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Psychometric evaluation of the Self-Appraisal Questionnaire in a Spanish sample of offenders

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Abstract

Background: The Self-Appraisal Questionnaire (SAQ) is a self-report instrument designed to predict recidivism among adult criminal offenders. The aim of this study was to evaluate the psychometric properties of this self-report in a Spanish sample of offenders. **Method:** The questionnaire was administered to 276 offenders recruited from various prisons in Madrid (Spain). **Results:** Confirmatory factor analyses showed that the underlying structure of SAQ was best explained by a one-factor solution. SAQ total scores exhibited high levels of internal consistency (.92). Correlations of the instrument with violence risk measures were statistically significant and had a moderate magnitude, indicating a reasonable degree of concurrent validity. **Conclusions:** After examination of its psychometric properties, it was concluded that the SAQ total score is a reliable and valid measure to estimate violence risk in Spanish offenders.

Keywords: Self-Appraisal Questionnaire, Violence Risk, Confirmatory factor analysis, Validation.

Resumen

Evaluación psicométrica del Cuestionario de Auto-valoración en una muestra española de delincuentes. **Antecedentes:** el Cuestionario de Auto-Valoración (SAQ) es un instrumento de auto-informe diseñado para predecir el riesgo de reincidencia en población penitenciaria. El objetivo de este estudio fue evaluar sus propiedades psicométricas en una muestra española de delincuentes. **Método:** el cuestionario fue administrado a 276 delincuentes procedentes de varias prisiones de Madrid (España). **Resultados:** el análisis factorial confirmatorio mostró que la estructura subyacente del SAQ fue explicada por una solución uni-factorial. El coeficiente alfa de Cronbach obtenido para la puntuación total del SAQ fue alto (.92). Las correlaciones obtenidas con otras medidas del riesgo de violencia fueron estadísticamente significativas y tuvieron una magnitud moderada, indicando un razonable grado de validez concurrente del instrumento. **Conclusiones:** después de examinar sus propiedades psicométricas, la puntuación total del SAQ proporciona una medida suficientemente fiable y válida para estimar el riesgo de violencia en población de delincuentes españoles.

Palabras clave: Cuestionario de Auto-Valoración, Riesgo de violencia, Análisis factorial confirmatorio, Validación.

Researchers in violence risk assessment have shown increasing interest in the incorporation to the forensic and penitentiary practice of instruments that utilize predictive techniques based on the advances in identifying factors that are protectors or facilitators of violence risk (Andreu, Graña, Peña, & Ballesteros, 2013; Andrews & Bonta, 2010; Douglas, Skeem, & Nicholson, 2011; Shepherd, Adams, McEntyre, & Walker, 2014; Wakeling, Freemantle, Beech, & Elliott, 2011; Yang, Wong, & Coid, 2010). Nevertheless, the practice of using objective measures designed specifically for predicting which offenders are likely to recidivate is a fairly new phenomenon to forensic and correctional systems. Prior to the development of measures such as the Level of Service Inventory –Revised (Andrews & Bonta, 1995), the Violence Risk Appraisal Guide (Harris, Rice, & Quinsey, 1993), and the Self-Appraisal Questionnaire (SAQ, Loza, 2005), professionals relied on clinical judgment and measures that were not specifically designed for predicting violence (Andrés-Pueyo & Echeburúa, 2010; Loza & Loza-Fanous, 2003).

Because of the need for a new permanent assessment to identify subjects who are more inclined to commit a new crime, and thereby manage the risk, the instruments used for this purpose must be reliable and objective, as well as presenting validity and consistency (Loza, Dhaliwhal, Kroner, & Loza-Fanous, 2000). While the prevailing risk of recidivism cannot be absolutely eliminated, through risk assessment, re-education, treatment and intervention programs, its impact can be reduced (Andrews & Bonta, 2010; Echeburúa, Muñoz, & Loinaz, 2011).

The Self-Appraisal Questionnaire (Loza, 2005) is a self-report instrument that measures the predictive, predominant aspects (dynamic and static factors) found in the literature and allows us to assess violence risk and recidivism in forensic and prison populations. The SAQ is a self-report risk/need inventory designed to assist clinicians, forensic and correctional professionals to predict violence risk but it can also be used as a measurement of pre- and posttreatment, as an evaluation of offenders' evolution, as

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a support instrument for assignment and changes in penitentiary grades and to determine penitentiary permissions (Loza, 2005; Prinsloo & Hesselink, 2011).

The developer of the SAQ maintains that this inventory has several important advantages over other violence risk measures. Firstly, the SAQ can be completed in only approximately 20 minutes. Secondly, the SAQ can be administered in groups. Thirdly, interpreting the results requires minimal professional time, minimal training, and no special certification to obtain credible and reliable results. Despite that some professionals are reluctant to use self-report questionnaires because they are vulnerable to lying, manipulation, and self-presentation biases in forensic settings, different studies have also found evidence that self-report questionnaires can be as effective, accurate and valid as observer rating instruments for violence risk assessment in criminal offenders (Loza et al., 2004; Mills, Loza & Kroner, 2003).

Taking into account the relevance and utility of the SAQ for predicting violence risk and assesses treatment needs for incarcerated populations, the purpose of this study was to analyse this self-report measure in a sample of Spanish offenders. The psychometric evaluation was performed by determining the scale dimensionality, excluding the anger subscale due to the author's beliefs in the unreliability of anger as a predictor of violent and nonviolent recidivism (Loza, 2005; Loza & Loza-Fanous, 2000, 2001, 2003; Loza, Neo, Shahinfar, & Loza-Fanous, 2005). Internal consistency and concurrent validity with other violence risk measures were also analyzed at the present study. The last aim centered on the ability of the SAQ to differentiate between individuals with and without history of violence, institutional infractions and antecedents of previous violence offenses.

Method

Participants

We recruited 276 male offenders who were incarcerated in various prisons in the Community of Madrid (Spain). The average age of the participants was 36.4 years (*SD* = 9.7, ranging from 19 to 66 years). Of the sample, 91.3% were Spanish, and 8.7% were from other nationalities. Current sentence length ranged from 8 to 588 months (*M* = 7.6 years, *SD* = 7.7). Seventy-five percent of the participants presented violent offenses (i.e., an offense against a person such as murder, rape, and assault), and the nonviolent offenders were convicted of nonviolent crimes such as property offenses (i.e., robbery without violence, breaking and entering, and theft).

Instruments

The following instruments were selected given the reliability and validity of scores on violence risk measures in offenders (Loza & Loza-Fanous, 2003; Loza et al., 2004; Prinsloo & Hesselink, 2011).

The Psychopathy Checklist–Revised (PCL-R; Hare, 1991, 2003). The PCL-R is an actuarial measure consisting of 20 items and two factors assessing psychopathy in forensic population. In addition to its utility in clinical and research contexts, several studies have supported the psychometric properties of the PCL-R as well as its use as a predictor of violent recidivism (Hare, 2003; Mokros, Vohs, & Habermeyer, 2014; Olver, Lewis, & Wong, 2013; Piquero et al., 2012; Rice & Harris, 1995; Walters, 2012). The Spanish standardization of the PCL-R (Moltó, Poy, & Torrubia, 2010) was used in the present research.

The Violence Risk Appraisal Guide (VRAG; Harris et al., 1993). The VRAG is an actuarial scale developed as a tool for assessing the risk of violent recidivism in mental patients and penitentiary and forensic populations. The instrument indicates the probability (0-100%) that an offender will commit another violent crime, including sexual crimes. Higher scores indicate a greater risk of reoffending violently. The instrument consists of a list of 12 items: PCL-R score (Hare, 1991), biographical and clinical data, including mismatch in elementary school, living with parents at 16 age, history of nonviolent offenses, marital status, age, prior parole failure, injuries inflicted, presence of personality disorder, diagnosis of schizophrenia and substance use. The Spanish version of the VRAG (Ballesteros, Graña, & Andreu, 2006) was used at the present study.

The Self-Appraisal Questionnaire (SAQ; Loza, 2005). The SAQ is a multidimensional instrument designed to predict violent and nonviolent recidivism and assesses treatment needs in correctional and forensic populations. The questionnaire consists of 72 true-false items that comprise eight subscales. Only the first six of these eight subscales (composed by 67 items) are used for the prediction of recidivism. Subscales included in the SAQ are Criminal Tendencies (CT), Antisocial Personality (AP), Conduct Problems (CP), Criminal History (CH), Alcohol and Drug Use (AD), Antisocial Associates (AS), Anger (AN) and Validity (VAL). Items of the Anger subscale are not included in the total score of the SAQ given the controversial relationship between anger and recidivism (Loza & Loza-Fanous, 2000; Loza & Loza-Fanous, 2004). However, the AN subscale could be used for assigning offenders to treatment problems dealing with anger (Loza et al., 2004). Validity subscale is included in the other SAQ subscales, and the specific items on this subscale allow one to validate the offender's accurateness in responding to the SAQ's items. In particular, these items ask about prior arrests or convictions. The application of the SAQ takes about fifteen minutes and the correction about five minutes. It can be applied individually or in group sessions (Loza, 2005).

The SAQ measures the prevailing predictive aspects found in the literature that have proven to be reliable and valid to assess and predict violent and nonviolent recidivism. The SAQ total score yields a quantifiable estimate of the offender's level of risk and determines the offender's probability of recidivism, indicating higher scores a greater level of risk and recidivism (Loza et al., 2005). According to Loza and Loza-Fanous (2003), the probability of recidivism can be calculated from the total score as low (SAQ total score = 2 to 19), medium (20 to 30) and high (31 to 58). Complementarily to the SAQ total score, score for each subscale can be calculated to assess potential treatment targets. The Spanish translation of the SAQ was used in the present study (Andreu, 2010; Ballesteros et al., 2006).

Procedure

Participation in this research was voluntary and included those who met the following inclusion criteria: speaking Spanish, basic level of literacy, having a definitive judicial verdict and sentence, and having given written consent to participate in the investigation. They were informed that the information provided would be used for research purposes, and that all their data would remain confidential. All participants were individually interviewed and

assessed by psychologists trained in the administration of all the assessment protocols, and they subsequently completed the PCL-R and the VRAG. The information regarding offenders' criminal and institutional histories and past evaluations was obtained from their penitentiary files.

Data Analysis

To test the factorial structure of the SAQ, confirmatory factor analysis (CFA) was applied using AMOS program (Arbuckle, 2006). The present study used multiple statistical tests and indexes designed to assess the goodness of fit of the data to the proposed models, following the recommendations of Hu and Bentler (1999). In the case of the Goodness of fit index (GFI), values greater than .95 indicated good fit. AGFI (adjusted GFI) values greater than .90 indicated good fit. NFI (normed fit index) values greater than or equal to .90 indicates acceptable model fit, and values less than .90 can usually be improved substantially. Finally, RFI (relative fit index) values close to 1 indicates a good fit.

Internal consistency of the SAQ was examined with Cronbach's alpha. Pearson correlations were used to analyze the concurrent validity of the SAQ with related variables of violence risk. Group differences comparing variables such as violent and nonviolent offenders, institutional infractions, and antecedents of previous offenses were analyzed using Student's *t*-test, determining the effect size with the partial eta squared coefficient (η_p^2). All analyses were performed with the SPSS computer program.

Table 1
Goodness-of-fit Indexes for the Contrasted Factorial Solutions

Indexes	1-factor solution	6-factor solution	Hierarchical 6-factor solution
Goodness of fit index (GFI)	.96	.89	.87
Adjusted goodness of fit index (AGFI)	.93	.88	.86
Normed fit index (NFI)	.95	.85	.82
Relative fit index (RFI)	.92	.84	.82

Results

Factor-Analytic Validity

We tested three different factorial solutions: (a) a one-factor solution; (b) a six-factor solution; and (c) a higher-order six-factor solution including a general factor underlying the six SAQ subscales. Confirmatory factor analysis using the Unweighted least squares (ULS) estimation method showed that SAQ subscales fit a model of just one factor (GFI = .96, AGFI = .93, NFI = .95, RFI = .92). The squared multiple correlations ranged from .10 to .85, and the factor loadings from .15 to .86. Table 1 shows the fit indexes corresponding to the one-factor model solution.

Internal consistency analysis

Table 2 shows the alpha coefficients for the SAQ total score and subscales. The alpha coefficient for the SAQ total score was .92, and alpha coefficients for the six subscales ranged from .35 to .83. The SAQ total score to subscale correlations ranged from .54 to .86. The correlations were all significant.

Concurrent validity

Concurrent validity was estimated by correlating SAQ scores with two instruments that have shown validity for violence risk assessment in the literature. Spearman's rank correlation coefficients are shown in Table 3.The SAQ total score had moderate correlations with the PCL-R (r = .45, p < .001) and VRAG (r = .64, p < .001). Correlations between the subscales and the PCL-R ranged from .22 to 43; and between the subscales and the VRAG, they ranged from .34 to 56. All of them were statistically significant.

Differences between violent and nonviolent offenders

Differences between violent and nonviolent offenders were analyzed. Offenders were identified as violent offenders if they had ever been convicted for at least one crime against individuals, whereas nonviolent offenders had a retrospective history of convictions related to crimes against property or other nonviolent offenses. As seen in Table 4, there was a significant difference in the SAQ total score between the group of violent and nonviolent

Table 2
Alpha Coefficients, means, standard deviations, and SAQ Total Score-subscale correlations

Subscales	Number of items	α	Means	SD	SAQ total score-subscale correlations
Criminal Tendencies	27	.75	11.3	4.4	.82***
Antisocial Personality	5	.62	2.2	1.4	.69***
Conduct Problems	18	.83	7.1	4.1	.86***
Criminal History	6	.66	2.5	1.7	.63***
Alcohol and Drug Abuse	8	.82	4	2.5	.75***
Antisocial Associates	3	.35	1.1	.9	.54***
(Anger)	(5)	(.69)	(1.9)	(1.6)	(.59***)
SAQ total score	72	.92	30.1	12.5	-

*** p < .001.

Table 3
Correlations between SAQ and Measures for Risk of Violence

SAQ Subscales	PCL-R	VRAG
Criminal Tendencies	.35***	.43***
Antisocial Personality	.43***	.45***
Conduct Problems	.43***	.56***
Criminal History	.43***	.54***
Alcohol and Drug Abuse	.19**	.51***
Antisocial Associates	.22***	.44***
(Anger)	(.25***)	(.34***)
SAQ total score	.45***	.64***
PCL-R total score	—	.55***

**$p < .005$. *** $p < .001$.

offenders (32 vs. 24.39, $t = 4.91$, $p < .001$). Violent offenders obtained significantly higher mean SAQ total scores than nonviolent offenders and they also scored significantly higher than nonviolent offenders on the subscales (except for the Antisocial Associates and Antisocial Personality subscales, where there were no significant group differences). The highest value for the partial eta squared coefficient corresponded to the Criminal History subscale ($\eta_p^2 = .12$).

Institutional infractions

Concurrent validity was further assessed using the number of institutional infractions committed retrospectively as a criterion, by which participants were divided into two groups. The infraction group included participants who had committed at least one institutional infraction, and the no-infraction group had no infractions. These groups were then compared on the SAQ total and subscale scores. Table 5 indicates that the means for the infraction group were always higher than the means of non-infraction group, and the differences were statistically significant in all measures. The highest value for the partial eta squared coefficient corresponded to the SAQ total score ($\eta_p^2 = .20$).

Differences in the antecedents of previous violence offenses

In this analysis, the following criterion was used as a measure of the antecedents of violence offenses: a second or subsequent entry in prison of the same person for committing a violent crime in the community, which may have been committed after serving the sentence or while enjoying a temporary leave from prison. A violent crime is defined as a felony involving acts reasonably regarded as likely to harm other people, clearly threatening behaviors, sexual aggressions, and the destruction of objects (Andrés-Pueyo & Echeburúa, 2010). According to their antecedents of criminal

Table 4
Means, Standard Deviations, t-values and effect sizes of SAQ for the History of Violence

	Violent group ($n = 207$)		Nonviolent group ($n = 69$)			
	M	*SD*	*M*	*SD*	*t*	η_p^2
Criminal Tendencies	11.79	4.59	10.02	3.42	3.39**	.03
Antisocial Personality	2.27	1.34	1.88	1.60	1.99	.01
Conduct Problems	7.53	4.16	5.57	3.69	3.47**	.04
Criminal History	2.85	1.61	1.53	1.47	5.96***	.12
Alcohol and Drug Abuse	4.36	2.50	2.97	2.05	4.18**	.06
Antisocial Associates	1.09	.97	.89	.84	1.51	.01
Anger	2.07	1.59	1.49	1.44	2.69**	.03
SAQ total	32	11.52	24.39	10.66	4.91***	.07

**$p < .005$. ***$p < .001$.

Table 5
Means, Standard Deviations, t-values and effect sizes of SAQ for Institutional Infractions

	Infractions ($n = 147$)		No-Infractions ($n = 129$)			
	M	*SD*	*M*	*SD*	*t-Student*	η_p^2
Criminal Tendencies	12.72	4.37	9.79	3.8	5.84***	.11
Antisocial Personality	2.63	1.25	1.67	1.43	5.93***	.11
Conduct Problems	8.34	4.03	5.51	3.69	6.12***	.12
Criminal History	3.09	1.56	1.87	1.57	6.48***	.13
Alcohol and Drug Abuse	4.97	2.19	2.93	2.31	7.51***	.17
Antisocial Associates	1.28	0.95	.78	.87	4.51***	.07
Anger	2.25	1.58	1.57	1.49	3.69**	.05
SAQ total	35.33	10.78	24.13	11.57	8.28***	.20

**$p < .005$. ***$p < .001$.

Table 6
Means, Standard Deviations, t-values and effect sizes of SAQ for the Antecedents of Previous Violence Offenses

	Violent Re-offenders (n = 148)		Non-reoffenders (n = 128)			
	M	*SD*	*M*	*SD*	*t-Student*	η_p^2
Criminal Tendencies	12.84	4.25	9.63	3.90	6.49***	.13
Antisocial Personality	2.56	1.26	1.73	1.46	5.03***	.09
Conduct Problems	8.40	4.07	5.47	3.62	6.27***	.12
Criminal History	3.37	1.36	1.53	1.45	10.87***	.30
Alcohol and Drug Abuse	4.97	2.31	2.91	2.17	7.58***	.17
Antisocial Associates	1.25	.96	.80	.96	4.08***	.06
Anger	2.33	1.59	1.59	1.59	3.37**	.04
SAQ total	35.64	11.06	23.68	11.06	8.99***	.23

**$p < .005$. ***$p < .001$.

history, participants were divided into two groups: violent re-offenders (individuals who had committed a crime qualified as violent) and non-reoffenders (primary offenders or individuals who had committed an offense considered nonviolent). Table 6 shows the comparison of both groups in the SAQ: the means for the violent re-offenders group were higher than the means of the non-reoffenders group, and the differences were statistically significant at $p < .001$. The highest value for the partial square eta coefficient corresponded to the Criminal History subscale ($\eta_p^2 = .30$).

Discussion

The main objective of this research was to analyze the psychometric properties of the SAQ in a Spanish sample of offenders. This was achieved by determining its internal consistency, factor structure, concurrent and discriminative validity. Overall, these results suggest that the SAQ total score has adequate psychometric properties and acceptable values for assessing violence risk in Spanish offenders.

The analysis of the SAQ at the present study has sound psychometric properties, with acceptable reliability and validity. In particular, the overall internal consistency of the summative total score of the SAQ was high (.92), and also for the Criminal Tendencies, Conduct Problems, and Alcohol/Drug subscales that displayed alphas between .75 and .83. By contrast, subscales with fewer than eight items (antisocial personality, criminal history and antisocial associates) had alpha coefficients ranging from .35 to .66. Therefore, these subscales demonstrated lower internal consistency than commonly acceptable standards of .7 and above.

Is is important to note that the low internal consistency of these subscales is not solely attributable to the small number of items on these subscales. Kubiak, Kim, Bybee & Eshelman (2014), Loza et al. (2000), and Mitchell, Caudy, and MacKenzie (2013) found similar issues in studies of both males and females and pointed to small sample sizes and low inter-item correlations as possible explanations for low internal consistency. For example, according to Mitchell and Mackenzie (2006), the number of items for the Antisocial Personality, Criminal History and Antisocial Associates subscales would need to be approximately doubled to yield an alpha of .70. That our findings replicate these problems may point to the need for further developmental work on the SAQ subscales and may be one of the reasons for problems related to the ability of the scores of each subscale to indicate potential treatment targets.

The confirmatory factor analyses indicated an appropriate fit of the one-factor model composed by the six subscales contained in the SAQ for predicting recidivism. In the present study, the factor loadings of nearly all items were satisfactory, and the fit indexes can also be considered satisfactory. Using exploratory factor analyses, Loza et al. (2000) indicated in the original study that the SAQ subscales showed a one-factor solution except for the Criminal Tendencies subscale, which had a three-factor solution. The present study, using a more sophisticated approach through confirmatory factor analyses, provides more empirical evidence of one-dimensional structure of the Criminal Tendencies, Antisocial Personality, Conduct Problems, Criminal History, Alcohol and Drug Abuse and Antisocial Associates subscales in Spanish offenders. Excluding the Anger subscale, given its unreliability as predictor of recidivism, these results also support the use of the SAQ total score as a quantifiable measure to assess and predict risk of violence.

Regarding concurrent validity, the results of this research were similar to those found by Loza et al. (2000), and to adaptations of this self-report in other populations (Loza et al., 2004, 2005; Summers & Loza, 2004), when the SAQ total and subscales scores were correlated and compared with risk assessment instruments such as the Violence Risk Appraisal Guide (Harris et al., 1993) and the Psychopathy Checklist-Revised (Hare, 1991). The SAQ showed moderate correlations with the VRAG and PCL-R in the present study. Although the PCL-R was not initially developed to predict the risk of violence and recidivism, there is evidence that it is useful for violence risk prediction (Loza & Loza-Fanous, 2003).

Regarding the type of offense (violent or nonviolent offenders), there were significant differences for the SAQ total score and all the subscales, except for the Antisocial Personality Problems and Antisocial Associates subscales. This may be due to the characteristics of the sample, to the fact that the SAQ does not measure the existence of an antisocial personality disorder but only two antisocial personality characteristics, and any offense (violent or nonviolent) is the result of an antisocial process under the effect of multiple risk factors (Copestake, Gray, & Snowden, 2013; Wakeling et al., 2011). However, although the Antisocial Personality and Antisocial Associates subscales show good concurrent validity according to the results of this study, and

when comparing them with studies in other populations, the low reliability coefficients found in the present research could affect the consistency of these subscales, and interpretation of results should be performed with caution.

Following Loza et al. (2004), the antecedents of previous violence offenses was used as a criterion to test validity, because it was found that this variable is an important risk factor in the prediction of future violence (Andrews & Bonta, 2010; Arbach & Andrés-Pueyo, 2007; Kroner & Yessine, 2013; Pérez, Martínez, & Redondo, 2009). The results of this study indicate that offenders classified as violent re-offenders scored high in the SAQ. There were also significant differences in the scores of the SAQ subscales when groups were compared using institutional infractions as a variable. In other words, offenders who presented antecedents of violence re-offending and institutional infractions scored high on all SAQ subscales. These results suggest that a high score on SAQ subscales translates into a long and diverse criminal violence history.

In general, the findings of this study suggest that the SAQ results were quite similar to other validation studies (Loza et al., 2000; Loza & Green, 2003). Therefore, it can be concluded that the SAQ total score is a reliable and valid measure for assessing violence risk in Spanish offenders. Nevertheless, it is not recommended that the SAQ be considered a replacement for the more comprehensive predictive instruments for assessing risk violence, but rather that the SAQ fills a gap for individuals who would otherwise not be assessed and may act as a supplement to offer case management staff new information. In this sense, the Spanish version of the SAQ only provides a basis for its complementary use in violence risk assessment, and convergence with other measures validated for the prediction of violence in Spanish offenders should be sought.

Notwithstanding satisfactory psychometric properties of the SAQ, this study presents an important limitation, consisting of the retrospective design. Due to this type of design, we could not predict recidivism among violent offenders. Therefore, estimation of predictive validity of the SAQ should be performed using a longitudinal design with prospective data collection. Besides, the SAQ should be validated with different subtypes of violent offenders in different settings and examined for its reliability and validity in female offenders.

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