

# A Dynamic Risk Factors–Based Typology of Sexual Offenders

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## Abstract

The purpose of this article was to develop an Spanish psychometric typology of sexual offenders taking into account dynamic risk factors. The sample comprised 94 sex offenders imprisoned in Spain (52 rapists and 42 child molesters). The analysis yielded two different offender categories based on the subjects' criminogenic needs level (high and low). The results also showed that social desirability has a strong influence on the developed typologies, whereas the offence type, sociodemographic characteristics, and criminal history do not. A dynamic risk factors typology, such as the one proposed here, could help criminal and correctional facilities to fulfill their remit. It could also be useful for linking treatment intensity to offenders' criminogenic needs, as well as providing a platform for recidivism risk assessments.

## Keywords

sex offenders, typology, cluster analysis, dynamic risk factors, social desirability

## Introduction

The main characteristics of sex offenders and the risk factors that influence their behaviour have been described in detail by psychological and criminological research (Beech, Fisher, & Thornton, 2003; Craig, Browne, Beech, & Stringer, 2006; Whitaker et al., 2008). Risk factors are defined here as those personal and social variables that increase the probability of committing crimes. Two classes of risk factors can be

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considered: static factors that are stable or difficult to change and dynamic factors that are modifiable through the appropriate intervention (Abbey, Jacques-Tiura, & LeBreton, 2011; Harkins & Beech, 2007; Whitaker et al., 2008). Sex offenders are often aggressive and impulsive, and in addition to low self-esteem and low tolerance of frustration, they invariably find it difficult to deal with feelings, both their own and those of others (Craig et al., 2006; Redondo, 2008; Redondo & Garrido, 2008; T. Ward, Polaschek, & Beech, 2006). They also show strong signs of “cognitive distortions” (illogical and erroneous thinking) and tend to see violence as a justifiable way of solving interpersonal problems (this is particularly the case of rapists; Ó Ciardha, 2011; Redondo, 2002; Sigurdsson, Gudjonsson, Asgeirsdottir, & Sigfusdottir, 2010). Compared with the general population, sex offenders are also likely to have had earlier and broader sexual experiences, including being exposed to pornography at an early age (involving violent scenes or children) and having been victims of maltreatment or sexual abuse during childhood (Mancini, Reckdenwald, & Beauregard, 2012).

However, the illegal behaviours of sex offenders are often not limited to sexual crimes and may also include other antisocial and violent behaviours such as theft, burglary, robbery, or injury.

Although they share some general characteristics, sex offenders are often a very heterogeneous group when it comes to individual traits, experiences, and criminal history (Gannon, Terriere, & Leader, 2012; Vess & Skelton, 2010). This heterogeneity makes managing sex offenders difficult, especially as regards intervention and risk management. Bickley and Beech (2001) have suggested that a parsimonious categorization of these offenders should be a priority for future research to facilitate treatment and risk management (Marshall, Marshall, Serran, & Fernandez, 2006; Seto & Fernandez, 2011). Given these arguments and others that will be discussed below, the main purpose of this study was to develop an integrated psychometric typology for two groups of sex offenders (rapists and child molesters) based on an evaluation of their dynamic risk factors.

### *Typologies of Sexual Offenders*

Different typological models have been designed to classify sex offenders (as well as other offenders) on multidimensional axes (Robertiello & Terry, 2007). Classification models can vary widely depending on a number of different factors, including the subjects of interest, the criterion variables used, the methodology applied in designing the specific typology and the objectives sought by the model. The most basic and common typological models classify sex offenders into adult versus juvenile sex offenders, female versus male sex offenders, rapists versus child molesters, intra-familial versus extra-familial offenders, elderly versus younger sex offenders, and online versus offline offenders (Ashfield, Brotherston, Eldridge, & Elliott, 2013; Briggs, Simon, & Simonsen, 2011; Burgess, Commons, Safarik, Loooper, & Ross, 2007; Gunby & Woodhams, 2010; Sewall, Krupp, & Lalumière, 2013).

However, these models are of little utility if they only label the different manifestations or topographies of sex offence behaviours according to the relationships between

the various sociodemographic and criminal characteristics of sex offenders. Indeed, most of these typologies have not taken into account other factors such as recidivism risk (Marshall & Barbaree, 1988; Prentky, Knight, & Lee, 1997) or therapeutic needs (Bickley & Beech, 2001). Consequently, some authors suggest that offender-based typologies are of limited use in the applied field of criminal justice (e.g., classification of subjects in prison, treatment application, or risk management); it is being argued that different purposes may require different typologies (Byrne & Roberts, 2007).

Blackburn (1993) highlighted four different methods for constructing classifications of both general and sex offenders, noting that these methods are sometimes used in combination. The first method relates to what are known as theory-led classification models, which try to identify different sex offender groups on the basis of the main tenets of the most relevant theories about sex crime and sex offenders (e.g., the Massachusetts Treatment Centre Child Molester Typology, Knight & Prentky, 1990; the model for rapists developed by Langton & Marshall, 2001). The second method is the clinical approach, which classifies sex offenders according to specific *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994), sexual disorders, such as paraphilia or other sexual disorders (M. Cohen, Seghorn, & Calmas, 1969). A third method for classifying sex offenders is the pragmatic or actuarial approach (Bickley & Beech, 2001; Blackburn, 1993), which assesses and predicts the offenders' risk by combining different static risk factors, such as previous behaviour and offence history (Hanson & Bussière, 1998; Prentky et al., 1997). Finally, the most recent and applied method for categorizing sex offenders is the psychometric or statistical profiling approach. This method collects data on offenders using standardized instruments and applies statistical methods, such as cluster analysis, to explore and define different ways of categorizing sex offenders (T. Ward et al., 2006). Most of the data used tend to refer to psychological variables related to the main dynamic risk factors (correlates associated with an increased probability of committing a crime, which can be modified through an intervention) or criminogenic needs. Different authors have argued that this could be the best and most efficient approach to the design of typologies (Beech & Mann, 2002; Seto & Fernandez, 2011).

However, an important criticism levelled against this approach is that the data obtained through these assessment tools are often biased due to factors such as social desirability, lying, fear of negative consequences derived from the assessment or the desire to obtain imprisonment benefits. The phenomenon of social desirability bias has been widely studied (Chung & Monroe, 2003; Lee & Sargeant, 2011; Myung-Soo, 2000; Pauls & Stemmler, 2003). Social desirability refers to people's tendency to present themselves in line with socially accepted standards and to deny those behaviours considered culturally undesirable, such as unpunctuality, alcohol abuse, or drink driving (Chung & Monroe, 2003; Groves, 1989; Krumpal, 2013; Zerbe & Paulhus, 1987). It has been found that social desirability can distort the conclusions of research that is based exclusively on interviews, surveys, or self-report methods, where it may explain between 10% and 75% of the total variance in responses to self-descriptive items (Nederhof, 1984; Tan & Grace, 2008). Furthermore, it has been documented in a wide range of research fields, including business ethics, racism,

homophobia, sexual behaviour, substance abuse, parental care, children's health status, and hostile behaviour (J. R. Cohen, Pant, & Sharp, 1998, 2001; Fastame, Penna, & Hitchcott, 2015; Kelly, Soler-Hampejsek, Mensch, & Hewett, 2013; Pauls & Stemmler, 2003; Randall & Fernandes, 1992; Sanzone et al., 2013). The effect of social desirability on individual scores could lead to important distortions with regard to both the clinical assessment of the individual and the overall conclusions of a study. For instance, the seriousness of some clinical and behavioural problems (e.g., alcohol use, intrusive sexual fantasies, compulsions, or other mental disorders) may be underestimated, or test results may even suggest a complete lack of problem awareness (Gudjonsson, 1990; Gudjonsson, Petursson, Sigurdardottir, & Skulason, 1992).

In the field of sex offenders, the study of social desirability has highlighted differences between types of offenders, with child molesters being more inclined to engage in impression management (Tan & Grace, 2008). Social desirability has also been associated with a decreased risk of recidivism (Mills & Kroner, 2005; Peersen, Sigurdsson, Gudjonsson, & Gretarsson, 2010). However, studies on social desirability tend to be limited by small sample sizes and various contextual factors (e.g., being assessed under anonymous conditions or not, individually or in a group, etc.).

Although questions remain regarding social desirability (Tan & Grace, 2008), a number of methods have been proposed to control for this phenomenon: These include incorporating honesty scales into self-reports and applying a specific style of survey or check questions, statistical methods, and so on (Gudjonsson, 1992; Kelly et al., 2013; Kroner & Weekes, 1996).

### *A Psychometric Typology of Child Molesters*

One of the classifications developed within the framework of the psychometric profiling method is the child molester typology produced by Beech (1998) from a sample of 140 untreated child molesters. Data on the level of social adequacy, offence-related measures, denial/admittance measures, level of sexual problems, social desirability, and accountability were collected via the application of different assessment tools. Using different hierarchical cluster analysis, Beech identified three clusters or categories of child molesters: (a) high deviance, (b) low deviance, and (c) high denial/low deviance. The high and low deviancy groups were labelled as such due to the differential amount of psychological difficulties presented by the individuals in the sample. Thus, the high deviance group had higher mean scores than the low deviancy group on most of the analysed variables. The third group, the so-called high-denial group, comprised of subjects whose main characteristic was a high level of social desirability. Beech sought to overcome the problem of social desirability bias by applying a statistical correction to all the variables used. From the adjusted data, he identified two main clusters of subjects, related to high and low deviancy. The Beech classification was one of the first typologies of child molesters to use the offenders' criminogenic needs as criteria for classifying subjects.

More recently, typologies of sex offenders have been expanded. For example, Seto and Fernandez (2011) identified four different clusters concerning different axes of

antisocial and sexual deviancy: (a) a low-needs group, (b) a typical group (with intermediate scores), (c) a sexually deviant group, and (d) a pervasive high-needs group. Their study also showed that the deviance level of the groups was not related to other characteristics such as the previous relationship between victim and offender. The authors regarded these results as rather unexpected, as previous research had highlighted the fact that intra-familial sex offenders generally show lower criminogenic needs than do extra-familial sex aggressors (Seto, 2008). Similarly, no differences were found between the basic types of offenders (rapists vs. child molesters) when attitudes toward victims were analysed. These results are consistent with previous research, suggesting that adult sex offenders and child molesters show only a few differences in terms of dynamic risk factors, despite the fact that the aetiology of their offending might be quite different (Lalumière, Harris, Quinsey, & Rice, 2005; Whitaker et al., 2008). However, as most of the typologies have been developed considering rapists and child molesters separately, an integrated typology of both kinds of sex offenders, such as the one that will be presented here, might be helpful for treatment purposes, as well as for simplifying existing dual typologies.

### *Management and Treatment Implications*

It is argued here that typologies can improve the classification, treatment, and management of offenders in prison. To give an example, a sexual offender's typology tied to the Andrews and Bonta rehabilitation model (risk–needs–responsivity [RNR]; Andrews & Bonta, 2010; Andrews, Bonta, & Wormith, 2011) has proven to be very useful for this purpose (Bickley & Beech, 2001). This rehabilitation model establishes that offender treatments have to be based on three related basics: (a) the *risk principle*, which examines the individual's risk level, so as to link this to treatment intensity; (b) the *needs principle*, which prioritizes the assessment of those psychological factors connected to criminal behaviour, the so-called "criminogenic needs"; (c) and the *responsivity principle*, which examines individual characteristics that can enhance or (indeed) block treatment effectiveness. Considering all of the above, Beech's approach has led to more efficient treatment of sex offenders in the United Kingdom by establishing the appropriate intensity and duration (shorter or longer) of interventions matched to level of need (Beech & Fisher, 2004). The relevance of dynamic risk factors or criminogenic needs, directly related to treatment objectives, is what links the present study to the suggestions of the RNR model. From this perspective, a typology based on criminogenic needs could have applied benefits for the justice and correctional systems, as well as for the implementation of treatment programmes.

In Spain, the treatment of sex offenders is based on the RNR model and is similar to programmes applied in the correctional services of Canada, the United States, and the United Kingdom (e.g., Marshall, Marshall, Serran, & O'Brien, 2011; Olver & Wong, 2013). The programme, which was designed by Garrido and Beneyto (1996) and subsequently revised by the Spanish Correctional Service in 2006 (Ministerio del Interior, 2006), is 1 to 2 years in length, group-based, and delivered twice weekly in sessions lasting 2½ hr. It focuses on (a) relaxation therapy, (b) the history and

development of sexual behaviour, (c) cognitive distortions, (d) emotional regulation, (e) violent behaviour, (f) coping techniques, (g) victim empathy, (h) a positive way of life, (i) sexual learning, (j) changing the sexual impulse, and (k) relapse prevention.

## **Research Aims**

The aim of the current manuscript is to develop a Spanish-integrated psychometric typology of sex offenders, based on an evaluation of dynamic risk factors identified in two groups of imprisoned untreated sex offenders (rapists and child molesters). Regarding treatment, this paper expects to show sex offenders could be treated as a single group, especially when the intervention is focused on their dynamic risk factors. It is hoped that this research will contribute to the knowledge base on sex offenders across different cultures and countries.

Related to these objectives, the following hypotheses were tested:

**Hypothesis 1:** Sexual offenders can be classified according to their level of criminogenic needs (i.e., the intensity and accumulation of dynamic risk factors).

**Hypothesis 2:** The social desirability of participants will influence and distort their answers on the scales used and, consequently, the developed typology.

**Hypothesis 3:** Sexual offenders can be classified into the distinct obtained groups irrespective of the type of offence they committed (rape or child abuse).

## **Method**

### *Procedure*

The data employed in the present article form part of an ongoing national study about the efficacy of sex offender treatment in Spain. Three groups of offenders (rapists, child molesters, and other violent offenders) were analysed across a total of 40 prisons offering sex offender treatment. In this national study, different self-report instruments (described below) were applied, as a pilot study, to a smaller group of sex offenders who are the sample for the present study. Any cases with more than 10% of items with missing data were excluded from the analysis. For the remaining subjects, the estimation means (expectation-maximization) method was used to replace any missing data. All the assessment tools were given to the participants prior to the initiation of treatment by specialized correctional staff, usually psychologists or social workers. Staff also completed a sheet compiling sociodemographic and criminal data for the subjects, with this information being gathered through personal interviews and consultation of case files.

### *Participants*

The primary inclusion criterion for this study was that participants had completed all of the applied instruments described in the Measures section below. All those included were about to begin a treatment programme for their sexual offending behaviours. The

final sample consisted of 94 male sexual offenders serving a sentence in a Spanish prison: 52 of them had been sentenced for rape (aggressors of adult women) and 42 for child molestation (sexual abusers of children below the age of 13). No subjects in this sample had been sentenced for both crimes.

Table 1 shows personal and criminal characteristics of the sample. The sample as a whole had been found guilty of 212 offences, with a mean of 2.26 crimes per subject.

It can be seen in Table 1 that there were significant differences in some personal characteristics (mean age at the time of assessment and at the time the crime was committed, family socioeconomic level) and certain criminal features (types of sexual acts inflicted on the victim during the offence, victim's age and characteristics, and being under the effects of alcohol during the offence). No significant differences were found between rapists and child molesters in their level of offending.

## Measures

The scales applied in this study, which assess dynamic risk factors relevant to this research and linked to the intervention targets of sexual offender treatment in Spain, were as follows:

*Abel-Becker Cognitions Scale (ABCS)*. The ABCS (Abel et al., 1989) consists of 29 items that are scored on a 5-point Likert-type scale, with lower scores indicating greater cognitive distortions. The scale's authors report good test-retest reliability and alpha coefficients above .70 for all the subscales. In the current study, the alpha for the overall scale was .93.

*The Illinois Rape Myth Acceptance Scale (IRMA)*. The IRMA (Payne, Lonsway, & Fitzgerald, 1999) is designed to evaluate male attitudes toward violence against women. It is a 45-item questionnaire scored on a 7-point Likert-type scale, with higher scores indicating more distorted perceptions. The scale's authors reported an alpha coefficient of .93, compared with  $\alpha = .91$  in the current study.

*Aggression Questionnaire (AQ)*. This instrument assesses aggressive behaviour and personality using 12 Likert-type items scored on a 5-point scale, with higher scores representing higher levels of aggressiveness. The Spanish adaptation (Gallardo-Pujol et al., 2006) yielded an  $\alpha$  of .78 and a temporal stability index of .71, compared with  $\alpha = .80$  in the current study (Buss & Perry, 1992; Gallardo-Pujol, Kramp, García-Forero, Pérez-Ramírez, & Andrés-Pueyo, 2006).

*The Balanced Inventory of Desirable Responding (BIDR-7)*. This self-report questionnaire consists of 40 items that are responded to on a 5-point Likert-type scale. There are two subscales: Impression Management (IM), with alpha coefficients ranging from .75 to .86, and Self-Deception Enhancement (SDE), with alpha ranging from .68 to .80. Paulhus (1984, 1991) reported an alpha value of .83 for the overall scale, compared with .74 in the present study.

**Table 1.** Means and Proportions for the Sample as a Whole.

	Rapists	Child molesters	Total sample
<i>M</i> ( <i>SD</i> ) age at time of assessment (years)	37.31 (8.14)	46.77 (10.62)*	41.26 (10.32)
Characteristics of family of origin (%)			
Structured family	77.8	65.6	72.7
Dysfunctional family	22.2	34.4	27.3
Socioeconomic status of family of origin (%)			
Low	13.3	32.4 <sup>a</sup>	21.5
Medium	82.2	64.7	74.6
High	4.4	2.9	3.8
Educational level (%)			
Elementary school	40.4	32.4	37.0
Middle school	38.3	32.4	35.8
High school	21.3	29.4	24.7
Bachelor	0	5.9	2.5
Partner relationship (%)			
No relationship	31.8	15.2	24.7
In a stable relationship	54.5	57.6	55.8
In an unstable relationship	13.6	27.3	19.5
Characteristics of acquired family (%)			
Structured family	57.6	53.8	55.9
Dysfunctional family	42.4	46.2	44.1
Diseases (asthma, AIDS, etc.) (%)	6.5	3.2	9.7
Diagnosis of mental disorders (anxiety, depression) (%)	25.6	12.1	19.7
History of alcohol/drug use (%)	22.6	15.1	37.6
Unemployed at time of offence (%)	19.0	17.6	18.4
<i>M</i> ( <i>SD</i> ) age at time of offence (years)	28.51 (8.57)	35.81 (10.11)*	31.57 (9.87)
<i>M</i> ( <i>SD</i> ) number of offences	2.02 (1.29)	2.59 (3.25)	2.26 (2.31)
Type of sexual acts (%)			
Exhibitionism	0.0	4.9	2.2
Sexual molestation	32.7	61.0 <sup>a</sup>	45.6
Masturbation	14.3	29.3 <sup>a</sup>	21.1
Vaginal penetration	63.3	17.1 <sup>a</sup>	42.2
Oral penetration	24.5	31.7	27.8

(continued)

**Table 1. (continued)**

	Rapists	Child molesters	Total sample
Anal penetration	20.4	14.6	17.8
No. of other offences committed during the sex crime	7	0	7
Property crime	4	—	4
Attempted homicide	2	—	2
Intimidation and injuries	1	—	1
Use of weapons (%)	17.2	0 <sup>a</sup>	17.2
Alcohol/drug intoxication during the offence (%)	24.5	7.5 <sup>a</sup>	31.9
Victim's mean age (years)	28.36 (10.26)	10.10 (2.55)*	18.76 (11.71)
Relationship to victim (%)			
Unknown to the offender	33.3	5.1 <sup>a</sup>	31.9
Previously known	16.7	19.2	29.8
Family member	7.7	18.0 <sup>a</sup>	21.3
Subjects who assume responsibility (%)	70.0	75.8	56.4

Note. Significant differences are indicated.

<sup>a</sup>Z test significant.

\*Significant at  $p < .05$ .

*The Barratt Impulsiveness Scale 11 (BIS-11)*. This measure was used to assess the personality/behavioural construct of impulsiveness. The BIS-11 (Patton, Stanford, & Barratt, 1995) is a self-report questionnaire comprising 30 items scored on a 4-point Likert-type scale, with higher scores indicating greater impulsivity. Patton et al. (1995) report high internal consistency for the scale with different samples (alpha values ranged between .79 and .83). An alpha coefficient of .83 was obtained in the present study, after eliminating Items 3, 6, 21, and 29.

*The CAGE alcohol interview schedule*. This screening instrument assesses possible alcohol problems by asking Yes/No questions about four areas referred to as Cut down, Annoyance, Guilty feelings, and Eye-openers. A score of 2 or more positive answers generally indicates serious drinking problems or dependency. The analysis of internal reliability in the present study yielded  $\alpha = .75$  (Mayfield, McLeod, & Hall, 1974).

*Rathus Assertiveness Schedule (RAS)*. This is a 30-item questionnaire that uses a 6-point Likert-type scale. In the present study, the response scale was simplified as follows:

1 = "very uncharacteristic of me" to 6 = "very characteristic of me." Higher scores on this scale indicate greater assertiveness difficulties. Rathus (1973) reported moderate to high test/retest reliability ( $r = .78$ ) and split-half reliability ( $r = .77$ ). In the present study, the alpha coefficient was moderate ( $\alpha = .70$ ).

*The Social Self-Esteem Inventory (SSEI)*. This is a 30-item self-report questionnaire that aims to measure the level of people's self-esteem while involved in different social situations. Lower scores indicate lower social self-esteem. The scale's authors reported high test/retest reliability ( $r = .88$ ). An alpha coefficient of .92 was obtained in the present study (Lawson, Marshall, & McGrath, 1979).

*UCLA Loneliness Scale (UCLA, University of California, Los Angeles)*. This is a 20-item self-report questionnaire that is scored on a 4-point Likert-type scale, with higher scores indicating higher levels of emotional loneliness. Russell (1996) reported alpha coefficients ranging from .89 to .94 and moderate test/retest reliability ( $r = .73$ ). The present study obtained  $\alpha = .83$  for the overall scale.

*The University of Rhode Island Change Assessment Scale (URICA)*. Readiness to change was assessed using this 32-item self-report questionnaire. The scoring method applied here followed the algorithm suggested by DiClemente, Schlundt, and Gemmell (2004). Alpha coefficients in the present study ranged from .65 to .85 (McConaughy, Prochaska, & Velicer, 1983).

## Data Analysis

The original data were adjusted for social desirability levels, following the method reported by Saunders (1991). This method consists in extracting a correction factor from the original data, as follows:  $Y^I = Y - (a)$  *Social Desirability*, where  $Y$  is the original score,  $(a)$  *Social Desirability* is the correction factor, and  $Y^I$  is the final adjusted score. Statistically, the correction factor is the unstandardized regression coefficient of social desirability obtained from the prediction of the original scores of a particular scale. This means that it is necessary to apply the following regression formula for each scale of interest:  $Y = (a)(X) + b$ , in which  $(a)$  is the regression coefficient,  $(X)$  is the social desirability scale score,  $b$  is the standard error, and  $(Y)$  is the scale score.

After obtaining the adjusted data for social desirability, different hierarchical cluster analyses were carried out using SPSS 20. J. H. J. Ward's (1963) clustering extraction method was applied, not only so as to remain consistent with the analyses performed by Beech (1998), but also because this is one of the most widely reported methods and it has been recognized as one of the most effective types of clustering methods (Loinaz, Echeburúa, & Torrubia, 2010). Using this method, three different cluster analyses were conducted with standardized data: (a) a three-cluster solution using the original data, (b) a two-cluster solution with the original data, and (c) a two-cluster solution using the adjusted data.

The  $z$  test for proportions was also applied to determine whether there were significant differences between the proportion of rapists and child molesters classified in the obtained groups. In addition, mean differences between groups were analysed using the Kruskal–Wallis and Mann–Whitney tests, followed by Bonferroni post hoc correction.

## Results

**Test of Hypothesis 1:** Sexual offenders can be classified into different clusters according to their level of criminogenic needs (intensity of their dynamic risk factors).

The results of the cluster analysis identified a parsimonious three-factor solution: *Cluster 1* comprised of 29 sex offenders, *Cluster 2* comprised of 35, and *Cluster 3* comprised of 30 (see Table A1 in the appendix for the mean scores and standard deviations for all the variables for the three extracted clusters, as well as for the overall sample). Mann–Whitney tests with post hoc Bonferroni corrections were used to examine differences between the identified clusters (see Table A2 in the Appendix for data comparisons).

The results are shown in Figure 1 which displays the mean-centred scores of each variable for the three obtained clusters (note that for the ABCS, SSEI, and URICA scales, lower scores indicate greater risk), and the significant differences between clusters are indicated.

As Figure 1 shows, most of the significant differences were found between Cluster 1 and Cluster 2, and between Cluster 1 and Cluster 3, with the scores of Cluster 1 indicating a greater amount of the measured construct on six of the 10 variables. The Mann–Whitney test showed that Cluster 1 scored lower than Cluster 2 on the SSEI ( $U = 123.00$ ,  $r = -.65$ ) and CAGE ( $U = 128.50$ ,  $r = -.65$ ) and higher in UCLA ( $U = 192.00$ ,  $r = -.53$ ), and significantly higher than Cluster 3 on the AQ ( $U = 130.00$ ,  $r = -.60$ ) and the UCLA ( $U = 58.00$ ,  $r = -.74$ ), and lower on the SSEI ( $U = 56.50$ ,  $r = -.75$ ; Table A2). This cluster was therefore termed the “high-needs group,” as their subjects’ mean scores indicated higher involvement in most of the assessed risk variables (which reflect personal difficulties and psychological or behavioural needs).

In Cluster 2, most of the scores for the different variables were situated between those obtained by Cluster 1 and Cluster 3 (Figure 1). However, Cluster 2 scored higher on the CAGE than did both Cluster 1 ( $U = 128.50$ ,  $r = -.65$ ) and Cluster 3 ( $U = 55.50$ ,  $r = -.79$ ). Scores on the IRMA were also higher in Cluster 2, but the Mann–Whitney test indicated that this difference between groups was not significant ( $p > .05$ ; Appendix Table A2). These results suggest that this group could tentatively be labelled as the “moderate-needs group.”

Cluster 3 scores indicated the lowest levels of involvement for all the analysed variables, with the exception of the BIDR-7, where this group obtained the highest score. Therefore, Cluster 3 can be tentatively described as the “low-needs/high-denial group.”

In summary, the post hoc results suggested that subjects could be grouped according to their level of needs on at least two levels (low and high), whereas the validity of the third group was unclear due to the influence of social desirability.

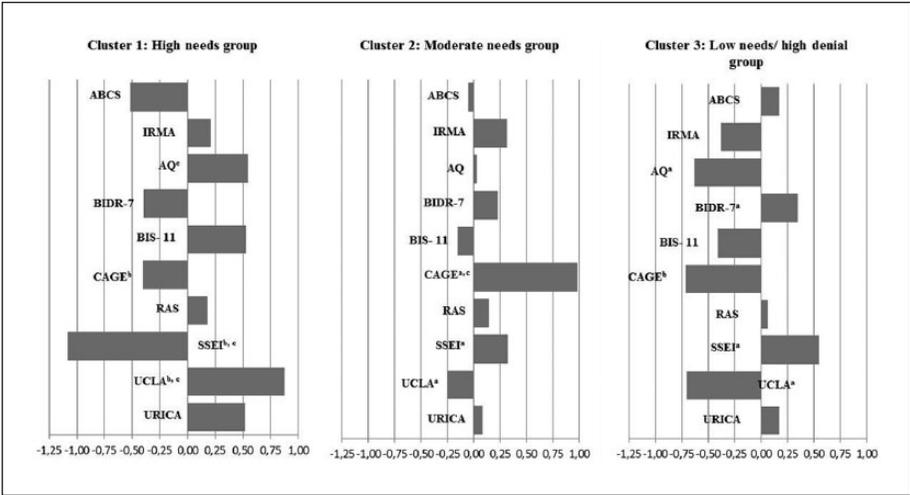


Figure 1. Representation of the centred mean scores for the three groups extracted in the first cluster analysis.

Note. ABCS = Abel-Becker Cognitions Scale; IRMA = Illinois Rape Myth Acceptance Scale; AQ = Aggression Questionnaire; BIDR-7 = Balanced Inventory of Desirable Responding; BIS-11 = Barratt Impulsiveness Scale II; CAGE = Alcohol Interview Schedule; RAS = Rathus Assertiveness Schedule; SSEI = Social Self-Esteem Inventory; UCLA = University of California, Los Angeles Loneliness Scale; URICA = University of Rhode Island Change Assessment Scale.

<sup>a</sup>Indicates significant differences between the particular cluster and Cluster 1.

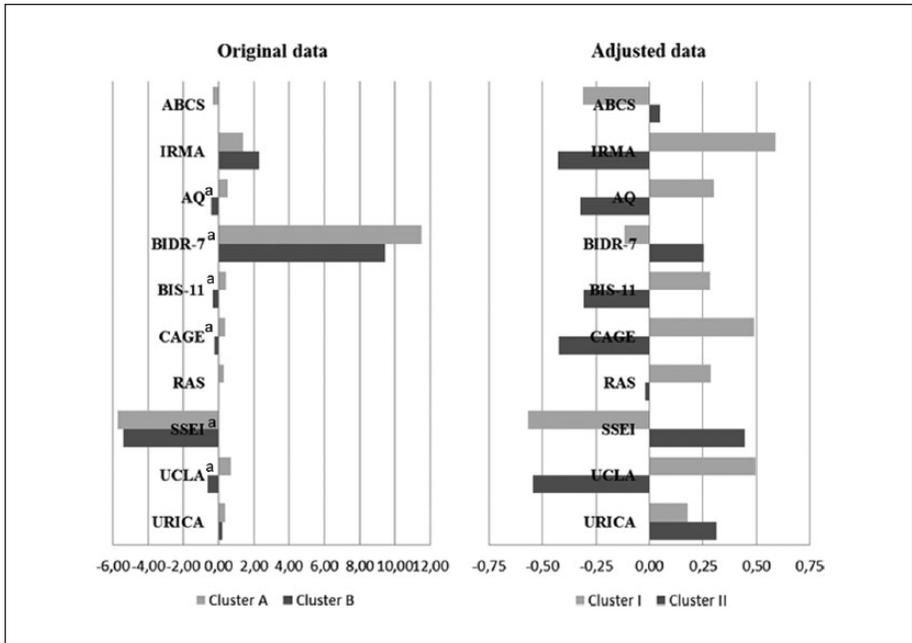
<sup>b</sup>Indicates significant differences between the particular cluster and Cluster 2.

<sup>c</sup>Indicates significant differences between the particular cluster and Cluster 3.

**Test of Hypothesis 2:** The social desirability of subjects will affect their answers on the scales and, consequently, the typology developed.

Given the results described above, this hypothesis was tested by examining scale scores in the simplest two-cluster solution (*Cluster A* and *Cluster B*) and comparing these original data with an adjusted data solution, which takes into account the level of social desirability (*Cluster I* and *Cluster II*). The original data cluster analysis identified two parsimonious clusters: Cluster A comprised of 39 participants and Cluster B comprised of 54. While the adjusted data cluster obtained Cluster I constituted of 45 sex offenders and Cluster II of 49 (see Table A3 in the appendix for the mean scores and standard deviations of both cluster analyses with the original and the adjusted data). Mann-Whitney tests with post hoc Bonferroni corrections were also used to examine differences between clusters (see Table A4 in the appendix for data comparisons).

Figure 2 shows the mean-centred scores of each variable for both cluster analyses. As for the original data clusters, Cluster A individuals indicated higher involvement than their Cluster B counterparts on all the variables, with the exception of the IRMA and URICA.



**Figure 2.** Representation of the centred mean scores for the different groups extracted in the original and the adjusted data cluster analysis.

Note. ABCS = Abel-Becker Cognitions Scale; IRMA = Illinois Rape Myth Acceptance Scale; AQ = Aggression Questionnaire; BIDR-7 = Balanced Inventory of Desirable Responding; BIS-11 = Barratt Impulsiveness Scale II; CAGE = Alcohol Interview Schedule; RAS = Rathus Assertiveness Schedule; SSEI = Social Self-Esteem Inventory; UCLA = University of California, Los Angeles Loneliness Scale; URICA = University of Rhode Island Change Assessment Scale.

<sup>a</sup>Significant differences between groups.

As can be seen in Figure 2, the Mann–Whitney tests indicated significant differences between Cluster A and Cluster B on the following variables: AQ ( $U = 460.00, r = -.48$ ); BIS-11 ( $U = 577.00, r = -.38$ ); CAGE ( $U = 725.00, r = -.28$ ); SSEI ( $U = 324.50, r = -.59$ ); UCLA ( $U = 473.00, r = -.67$ ); and BIDR-7 ( $U = 473.00, r = -.47$ ; Table A4). The latter result suggests that social desirability (BIDR-7) may once again be having an effect upon scores, and therefore the adjusted data set was also analysed.

Regarding the analysis of adjusted data (controlling the effects of social desirability), Cluster I mean scores indicated the highest level of involvement on all the analysed variables, and Cluster II the lowest. Thus, Cluster I was labelled as the “high-needs group” and Cluster II as the “low-needs group.” However, few of the variables differed significantly between groups, in comparison with the previous analyses (Figure 2). The significant differences corresponded to the CAGE ( $U = 573.50, r = -.43$ ), the SSEI ( $U = 494.00, r = -.48$ ), the IRMA ( $U = 451.50, r = -.51$ ), and the UCLA ( $U = 465.50, r = -.50$ ).

**Test of Hypothesis 3:** Spanish sexual offenders can be classified into the distinct categories irrespective of the type of offence they committed (rapists or child molesters).

Hypothesis 3 was tested by analysing the distribution of the two groups of sex offenders in the three different cluster analyses. The distribution of subjects in the first cluster analysis was as follows: *Cluster 1* comprised of 29 sex offenders, of whom 14 were rapists and 15 were child molesters; *Cluster 2* was comprised of 35 subjects, with 21 rapists and 14 child molesters; and *Cluster 3* consisted of 30 males, of whom 17 were rapists and 13 were child molesters.

In the second cluster analysis, Cluster A was comprised of 39 participants (20 rapists and 19 child molesters) and Cluster B comprised of 54 (31 rapists and 23 child abusers).

Finally, in the third cluster analysis, Cluster I was comprised of 45 sex offenders (26 rapists and 19 child molesters) and Cluster II comprised of 49 (26 rapists and 23 child abusers).

The Z-test analysis for the indicated proportions showed no significant differences between the proportions of rapists and child offenders distributed across the two clusters. The analysis of sociodemographic, criminological, and other offence-related variables likewise revealed no significant differences between groups.

## Discussion

The purpose of this article was to develop a psychometric typology of sexual offenders based on dynamic risk factors. To this end, a sample of untreated Spanish sex offenders, comprising both rapists and child molesters, was analysed. Different psychometric tools were applied to assess the main therapeutic risk factors and criminogenic needs of these individuals. These criminogenic needs or dynamic risk factors were then used as criterion variables to identify different hierarchical clusters.

In the test of Hypothesis 1, which stated that sex offenders could be classified according to their level of criminogenic needs, the first cluster analysis classified subjects into three groups, and it thus bore some similarities to the model described by Beech (1998). More specifically, the mean scores on criminogenic needs obtained by the different groups enabled us to label them as a “high-needs group,” a “moderate-needs group,” and a “low-needs/high-denial group.” This analysis therefore confirmed that these sex offenders could be classified according to their dynamic risk factors or criminogenic needs.

To test Hypothesis 2, which concerned the influence of social desirability (assessed using BDR-7) on the typology, the data were adjusted by means of the method reported in Beech’s (1998) study. A comparison of a two-cluster analysis and the adjusted data analysis was thus carried out. The two-cluster analysis showed that the groups differed significantly in social desirability. However, the adjusted data analysis revealed that by controlling for the influence of social desirability, subjects could be clearly classified according to their level of criminogenic needs: Cluster I was labelled the “high-needs group” and Cluster II the “low-needs group.”

Finally, Hypothesis 3 stated that sexual offenders could be classified into the distinct obtained groups irrespective of whether they committed rape or child abuse. No significant differences in the proportions of rapists and child molesters were found in the obtained categories of “high” and “low” needs sex offenders. This typology therefore shows that in terms of criminological needs, the two groups present more similarities than differences, as previously reported (Seto & Fernandez, 2011; Whitaker et al., 2008; Woessner, 2010).

In this respect, a particular contribution of this article is the development of a sex offender typology based on an integrated sample comprising both rapists and child molesters. A combined sex offender typology of this kind has not previously been reported in Spain.

Another important contribution of this research is the description of a sex offender typology that takes into account their criminogenic needs. In this respect, the main difference between the present typology and others (i.e., Beech, 1998; Seto & Fernandez, 2011) is that ours is specifically based on dynamic risk factors that constitute therapeutic aims of current sex offender treatment programmes (e.g., cognitive distortions, attitudes toward violence, aggressive behaviour, impulsivity, etc.). This link with treatment objectives suggests that the typology developed here may have more direct implications for intervention with sex offenders than do previously published typologies. Specifically, the typology could help therapists and educators to target their interventions according to the criminogenic needs of sex offenders (e.g., making interventions more flexible or more intensive), rather than the kind of treatment being defined solely on the basis of the type of victim involved.

This approach (high vs. low criminogenic needs) seems to be consistent with the main arguments of the RNR model (Andrews & Bonta, 2010). Specifically, our typology allows sex offenders to be classified according to the intervention needs principle, as the classification is based on an assessment of an individual’s dynamic risk factors and therapeutic variables: cognitive distortions, feelings of loneliness, assertiveness, empathy, and so on. In this respect, the typology could help criminal and correctional facilities with prison classification, inmate diagnoses, permission reports, parole assignments, risk assessments and management, among other aspects.

It should also be noted that there is considerable scientific evidence to suggest that treatment is more effective when administered according to the risk and needs principles (Andrews & Bonta, 2010; Andrews & Dowden, 2007; Harkins & Beech, 2007). In this context, the results of the current study suggest that a dynamic risk factor typology is likely to be the most cost-effective way of adapting treatments to sex offenders’ characteristics. For instance, such a typology may help professionals to make better-informed decisions regarding the intensity of the treatment they are applying. More specifically, individuals in the “high-needs group” (Cluster I) would require more intensive treatment, whereas a shorter intervention would be appropriate for offenders in the “low-needs group” (Cluster II).

In Spain, sentenced sex offenders are individually assessed by a trained psychologist for inclusion in a treatment programme. In principle, it would be technically possible to apply the programme with different intensity levels (similar to those used in

the United Kingdom). However, because of considerable public alarm related to sex offenders' recidivism, Spanish prisons currently only offer intensive-level treatment (including all the previously described therapeutic ingredients) to the offenders who accept to enrol in the programme. It is important to note in this context that, in accordance with previous findings, our proposed typology of sex offenders suggests that they do not all have the same degree of criminogenic needs or the same needs in terms of treatment intensity.

Similarly to other countries, the Spanish correctional system schedules risk assessments at different points in time, particularly for classifying inmates when they first enter prison, as well as before and after treatment. These risk assessments are generally carried out using recidivism risk instruments, in which static risk factors predominate. Unfortunately, in many cases these traditional risk assessments are of limited use when it comes to identifying criminogenic needs for treatment purposes. Consequently, the development and use of a sex offenders typology based on the assessment of their dynamic risk factors could clearly help prison staff to define and tailor more efficient treatment applications.

Some authors have extensively argued that the correctional system could be organized in line with the risk level of subjects so as to match it more closely to the RNR model (Pattavina & Taxman, 2013). In this respect, a needs-based typology of sex offenders could be useful for decision making regarding correctional interventions and tasks. For instance, it could help bring sentence assignment (prison, probation, community) into line with an individual's risk level, above and beyond the seriousness of the offence or social or media alarm. From this perspective, offenders with low-risk needs could serve their sentence in more flexible contexts, such as probation, whereas those with high-risk needs would require more controlled correctional environments.

Although the effects of social desirability and other kinds of response manipulation are well documented in the psychometric literature, they are often ignored in sex offender research. In fact, this is one of the most important criticisms levelled against the psychometric typology approach which, as already noted, is based on data obtained by applying questionnaires and other psychological tests to offenders (T. Ward et al., 2006). The results obtained in this article suggest that both "faking good" and "faking bad" response styles should always—when the applied instruments do not have their own appropriate validity scales to control for them—be controlled through other available methods. One possibility in this respect would be to include other instruments such as the BIDR, the Minnesota Multiphasic Personality Inventory (MMPI-2), or the Behavioural Rating Inventory of Executive Functioning (BRIEF) in the specific assessment of sex offenders, as all of these instruments use validity scales to determine whether the subject's responses are acceptable.

The present analysis has shown that social desirability bias can critically distort results and conclusions when designing a typology of sex offenders, and it is also a problem in relation to risk assessments and other daily tasks of correctional services. Here, for example, we found that compared with the non-adjusted data analysis, controlling for the effect of social desirability on scale scores led to the classification of

offenders being more sensitive to the actual severity of their dynamic risk factors, thus enabling better discrimination between those with high and low levels of risk. More specifically, once social desirability had been controlled for, most of the participants who were initially classified into the “moderate-needs group” (Cluster 2) were reclassified into the “high-needs group” (Cluster II).

If the effect of social desirability on sex offender typologies is not taken into account, the actual risk level of offenders could be over- or underestimated. This inaccuracy in sex offender risk assessment and classification may not only severely distort and hinder treatment applications, but could also have implications for both the individual and society at large if the purpose of the risk assessment is to decide whether the individual should be released from prison.

In summary, a classification based on criminogenic needs, as proposed here, is likely to be more accurate and efficient for the purposes of both risk assessment and the treatment of sex offenders.

### *Limitations of the Research*

The main limitation of the current study concerns the missing data in the applied assessment tools, as this obliged us to exclude a number of subjects from the final analysis, significantly reducing the sample size. This, along with other factors related to application of the assessment tools, could have reduced the expected heterogeneity among subjects. Another limitation to take into account is that instead of using a statistical stopping method to extract the clusters used, we analysed the dendrogram and conducted a detailed analysis of the obtained clusters.

### *Suggestions for Future Research*

In the field of forensic psychology and criminology, further research is needed on the effect of social desirability and other forms of response manipulation bias. We also acknowledge that several dynamic risk factors in addition to those assessed here have been identified in connection with sex offending. These include social skills, problem solving, social support, poor self-management, future planning skills, emotional reactions, masturbatory behaviour, and hormonal abnormalities (Hanson & Harris, 2001). Consequently, it would be helpful, perhaps using a meta-analysis, to identify the psychological variables that are most relevant and useful when it comes to developing sex offender typologies, and, particularly, to determine the most efficient and valid way of assessing dynamic risk factors so as to avoid, as far as possible, the application of countless assessment tools. This could help limit the amount of information and data that are lost. Importantly, the efficiency of psychological assessment in the criminal justice context could be improved by ensuring that the personal and material resources which are invested are actually useful and effective, and also that any decisions made are well founded. Finally, in terms of future research, it would also be interesting to reassess the same participants after treatment implementation to examine whether the intervention has managed to reduce the level of their criminogenic needs.

## Appendix

**Table A1.** Means and Standard Deviations for the Three Groups Extracted in the First Cluster Analysis and for the Overall Sample.

Measures	Cluster 1		Cluster 2		Cluster 3		Total sample	
	(n = 29)		(n = 35)		(n = 30)		(n = 94)	
	M	SD	M	SD	M	SD	M	SD
ABCS	132.10	(8.04)	135.57	(7.85)	137.24	(4.43)	135.97	(7.49)
IRMA	84.54	(25.15)	87.78	(36.94)	66.28	(16.18)	78.08	(30.70)
AQ	29.17	(6.43)	25.83	(4.64)	21.53	(4.27)	25.65	(6.49)
BIDR-7	11.12	(5.36)	15.11	(6.21)	15.90	(6.15)	13.66	(6.43)
BIS-II	50.42	(9.44)	44.49	(6.74)	42.27	(7.51)	45.83	(8.71)
CAGE	0.76	(1.12)	2.69	(1.13)	0.33	(0.66)	1.32	(1.39)
RAS	107.89	(20.93)	107.33	(15.79)	105.91	(16.30)	104.85	(17.21)
SSEI	113.4	(23.40)	144.68	(15.46)	149.72	(12.65)	137.53	(22.27)
UCLA	48.93	(8.59)	39.17	(7.07)	35.12	(5.14)	41.31	(8.74)
URICA	10.65	(1.55)	9.66	(1.80)	9.86	(2.3)	9.46	(2.31)

Note. ABCS = Abel-Becker Cognitions Scale; IRMA = Illinois Rape Myth Acceptance Scale; AQ = Aggression Questionnaire; BIDR-7 = Balanced Inventory of Desirable Responding; BIS-II = Barratt Impulsiveness Scale II; CAGE = Alcohol Interview Schedule; RAS = Rathus Assertiveness Schedule; SSEI = Social Self-Esteem Inventory; UCLA = University of California, Los Angeles Loneliness Scale; URICA = University of Rhode Island Change Assessment Scale.

**Table A2.** Multiple Comparisons Between the Three Groups Extracted in the First Cluster Analysis.

	$\chi^2$	Cluster 1 vs. Cluster 2	Cluster 1 vs. Cluster 3	Cluster 2 vs. Cluster 3
		U	U	U
ABCS	6.35	367.50	273.50	497.50
IRMA	9.19	482.50	232.50	361.00
AQ	24.23*	361.00	130.00*	266.50
BIDR-7	9.27	321.50	231.00	491.00
BIS-II	10.68	332.00	232.00	440.50
CAGE	50.18*	128.50*	349.00	55.50*
RAS	0.29	491.00	424.50	479.00
SSEI	40.23*	123.00*	56.50*	431.00
UCLA	37.03*	192.00*	58.00*	431.5
URICA	4.51	347.50	362.50	457.00

Note. ABCS = Abel-Becker Cognitions Scale; IRMA = Illinois Rape Myth Acceptance Scale; AQ = Aggression Questionnaire; BIDR-7 = Balanced Inventory of Desirable Responding; BIS-II = Barratt Impulsiveness Scale II; CAGE = Alcohol Interview Schedule; RAS = Rathus Assertiveness Schedule; SSEI = Social Self-Esteem Inventory; UCLA = University of California, Los Angeles Loneliness Scale; URICA = University of Rhode Island Change Assessment Scale.

\*Bonferroni correction was established at  $p < .0016$ .

**Table A3.** Means and Standard Deviations for the Different Groups Extracted in the Second Cluster Analysis With Both the Original and the Adjusted Data.

Measures	Original data				Adjusted data			
	Cluster A		Cluster B		Cluster I		Cluster II	
	(n = 39)		(n = 54)		(n = 45)		(n = 49)	
	M	SD	M	SD	M	SD	M	SD
ABCS	133.56	(8.11)	136.04	(6.50)	133.62	(8.33)	136.33	(5.88)
IRMA	120.52	(24.49)	148.35	(14.29)	96.14	(31.80)	65.00	(16.33)
AQ	28.91	(6.00)	23.03	(4.63)	27.60	(6.23)	23.55	(4.98)
BIDR-7	87.54	(29.70)	74.36	(28.35)	12.91	(6.03)	15.29	(6.24)
BIS-11	49.64	(8.38)	42.85	(7.47)	48.30	(8.10)	43.14	(8.18)
CAGE	1.85	(1.53)	1.00	(1.29)	2.00	(1.49)	0.73	(1.11)
RAS	109.53	(17.10)	105.4	(17.88)	109.80	(16.53)	104.52	(18.16)
SSEI	10.66	(4.60)	16.69	(6.05)	124.84	(24.52)	147.48	(16.26)
UCLA	47.32	(7.89)	35.89	(5.85)	45.63	(9.08)	36.54	(6.37)
URICA	10.31	(1.71)	9.88	(2.06)	9.87	(1.93)	10.18	(1.94)

Note. ABCS = Abel-Becker Cognitions Scale; IRMA = Illinois Rape Myth Acceptance Scale; AQ = Aggression Questionnaire; BIDR-7 = Balanced Inventory of Desirable Responding; BIS-11 = Barratt Impulsiveness Scale 11; CAGE = Alcohol Interview Schedule; RAS = Rathus Assertiveness Schedule; SSEI = Social Self-Esteem Inventory; UCLA = University of California, Los Angeles Loneliness Scale; URICA = University of Rhode Island Change Assessment Scale.

**Table A4.** Analysis of Group Differences in the Dynamic Risk Factors Assessed for the Clusters Extracted by the Cluster Analyses Based on Original Data and Adjusted Data.

	Original data	Adjusted data
	U	U
ABCS	853.00	904.00
IRMA	753.00	451.50*
AQ	460.00*	684.50
BIDR-7	473.00*	—
BIS-11	577.00*	742.50
CAGE	725.00*	573.50*
RAS	897.50	904.50
SSEI	324.50*	494.00*
UCLA	221.00*	456.50*
URICA	956.50	950.50

Note. ABCS = Abel-Becker Cognitions Scale; IRMA = Illinois Rape Myth Acceptance Scale; AQ = Aggression Questionnaire; BIDR-7 = Balanced Inventory of Desirable Responding; BIS-11 = Barratt Impulsiveness Scale 11; CAGE = Alcohol Interview Schedule; RAS = Rathus Assertiveness Schedule; SSEI = Social Self-Esteem Inventory; UCLA = University of California, Los Angeles Loneliness Scale; URICA = University of Rhode Island Change Assessment Scale.

\*Bonferroni correction was established at  $p < .0016$ .

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## References

- Abbey, A., Jacques-Tiura, A. J., & LeBreton, J. M. (2011). Risk factors for sexual aggression in young men: An expansion of the confluence model. *Aggressive Behavior, 37*, 450-464. doi:10.1002/ab.20399
- Abel, G. G., Gore, D. K., Holland, C. L., Camps, N., Becker, J. V., & Rathner, J. (1989). The measurement of the cognitive distortions of child molesters. *Annals of Sex Research, 2*, 135-152. doi:10.1007/BF00851319
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Andrews, D. A., & Bonta, J. (2010). *The psychology of criminal conduct* (5th ed.). New Providence, NJ: Anderson.
- Andrews, D. A., Bonta, J., & Wormith, J. S. (2011). The Risk-Need-Responsivity (RNR) Model: Does adding the good lives model contribute to effective crime prevention? *Criminal Justice and Behavior, 38*, 735-755. doi:10.1177/0093854811406356
- Andrews, D. A., & Dowden, C. (2007). The Risk-Need-Responsivity Model of assessment and human service in prevention and corrections: Crime-prevention jurisprudence. *Canadian Journal of Criminology and Criminal Justice, 49*, 439-464. Retrieved from <http://utpjournals.metapress.com/content/u7r05rw24683214q/>
- Ashfield, S., Brotherston, S., Eldridge, H., & Elliott, I. (2013). Female sexual offenders. In K. Harrison & B. Rainey (Eds.), *The Wiley-Blackwell handbook of legal and ethical aspects of sex offender treatment and management*. Chichester, UK: John Wiley. doi:10.1002/9781118314876
- Beech, A. R. (1998). A psychometric typology of child abusers. *International Journal of Offender Therapy and Comparative Criminology, 42*, 319-339. doi:10.1177/0306624X9804200405
- Beech, A. R., & Fisher, D. D. (2004). Treatment of sex offenders in the UK prison and probation settings. In H. Kemshall & G. McIvor (Eds.), *Managing sex offender risk* (pp. 137-164). London, England: Home Office.
- Beech, A. R., Fisher, D. D., & Thornton, D. (2003). Risk assessment of sex offenders. *Professional Psychology: Research and Practice, 34*, 339-352. doi:10.1037/0735-7028.34.4.339
- Beech, A. R., & Mann, R. (2002). Recent developments in the assessment and treatment of sexual offenders. In J. McGuire (Ed.), *Offender rehabilitation and treatment: Effective programmes and policies to reduce re-offending* (pp. 259-288). Chichester, UK: John Wiley.

- Bickley, J., & Beech, A. R. (2001). Classifying child abusers: Its relevance to theory and clinical practice. *International Journal of Offender Therapy and Comparative Criminology*, 45, 51-69. doi:10.1177/0306624X01451004
- Blackburn, R. (1993). *The psychology of criminal conduct: Theory, research and practice* (Wiley series in Clinical Psychology). Oxford, UK: John Wiley.
- Briggs, P., Simon, W. T., & Simonsen, S. (2011). An exploratory study of Internet-initiated sexual offenses and the chat room sex offender: Has the Internet enabled a new typology of sex offender? *Sexual Abuse: A Journal of Research and Treatment*, 23, 72-91. doi:10.1177/1079063210384275
- Burgess, A. W., Commons, M. L., Safarik, M. E., Looper, R. R., & Ross, S. N. (2007). Sex offenders of the elderly: Classification by motive, typology, and predictors of severity of crime. *Aggression and Violent Behavior*, 12, 582-597. doi:10.1016/j.avb.2007.02.006
- Buss, A. H., & Perry, M. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology*, 63, 452-459. doi:10.1037/0022-3514.63.3.452
- Byrne, J. M., & Roberts, A. R. (2007). New directions in offender typology design, development, and implementation: Can we balance risk, treatment and control? *Aggression and Violent Behavior*, 12, 483-492. doi:10.1016/j.avb.2007.02.009
- Chung, J., & Monroe, G. S. (2003). Exploring social desirability bias. *Journal of Business Ethics*, 44, 291-302.
- Cohen, J. R., Pant, L. W., & Sharp, D. J. (1998). The effect of gender and academic discipline diversity on the ethical evaluations, ethical intentions and ethical orientations of potential public accounting recruits. *Accounting Horizons*, 13, 250-270.
- Cohen, J. R., Pant, L. W., & Sharp, D. J. (2001). An examination of differences in ethical decision-making between Canadian business students and accounting professionals. *Journal of Business Ethics*, 30, 319-336. doi:10.1023/A:1010745425675
- Cohen, M., Seghorn, T., & Calmas, W. (1969). Sociometric study of the sex offender. *Journal of Abnormal Psychology*, 74, 249-255. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/4890995>
- Craig, L. A., Browne, K. D., Beech, A. R., & Stringer, I. (2006). Psychosexual characteristics of sexual offenders and the relationship to sexual reconviction. *Psychology, Crime & Law*, 12, 231-243. doi:10.1080/10683160500151084
- DiClemente, C. C., Schlundt, D., & Gemmell, L. (2004). Readiness and stages of change in addiction treatment. *The American Journal on Addictions/American Academy of Psychiatrists in Alcoholism and Addictions*, 13, 103-119. doi:10.1080/10550490490435777
- Fastame, M. C., Penna, M. P., & Hitchcott, P. K. (2015). Life satisfaction and social desirability across the late life span: What relationship? *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*, 24, 241-244. doi:10.1007/s11136-014-0750-4
- Gallardo-Pujol, D., Kramp, U., García-Forero, C., Pérez-Ramírez, M., & Andrés-Pueyo, A. (2006). Assessing aggressiveness quickly and efficiently: The Spanish adaptation of Aggression Questionnaire-refined version. *European Psychiatry: The Journal of the Association of European Psychiatrists*, 21, 487-494. doi:10.1016/j.eurpsy.2006.02.002
- Gannon, T. A., Terriere, R., & Leader, T. (2012). Ward and Siegert's pathways model of child sexual offending: A cluster analysis evaluation. *Psychology, Crime & Law*, 18, 129-153. doi:10.1080/10683160903535917
- Garrido, V., & Beneyto, M. J. (1996). *El control de la agresión sexual. Un programa de tratamiento para delinquentes sexuales en prisión y en la comunidad* [The control of sex offence.

- A treatment program for sex offenders in prison and in the community]. Editorial Cristobal Serrano Villalba, Valencia, Spain.
- Groves, R. M. (1989). *Survey errors and survey costs*. New York, NY: John Wiley.
- Gudjonsson, G. H. (1990). Self-deception and other deception in forensic assessment. *Personality and Individual Differences, 11*, 219-225.
- Gudjonsson, G. H. (1992). *The psychology of interrogation, confessions and testimony*. New York, NY: John Wiley.
- Gudjonsson, G. H., Petursson, H., Sigurdardottir, H., & Skulason, S. (1992). Overcontrolled hostility among prisoners and its relationship with denial and personality scores. *Personality and Individual Differences, 12*, 17-20.
- Gunby, C., & Woodhams, J. (2010). Sexually deviant juveniles: Comparisons between the offender and offence characteristics of "child abusers" and "peer abusers." *Psychology, Crime & Law, 16*, 47-64. doi:10.1080/10683160802621966
- Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology, 66*, 348-362. doi:10.1037/0022-006X.66.2.348
- Hanson, R. K., & Harris, A. (2001). *Dynamic predictors of sexual recidivism (1998-2001)*. Corrections Research Department of the Solicitor General Canada: Canada.
- Harkins, L., & Beech, A. R. (2007). A review of the factors that can influence the effectiveness of sexual offender treatment: Risk, need, responsivity, and process issues. *Aggression and Violent Behavior, 12*, 615-627. doi:10.1016/j.avb.2006.10.006
- Kelly, C. A., Soler-Hampejsek, E., Mensch, B. S., & Hewett, P. C. (2013). Social desirability bias in sexual behavior reporting: Evidence from an interview mode experiment in rural Malawi. *International Perspectives on Sexual and Reproductive Health, 39*, 14-21. doi:10.1363/3901413
- Knight, R. A., & Prentky, R. A. (1990). Classifying sexual offenders: The development and corroboration of taxonomic models. In W. L. Marshall, D. R. Laws, & H. E. Barbaree (Eds.), *Handbook of sexual assault: Issues, theories, and treatment of the offender* (pp. 23-52). New York, NY: Plenum Press.
- Kroner, D. G., & Weekes, J. R. (1996). Balanced inventory of desirable responding: Factor structure, reliability, and validity with an offender sample. *Personality and Individual Differences, 21*, 323-333. doi:10.1016/0191-8869(96)00079-7
- Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: A literature review. *Quality & Quantity, 47*, 2025-2047. doi:10.1007/s11135-011-9640-9
- Lalumière, M. L., Harris, G. T., Quinsey, V. L., & Rice, M. E. (2005). *The causes of rape: Understanding individual differences in male propensity for sexual aggression*. Washington, DC: American Psychological Association Press.
- Langton, C. M., & Marshall, W. L. (2001). Cognition in rapists theoretical patterns by typological breakdown. *Aggression and Violent Behavior, 6*, 499-518. doi:10.1016/S1359-1789(00)00029-X
- Lawson, J. S., Marshall, W. L., & McGrath, P. (1979). The Social Self-Esteem Inventory. *Educational and Psychological Measurement, 39*, 803-811. doi:10.1177/001316447903900413
- Lee, Z., & Sargeant, A. (2011). Dealing with social desirability bias: An application to charitable giving. *European Journal of Marketing, 45*, 703-719. doi:10.1108/03090561111119994
- Loinaz, I., Echeburúa, E., & Torrubia, R. (2010). Tipología de agresores contra la pareja en prisión [A typology of imprisoned offenders against women]. *Psicothema, 22*, 106-111.
- Mancini, C., Reckdenwald, A., & Beauregard, E. (2012). Pornographic exposure over the life course and the severity of sexual offenses: Imitation and cathartic effects. *Journal of Criminal Justice, 40*, 21-30.

- Marshall, W. L., & Barbaree, H. E. (1988). The long-term evaluation of a behavioral treatment program for child molesters. *Behavior Research and Therapy*, 26, 499-511. doi:10.1016/0005-7967(88)90146-5
- Marshall, W. L., Marshall, L. E., Serran, G. A., & O'Brien, M. D. (2011). *Rehabilitating sexual offenders: A strength-based approach* (Psychology, Crime, and Justice). Washington, DC: American Psychological Association Press.
- Marshall, W. L., Marshall, L. E., Serran, G. E., & Fernandez, Y. M. (2006). *Treating sexual offenders: An integrated approach*. New York, NY: Taylor & Francis.
- Mayfield, D., McLeod, G., & Hall, P. (1974). The CAGE questionnaire: Validation of a new alcoholism screening instrument. *The American Journal of Psychiatry*, 131, 1121-1123. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/4416585>
- McConaughy, E. A., Prochaska, J. O., & Velicer, W. F. (1983). Stages of change in psychotherapy: Measurement and sample profiles. *Psychotherapy: Theory, Research, Practice, and Training*, 20, 368-375. doi:10.1037/h0090198
- Mills, J. F., & Kroner, D. G. (2005). An investigation into the relationship between socially desirable responding and offender self-report. *Psychological Services*, 2, 70-80.
- Ministerio del Interior. (2006). *El control de la agresión sexual: Programa de Intervención en el medio penitenciario. Un programa de tratamiento para delincuentes sexuales en prisión (Manual del terapeuta)*[The control of sex offence: Intervention programme for prisons. The treatment program for sex offenders in prison (Therapist manual). Madrid, Spain: Ministerio del Interior, Secretaría General Técnica.
- Myung-Soo, J. (2000). Controlling social-desirability bias via method factors of direct and. *Psychology & Marketing*, 17, 137-148.
- Nederhof, A. J. (1984). Visibility of response as mediating factor in equity research. *Journal of Social Psychology*, 122, 211-215.
- Ó Ciardha, C. (2011). A theoretical framework for understanding deviant sexual interest and cognitive distortions as overlapping constructs contributing to sexual offending against children. *Aggression and Violent Behavior*, 16, 493-502. doi:10.1016/j.avb.2011.05.001
- Olver, M. E., & Wong, S. C. P. (2013). Treatment programs for high risk sexual offenders: Program and offender characteristics, attrition, treatment change and recidivism. *Aggression and Violent Behavior*, 18, 579-591. doi:10.1016/j.avb.2013.06.002
- Pattavina, A., & Taxman, F. S. (2013). Planning for the future of the U.S. correctional system. In A. Pattavina & F. S. Taxman (Eds.), *Simulation strategies to reduce recidivism: Risk Need Responsivity (RNR) modeling for the criminal justice system* (pp. 3-20). New York, NY: Springer.
- Patton, J. H., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the Barratt Impulsiveness scale. *Journal of Clinical Psychology*, 51, 768-774. doi: 10.1002/1097-4679(199511)51:6<768::AID-JCLP2270510607>3.0.CO;2-1.
- Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology*, 46, 598-609. doi:10.1037//0022-3514.46.3.598
- Paulhus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, J. P. Shaver, & J. P. Wrightsman (Eds.), *Measures of personality and social psychological attitudes: Volume 1* (pp. 17-59). San Diego, CA: Academic Press.
- Pauls, C. A., & Stemmler, G. (2003). Substance and bias in socially desirable responding. *Personality and Individual Differences*, 35, 263-275. doi:10.1016/S0191-8869(02)00187-3
- Payne, D. L., Lonsway, K. A., & Fitzgerald, L. F. (1999). Measurement using the Illinois Rape Myth Acceptance Scale. *Journal of Research in Personality*, 33, 27-68. doi:10.1006/jrpe.1998.2238

- Peersen, M., Sigurdsson, J. F., Gudjonsson, G. H., & Gretarsson, S. J. (2010). Predicting re-offending: A 5-year prospective study of Icelandic prison inmates. *Psychology, Crime & Law*. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/10683160310001614789?journalCode=gpcl20>
- Prentky, R. A., Knight, R. A., & Lee, A. F. (1997). Risk factors associated with recidivism among extrafamilial child molesters. *Journal of Consulting and Clinical Psychology*, 65, 141-149. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/9103743>
- Randall, D. M., & Fernandes, M. F. (1992). Social desirability bias in business ethics research. *Business Ethics Quarterly*, 2, 183-205.
- Rathus, S. A. (1973). A 30-item schedule for assessing assertive behavior 1. *Behavior Therapy*, 4, 398-406.
- Redondo, S. (2002). *Delincuencia sexual y Sociedad* [Sexual crime and Society]. Madrid, Spain: Ariel.
- Redondo, S. (2008). *Manual para el tratamiento psicológico de los delincuentes* [Manual for the psychological treatment of offenders]. Madrid, Spain: Pirámide.
- Redondo, S., & Garrido, V. (2008). Efficacy of a psychological treatment for sex offenders. *Psicothema*, 20, 4-9.
- Robertiello, G., & Terry, K. J. (2007). Can we profile sex offenders? A review of sex offender typologies. *Aggression and Violent Behavior*, 12, 508-518. doi:10.1016/j.avb.2007.02.010
- Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, 66, 20-40. doi:10.1207/s15327752jpa6601
- Sanzone, L. A., Lee, J. Y., Divaris, K., DeWalt, D. A., Baker, A. D., & Vann, W. F. (2013). A cross sectional study examining social desirability bias in caregiver reporting of children's oral health behaviors. *BMC Oral Health*, 13(1), Article 24. doi:10.1186/1472-6831-13-24
- Saunders, D. G. (1991). Procedures for adjusting self-reports of violence for social desirability bias. *Journal of Interpersonal Violence*, 6, 336-344. doi:10.1177/088626091006003006
- Seto, M. C. (2008). *Pedophilia and sexual offending against children: Theory, assessment, and intervention*. Washington, DC: American Psychological Association Press.
- Seto, M. C., & Fernandez, Y. M. (2011). Dynamic risk groups among adult male sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, 23, 494-507. doi:10.1177/1079063211403162
- Sewall, L. A., Krupp, D. B., & Lalumière, M. L. (2013). A test of two typologies of sexual homicide. *Sexual Abuse: A Journal of Research and Treatment*, 25, 82-100. doi:10.1177/1079063212452617
- Sigurdsson, J. F., Gudjonsson, G. H., Asgeirsdottir, B. B., & Sigfusdottir, I. D. (2010). Sexually abusive youth: What are the background factors that distinguish them from other youth? *Psychology, Crime & Law*, 16, 289-303. doi:10.1080/10683160802665757
- Tan, L., & Grace, R. C. (2008). Social desirability and sexual offenders: A review. *Sexual Abuse: A Journal of Research and Treatment*, 20, 61-87. doi:10.1177/1079063208314820
- Vess, J., & Skelton, A. (2010). Sexual and violent recidivism by offender type and actuarial risk: Reoffending rates for rapists, child molesters and mixed-victim offenders. *Psychology, Crime & Law*, 16, 541-554. doi:10.1080/10683160802612908
- Ward, J. H. J. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association*, 58, 236-244. doi:10.1080/01621459.1963.10500845
- Ward, T., Polaschek, D. L. L., & Beech, A. R. (2006). *Theories of sexual offending*. London, England: John Wiley.

- Whitaker, D. J., Le, B., Karl Hanson, R., Baker, C. K., McMahon, P. M., Ryan, G., . . . Rice, D. D. (2008). Risk factors for the perpetration of child sexual abuse: A review and meta-analysis. *Child Abuse & Neglect*, *32*, 529-548. doi:10.1016/j.chiabu.2007.08.005
- Woessner, G. (2010). Classifying sexual offenders: An empirical model for generating type-specific approaches to intervention. *International Journal of Offender Therapy and Comparative Criminology*, *54*, 327-345. doi:10.1177/0306624X08331213
- Zerbe, W., & Paulhus, D. L. (1987). Socially desirable responding in organizational behaviour: A reconception. *Academy of Management Journal*, *12*, 250-264.