A. Evidence-based social work practice: Challenges and promise. *Soc Work Res*. 2003;27(4):197-208.
5. Davies P. What is evidence-based education? *Br J Educ Stud*. 2002;47(2):108-121.
6. Youngblut JM, Brooten D. Evidence-based nursing practice: why is it important? *AACN Clin Issues*. 2001;12:468-476.
7. APA Presidential Task Force on Evidence Based-Practice. Evidence-based practice in psychology. *Am Psychol*. 2006;61(4):271-285.
8. Drake RE, Goldman HE, Leff HS, et al. Implementing evidence-based practices in routine mental health service settings. *Psychiatr Serv*. 2001;52(2):179-182.
9. Jette DU, Bacon K, Batty C, et al. Evidence-based practice: beliefs, attitudes, knowledge, and behaviors of physical therapists. *Phys Ther*. 2003;83:786-805.
10. Aarons GA. Mental health provider attitudes toward adoption of evidence-based practice: The Evidence-Based Practice Attitude Scale (EBPAS). *Ment Health Serv. Res*. 2004;6:61-74.
11. Upton D, Upton P. Development of an evidence-based practice questionnaire for nurses. *J Adv Nurs*. 2006;53:454-458.
12. Melnyk BM, Fineout-Overholt E, Mays MZ. The evidence-based practice beliefs and implementation scales: psychometric properties of two new instruments. *Worldviews On Evidence-Based Nursing*. 2008;5: 208-216.
13. Fishbein M, Ajzen I. *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley; 1975.
14. Aarons GA, Sawitzky AC. Organizational climate partially mediates the effect of culture on work attitudes and staff turnover in mental health services. *Adm Policy Ment Health*. 2006;33(3):289-301.
15. Osborne AC, Wild AC, Braun K, Newton-Taylor B. Measuring treatment process beliefs among staff of specialized addiction treatment services. *J Subst Abuse Treat*. 1998;15:301-312.
16. Kraus SJ. Attitudes and the prediction of behavior: A meta-analysis of the empirical literature. *Pers Soc Psycho B*. 1995;21(1):58-75.

17. Bagozzi RP. The self-regulation of attitudes, intentions, and behavior. *Soc Psychol Q*. 1992;55(2):178-204.
18. Aarons GA. Mental health provider attitudes toward adoption of evidence-based practice: the Evidence-Based Practice Attitude Scale (EBPAS). *Ment Health Serv Res*. 2004;6(2):61-74.
19. Plante TG, Boccaccini M, Andersen E. Attitudes concerning professional issues impacting psychotherapy practice among members of the American Board of Professional Psychology. *Psychot Theo Res Pract Train*. 1998;35(1):34-42.
20. Addis ME, Krasnow AD. A national survey of practicing psychologists' attitudes toward psychotherapy treatment manuals. *J Consult Clin Psychol*. 2000;68(2):331-339.
21. Holske MJ, Leslie D. Obstacles to conducting empirically based practice. In: Wodarski JJ, Thyer BA, eds. *Handbook of empirical social work problems: Social problems and practice issues*. New York: John Wiley & Sons, Inc.; 1998:433-451.
22. Mullen EJ, Bacon W. Implementation of practice guidelines and evidence-based treatment: A survey of psychiatrists, psychologists, and social workers. In: Roberts AR, Yeager KR, eds. *Evidence-based practice manual: Research and outcome measures in health and human services*. New York: Oxford University Press; 2004:210-218.
23. Fabrigar LR, Wegener DT, MacCallum RC, Strahan EJ. Evaluating the use of exploratory factor analysis in psychological research. *Psychol Methods*. 1999;4(3):272-299.
24. Long JS. *Confirmatory factor analysis*. Beverly Hills, CA: Sage; 1983.
25. Kelloway EK. *Using LISREL for structural equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage; 1998.
26. Hu L-T, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *SEM*. 1999;6(1):1-55.

Appendix A
Escala para una Práctica Profesional Basada en la Evidencia (PPBE)
Spanish version

Favor de contestar las siguientes preguntas basadas en su práctica clínica. Circule el número que mejor indica cuán de acuerdo está con cada una de las siguientes aseveraciones, donde un 5 = Total Acuerdo y un 1 = Nada de Acuerdo. Para cada aseveración haga su selección en torno a como usted se siente en este momento.

Favor de hacer un círculo en el número que mejor describe cuán de acuerdo está con cada planteamiento.	Total Acuerdo 5	4	3	2	1
1. Las nuevas PBE son útiles	5	4	3	2	1
2. Hacer de mi práctica una basada en la evidencia es de beneficio para mis clientes	5	4	3	2	1
3. La PBE mejora la calidad del servicio que brindo a mi clientela	5	4	3	2	1
4. La PBE me ayuda a tomar decisiones sobre el servicio profesional que ofrezco	5	4	3	2	1
5. Utilizar la PBE sería provechoso para mi práctica profesional	5	4	3	2	1
6. Integraría la PBE en mi práctica profesional	5	4	3	2	1
7. Estoy familiarizado con la PBE	5	4	3	2	1
8. Yo utilizo la PBE	5	4	3	2	1
9. En mi equipo de trabajo se usan las PBE	5	4	3	2	1
10. Estoy trabajando para integrar los resultados de investigación a mi práctica	5	4	3	2	1
11. Yo aprendí los fundamentos de la PBE como parte de mi preparación académica	5	4	3	2	1
12. Uso los hallazgos de los estudios de eficacia y efectividad para diseñar mi plan de intervención o tratamiento	5	4	3	2	1
13. Me siento competente utilizando la PBE	5	4	3	2	1
14. La PBE considera la mejor evidencia empírica disponible	5	4	3	2	1
15. La PBE promueve el uso de tratamientos o intervenciones más efectivas	5	4	3	2	1
16. La PBE destaca la eficacia y la utilidad de las intervenciones	5	4	3	2	1
17. La PBE busca proveer guías que puedan mejorar la práctica psicológica	5	4	3	2	1