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ENTORNOS PENITENCIARIOS HISPANOHABLANTES

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MODALIDADES DE AGRESIÓN EN

ENTORNOS PENITENCIARIOS HISPANOHABLANTES

MODALITIES OF AGGRESSION IN

SPANISH-SPEAKING PRISON ENVIRONMENTS

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Granada, 31 de mayo de 2017

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Dedicada a mi madre y a mi padre

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Capítulo 1. Resumen

RESUMEN

La presente Tesis doctoral, cuyo eje es el estudio de las modalidades de agresión y los rasgos que diferencian a unos delincuentes de otros en entornos penitenciarios hispanohablantes, está integrada por 12 capítulos, divididos en cuatro secciones o apartados: a) Marco general, b) Parte empírica, c) Discusión general y d) Conclusiones. En el Marco general se abordan, a modo de introducción global, aspectos que tienen que ver con el proceso de formación científica, la criminalidad, la agresión dentro de prisión, la rehabilitación social en contextos de habla hispana (España y Ecuador), algunas necesidades de los sistemas penitenciarios y la delimitación de los estudios de la Tesis doctoral (capítulo 3). El segundo capítulo de esta sección (capítulo 4), en cambio, contiene una reseña del fundamento, de los objetivos y de las hipótesis de los cinco estudios empíricos que representan el núcleo de este trabajo de investigación.

El Nuevo Modelo de Gestión Penitenciaria, implementado por el Ministerio de Justicia, Derechos Humanos y Cultos del Ecuador (MJDHC), ha significado un avance sin precedente para el sistema de rehabilitación social de este país. Con la finalidad de contribuir a su fortalecimiento, se diseñó el "Estudio de Prevalencia de Trastornos Mentales en Población Penitenciaria de Guayaquil", cuya ejecución estuvo bajo la coordinación y supervisión de la Coordinación Zonal 8 del Ministerio de Salud Pública del Ecuador (MSP). Cuatro de los cinco estudios empíricos de esta Tesis doctoral emplean parte de los datos obtenidos en este proyecto. En estos estudios se utilizaron muestras de entre 576 y 811 hombres que cumplían condena por diversos delitos en dos centros penitenciarios de Guayaquil (Ecuador): Centro de Rehabilitación Social Regional Guayas y Centro de Rehabilitación Social Guayaquil. El quinto estudio, en cambio, empleó una muestra de 77 hombres que cumplían condena por agresión física, psicológica o sexual contra la pareja o expareja en dos prisiones de Granada (España): Prisión de Albolote y Centro de Inserción Social "Matilde Cantos Fernández". A continuación se describen los datos esenciales de cada uno de estos estudios, que corresponden a los capítulos 5, 6, 7, 8 y 9 (segunda sección).

Primer estudio. Tuvo como propósito facilitar el trabajo de los psicólogos en los centros penitenciarios del Ecuador. Dada la escasez de instrumentos de evaluación estandarizados en población ecuatoriana, se decidió poner a prueba las propiedades psicométricas de la adaptación española del Inventario de Evaluación de la Personalidad (PAI; Ortiz-Tallo, Santamaría, Cardenal y Sánchez, 2011) en población penitenciaria ecuatoriana. Para explorar su estructura factorial se empleó el método de análisis *Exploratory Structural Equation Modeling* (Asparouhov y Muthén, 2009), mientras que para estudiar su consistencia interna fueron aplicados algunos de los análisis utilizados por Ortiz-Tallo *et al.* (2011). Los resultados indicaron que la adaptación española del PAI posee aceptables propiedades psicométricas en población penitenciaria. Se espera que esta herramienta sea valorada en estos contextos tanto como la versión original (Morey, 1991, 2007) lo es en entornos penitenciarios anglosajones.

Segundo estudio. Una de las tareas del MSP, en el marco del Nuevo Modelo de Gestión Penitenciaria, es obtener información sobre el estado de salud física y mental de las personas privadas de libertad. Una vez contrastadas las cualidades psicométricas de la adaptación española del PAI en población penitenciaria, el segundo estudio tuvo como finalidad estimar la prevalencia actual de características psicopatológicas en población penitenciaria ecuatoriana, empleando las escalas clínicas de este instrumento. Se utilizó una estrategia rigurosa de muestreo para favorecer la precisión y generalización de los resultados. Los hallazgos revelaron la predominancia de los problemas relacionados con el consumo de sustancias y su elevada comorbilidad con otros trastornos mentales. Los datos obtenidos representan una aproximación al perfil psicopatológico de la población penitenciaria ecuatoriana.

Tercer estudio. En las cárceles y prisiones conviven individuos que han cometido delitos con y sin violencia. Sin embargo, en los estudios que emplean muestras penitenciarias se percibe cierta tendencia, por diversos motivos, a no tener en cuenta el delito o no incluir medidas de distinta naturaleza. La heterogeneidad sociodemográfica, judicial y clínica de esta población ha generado interés por detectar medidas que identifiquen con precisión al recluso según el delito que ha cometido. Estos antecedentes dieron origen al diseño de un estudio con implicaciones importantes para la gestión de los centros penitenciarios. Después de establecer el perfil psicopatológico de la población penitenciaria ecuatoriana, se analizó la capacidad de las medidas psicológicas y los datos actuariales para clasificar a los delincuentes en función

del delito por el que cumplen condena, utilizando la adaptación española del PAI para la medición de las variables psicológicas. Se llevó a cabo un análisis discriminante, considerando como variables categóricas cuatro grupos de individuos condenados por delitos frecuentes (robo, asesinato, violación y posesión de drogas). También se examinó la utilidad de todas las variables incluidas en el estudio para configurar un perfil específico de cada delito. Si bien los datos actuariales evidenciaron mayor potencial que las medidas psicológicas, la contribución de los datos actuariales y las medidas psicológicas varía de acuerdo al delito. Además, la adición de medidas psicológicas al modelo actuarial generó un aumento notable en su precisión clasificatoria en los delitos donde se mostró menos robusto: asesinato, violación y posesión de drogas. Por último, la conjugación de los datos actuariales y las medidas psicológicas más robustas permitió el diseño de un perfil específico de cada delito. Los hallazgos sugieren la conveniencia de estudiar a las personas privadas de libertad según el delito que hayan cometido, empleando modelos que incluyan las medidas pertinentes.

Cuarto estudio. Fundamentado en los hallazgos de los tres estudios anteriores, el cuarto estudio se propuso detectar los indicadores de tres modalidades de agresión, empleando tres subescalas del PAI (Actitud agresiva, Agresiones verbales y Agresiones físicas) y un amplio número de variables independientes (sociodemográficas, judiciales y psicológicas). En el análisis de los datos se utilizó el método multivariante *Path Analysis*. Los resultados revelaron que las tres modalidades de agresión poseen estructuras diferenciadas, compuestas por los mismos indicadores principales (rasgos límites y antisociales) e indicadores secundarios y específicos de cada una de ellas: los trastornos relacionados con la ansiedad y la falta de apoyo social, de la Actitud agresiva; la esquizofrenia y la falta de apoyo social, de las Agresiones verbales; y los problemas relacionados con el consumo de drogas y cumplir condena por delitos contra la propiedad, de las Agresiones físicas.

Quinto estudio. Los maltratadores constituyen una población específica de delincuentes y agresores. En el ámbito de la violencia de género, el consumo de sustancias actúa como importante factor de riesgo y desencadenante de conductas violentas contra la pareja o expareja. Varias disciplinas científicas, entre las que figura la Neuropsicología, están empeñadas en identificar los rasgos que diferencian al maltratador, de modo prioritario aquellos que guardan una vinculación estrecha con distintas manifestaciones de agresión. Esta información es relevante para el diseño de

estrategias de prevención de agresiones contra la pareja o expareja y la optimización de los programas de tratamiento para maltratadores. Estas razones justificaron el estudio del funcionamiento ejecutivo de maltratadores con y sin antecedentes de abuso/dependencia de sustancias. Los hallazgos evidenciaron la asociación entre el abuso/dependencia de sustancias y un funcionamiento ejecutivo específico y más pobre con respecto al de los maltratadores no consumidores de sustancias. Las diferencias entre ambos tipos de maltratador fueron notorias en los componentes Actualización, Control inhibitorio y Flexibilidad, pero no en Toma de decisiones.

Finalmente, la Discusión general (capítulo 10) está destinada a analizar los resultados y las principales implicaciones teóricas y clínicas del conjunto de estudios, mientras que en la sección Conclusiones (capítulo 11) se enumeran las conclusiones más sobresalientes y se proponen futuras líneas de investigación.

Capítulo 2. *Summary*

SUMMARY

The structure of the present doctoral thesis titled "Modalities of aggression in Spanish-speaking prison environments" is divided into four main sections: a) General framework, b) Empirical studies, c) General discussion, and d) Conclusions.

One of the main aspects of this work is that it involves two different prison populations: the Spanish and Ecuadorian populations. Each of these populations has different needs depending on its characteristics, priorities, and the degree of progress of its own social rehabilitation systems. Thus, we adopted a research approach adjusted to the particularities of each prison context, hence generating results that are useful for classification, security, and intervention processes in each context.

The New Model of Prison Management implemented by the Ministry of Justice, Human Rights and Cults (MJDHC), represents a novel line of progress for the System of Social rehabilitation in Ecuador. In order to contribute to the development of this process, four out of the five empirical studies of this doctoral thesis were carried out in an Ecuadorian prison context. For this, we used samples of between 576 and 811 male inmates for different criminal offenses in two prisons in Guayaquil (Ecuador): Regional Guayas Social Rehabilitation Center and Guayaquil Social Rehabilitation Center. The fifth study used a sample of 77 male participants that are in prison for physical, psychological or sexual (to the partner or ex-partner) aggression in two different centers in Granada (Spain): Albolote Prison and the Social Insertion Center *"Matilde Cantos Fernández"*. This set of studies follows a logical sequence from both clinical and scientific perspectives. In the following paragraphs, we will briefly present the justification, objectives, data analysis methods, and most relevant results of each study.

First study. The first study aimed to facilitate the evaluation and treatment processes that have been developed by psychologists in Ecuadorian prison centers. One of the main limitations that they find is the lack of standardized evaluation instruments for the Ecuadorian population. Given this, we explored the psychometric properties of the Spanish adaptation of the Personality Assessment Inventory (PAI; Ortiz-Tallo, Santamaría, Cardenal, & Sánchez, 2001) used in the Ecuadorian prison population.

Given that the original version (Morey, 1991, 2007) is widely used in English-speaking prison environments due its excellent qualities as an instrument for the evaluation of personality and psychopathology, we were particularly interested in determining, for the first time, the extent of its usefulness in the Spanish-speaking prison population. We used the Exploratory Structural Equation Modeling (Asparouhov & Muthén, 2009) method of analysis to study the factorial structure. With regard to internal consistency, we applied the analyses used by Ortiz-Tallo *et al.* (2011). The results showed that this version has acceptable psychometric properties in this context.

Second study. One of the challenges of the Ministry of Public Health of Ecuador (MSP) within the New Model of Prison Management framework is to obtain information about the physical and mental health status of inmates. Given this challenge, we aimed to analyze the current prevalence of psychopathological features of the prison population in Ecuador, using clinical scales of the Spanish adaptation of the PAI (Ortiz-Tallo et al., 2011). We adopted a rigorous sampling strategy in order to favor the generalization of the results. The results revealed the prevalence of problems related to drug use in the psychopathological profile of the sample, as well as a high comorbidity with other mental disorders. Further, we found that the PAI provides detailed information that is relevant in the clinical context in a short period of time using minimal resources, both for individual and group interventions.

Third study. The prison population includes individuals that have committed criminal offenses with and without the use of violence. The socio-demographic, judicial, and clinical diversity of this population allowed us to carry out a study with important implications for classification, security and intervention processes. Thus, the main objective of this study was to explore the ability of psychological measures and actuarial data to classify offenders according to their criminal offense, using PAI as an assessment instrument of the psychological variables. For this, we carried out a discriminant analysis with four groups of individuals sentenced for common criminal offenses with the categorical variables: Robbery, Murder, Rape, and Drug Possession. We also analyzed if the variables included in the study could allow us to form a more specific profile for each criminal offense. The results showed that the model with the actuarial data is more robust when these four criminal offenses are characterized. The findings also showed that the contribution of the actuarial data and psychological measures depends on the criminal offense, and that the inclusion of psychological

measures in actuarial models moderately optimizes the accuracy of the classification of the criminal offenses of murder, rape, and drug possession. With these data, we formed a specific profile of each of the four criminal offenses. Our results suggest that it is convenient to consider inmates depending of their criminal offenses, using models that include the most adequate measures in each case. In this study, we compared, for the first time, the discriminatory ability and classification accuracy of a wide range of psychological measures and actuarial data in the same study, with the same sample and for several common criminal offenses.

Fourth study. This study aimed to detect indicators for the three modalities of aggression, using three subscales of the PAI: Aggressive attitude (AGG-A), Verbal aggression (AGG-V) and Physical aggression (AGG-P). We used the Path Analyses multi-variant analysis method for the data. The results showed that each modality of aggression has a differentiated structure with common and specific indicators in this context. The borderline personality and antisocial traits emerge as indicators of the three modalities of aggression. The disorders related to anxiety and the lack of social support were revealed as specific indicators of aggressive attitude, whilst those related to schizophrenia and lack of social support were indicators of verbal aggression. Finally, problems related to drug use and sentences served for criminal offenses against property were indicators of physical aggression. This information is useful in order to intervene and prevent inadequate behaviors. It indicated the tendency of an individual to manifest one specific modality of aggression, as well as the factors that are associated with such aggression. This study was the first to use the adaptation of the PAI to analyze the association between indicators of different expressions of aggression in Spanish-speaking prison contexts.

Fifth study. One of the justifications of this study is the social alarm that has been generated by gender violence. This phenomenon involves a set of risk factors and triggers of aggressive behavior against the partner or ex-partner, the most notable of these being the consumption of substances. Drug-related problems play a prominent role in the psychopathological profile of the prison population, whilst showing to have a considerable impact as indicators of physical aggression in this environment. In addition, recent findings suggest that the batterer has a distinct brain function and neuropsychological profile, regardless of the presence of problems related to substance use. This type of information is relevant for the optimization of preventive and

therapeutic strategies that are applied in this population. For these reasons, a protocol for evaluating executive functions (self-monitoring, inhibitory control, flexibility, and decision-making) was administered to a group of batterers with a history of substance abuse/dependence and a second group of batterers without this background. The findings showed an association between substance abuse/dependence with specific executive functioning. Batterers with previous drug abuse/dependency show lower executive functioning compared to batterers without such history. These differences are important for self-monitoring, inhibitory control, and flexibility. This is the first time that the executive functioning of batterers with and without a history of substance abuse/dependence has been analyzed in a single study.

The final sections of the present doctoral thesis aim to develop discussions about the empirical studies included in this work and the theoretical and clinical implications of the results obtained. We propose recommendations, conclusions, and future perspectives based on those results.

Apartado I

Marco General

Capítulo 3. Marco general

3.1 Consideraciones preliminares

La presente Tesis doctoral está integrada por cinco estudios empíricos -cada uno de ellos con un cuerpo teórico propio y una finalidad específica- que giran en torno a un mismo eje temático, formando un conjunto coherente desde una perspectiva científica (ver capítulos 5, 6, 7, 8 y 9).

A modo de introducción general, este capítulo aborda elementos que ayudan al lector a familiarizarse con la materia de estudio y valorar los rasgos esenciales de las fases del trabajo realizado. Con esto se pretende transmitir, con suficiente claridad, la perspectiva de estudio adoptada y la lógica que ha guiado todo el proceso. Nos parece que esta información es necesaria para entender la razón de ser de cada estudio y del trabajo de investigación en su totalidad.

3.2 Rasgos esenciales de una Tesis doctoral

Durante el período de desarrollo de una Tesis doctoral, desde la idea inicial hasta su defensa, intervienen factores teóricos, metodológicos, técnicos y logísticos. Resulta inevitable que las fases de un programa de formación científica sean moduladas por circunstancias que favorecen o dificultan el cumplimiento del itinerario previamente establecido, requiriendo del doctorando, en más de una ocasión, esfuerzo adicional y mayor capacidad de adaptación. En definitiva, el resultado que se espera obtener, al final del recorrido, es un trabajo consistente, coherente y productivo.

Tomando como referencia la promoción, coordinación y gestión de las actividades de investigación, innovación y transferencia de resultados de investigación que realiza la Universidad de Granada, se pueden identificar dos aspectos que potencian el alcance de una iniciativa de este género: la utilidad del tema de estudio y el grado de transferencia de los hallazgos resultantes al sector público o privado.

En cuanto a la utilidad del tema de estudio, todo trabajo debería contar con un fundamento teórico sólido y un marcado carácter aplicado. El planteamiento de una investigación, por tanto, debería estar dirigido a, por ejemplo, atender alguna necesidad prioritaria de una población determinada o dar respuesta a un problema social relevante. Si bien la transferencia de conocimientos depende de múltiples factores, muchos de ellos fuera del control del investigador y del ámbito universitario, el beneficio concreto y el alcance potencial de los hallazgos favorecen, sin lugar a dudas, este proceso.

3.3 Planteamiento de la Tesis doctoral

Antes de dar inicio a esta Tesis doctoral, fueron analizadas concienzudamente cuestiones importantes como el área en que se enmarcaría el trabajo de investigación, el tema y la población de estudio, el escenario de trabajo y sus necesidades específicas, los objetivos pertinentes, la utilidad de los hallazgos previstos y los recursos disponibles, entre otras. A continuación se exponen algunas ideas sobre los aspectos referidos.

Criminalidad y seguridad ciudadana

La criminalidad es, sin duda alguna, un problema relevante para la seguridad ciudadana. El marco legal del Estado español nos brinda un ejemplo bastante claro de esta realidad. En el Preámbulo de la Ley Orgánica 4/2015, de 30 de marzo, de protección de la seguridad ciudadana, se puede leer:

> Para garantizar la seguridad ciudadana, que es una de las prioridades de la acción de los poderes públicos, el modelo de Estado de Derecho instaurado por la Constitución dispone de tres mecanismos: un ordenamiento jurídico adecuado para dar respuesta a los diversos fenómenos ilícitos, un Poder Judicial que asegure su aplicación, y unas Fuerzas y Cuerpos de Seguridad eficaces en la prevención y persecución de las infracciones.

Entre los indicadores que ayudan a captar la dimensión de la criminalidad, hay dos que son habitualmente utilizados: a) total de personas que conforman la población penitenciaria (p. ej., preventivos, sentenciados, etc.) y b) delitos más frecuentes por los que se cumple condena.

La base de datos en línea *World Prison Brief*, del *Institute for Criminal Policy Research*, proporciona estadísticas bastante actualizadas de la mayoría de sistemas penitenciarios. Gracias a esta información se sabe que la población penitenciaria mundial alcanza los 11.000.000 de personas. El 60% de esta cifra se distribuye entre los Estados Unidos de América (2.145.100), China (1.649.804), Brasil (659.020), Rusia (623.642), India (419.623), Tailandia (286.861), México (233.469), Irán (225.624), Indonesia (210.682) y Turquía (201.177). Estos países presentan tasas de 666, 118, 319, 431, 33, 424, 192, 287, 81 y 254 personas por cada 100.000 habitantes respectivamente.

En cuanto a los delitos más frecuentes en la población penitenciaria, existe una tendencia generalizada en el ámbito internacional. En concreto, la mayoría cumple condena por delitos contra la propiedad, delitos relacionados con las drogas (posesión y tráfico) y delitos violentos, categoría que incluye homicidio, agresión, robo y violencia

sexual (UN, 2016). Los individuos condenados por delitos contra la propiedad son, con diferencia, los más prevalentes, mientras que los delitos financieros y aquellos relativos a la corrupción se encuentran entre los menos frecuentes.

Agresión en el entorno penitenciario

La agresión implica la participación de una amplia gama de factores que pueden manifestarse en las distintas dimensiones que integran al individuo: física, emocional, cognitiva y social (Carrasco y González, 2006). Para Anderson y Bushman (2002), agresión es toda conducta que tiene la intención inmediata de causar daño a otra persona, mientras que la violencia es una agresión que tiene la finalidad de ocasionar un daño importante o letal en la víctima. De acuerdo a estas definiciones, cualquier acción violenta puede ser considerada una agresión, pero no toda agresión es necesariamente una expresión de violencia.

Habitualmente se concede mayor gravedad a la conducta agresiva que tiene implicaciones penales. De este modo, la asociación entre agresión y delito nos dirige directamente al entorno penitenciario como principal escenario de estudio, donde las manifestaciones de agresión y violencia son objeto de especial atención. En efecto, todo sistema penitenciario tiene entre sus prioridades la prevención de cualquier acción autolesiva (Fazel, Cartwright, Norman-Nott y Hawton, 2008; Negredo López, Melis Pont y Herrero Mejías, 2011; Patry y Magaletta, 2015) o conducta que pueda poner en riesgo la integridad de los demás reclusos (Byrne y Hummer, 2007; Lahm, 2008; Schenk y Fremouw, 2012) y de los funcionarios de prisiones (Gadon, Johnstone y Cooke, 2006; Sorensen, Cunningham, Vigen y Woods, 2011). La magnitud de este problema ha fomentado el estudio de los predictores de comportamientos inadecuados y agresiones de diversa gravedad dentro de prisión (Gardner, Boccaccini, Bitting y Edens, 2015; Schenk y Fremouw, 2012).

Aproximación al estudio de las modalidades de agresión en población penitenciaria

La elevada complejidad del constructo agresión se ve reflejada en la interacción, en diferente número e intensidad, de componentes y características de distinta naturaleza en la génesis, el desarrollo y la manifestación de cada conducta agresiva (Anderson y Bushman, 2002; Carrasco y González, 2006). Esto nos lleva a pensar que para estudiar la agresión dentro de prisión es más conveniente, desde una perspectiva

metodológica, hablar de expresiones o modalidades de agresión y adoptar un enfoque psicométrico que considere la compleja dinámica del constructo.

El Inventario de Evaluación de la Personalidad (PAI; Morey, 1991, 2007) es una herramienta idónea para esta finalidad, porque una de sus 22 escalas (Agresión: AGR) ha sido construida específicamente para medir múltiples conductas y actitudes relativas a la agresividad, la ira y la hostilidad (Ortiz-Tallo et al., 2011). La escala AGR se descompone en tres subescalas, cada una de ellas destinada a valorar una modalidad o forma de agresión: Actitud agresiva (AGR-A), Agresiones verbales (AGR-V) y Agresiones físicas (AGR-F). La primera subescala evalúa la presencia de actitudes y emociones que predisponen al sujeto a reaccionar con ira, mientras que la segunda subescala mide la propensión del individuo a expresar la ira de forma verbal. Finalmente, la tercera subescala evalúa el historial agresivo y la actitud actual de la persona hacia la violencia física.

Estudio de la agresión en entornos penitenciarios hispanohablantes

Las circunstancias favorables para trabajar con muestras penitenciarias en dos contextos de habla hispana (España y Ecuador), así como la disponibilidad de recursos para tal efecto, permitieron el diseño de una Tesis doctoral centrada en el estudio de las modalidades de agresión y los rasgos que diferencian a unos delincuentes de otros en estos entornos. Así, el planteamiento de los objetivos de este trabajo de investigación tomó en consideración algunas necesidades de ambos sistemas penitenciarios en lo relativo a la rehabilitación social de los reclusos.

3.4 Marco legal de la rehabilitación social en los sistemas penitenciarios español y ecuatoriano

Cada país cuenta con una población penitenciaria heterogénea, con características, derechos, obligaciones y necesidades específicas. El total de personas encarceladas en España se encuentra en torno a 60.000, cifra que equivale a una tasa aproximada de 130 personas por cada 100.000 habitantes (ICPR, 2017). Los reclusos están sometidos a un régimen especial de vida, en un contexto complejo y con un propósito determinado, tal como establece la Constitución Española en el artículo 25.2:

> Las penas privativas de libertad y las medidas de seguridad estarán orientadas hacia la reeducación y reinserción social y no podrán consistir en trabajos forzados. El condenado a pena de prisión que estuviere cumpliendo la misma gozará de los derechos fundamentales de este Capítulo, a excepción

de los que se vean expresamente limitados por el contenido del fallo condenatorio, el sentido de la pena y la ley penitenciaria. En todo caso, tendrá derecho a un trabajo remunerado y a los beneficios correspondientes de la Seguridad Social, así como al acceso a la cultura y al desarrollo integral de su personalidad.

En síntesis, el sistema penitenciario español tiene entre sus principales cometidos la rehabilitación social de los individuos, fundamento de las penas privativas de libertad y medidas de seguridad. La estancia en prisión debe ser, por tanto, un periodo de aprendizaje y preparación para desarrollar una vida en libertad en condiciones idóneas y con suficientes garantías de éxito.

En el entorno hispanoamericano, los sistemas penitenciarios no están tan estructurados ni consolidados como el sistema penitenciario español. Es probable que limitaciones de carácter presupuestario y desaciertos en materia de gestión expliquen, por lo menos en parte, esta realidad. En todo caso, estos factores son determinantes del alcance y de los resultados de cualquier programa de reinserción social.

En este sentido, es oportuno resaltar que el Gobierno de la República del Ecuador ha apostado decididamente por la reestructuración completa de su sistema penitenciario, con resultados satisfactorios hasta el momento. Este cambio radical de tendencia, evidente en los últimos años (SENPLADES, 2013), puede servir de estímulo a países con antecedentes similares en lo que respecta a sistemas de rehabilitación social deficitarios y políticas penitenciarias inadecuadas.

Ecuador es un país que cuenta con 16.000.000 de habitantes y una población penitenciaria de aproximadamente 26.000 personas, cifra que corresponde a una tasa de 160 personas por cada 100.000 habitantes (ICPR, 2017), una de las más bajas del continente sudamericano. A partir de 2007 se puso en marcha un plan de transformación y modernización del sistema penitenciario sin parangón en la historia del país. El Gobierno ecuatoriano, por medio del Ministerio de Justicia, Derechos Humanos y Cultos, órgano rector de las políticas públicas en materia penitenciaria, implementó el Nuevo Modelo de Gestión Penitenciaria. Este enfoque se propone entender y gestionar el sistema de rehabilitación social de modo coherente con lo que determinan la Constitución de la República del Ecuador y el Plan Nacional para el Buen Vivir 2013-2017 (SENPLADES, 2013).

En lo referente a los derechos de las personas y los grupos de atención prioritaria, la Constitución de la República del Ecuador establece, en el artículo 35, que:

Las personas adultas mayores, niñas, niños y adolescentes, mujeres embarazadas, personas con discapacidad, personas privadas de libertad y quienes adolezcan de enfermedades catastróficas o de alta complejidad, recibirán atención prioritaria y especializada en los ámbitos público y privado. La misma atención prioritaria recibirán las personas en situación de riesgo, las víctimas de violencia doméstica y sexual, maltrato infantil, desastres naturales o antropogénicos. El Estado prestará especial protección a las personas en condición de doble vulnerabilidad.

De modo específico, la Carta Magna enumera, en el artículo 51, algunos derechos de las personas privadas de libertad:

Se reconoce a las personas privadas de la libertad los siguientes derechos:

1. No ser sometidas a aislamiento como sanción disciplinaria.
2. La comunicación y visita de sus familiares y profesionales del derecho.
3. Declarar ante una autoridad judicial sobre el trato que haya recibido durante la privación de la libertad.
4. Contar con los recursos humanos y materiales necesarios para garantizar su salud integral en los centros de privación de libertad.
5. La atención de sus necesidades educativas, laborales, productivas, culturales, alimenticias y recreativas.
6. Recibir un tratamiento preferente y especializado en el caso de las mujeres embarazadas y en periodo de lactancia, adolescentes, y las personas adultas mayores, enfermas o con discapacidad.
7. Contar con medidas de protección para las niñas, niños, adolescentes, personas con discapacidad y personas adultas mayores que estén bajo su cuidado y dependencia.

La Constitución ecuatoriana interpreta la finalidad fundamental de la pena privativa de libertad de modo similar a como lo hace la Constitución española. Por ejemplo, en el artículo 201, la Constitución de la República del Ecuador precisa que:

El sistema de rehabilitación social tendrá como finalidad la rehabilitación integral de las personas sentenciadas penalmente para reinsertarlas en la sociedad, así como la protección de las personas privadas de libertad y la garantía de sus derechos.

El sistema tendrá como prioridad el desarrollo de las capacidades de las personas sentenciadas penalmente para ejercer sus derechos y cumplir sus responsabilidades al recuperar la libertad.

Más adelante, en el artículo 203.2, la Carta Magna menciona ciertas acciones que deben ser emprendidas con el fin de promover la reinserción social del individuo:

En los centros de rehabilitación social y en los de detención provisional se promoverán y ejecutarán planes educativos, de capacitación laboral, de producción agrícola, artesanal, industrial o cualquier otra forma ocupacional, de salud mental y física, y de cultura y recreación.

Por su parte, el Plan Nacional para el Buen Vivir 2013-2017 (SENPLADES, 2013) es fiel a lo que determina la Constitución de la República del Ecuador en esta materia. De hecho, *Consolidar la transformación de la justicia y fortalecer la seguridad integral, en estricto respeto a los derechos humanos* es uno de sus objetivos capitales (Objetivo 6). Además, entre las políticas públicas que forman parte de este objetivo hay una destinada a *Consolidar la transformación del sistema de rehabilitación social*.

El 18 de junio de 2013, el Ministerio de Justicia, Derechos Humanos y Cultos y el Ministerio de Salud Pública suscribieron un Acuerdo Interministerial, en el marco del Nuevo Modelo de Gestión Penitenciaria. A partir de ese momento, el Ministerio de Salud Pública asumió las competencias en materia de salud en los centros penitenciarios ecuatorianos. La labor de los profesionales de la salud resulta fundamental para garantizar algunos de los derechos que la Constitución ecuatoriana reconoce a las personas privadas de libertad.

Aunque una empresa de tal envergadura, como es la transformación y modernización del sistema de rehabilitación social de un país, requiere un margen de tiempo razonable para la ejecución de todas sus fases, se han dado pasos importantes. En los últimos años se han emprendido iniciativas para renovar la infraestructura de los centros penitenciarios, mejorar las condiciones de vida de los reclusos y poner en marcha un conjunto de programas socioeducativos destinados a fomentar su desarrollo personal y fortalecer el proceso de reinserción social.

3.5 Algunas prioridades en los entornos penitenciarios

El estado de desarrollo del sistema de rehabilitación social, las características de los centros penitenciarios y las necesidades de los reclusos condicionan las decisiones relativas a la seguridad y la intervención multidisciplinar. Por tanto, no es razonable esperar que los sistemas penitenciarios compartan las mismas prioridades en estas áreas. En el entorno ecuatoriano, por ejemplo, garantizar una atención individualizada, oportuna y eficiente en materia de salud es uno de los principales retos. Esto se debe a que la prestación de servicios de salud es un pilar fundamental del proceso de reestructuración del sistema de rehabilitación social.

En lo concerniente a la atención psicológica, la obtención de datos sobre las características psicopatológicas de la población penitenciaria ecuatoriana facilitaría la

elaboración de un diagnóstico preciso, la definición de prioridades en materia de atención clínica y el diseño de estrategias de intervención. Aunque se han llevado a cabo muchos estudios de prevalencia de trastornos mentales y síntomas en entornos penitenciarios anglohablantes (para una revisión, ver Fazel y Seewald, 2012), información de esta naturaleza es todavía insuficiente en el contexto sudamericano. En esta misma área, una de las limitaciones importantes que encuentran los profesionales de la salud mental es el escaso número de instrumentos de evaluación estandarizados en población ecuatoriana, razón que debería promover el diseño y la adaptación de herramientas que se ajusten a sus características culturales.

Asociada al estado de salud mental de la población penitenciaria, la agresión se presenta como uno de los grandes problemas en cualquier sistema penitenciario. Esto ha motivado el estudio de los rasgos individuales que guardan una relación estrecha con diversas manifestaciones de indisciplina, conducta agresiva y violencia (Schenk y Fremouw, 2012). Los resultados obtenidos hasta la fecha revelan que ciertos datos actuariales (p. ej., edad, nivel de educación, antecedentes penales, tipo de delito, afiliación a bandas, etc.) poseen mayor potencial que las medidas psicológicas (p. ej., síntomas, rasgos de personalidad, trastornos mentales, etc.) para predecir la violencia dentro de prisión. No obstante, estos autores también advierten la falta de datos concluyentes sobre las variables psicológicas en esta materia. En consecuencia, investigaciones con adecuado rigor metodológico, que pongan a prueba, en un mismo estudio, las cualidades de ambos tipos de medidas para distintos propósitos en el ámbito forense, podrían aportar datos concluyentes sobre el alcance de su utilidad en cada caso.

En cuanto al entorno penitenciario español, a partir de la entrada en vigor de la Ley Orgánica 1/2004, de 28 de diciembre, de Medidas de Protección Integral contra la Violencia de Género, la agresión física, psicológica y sexual contra la pareja o expareja es motivo de particular preocupación. Esto se debe a que nos encontramos ante un problema social y de salud que ha alcanzado proporciones epidémicas (OMS, 2013).

Los maltratadores son una población específica de delincuentes y agresores. Al parecer, el consumo de sustancias es uno de los principales factores de riesgo y desencadenantes del comportamiento agresivo contra la pareja (Chermack, Fuller y Blow, 2000; Fals-Stewart, 2003). Si bien la víctima recibe atención prioritaria, también se trabaja desde las instancias públicas y el ámbito científico en la identificación del

perfil del maltratador, con especial énfasis en la detección de los indicadores de violencia (Farrell, 2011; Loinaz, 2010, 2017). Por ejemplo, la Neuropsicología es una de las disciplinas que se han incorporado al análisis de la violencia de género (Bueso-Izquierdo, Hart, Hidalgo-Ruzzante, Kropp y Pérez-García, 2015). Diversos estudios refieren que la conducta violenta se corresponde con ciertos patrones neuropsicológicos (p. ej., Cohen et al., 2003; Kraanen, Vedel, Scholing y Emmelkamp, 2014), mientras que datos recientes sugieren que los agresores no consumidores de sustancias presentan un funcionamiento cerebral distinto al de otros delincuentes (Bueso-Izquierdo et al., 2016). Por lo tanto, las variables neuropsicológicas pueden contribuir al diseño del perfil del maltratador consumidor y no consumidor de sustancias.

No cabe duda de que la violencia de género requiere un abordaje desde múltiples áreas científicas, siendo sus aportaciones necesarias para detectar indicadores que diferencien con precisión los tipos de maltratador. Lo que se pretende con esta aproximación, en realidad, es identificar la relación de ciertos rasgos del maltratador con conductas agresivas y violentas de diferente índole e intensidad. En síntesis, se puede decir que la investigación en este campo de estudio tiene dos objetivos primordiales: prevenir las agresiones contra la pareja o expareja y mejorar los resultados de los programas de tratamiento diseñados para este tipo de agresores (Carbajosa, Catalá-Miñana, Lila y Gracia, 2017; Ferrer-Pérez y Bosch-Fiol, 2016; Loinaz, 2017).

3.6 Delimitación de los estudios de la Tesis doctoral

Las ideas y reflexiones anteriores dan origen a cinco propuestas de estudio, estrechamente relacionadas entre sí y con un propósito claro: atender necesidades específicas de dos sistemas penitenciarios hispanohablantes.

Con la finalidad de contribuir al fortalecimiento del Nuevo Modelo de Gestión Penitenciaria, se diseñó el "Estudio de Prevalencia de Trastornos Mentales en Población Penitenciaria de Guayaquil", cuya ejecución estuvo bajo la coordinación y supervisión de la Coordinación Zonal 8 del Ministerio de Salud Pública del Ecuador. Desde esta instancia se promovieron las acciones necesarias para la puesta en marcha, el desarrollo y la culminación de esta propuesta científica (p. ej., revisión de aspectos técnicos y éticos del proyecto, conformación y formación del equipo de evaluadores, obtención de información, gestión de permisos para ingresar y desarrollar el trabajo de campo en los centros penitenciarios, coordinación de aspectos logísticos, etc.).

Dado que cuatro de los cinco estudios que constituyen la parte empírica de esta Tesis doctoral emplean parte de los datos obtenidos en el proyecto mencionado, los apartados dedicados a *Inclusion and exclusion criteria*, *Procedure*, *Ethics statement* y *Acknowledgements and funding* son similares en todos ellos (capítulos 5, 6, 7 y 8). En estos cuatro trabajos se utilizaron muestras de entre 576 y 811 hombres que cumplían condena por diversos delitos en dos centros penitenciarios de Guayaquil (Ecuador): Centro de Rehabilitación Social Regional Guayas y Centro de Rehabilitación Social Guayaquil. El quinto estudio, en cambio, se desarrolló en población penitenciaria española y empleó una muestra de 77 hombres que cumplían condena por agresión física, psicológica o sexual contra la pareja o expareja en dos prisiones de Granada (España): Prisión de Albolote y Centro de Inserción Social "Matilde Cantos Fernández". En el siguiente capítulo se exponen, de modo breve, el fundamento, el objetivo y la hipótesis principal de cada uno de estos cinco estudios.

Capítulo 4. Objetivos

OBJETIVOS

Los objetivos de los cinco estudios de esta Tesis doctoral observan una secuencia lógica. En primer lugar, se analizará si el PAI mantiene sus propiedades psicométricas cuando se utiliza en población penitenciaria hispanohablante (objetivo del Estudio 1). En segundo lugar, se estudiará la prevalencia de problemas de salud mental y su comorbilidad en población penitenciaria ecuatoriana (objetivo del Estudio 2). En tercer lugar, se analizarán los rasgos que diferencian a unos delincuentes de otros (objetivo del Estudio 3), así como los indicadores de cada modalidad de agresión en el entorno penitenciario (objetivo del Estudio 4). Por último, se estudiará el funcionamiento ejecutivo del maltratador, un tipo específico de delincuente y agresor (objetivo del Estudio 5).

Si bien estos objetivos han sido planteados en función de ciertas necesidades de dos sistemas penitenciarios, se espera que el alcance de buena parte de los resultados esperados trascienda estos ámbitos de estudio.

Estudio 1

Tiene como propósito facilitar las labores de evaluación e intervención que desarrollan los psicólogos en los centros penitenciarios del Ecuador. Una de las principales limitaciones que encuentran estos profesionales es el escaso número de instrumentos psicométricos estandarizados en población ecuatoriana. Además, el Inventario de Evaluación de la Personalidad (PAI; Morey, 1991, 2007) es una herramienta que evalúa personalidad y psicopatología, cuya utilidad es ampliamente reconocida en entornos penitenciarios anglohablantes. Esto sugiere que este instrumento puede ser un buen recurso en contextos penitenciarios de habla hispana. Sin embargo, no existen estudios sobre las cualidades psicométricas de la adaptación española del PAI (Ortiz-Tallo et al., 2011) en población penitenciaria.

Objetivo. Explorar las propiedades psicométricas de la adaptación española del Inventario de Evaluación de la Personalidad (Ortiz-Tallo et al., 2011) en población penitenciaria.

Hipótesis. Esta versión presentará adecuadas propiedades psicométricas en población penitenciaria de habla hispana. Los resultados serán consistentes con los referidos por estudios similares en otras muestras.

Estudio 2

Una de las tareas del Ministerio de Salud Pública del Ecuador, en el marco del Nuevo Modelo de Gestión Penitenciaria, es recabar información sobre el estado de salud física y mental de las personas privadas de libertad. Una vez verificadas las propiedades psicométricas del PAI en población penitenciaria hispanohablante, el siguiente paso es estimar la prevalencia actual de características psicopatológicas en población penitenciaria ecuatoriana. Esta información puede ser de gran valor como aproximación al perfil psicopatológico de la población penitenciaria ecuatoriana y para la toma de decisiones en materia de gestión de los servicios de salud.

Objetivo. Estimar la prevalencia actual de características psicopatológicas en población penitenciaria ecuatoriana, utilizando las escalas clínicas de la adaptación española del Inventario de Evaluación de la Personalidad (Ortiz-Tallo et al., 2011).

Hipótesis. La población penitenciaria ecuatoriana revelará un perfil psicopatológico caracterizado por una preponderante prevalencia de problemas relacionados con el consumo de sustancias, al igual que ocurre en otras poblaciones penitenciarias.

Estudio 3

Aunque en las prisiones conviven individuos que han cometido delitos con y sin violencia, en los estudios que emplean muestras penitenciarias se percibe cierta tendencia, por diferentes razones, a no tener en cuenta el delito o no incluir medidas de distinta naturaleza. Además, la literatura reconoce el potencial de los datos actuariales en la predicción de la violencia dentro de prisión, al mismo tiempo que la falta de datos concluyentes sobre las variables psicológicas en esta materia. En consecuencia,

investigaciones con adecuado rigor metodológico, que pongan a prueba, en un mismo estudio, las cualidades de ambos tipos de medidas para distintos propósitos en el ámbito forense, podrían aportar datos concluyentes sobre el alcance de su utilidad en cada caso.

Objetivo. Determinar si la capacidad discriminante de las medidas psicológicas y los datos actuariales varía según el delito, como también si es posible configurar un perfil específico de cada delito con ambos tipos de medidas.

Hipótesis. Los datos actuariales mostrarán mayor capacidad discriminante que las medidas psicológicas, no obstante el potencial del modelo actuarial y la contribución de las medidas psicológicas dependerán del delito. Además, la conjugación de ambos tipos de variables permitirá configurar un perfil específico de cada delito.

Estudio 4

El potencial de los datos actuariales y las medidas psicológicas para clasificar a la población penitenciaria por delito (con y sin violencia) sirve de fundamento para el planteamiento del cuarto estudio, cuyo objetivo es la detección de los indicadores de tres modalidades de agresión, empleando tres subescalas del PAI: Actitud agresiva (AGR-A), Agresiones verbales (AGR-V) y Agresiones físicas (AGR-F). La agresión, en cualquiera de sus manifestaciones, es uno de los problemas más importantes dentro de los centros penitenciarios. En este sentido, la identificación de la tendencia de un individuo a expresar, de modo preponderante, una determinada forma de agresión, tiene importantes implicaciones para las áreas de seguridad y de intervención. Además, la interacción de los indicadores de cada modalidad de conducta agresiva puede aportar información clínica relevante.

Objetivo. Estudiar los indicadores de tres modalidades de agresión en población penitenciaria hispanohablante, empleando tres subescalas del PAI (Ortiz-Tallo et al., 2011): Actitud agresiva (AGR-A), Agresiones verbales (AGR-V) y Agresiones físicas (AGR-F).

Hipótesis. Cada modalidad de agresión posee una estructura de indicadores propia en la población penitenciaria. Los rasgos límites y antisociales, los síntomas de esquizofrenia, los problemas relacionados con el consumo de drogas y los factores contextuales presentarán una asociación robusta con estas tres modalidades de agresión.

Estudio 5

Los maltratadores constituyen una población específica de delincuentes y agresores. En el ámbito de la violencia de género, el consumo de sustancias actúa como importante factor de riesgo y desencadenante de conductas violentas contra la pareja o expareja. Unas cuantas disciplinas científicas, entre las que figura la Neuropsicología, están empeñadas en identificar los rasgos que diferencian al maltratador, de modo particular aquellos que guardan una vinculación estrecha con distintas manifestaciones de agresión. Estos datos son relevantes para las estrategias de prevención de agresiones contra la pareja o expareja y la optimización de los programas de tratamiento para maltratadores. Sin embargo, no nos consta que haya sido valorado el funcionamiento ejecutivo de maltratadores con historia de abuso/dependencia de sustancias (MCA) y maltratadores sin estos antecedentes (MSA) en un mismo estudio.

Objetivo. Analizar el funcionamiento ejecutivo (Actualización, Control inhibitorio, Flexibilidad y Toma de decisiones) de MCA y MSA.

Hipótesis. Los MCA obtendrán un rendimiento más pobre que los MSA en pruebas que miden funciones ejecutivas.

Apartado II

Estudios Empíricos

Capítulo 5. Estudio 1

Psychometric properties of the Spanish adaptation of the
Personality Assessment Inventory
in correctional settings:
An ESEM study

Burneo-Garcés, C., Fernández-Alcántara, M., Aguayo-Extremera, R., & Pérez-García, M.
(2017). Psychometric properties of the Spanish adaptation of the Personality Assessment
Inventory in correctional settings: An ESEM study. *Journal of Personality Assessment*
(Under review).

5.1 Introduction

The Personality Assessment Inventory (PAI; Morey, 1991, 2007) is one of the most important personality and psychopathology assessment tools available nowadays, and is widely used in clinical settings, personnel selection, and research (Blais, Baity, & Hopwood, 2010; White, 1996). The PAI is a self-report that measures the effect of thoughts, attitudes, behaviors, facts, and past and present circumstances on the development of symptoms, the characteristics of personality, and the individual's behavior at the time of evaluation. It is composed of 4 validity scales, 11 clinical scales, 31 subscales, 5 scales for treatment consideration, 2 scales of interpersonal relations, and 10 complementary indexes. The content of the 22 scales is non-overlapping. The clinical scales represent the clinical syndromes of the highest significance in diagnostic practice, whereas the scales related to treatment provide complementary information related to a possible intervention. Finally, the interpersonal scales measure the interpersonal relationship style, whereas the complementary indexes can be used to obtain a more precise interpretation of some scores.

The increasing use of the PAI has generated interest in analyzing its psychometric properties (e.g., Siefert, Sinclair, Kehl-Fie, & Blais, 2009; Sinclair et al., 2009, 2010), particularly its structure (e.g., Boyle & Lennon, 1994; Frazier, Naugle, & Haggerty, 2006; Hoelzle & Meyer, 2009; Hopwood & Moser, 2011; Slavin-Mulford et al., 2013). In the original studies, Morey (1991) reported, for the 22 scales and in the normative sample, a structure of four components: (a) subjective distress and affective disruption, (b) behavioral acting out and impulsivity, (c) egocentricity and exploitativeness in relationships, and (d) social detachment. The component structure of the clinical sample differed from the latter in that its fourth component was invalidity and carelessness. For the 11 clinical scales in the normative sample, a two-component structure was reported: (a) subjective distress and affective disruption, and (b) behavioral acting out and impulsivity. To these two components was added a third, in the clinical sample, related to egocentricity and exploitativeness in relationships.

In general, the literature has revealed some discrepancies regarding the dimensional structure (component/factor) of the PAI across different samples (e.g., Boyle & Lennon, 1994; Deisinger, 1995; Karlin et al., 2005; Morey, 1991). These inconsistencies may be due to the characteristics of the normative and clinical samples

analyzed, as well as the methodological guidelines adopted in the studies (e.g., number of scales, validity criteria, factor analytic techniques), as suggested by several authors (e.g., Hoelzle & Meyer, 2009; Velicer, Eaton, & Fava, 2000; Wood, Tataryn, & Gorsuch, 1996). Based on these considerations, Hoelzle and Meyer (2009) conducted a study (Study 1) in a clinical sample using different component retention procedures, in which three components emerged for the 22 scales: (a) general distress and symptomatology, (b) energetic dominance and egocentricity, and (c) substance abuse, carelessness, and a disregard for societal standards. They then compared the consistency of the dimensional structure across a set of six studies — including Study 1 and five other studies — applying the analytical procedure suggested by Barrett (2005). From these five studies, two were conducted in a normative sample (Groves & Engel, 2007; Morey, 1991) and three in a clinical sample (Karlin et al., 2005; Morey, 1991; Tasca, Wood, Demidenko, & Bissada, 2002).The findings showed that the PAI has three invariant higher order components: (a) general distress, (b) elevated mood and dominance, and (c) substance abuse and psychopathy.

The factor structure of the PAI and its psychometric properties have also been tested in the adaptation of the Spanish and Argentinian versions (Ortiz-Tallo, Santamaría, Cardenal, & Sánchez, 2011; Stover, Castro, & Fernández, 2015). When replicating analyzes conducted for the American version (Morey, 1991, 2007), Ortiz-Tallo *et al*. (2011) found that the accumulated variance explained by the exploratory factor analysis (EFA) ranged between 62% and 68%. In the normative and clinical samples, factor analysis of the 22 scales yielded a 5-dimensional structure that identified: (a) subjective distress and affective disruption, (b) impulsivity, acting out, and poor judgment, (c) egocentricity, abuse, and exploitativeness in relationships, (d) social detachment and susceptibility and hypersensitivity in social relations, and (e) carelessness. The dimensions that emerged for the 11 clinical scales were the first two referred to for the 22 scales. Likewise, confirmatory factor analysis (CFA) was conducted for the 10 scales that have subscales. Using the unweighted least squares (ULS) factor analysis algorithm (Brown, 2006) in data analyzes of the clinical sample, the scores obtained for normed fit index (NFI) and adjusted goodness of fit index (AGFI) were between .90 and .97, and between .93 and .98, respectively. With regard to internal consistency, in the normative sample, the median of the Cronbach's alpha coefficients was .78 for the scales, while for the subscales this was .70. When analyzing

temporal consistency, the median of the test-retest correlations obtained was .84 for the scales and .79 for the subscales. In addition, Ortiz-Tallo *et al.* (2011) compared the average T scores of the typical sample of the Spanish adaptation with the American scale of the PAI and found differences in effect sizes that were non-significant for 17 of the 21 scales, and small for the remaining 4 scales. They concluded that the results obtained were consistent with those found in the original studies (Morey, 1991, 2007).

From the Spanish version, Stover *et al.* (2015) carried out adaptation studies of the Argentinian version, where they applied a methodology similar to that of Ortiz-Tallo *et al.* (2011) to analyze the factor structure. The analyzes revealed, in the normative sample and for the 22 scales, a structure of five factors that represent: (a) subjective discomfort and symptomatology, (b) poor impulse control and inconsistency, (c) social isolation, extravagant ideation, difficulties towards reality, interpersonal mistrust, lack of social support and disrespect toward socially accepted norms, (d) excessive energy and impulsiveness, and (e) disinterest in treatment and lack of sincerity. Similarly, in the 11 clinical scales a structure of three factors was identified that represent: (a) subjective discomfort and symptomatology, (b) externalizing symptomatology, and (c) poor impulse control. In addition, these authors reported that the factor structures of the Argentinian and Spanish versions showed adequate congruence.

However, the use of the PAI is not sufficiently widespread in Spanish-speaking populations (Ortiz-Tallo, Cardenal, Ferragut, & Santamaría, 2015, 2017; Stover et al., 2015). In fact, we have not found studies that have tested the psychometric qualities of this instrument in the Latin American prison population. Although PAI was not designed specifically to be applied in the forensic area, it has been one of the most widely employed and useful self-report questionnaires in this context, particularly for processes such as classification, intervention, and prevention of behaviors that compromise both one's own integrity and that of others, both inside and outside prison (e.g., Archer, Buffington-Vollum, Stredny, & Handel, 2006; Boccaccini, Murrie, Hawes, Johnson, & Simpler, 2010; Douglas, Hart, & Kropp, 2001; Edens, Buffington-Vollum, Colwell, Johnson, & Johnson, 2002; Gardner, Boccaccini, Bitting, & Edens, 2015; Hopwood, Morey, Rogers, & Sewell, 2007; Lally, 2003; Reidy, Sorensen, & Davidson, 2016; Ruiz & Ochshorn, 2010; Walters, Duncan, & Geyer, 2003). The growing use of the PAI in research studies has generated findings that have allowed for optimizing its usefulness in this context, which is a relevant objective given the specific characteristics of the prison

population. An example of this is the PAI Interpretive Report for Correctional Settings (PAI-CS; Edens & Ruiz, 2005), which also includes correctional norms.

Undoubtedly, the findings of Hoelzle and Meyer (2009) have a solid methodological basis, although their study did not include a penitentiary sample. It is important to consider that prisoners have individual characteristics (accentuated symptomatology, antisocial characteristics, and substance use) which, modulated by life inside prison, form a specific population (e.g., Byrne & Hummer, 2007; Fazel & Seewald, 2012; Gadon, Johnstone, & Cooke, 2006; Loeber & Farrington, 2012; Schenk & Fremouw, 2012). The singularity of this population is better appreciated when it is analyzed by crimes, since each of them present a distinct socio-demographic, judicial, and clinical profile (Burneo-Garcés, Fernández-Alcántara, Marín-Morales, & Pérez-García, under review). In addition, these authors, using a large Ecuadorian penitentiary sample, found that the discriminant power of the ANT (Antisocial Features), ALC (Alcohol Problems), DGR (Drug Problems), and AGG (Aggression) scales is superior to that of the other scales, and is particularly useful for defining the profiles corresponding to the criminal offenses of Robbery and Murder.

PAI dimensional structure in correctional settings should be consistent with the findings of Hoelzle and Meyer (2009), regardless of the psychopathological profile of the incarcerated population. However, model fit could improve if substance abuse and psychopathy form part of independent components, considering that they are distinctive features of the prison population (e.g., Fazel & Seewald, 2012; Fountoulakis, Leucht, & Kaprinis, 2008; Loeber & Farrington, 2012). To verify these assumptions, some methodological limitations need to be addressed, particularly those concerning the technique of factor analysis. An example of such methodological limitations can be found in the traditional CFA models, which assume that an item or a scale must load exclusively on a factor assigned a priori, assuming a null factorial loading in the other factors. Flexible approaches are now being used to obtain a more adequate representation of multidimensional structures, without depending on the constraints of the CFA models (Morin, Arens, & Marsh, 2016). One such approach is that of exploratory structure equation modeling (ESEM), which can be used as a confirmatory strategy (Asparouhov & Muthén, 2009; Marsh, Morin, Parker, & Kaur, 2014). Assuming that the items can have multiple determinants, the ESEM gives values of the items for all the factors, as occurs in the EFA, which permits a better overall fit of the

models (Gomes, Almeida, & Núñez, 2017). From all of the above, it can be concluded that methodologically rigorous studies could provide reliable data on the psychometric characteristics of the PAI in the Spanish-speaking penitentiary population, thus covering an important gap in the research on this instrument and encouraging its use in various Spanish-American populations.

Based on these considerations, the aim of this study was to explore the factor structure of the Spanish adaptation of the PAI (Ortiz-Tallo et al., 2011) in an extensive sample of male prisoners using ESEM. We used the structure of three invariant components (Hoelzle and Meyer, 2009) as the main theoretical foundation for designing 3 and 2-factor structures for the 22 scales and 11 clinical scales respectively. From these models, 4 and 3-factor structures were tested for the 22 scales and 11 clinical scales, respectively, considering substance abuse as an independent factor. Finally, the internal consistency of the Spanish adaptation of the PAI was assessed following the methodology used by Ortiz-Tallo *et al*. (2011). It is hypothesized that the four factor structures proposed will have a good fit to the data. With regard to internal consistency, we expect results similar to those reported by Ortiz-Tallo *et al*. (2011).

5.2 Method

Participants

The sample was composed of 811 male sentenced prisoners aged 18-75 years (*M* = 35.43; *SD* = 10.60) from the Regional Guayas Social Rehabilitation Center (CRSRG) and the Guayaquil Social Rehabilitation Center (CRSG). These adult male prisons, which house approximately 9,000 inmates, are located in Guayaquil, Ecuador. The prison population in this country is estimated to be around 26,000 (ICPR, 2017). A random sampling procedure was conducted using the list of males sentenced from both correctional centers. The distribution and proportion of the sample, related to the reference population were CRSRG = 541 (25.3%) and CRSG = 270 (25.8%).

Inclusion and exclusion criteria

The inclusion criteria were: (1) serving a sentence in either CRSRG or CRSG, and (2) participating voluntarily in the study. The exclusion criteria were: (1) having insufficient knowledge of the Spanish language, (2) being in an inadequate physical or mental state to complete the questionnaires, and (3) having an attitude that precludes the

development of evaluation. The exclusion criteria were taken into account from the first contact with the inmate until the end of the evaluation. Thus, the proportion of excluded participants (5%) was composed of individuals that did not declare interest in the study, had difficulties with language understanding, or, upon beginning the evaluation, showed misconduct or lack of motivation to continue the study. For those cases, the information provided by the participants was deleted immediately. The excluded participants had the same characteristics as the 811 individuals who had satisfactorily completed the evaluation.

Table 1. Socio-demographic characteristics of the participants

Variable	Total sample ($N = 811$)	Subsample ($n = 630$)
	f (%)	f (%)
Age range:		
18–25 years	108 (13.3)	78 (12.4)
26–35 years	392 (48.3)	297 (47.1)
36–45 years	184 (22.7)	149 (23.7)
46–55 years	81 (10)	69 (10.9)
56–75 years	46 (5.7)	37 (5.9)
Country of origin:		
Ecuador	764 (94.2)	591 (93.8)
American countries	36 (4.4)	28 (4.4)
European countries	11 (1.4)	11 (1.8)
Current marital status:		
Single/Widowed	230 (28.4)	169 (26.8)
Married	97 (12)	83 (13.2)
Common law	396 (48.8)	309 (49)
Separated/Divorced	88 (10.8)	69 (11)
Education:		
None[a]	158 (19.5)	108 (17.1)
Primary	475 (58.6)	368 (58.4)
Secondary	157 (19.4)	136 (21.6)
Superior	21 (2.5)	18 (2.9)
Employment status:		
Employed	691 (85.2)	544 (86.3)
Unemployed	120 (14.8)	86 (13.7)
Prior prison terms:		
0	427 (52.7)	336 (53.3)
≥ 1	384 (47.3)	294 (46.7)
Type of criminal offense[b]:		
AP	225 (27.7)	174 (27.6)
AIL	220 (27.1)	168 (26.7)
IPTS	143 (17.7)	115 (18.3)
ASRI	144 (17.8)	107 (17)
Other	79 (9.7)	66 (10.4)

Note. Subsample = PAI protocols that meet the validity criteria for the current study, AP = Against property, AIL = Against the inviolability of life, IPTS = Illegal production or trafficking of substances, ASRI = Against sexual and reproductive integrity.
[a]This condition does not imply illiteracy.
[b]According to Organic Integral Criminal Code of the Republic of Ecuador.

Measures

Socio-demographics

The participants were interviewed using an *ad hoc* questionnaire to gather information about age, country of origin, current marital status, level of education completed, employment status prior to entering prison (considering any job or professional activity, formal or informal, with a stable and regular income), and prior prison terms. The type of criminal offense, classified according to the Organic Integral Criminal Code of the Republic of Ecuador, was also measured. Given that we failed to find any significant statistical differences between the two centers in terms of socio-demographic characteristics, the data were processed as a single sample (see Table 1).

Spanish adaptation of the Personality Assessment Inventory

This self-report is composed of 344 items that use a Likert scale with four response alternatives: 1 = False, 2 = Slightly True, 3 = Mainly True, and 4 = Very True. Completion of the questionnaire requires fourth-grade reading level and takes 50-60 minutes. Given the lack of specific norms for Spanish-speaking Latin American populations, the Spanish norms were used in the present study.

Validity criteria. Ortiz-Tallo *et al.* (2011) have indicated two strategies (high sensitivity and specificity in both cases) to detect random response in general and clinical populations using two validity scales: (1) Inconsistency (INC) ≥ 75T or Infrequency (INF) ≥ 75T, and (2) INC ≥ 64T and INF ≥ 60T. However, they also highlighted the limited usefulness of the INF scale in correctional settings since the high scores on this scale appear to be more related to situational characteristics than to a random response pattern. Given these considerations, we preferred to apply the INC ≥ 75T cut-off point. For the Negative Impression (NIM) and Positive Impression (PIM) validity scales, the ≥ 101T and ≥ 65T cut-off points were taken into account (Ortiz-Tallo et al., 2011). As a result, 630 participants aged 18-75 years (M = 35.87; SD = 10.63) were classified as meeting the validity criteria for the present study. The distribution and proportion of the subsample, related to the reference population were CRSRG = 423 (19.8%) and CRSG = 207 (19.8%). Tables 2 and 3 show the means and standard deviations of the T scores obtained by the total sample and subsample for the full set of scales and subscales.

Table 2. Average T scores for 22 scales of the PAI

Scale	Total sample (N = 811)		Subsample (n = 630)	
	M	*SD*	*M*	*SD*
Inconsistency (ICN)	60.6	11.7	57.7	9.4
Infrequency (INF)	71.3	10.7	71	10.5
Negative Impression (NIM)	69.6	19.4	65.2	15.2
Positive Impression (PIM)	48.9	10.7	50.2	9.1
Somatic Complaints (SOM)	61	12.1	59.3	11
Anxiety (ANX)	55.7	9.9	54	8.8
Anxiety-Related Disorders (ARD)	59.9	9.1	58.8	8.3
Depression (DEP)	60.6	11.4	58.8	10.1
Mania (MAN)	62	10	61	9.4
Paranoia (PAR)	63.6	9	62.6	8.4
Schizophrenia (SCZ)	62.5	12.2	60.4	10.9
Borderline Features (BOR)	59.7	10.6	58.1	9.5
Antisocial Features (ANT)	65.7	12.3	63.9	10.9
Alcohol Problems (ALC)	63.8	18.6	61.9	17.6
Drug Problems (DRG)	63.2	19.8	60.5	18.3
Aggression (AGG)	55.2	12.4	53.5	11
Suicide Ideation (SUI)	57.3	15.8	54.5	12.7
Stress (STR)	62.4	10.8	61.4	10.4
Non-Support (NON)	64.3	11.1	62.9	10.4
Treatment Rejection (RXR)	43.5	7.9	44.2	7.5
Dominance (DOM)	53.6	10.1	54.1	10.2
Warmth (WRM)	53.4	9.1	54.3	8.9

Note. PAI = Spanish adaptation of the Personality Assessment Inventory (Ortiz Tallo et al., 2011), Subsample = PAI protocols that meet the validity criteria for the current study.

Procedure

The Undersecretariat of Rehabilitation, Reintegration, and Precautionary Measures for Adults (Ministry of Justice, Human Rights, and Cults of Ecuador) granted the necessary permits. Statistical information and coordination of the study in the centers according to the required security rules were requested from the directors of the two prisons. A team of nine psychologists from the Ministry of Public Health of Ecuador (MSP) conducted the fieldwork between February and April 2015, none of which had any authority or connections within the prison context. In addition, they received training in forensic psychopathology, mental health research, application of the research protocol, and recording the information. The *ad hoc* questionnaire was administered immediately after the PAI. In total, the individual evaluation took between 70 and 90 minutes. The participants received the necessary assistance to solve any difficulty caused by the linguistic differences between the Spanish used in Ecuador and that used in the PAI. In terms of the frequency and characteristics of the difficulties encountered during the evaluations, it can be said that there were no major drawbacks in

this area. The present study is part of and uses data from a broader project entitled "Study of the Prevalence of Mental Disorders in Prison Population of Guayaquil".

Table 3. Average T scores for 31 subscales of the PAI

Subscale	Total sample ($N = 811$)		Subsample ($n = 630$)	
	M	*SD*	*M*	*SD*
Conversion (SOM-C)	59.5	13.1	57.6	11.7
Somatization (SOM-S)	57.6	11.4	56.3	10.7
Health Concerns (SOM-H)	61.3	11.5	60.1	10.8
Cognitive (ANX-C)	55.5	9.7	54.1	8.8
Affective (ANX-A)	51.9	8.5	50.8	7.9
Physiological (ANX-P)	58.4	13	56.3	11.7
Obsessive-Compulsive (ARD-O)	60.3	8.9	59.9	8.7
Phobias (ARD-P)	52.3	10.5	51.6	10.4
Traumatic Stress (ARD-T)	59.7	10.6	58.3	9.8
Cognitive (DEP-C)	55.6	12.8	53.5	11.5
Affective (DEP-A)	61.1	11.6	59.3	10.5
Physiological (DEP-P)	59.9	10.6	58.9	10.2
Activity Level (MAN-A)	60.7	10.4	59.7	10
Grandiosity (MAN-G)	64.2	9.7	64.3	9.6
Irritability (MAN-I)	52.5	11.8	51.2	11
Hypervigilance (PAR-H)	61.4	8.4	61.2	8.3
Persecution (PAR-P)	73.4	14.8	71.6	13.8
Resentment (PAR-R)	52.4	8.6	51.7	8.4
Psychotic Experiences (SCZ-P)	61	13.2	59	11.6
Social Detachment (SCZ-S)	58.8	10.1	57.7	9.8
Thought Disorder (SCZ-T)	58.4	11.8	56.9	11
Affective Instability (BOR-A)	53.5	9.2	52.4	8.9
Identity Problems (BOR-I)	60.6	10.2	59.6	9.4
Negative Relationships (BOR-N)	56.6	9.9	55.4	9.2
Self-Harm (BOR-S)	61.4	14.2	59.6	13
Antisocial Behaviors (ANT-A)	65.2	11.2	64	10.8
Egocentricity (ANT-E)	64.6	13.7	62.7	12.1
Stimulus Seeking (ANT-S)	57.1	11.5	55.8	10.5
Aggressive Attitude (AGG-A)	54.4	12	53	11.1
Verbal Aggression (AGG-V)	49.2	9.3	48.5	9.1
Physical Aggression (AGG-P)	61.2	15.4	58.8	13

Note. PAI = Spanish adaptation of the Personality Assessment Inventory (Ortiz Tallo et al., 2011), Subsample = PAI protocols that meet the validity criteria for the current study.

Ethics statement

The National Directorate of Primary Healthcare (MSP) reviewed the technical aspects of the study. The Health Coordination Zone 8 (CZ8-S, MSP) managed both the ethics revision and the project approval. The inmates selected by the sampling method were contacted in their pavilion or their security level, where they were given, both individually and in a group, information regarding the characteristics of the study whereupon they could freely decide whether or not to participate in the study. The lack

of any kind of benefit in the short, medium, or long-term for their participation in the study was explained, as well as their freedom to leave the study at any time. All individuals signed the Informed Consent Form after listening and reading about the characteristics of the study and the Rights guaranteed to research participants, established by the Constitution of the Republic of Ecuador. This study followed the ethical principles of the Declaration of Helsinki.

Data analysis

Factor structure

Analyzes were conducted using ESEM. According to the recommendations of Marsh *et al.* (2014), we used maximum likelihood estimation with robust standard errors and target rotation. Recent studies (Marsh et al., 2010, 2014) recommend using target rotation, particularly when there are items that clearly belong to a certain factor (i.e., have factor loadings close to zero in all other factors) and a factor structure has been previously defined (Morin et al., 2016). Thus, ESEM was conducted for the full set of scales and 11 clinical scales in the total sample using the raw scores.

For the design of the models to be tested, previous findings regarding the PAI structure (factor/component) in clinical and non-clinical samples were taken into account (e.g., Hoelzle & Meyer, 2009; Hopwood & Moser, 2011; Ruiz & Edens, 2008) along with the most significant distinctive features of the prison population (e.g., Burneo-Garcés et al., under review; Byrne & Hummer, 2007; Fazel & Seewald, 2012; Gadon, Johnstone, & Cooke, 2006; Loeber & Farrington, 2012; Schenk & Fremouw, 2012) and the correlations between the 22 PAI scales (see Table 4). In summary, the assumption underlying this approach is that the factor structure of the PAI in the prison population is able to accurately distinguish the scales related to general distress, antisocial characteristics, substance use, and interpersonal relationship style.

With this theoretical background, two models were initially tested: Model 1 with a full set of scales, composed by three factors, and Model 2 with 11 clinical scales, composed by two factors. For the first model, the items with fixed loadings were distributed as follows: (a) SOM, ANX, ARD, DEP, SCZ, SUI, STR, NON, and RXR, (b) ANT, ALC, DRG, and AGG, and (c) DOM and WRM.

Table 4. Pearson correlation matrix between the 22 scales of the PAI for the total sample

Scale	INC	INF	NIM	PIM	SOM	ANX	ARD	DEP	MAN	PAR	SCZ	BOR	ANT	ALC	DRG	AGG	SUI	STR	NON	RXR	DOM
INF	.180***																				
NIM	.291***	.160***																			
PIM	-.291***	-.113**	-.558***																		
SOM	.294***	.128***	.567***	-.387***																	
ANX	.365***	.175***	.702***	-.620***	.699***																
ARD	.320***	.115**	.592***	-.513***	.547***	.708***															
DEP	.365***	.161***	.690***	-.590***	.634***	.771***	.603***														
MAN	.204***	.133***	.448***	-.502***	.280***	.467***	.520***	.330***													
PAR	.280***	.064	.535***	-.451***	.349***	.547***	.500***	.550***	.421***												
SCZ	.310***	.193***	.710***	-.631***	.525***	.751***	.624***	.681***	.496***	.583***											
BOR	.364***	.191***	.689***	-.682***	.501***	.733***	.630***	.710***	.577***	.617***	.712***										
ANT	.300***	.212***	.573***	-.535***	.291***	.469***	.416***	.474***	.532***	.490***	.542***	.690***									
ALC	.263***	.188***	.416***	-.358***	.288**	.378***	.378***	.347***	.317***	.317***	.369***	.423***	.461***								
DRG	.293***	.190***	.464***	-.419***	.319***	.402***	.349***	.417***	.329***	.373***	.433***	.542***	.589***	.568***							
AGG	.302***	.248***	.559***	-.548***	.324***	.548***	.437***	.502***	.570***	.517***	.577***	.747***	.708***	.508***	.592***						
SUI	.274***	.114**	.548***	-.376***	.468***	.526***	.419***	.577***	.247***	.387***	.490***	.532***	.382***	.330***	.373***	.456***					
STR	.273***	.074*	.527***	-.505***	.421***	.535***	.507***	.551***	.350***	.468***	.513***	.573***	.435***	.342***	.396***	.411***	.362***				
NON	.204***	.117***	.493***	-.342***	.369***	.473***	.364***	.544***	.219***	.530***	.500***	.496***	.390***	.233***	.357***	.376***	.363***	.457***			
RXR	-.213***	-.014	-.413***	.420***	-.364***	-.490***	-.463***	-.447***	-.302***	-.374***	-.415***	-.502***	-.299***	-.215***	-.266***	-.323***	-.348***	-.398***	-.335***		
DOM	-.161***	-.090*	-.245***	.160***	-.207***	-.250***	-.065	-.373***	.220***	-.159***	-.221***	-.145***	-.063	-.107**	-.153***	-.075	-.210***	-.152***	-.281***	.203***	
WRM	-.198***	-.125***	-.362***	.286***	-.226***	-.384***	-.193***	-.417***	.060	-.344***	-.408***	-.392***	-.339***	-.253***	-.295***	-.449***	-.331***	-.249***	-.397***	.204***	.334***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

For the second model, the distribution of clinical scales with fixed loadings was as follows: (a) SOM, ANX, ARD, DEP, and SCZ, and (b) MAN, ANT, ALC, and DRG. Both the substantive scales that usually present cross-loadings in EFA models and the validity scales that do not usually group in a specific factor were able to load on more than one factor. In this way, the MAN scale was able to load on factors 2 and 3 of the first model, the PAR and BOR scales on factors 1 and 2 of both models, and the INC, INF, PIM, and NIM scales could load in any factor. As a result of this initial exploration, the MAN scale loaded similarly on factors 2 and 3 of the first model, while the PAR and BOR scales loaded on factors 1 and 2 of both models. However, the INC, PIM, and NIM scales loaded on factor 1 and the INF scale loaded on factor 2. To obtain a better fit of the models, these scales, with the exception of MAN, PAR, and BOR, were set in the factor where they showed the highest coefficient.

From the final factor structures of the aforementioned models, two new models were proposed in order to verify if the scales related to the use of substances, grouped into an independent factor, improve the fit of each factor structure to the data: Model 3 with a full set of scales, composed by four factors, and Model 4 with 11 clinical scales, composed by three factors. Thus, the configuration of the scales with fixed loadings for the third model was as follows: (a) INC, PIM, NIM, SOM, ANX, ARD, DEP, SCZ, SUI, STR, NON, and RXR, (b) ANT and AGG, (c) INF, ALC, and DRG, and (d) DOM and WRM. For the fourth model, the scales with fixed loadings were distributed as follows: (a) SOM, ANX, ARD, SCZ, and DEP, (b) MAN and ANT, and (c) ALC and DRG. In order to improve the fit of the models, the INF scale was included in factor 3 of the third model, the MAN scale was able to load on factors 2 and 4 of the third model, and the PAR and BOR scales were allowed to load on factors 1 and 2 of both models (the syntax used is available in Supplementary Material, SM).

The evaluation and comparison of the final pairs of models (Model 1 vs. Model 3, Model 2 vs. Model 4) was conducted using the Satorra-Bentler chi-square statistic (Satorra-Bentler, 2001). The fit indices used were the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the standardized root mean square residual (SRMR). We also used the Akaike information criterion (AIC) and the Bayesian information criterion (BIC).

Reliability

To estimate internal consistency, Cronbach's alpha, inter-item correlation, and corrected item-total correlation were calculated. These analyzes were conducted both in the total sample and in the subsample using the raw scores. This made it possible to determine whether the application of the validity criteria had an effect on the results. All data were processed using the statistical packages IBM®SPSS.22 and Mplus 6.11 for Windows.

5.3 Results

Factor structure: 22 scales

The sample size was adequate for performing factor analysis according to the Kaiser-Meyer-Olkin index (KMO = .951) and the Bartlett sphericity test [χ^2 (231, N = 811) = 10,697.176, p <.001]. Table 5 shows the factor loadings obtained in the two models tested for the 22 scales. With respect to the 3-factor model, the loading on the PAR scale is clearly more pronounced in factor 1, while the BOR scale maintains a similar loading on factors 1 and 2, which also happens with the MAN scale in factors 2 and 3. Taking into account the characteristics of the sample being studies, the data suggest a structure of factors that emphasize: (a) general symptomatology and distress (scales ANX, SOM, ARD, DEP, SCZ, NIM, RXR, STR, BOR, PIM, SUI, PAR, NON, and INC), (b) impulsive and antisocial behaviors, substance use, and carelessness (scales AGG, ANT, DGR, MAN, ALC, BOR, and INF), and (c) energetic dominance (scales DOM, MAN, and WRM). For the 4-factor model, the loadings of the PAR and BOR scales showed the same trend as in the previous model, whereas the MAN scale revealed important and similar loadings in factors 2 and 4. In summary, the results appear to indicate a structure of factors that emphasize: (a) general symptomatology and distress (scales ANX, SOM, DEP, ARD, SCZ, NIM, BOR, RXR, STR, PIM, SUI, PAR, NON, and INC), (b) impulsive and antisocial behaviors (scales AGG, ANT, MAN, and BOR), (c) substance use and carelessness (scales ALC, DGR, and INF), and (d) energetic dominance (scales DOM, MAN, and WRM). With the exception of the INC and INF scales, all scales showed moderate to high loadings in both models. Although the two models showed adequate fit indices, the 4-factor model statistically improved the fit indices of the 3-factor model (see Table 6).

Table 5. Factor loadings of the ESEM analysis for the full set of scales and 11 Clinical scales of the PAI

Scales	22 scales							11 Clinical scales				
	3-Factor Model			4-Factor Model				2-Factor Model		3-Factor Model		
	1	2	3	1	2	3	4	1	2	1	2	3
Inconsistency (INC)	**.304**	.129	-.064	**.305**	-.005	.185	-.035					
Infrequency (INF)	.002	**.243**	-.063	.021	.067	.223	-.035					
Negative Impression (NIM)	**.672**	.175	-.043	**.679**	.119	.082	-.040					
Positive Impression (PIM)	**-.519**	-.290	-.103	**-.532**	-.322	.024	-.068					
Somatic Complaints (SOM)	**.898**	-.280	-.023	**.890**	-.369	.112	.048	**.867**	-.207	**.889**	-.309	.081
Anxiety (ANX)	**.968**	-.083	.035	**.964**	-.050	-.034	.048	**.971**	-.053	**.958**	-.005	-.045
Anxiety-Related Disorders (ARD)	**.859**	-.058	.263	**.839**	-.023	.000	.280	**.700**	.086	**.688**	.163	-.065
Depression (DEP)	**.859**	-.058	-.196	**.856**	-.035	-.035	-.195	**.795**	.058	**.810**	.009	.046
Mania (MAN)	.310	.499	**.579**	.337	**.538**	-.012	**.537**	.174	**.502**	.172	**.613**	-.084
Paranoia (PAR)	**.455**	.277	-.005	**.472**	.360	-.104	-.064	**.374**	.361	.377	**.404**	-.021
Schizophrenia (SCZ)	**.717**	.161	.023	**.727**	.214	-.063	-.005	**.649**	.235	**.649**	.271	-.020
Borderline Features (BOR)	**.534**	.463	.064	**.566**	.448	.026	.024	.458	**.520**	.474	**.489**	.067
Antisocial Features (ANT)	.042	**.804**	.037	.092	**.592**	.281	.010	-.072	**.905**	.013	**.629**	.285
Alcohol Problems (ALC)	.092	**.493**	-.043	.078	.058	**.645**	.031	.084	**.494**	.114	.078	**.525**
Drug Problems (DRG)	.032	**.639**	-.128	.025	.218	**.623**	-.089	.015	**.663**	.005	.069	**.849**
Aggression (AGG)	.060	**.842**	.026	.124	**.615**	.280	.001					
Suicidal Ideation (SUI)	**.497**	.115	-.164	**.506**	.001	.143	-.141					
Stress (STR)	**.552**	.125	.003	**.546**	.118	.034	-.008					
Non-Support (NON)	**.438**	.123	-.238	**.446**	.170	-.073	-.283					
Treatment Rejection (RXR)	**-.569**	.013	-.034	**-.561**	-.072	.096	-.014					
Dominance (DOM)	-.293	.198	**.589**	-.284	.240	-.022	**.574**					
Warmth (WRM)	-.128	-.299	**.420**	-.163	-.227	-.047	**.453**					

Note. PAI = Spanish adaptation of the Personality Assessment Inventory (Ortiz Tallo et al., 2011), N = 811, The value of each scale included in each factor is bolded.

Table 6. Fit indices of the different models for the 22 scales and the 11 clinical scales of the PAI

Solution	χ^2	df	RMSEA [95% CI]	CFI	TLI	SRMR	AIC	BIC
22 scales: 3-Factor	674.118***	168	.061 [.056 .066]	.946	.926	.029	108814.125	109316.840
22 scales: 4-Factor	514.160***	149	.055 [.050 .060]	.961	.940	.023	108653.027	109245.009
Satorra-Bentler χ^2	135.26***	19						
11 Clinical scales: 2-Factor	297.713***	34	.098 [.088 .108]	.947	.914	.037	60394.589	60596.615
11 Clinical scales: 3-Factor	155.131***	25	.080 [.068 .092]	.974	.942	.021	60245.440	60489.750
Satorra-Bentler χ^2	130.89***	9						

Note. N = 811, ***p <.001.

Factor Structure: 11 clinical scales

The sample size was adequate for performing factor analysis according to the Kaiser-Meyer-Olkin index (KMO = .919) and the Bartlett sphericity test [χ^2 (55, N = 865) = 5,737.86, p <.001]. Table 5 shows the factor loadings obtained in the two models tested for the 11 clinical scales. In the 2-factor model, the loadings of the PAR and BOR scales were very similar in both factors. For this model, the data suggest a structure of factors that emphasize: (a) general symptomatology and distress (scales ANX, SOM, DEP, ARD, SCZ, BOR, and PAR), and (b) impulsive and antisocial behaviors and substance use (ANT, DGR, BOR, MAN, ALC, and PAR). In the 3-factor model, the cross-loadings of the PAR and BOR scales were repeated. For this model, the data appear to indicate a structure of factors that emphasize: (a) general symptomatology and distress (scales ANX, SOM, DEP, ARD, SCZ, BOR, and PAR), (b) impulsive and antisocial behaviors (scales ANT, MAN, BOR, and PAR), and (c) substance use (scales DGR and ALC). All scales showed loadings between moderate and high in both models. Although both models had adequate fit indices, the 3-factor model statistically improved the fit of the 2-factor model (see Table 6).

Reliability

In the analysis of internal consistency (INC and INF scales were not considered), alphas <.70 for PIM, PAR, STR, NON, RXR, DOM, and WRM scales were detected in the total sample (see Table 7). The Cronbach's alpha coefficients of the scales ranged between .49 and .89, with a median of .76. The mean inter-item correlations ranged between .08 and .42, with a median of .15. The mean corrected item-total correlations ranged between .18 and .60, with a median of .28.

Table 7. Mean, standard deviation, internal consistency, mean inter-item correlation, and mean corrected item-total correlation using raw scores for 20 PAI scales

Scale	Total sample (N = 811)					Subsample (n = 630)				
	M	SD	α	Mean inter-item correlation	Mean corrected item-total correlation	M	SD	α	Mean inter-item correlation	Mean corrected item-total correlation
Negative Impression (NIM)	6.36	4.82	.74	.25	.42	5.21	3.54	.58	.14	.27
Positive Impression (PIM)	15.30	4.66	.63	.16	.28	15.86	3.97	.49	.10	.16
Somatic Complaints (SOM)	23.10	11.96	.87	.23	.40	21.33	10.75	.85	.20	.37
Anxiety (ANX)	27.29	11.25	.84	.18	.33	25.25	9.86	.81	.15	.31
Anxiety-Related Disorders (ARD)	31.92	9.45	.72	.10	.21	30.54	8.62	.69	.09	.16
Depression (DEP)	25.65	10.86	.83	.17	.36	23.85	9.64	.79	.14	.33
Mania (MAN)	32.26	8.88	.72	.10	.23	31.35	8.35	.70	.10	.22
Paranoia (PAR)	33.59	8.14	.68	.08	.20	32.67	7.57	.65	.07	.18
Schizophrenia (SCZ)	25.09	9.93	.79	.14	.31	23.37	8.84	.75	.12	.28
Borderline Features (BOR)	29.69	10.59	.81	.15	.28	28.07	9.42	.76	.12	.27
Antisocial Features (ANT)	26.27	9.50	.77	.13	.21	24.96	8.47	.72	.11	.22
Alcohol Problems (ALC)	9.56	7.69	.85	.33	.52	8.75	7.31	.84	.32	.50
Drug Problems (DRG)	10.11	9.01	.89	.42	.60	9.06	8.43	.88	.39	.57
Aggression (AGG)	18.14	9.73	.85	.25	.44	16.71	8.65	.82	.22	.41
Suicidal Ideation (SUI)	5.53	6.80	.88	.40	.57	4.26	5.23	.83	.32	.49
Stress (STR)	11.29	4.36	.58	.15	.26	10.87	4.15	.56	.14	.24
Non-Support (NON)	10.59	3.94	.58	.14	.26	10.13	3.68	.53	.12	.20
Treatment Rejection (RXR)	12.33	3.58	.49	.11	.18	12.60	3.38	.46	.10	.17
Dominance (DOM)	22.42	4.94	.57	.10	.20	22.60	5	.61	.11	.21
Warmth (WRM)	23.45	4.77	.61	.12	.23	24	4.65	.60	.12	.21

Note. PAI = Spanish adaptation of the Personality Assessment Inventory (Ortiz Tallo et al., 2011), N = 811, Subsample = PAI protocols that meet the validity criteria for the current study.

For the subsample, NIM, PIM, ARD, PAR, STR, NON, RXR, DOM, and WRM scales revealed alphas <.70. The Cronbach's alpha coefficients of the scales ranged between .46 and .88, with a median of .71. The mean inter-item correlations ranged between .07 and .39, with a median of .12. The mean corrected item-total correlations ranged between .16 and .57, with a median of .26.

5.4 Discussion

The aim of the current study was to explore the psychometric properties (factor structure and reliability) of the Spanish adaptation of the PAI, employing a large sample of male prisoners serving their sentences in two Ecuadorian penitentiary centers.

Factor structure

To date, the analysis of the PAI factor structure in a Spanish-speaking penitentiary sample had not been considered. The prison population has its own psychopathological profile, the most outstanding aspects being the characteristics and behaviors related to antisocial lifestyle, aggressiveness, and substance abuse (e.g., Byrne & Hummer, 2007; Fazel & Seewald, 2012; Gadon et al., 2006; Loeber & Farrington, 2012; Schenk & Fremouw, 2012).

The methodological rigor and consistency of the findings of the Hoelzle and Meyer study (2009) lead us to expect similar dimensional structures to emerge in other study samples. It is also reasonable to suppose that the socio-demographic, judicial, clinical, and contextual aspects inherent in the offender and prison life may lead to a specific distribution of scales. This statement is supported by the impact of the characteristics of the study population, the sample size, and the type of factor analysis employed on the factor structure (Velicer et al., 2000; Wood et al., 1996).

Based on the previous literature, two models were proposed for the 22 scales (3 and 4 factors) and two other models for the 11 clinical scales (2 and 3 factors). The purpose of this approach was to separate into independent factors general distress, antisocial characteristics, substance use, and interpersonal relationship style. The properties of the ESEM allowed for the testing of these structures and to obtain four final factorial solutions. Next, we will discuss the models for the 22 scales and 11 clinical scales respectively.

3-factor model: 22 scales

For the first factor, the internalizing scales showed stronger loadings than the treatment-related scales, with the PAR scale showing the weakest loading of all clinical scales. Unsurprisingly, the NIM and PIM scales, which measure response bias related to positive or negative impression management, show strong and clustered loadings in a heterogeneous factor, although highly related to general distress. The PAR scale had a weaker loading on the second factor, while the BOR scale revealed moderate and similar loadings on the first two factors although the loading was slightly higher on the first factor. Finally, the INC scale is also part of this first factor, but with a secondary loading. As for the second factor, some scales had loadings between moderate (ALC, MAN, and DRG) and strong (ANT and AGG), as opposed to INF, which obtained the weaker factor and model loading. In addition, we tried to test a third factor identified by authoritarian style and selfish interpersonal relationship style, which are represented in particular by the DOM and MAN scales. These scales are usually grouped with scales related to antisocial lifestyle and aggressiveness, such as ANT and AGG (e.g., Groves & Engel, 2007; Hoelzle & Meyer, 2009; Morey, 1991; Ortiz-Tallo et al., 2011; Stover et al., 2015). For this reason, the MAN scale was also allowed to load along with the DOM and WRM scales. The moderate and similar loadings of these three scales confirmed the consistency of their association. In summary, this model was consistent with the structure of three invariant components, as described by Hoelzle and Meyer (2009). The first factor clearly distinguished the scales that generally measure symptomatology and distress from those that measure externalizing behaviors and symptoms, whose presence is preponderant in the second factor (impulsive and antisocial behaviors, substance abuse, and carelessness). The joint loading of the DOM, MAN, and WRM scales in the third factor define a component that emphasizes energetic dominance.

4-factor model: 22 scales

The creation of a new factor, made up of the ALC and DGR scales, allowed us to evaluate the use of substances independently of impulsive and antisocial behaviors, keeping intact the distribution of the remaining scales. In clinical and non-clinical samples, the MAN, ANT, AGG, ALC, and DGR scales typically share factors (e.g., Morey, 1991; Ortiz-Tallo et al., 2011; Stover et al., 2015; Tasca et al., 2002). However,

problems related to substance use are highly prevalent in the psychopathological profile of the prison population (Burneo-Garcés & Pérez-García, in press; Fazel, Bains, & Doll, 2006; Fazel & Seewald, 2012). This is important because of the repercussion of substance use on physical and mental health, the development of new disorders, and the exacerbation of antisocial behaviors (e.g., Fountoulakis, Leucht, & Kaprinis, 2008; Yu, Geddes, & Fazel, 2012). Although these variables seem to be intertwined, their loading pattern in the second factor of the previous model suggests that their differentiation could improve the fit of the factor structure of the PAI to the data in this population. For this reason, a 4-factor model was tested for the entire set of scales. Both the first factor and the fourth factor reproduced the same loading pattern as that observed in the previous model. The same happened with the MAN and BOR scales in the second factor, while the loading of the AGG and ANT scales decreased slightly. In contrast, the ALC and DRG scales showed a consistent association, with strong and similar loadings in the third factor. The fit of the model required the inclusion of the INF scale in this factor, which suggests an important effect of substance use on the lack of care when responding. Given these results, this structure shows a better fit to the data, thus validating the underlying theoretical dimensions.

2-factor model: 11 scales

In this model, the internalizing (first factor) and externalizing (second factor) scales reproduced the same loading patterns as in the first model discussed. The PAR scale revealed similar weak loadings in the two factors, while the BOR scale presented moderate and similar loadings in both factors, although with a slightly higher presence in the second factor. Moreover, data from studies that have used multiple analytical techniques (e.g., Hopwood & Moser, 2011; Ruiz & Edens, 2008; Slavin-Mulford et al., 2013), including the present study, seem to suggest that we should not expect a definite and stable association between these two scales with one and the same factor. This overlap may be due to the nature of the construct, which is composed of internalizing and externalizing characteristics that make it difficult for the confirmatory models to fit properly. Another possibility is that the content validity of certain items of different scales decreases in the penitentiary population, failing to adequately adjust to the specificity of their individual and situational characteristics. In any case, this model presented good fit indices.

3-factor model: 11 scales

On this occasion, the first factor (internalizing dimension) of the previous model was maintained and a new factor was generated with the scales related to the use of substances, keeping the remaining scales in the second factor. The loading pattern of the internalizing scales was very similar to that recorded in the 2-factor model, although the PAR scale loadings showed the opposite trend. By separating the ALC and DRG scales into a third factor, the MAN and PAR scales were strengthened, whilst the opposite was the case for the BOR and ANT scales. Finally, the ALC and DGR scales showed moderate and strong loadings respectively, in the third factor. As expected, based on the results of the 4-factor model, this model obtained better fit indices than the 2-factor model.

Reliability

In the adaptation studies of the Spanish version (Ortiz-Tallo et al., 2011), Cronbach's alpha coefficients of <.70 were found for the non-clinical sample in 6 scales (NIM, PIM, DRG, STR, NON, and DOM). In the clinical sample, no coefficients <.70 were detected. The mean inter-item correlations ranged from .12 to .31 in the non-clinical sample, and between .16 and .50 for the clinical sample. In the present study, 7 scales showed coefficients <.70 when the total sample was analyzed, with the lowest values being found in the treatment-related scales and interpersonal relationship style (RXR, DOM, STR, NON, and WRM). These studies agree when reporting, in different samples, low coefficients for the STR, NON, and DOM scales. Both the median Cronbach's alpha coefficients of the scales (.76) and the median inter-item correlations (.15) may be considered acceptable.

It is worth noting that if we focus only on the subsample — whose information should provide higher accuracy due to the validity criteria applied — the number of scales with Cronbach's alpha coefficients <.70 increases to 9 (NIM, PIM, ARD, PAR, STR, NON, RXR, DOM, and WRM). As can be observed, these scales are distributed over the four types of scales that comprise the PAI (Validity, Clinical, Treatment consideration, and Interpersonal relations). Both the mean Cronbach's alpha coefficients of the scales (.71) and the median inter-item correlations (.12) are lower than those detected for the total sample. It seems that the loss of variability affects the internal consistency of the scales when the subsample is explored.

In any case, the results on reliability are, in general, moderately satisfactory given considering the reference studies (Ortiz-Tallo et al., 2011), except for certain scales, which deserve special attention in later studies. As previously suggested, it is reasonable to suppose that certain items are not functioning properly because their content does not adjust the individual and situational particularities of the prison population, in the way that they do in normative or clinical populations (Spanish version of the PAI). Advanced psychometric studies (e.g., Siefert et al., 2009; Sinclair et al., 2009, 2010) could clarify the doubts that, depending on the results, arise in PAI scales in this population in terms of correct functioning.

Strengths, limitations, and conclusions

This is the first study that explores the psychometric properties of the Spanish adaptation of the PAI in correctional settings, using a large sample of sentenced prisoners, which is the most typical and stable population within prison. The use of ESEM has allowed us to overcome certain limitations of conventional analysis techniques, showing factor structures with adequate fit indices. This methodology, from a semi-confirmatory perspective, seems to be optimal when using instruments such as the PAI, since it takes into account its multidimensionality, as well as multiple loadings of different scales. However, the lack of women in this study could be regarded as a limitation. Another aspect to consider is the lack of specific norms for Spanish-speaking prison populations. Moreover, it is reasonable to raise some concerns regarding the degree of understanding of Spanish used in the PAI questionnaire by the South American population. This supposed limitation was analyzed in the studies of linguistic adaptation of the Argentinian version of the PAI (Stover et al., 2015), where the content of only 4 of the 344 items that compose the PAI had to be modified to improve comprehension.

For purposes of psychological and interdisciplinary evaluation, as well as for individual and group intervention, these findings provide an important frame of reference. This is because the factorial models obtained present dimensions that adequately define the distinctive features of the incarcerated population (accentuated symptomatology, antisocial characteristics, substance use, and interpersonal relationship style). For example, in the present study it has been possible to verify the structure of three invariant components (Hoelzle and Meyer, 2009) in the Spanish-speaking prison

population. Regarding the scope of utility, the 3 and 2 factor models are more parsimonious but statistically less accurate than the 4 and 3 factor models. The best fit of these models is the result of the grouping of the scales related to the use of substances independently of the rest of the scales, particularly those that measure impulsive and antisocial behaviors. From a clinical perspective, the ability to differentiate scales that are closely related in the prison population increases the utility of these models within this environment.

In conclusion, the Spanish adaptation of the PAI shows acceptable psychometric properties in the penitentiary population. The clinical usefulness of this instrument, the lack of studies of this nature in the Spanish-speaking prison context, as well as the methodological details, all add particular relevance to this work. Thus, we have established a starting point for the development of more advanced psychometric studies that can enhance the usefulness of this valuable tool for personality and psychopathology assessment in this setting. Future studies should focus on expanding the study of construct validity and incorporate some external validity indicators considering the individual, clinical, and contextual characteristics of the Spanish-speaking prison population. This will allow for an optimization of the PAI in correctional settings.

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Capítulo 6. Estudio 2

Prevalence of psychopathological features in South American prisons using the Personality Assessment Inventory

Burneo-Garcés, C., & Pérez-García, M. (2017). Prevalence of psychopathological features in South American prisons using the Personality Assessment Inventory. *Behavioral Psychology/Psicología Conductual* (In press).

6.1 Introduction

The prison population has increased in numbers on a global scale, reaching around 11 million people worldwide. Approximately 50% of this population is located in countries such as the USA, China, Brazil, Russian Federation, and India. In South America, Brazil (657,680), Colombia (116,773), Peru (83,639), Argentina (72,693), and Venezuela (54,738) occupy the top places, with prison population rates of 318, 230, 262, 167, and 173 per 100,000 habitants respectively (ICPR, 2017).

Mental health in the prison environment requires special attention, given that the presence of mental illness is significantly higher in this setting when compared with the general population (see Fazel & Seewald, 2012 for a review), becoming a major public health problem (Fazel & Baillargeon, 2011). Nevertheless, in a systematic review of the prevalence of mental illnesses in U.S. state prisons, Prins (2014) refers to a tendency to overestimate the prevalence rates. Among other problems related to inconsistency in the studies included in the review, the author highlights the absence of an unambiguous concept of mental illness, the heterogeneity of the samples, and other aspects related to the sampling strategies and assessment instruments used in those studies. Furthermore, it is important to consider that epidemiological studies require accuracy and methodological rigor in order to implement the findings in the design, funding, and development of any intervention program in the prison context (WHO, 2004). All this becomes particularly relevant in low-middle-income countries (LMICs), in which severe mental illness is more commonly found (Fazel & Seewald, 2012).

Nonetheless, a precarious housing situation, unemployment, crime, and substance use are all presented as risk factors for psychopathology (Frank & Glied, 2006; Marín-Basallote & Navarro-Repiso, 2012). Furthermore, some characteristics of prison confinements such as limited physical space, restricted movement, constant surveillance, forced coexistence, and lack of privacy, can generate or potentiate mental alterations that differ in nature and severity (Arroyo & Ortega, 2009). Of particular concern is violence in prison, often as a result of the impact of situational factors on inmates (see Gadon, Johnstone, & Cooke, 2006 for a review). More specifically coercion and victimization have particularly drawn attention (Colvin, Cullen, & Vander Ven, 2002; Teasdale, Daigle, Hawk, & Daquin, 2016). However, there is insufficient information available regarding the psychopathological characteristics of the prison population from Latin

American countries. In fact, most prevalence studies have been developed in English-speaking population and in high-income-countries. Indeed, studies in different cultural and socioeconomic contexts can reveal the impact of individual, familiar, social, economic, and environmental factors on mental health (WHO, 2004). Moreover, further studies on this matter, which take into account the legal status of the prisoners, would facilitate in the future a cross-cultural and stratified analysis of the results.

All this is particularly relevant in the Ecuadorian environment because this type of information can contribute towards consolidating the transformation of the social rehabilitation system, which is one of the policies of the Ecuadorian government, as stated in the National Plan for Good Living (SENPLADES, 2013). In short, this would strengthen the innovation process of the mental healthcare in the Ecuadorian correctional settings. In this regard, the work of the Ministry of Public Health of Ecuador (MSP) significantly favors the development of the New Model of Prison Management, implemented by Ministry of Justice, Human Rights, and Cults of Ecuador (MJDHC), which seeks the comprehensive rehabilitation of inmates.

On the other hand, unifying the use of criteria for assessment instruments in psychopathology (Prins, 2014) is a complex objective, given that the opinion of the professional can be influenced by various factors in each case (Esbec & Echeburúa, 2014; Tejada, Jaramillo, Sánchez-Pedraza, & Vimal, 2014). The contextual and situational reality of the prison population, their health care needs, and resources available for intervention should all receive greater attention. Consequently, estimating the presence of psychiatric symptoms and personality traits that are clinically significant in prison populations could complement the utility of clinical diagnosis based on current classification systems, given that these two conditions do not always correlate.

In this regard, the Personality Assessment Inventory (PAI; Morey, 1991, 2007), commonly used in forensic assessment (Archer, Buffington-Vollum, Stredny, & Handel, 2006), has characteristics that are suitable for this objective. The PAI is a self-report that measures the effect of thoughts, attitudes, behaviors, facts, and past and present circumstances on the development of symptoms, the characteristics of personality, and the individual's behavior at the time of evaluation. It is composed of 4 validity scales, 11 clinical scales, 5 scales for treatment consideration, 2 scales of interpersonal relations, 31 subscales, and 10 complementary indexes (the content of the

22 scales is non-overlapping). The clinical scales represent the clinical syndromes of the highest significance in diagnostic practice, whereas the scales related to the treatment provide complementary information that could be relevant to a possible intervention. Finally, the interpersonal scales measure the interpersonal relationship style, whereas the complementary indexes can be used to obtain a more precise interpretation of some of the scores.

In forensic settings, the utility of this self-report instrument has been shown in studies of mental disorders (Douglas, Hart, & Kropp, 2001; Edens & Ruiz, 2008; Patry, Magaletta, Diamond, & Weinman, 2011); suicidality (Patry & Magaletta, 2015); malingering, suicide risk, and aggression (Wang et al., 1997); psychopathy and institutional misbehavior (Edens, Buffington-Vollum, Colwell, Johnson, & Johnson, 2002); misconduct, recidivism, and violence (Gardner, Boccaccini, Bitting, & Edens, 2015; Newberry & Shuker, 2012; Reidy, Sorensen, & Davidson, 2016), among others. Furthermore, the presence of the PAI in the European context has intensified since the adaptation of the German and Spanish versions (Groves & Engel, 2007; Ortiz-Tallo, Santamaría, Cardenal, & Sánchez, 2011).

Based on these considerations, the aim of this study was to analyze the current prevalence of psychiatric symptoms and personality traits that are clinically significant among sentenced male prisoners in two Ecuadorian prisons using the clinical scales of the Spanish adaptation of the PAI (see Table 1).

Table 1. Personality Assessment Inventory: Clinical scales

Scale	Interpretation of high scores
Somatic Complaints (SOM)	Focus on physical health-related issues
Anxiety (ANX)	Experience of generalized anxiety across different response modalities
Anxiety-Related Disorders (ARD)	Symptoms and behaviors related to specific anxiety disorders
Depression (DEP)	Experience of depression across different response modalities
Mania (MAN)	Experience of behavioral, affective, and cognitive symptoms of mania and hypomania
Paranoia (PAR)	Experience of paranoid symptoms and traits
Schizophrenia (SCZ)	Symptoms relevant to the broad spectrum of schizophrenic disorders
Borderline Features (BOR)	Attributes indicative of borderline levels of personality functioning
Antisocial Features (ANT)	Focuses on behavioral and personological features of antisocial personality
Alcohol Problems (ALC)	Use of and problems with alcohol
Drug Problems (DRG)	Use of and problems with drugs

Source. Adapted from Personality Assessment Inventory (PAI; Morey, 1991).

6.2 Method

Participants

The sample was composed of 675 male sentenced prisoners aged 18-75 years (*M* = 35.58; *SD* = 10.57) from the Regional Guayas Social Rehabilitation Center (CRSRG) and the Guayaquil Social Rehabilitation Center (CRSG). These adult male prisons, which house approximately 9,000 inmates, are located in Guayaquil, Ecuador. The prison population in this country is estimated to be around 26,000 (ICPR, 2017). According to the characteristics of the centers, we can distinguish five strata. For the CRSRG, these strata are Minimum Security (MIS), Medium Security (MES), Maximum Security (MAS), and Priority (PRI), which is a specific area for people who meet vulnerable situations criteria (e.g., being a senior adult, having a critical illness, disability, or severe physical or mental illness). Finally, the fifth stratum is the CRSG considered as a whole. The minimum size for the sample was calculated using the software for epidemiological analysis of data Epidat 4.1®, according to the following parameters: (a) Size of the population = 3,183, (b) Expected proportion = 50%, (c) Confidence level = 95%, (d) Absolute accuracy = 4%, and (e) Design effect = 1. After stratified sampling procedure with proportional affixation, the distribution and proportion of the sample strata, related to the reference population, were MIS = 152 (21.2%), MES = 178 (21.2%), MAS = 72 (21.1%), PRI = 51 (21.3%), and CRSG = 222 (21.2%).

Inclusion and exclusion criteria

The inclusion criteria were: (1) serving a sentence in either CRSRG or CRSG, and (2) participating voluntarily in the study. The exclusion criteria were: (1) having insufficient knowledge of the Spanish language, (2) being in an inadequate physical or mental state to complete the questionnaires, and (3) having an attitude that precludes the development of evaluation. The exclusion criteria were taken into account from the first contact with the inmate until the end of the evaluation. Thus, the proportion of excluded participants (5%) was composed of individuals that did not declare interest in the study, had difficulties with language understanding, or, upon beginning the evaluation, showed misconduct or lack of motivation to continue the study. For those cases, the information provided by the participants was deleted immediately. The excluded participants had the same characteristics as the 675 individuals who had satisfactorily completed the evaluation.

Measures

Socio-demographics

The participants were interviewed using an *ad hoc* questionnaire to gather information about age, country of origin, current marital status, level of education completed, employment status prior to entering prison (considering any job or professional activity, formal or informal, with a stable and regular income), and prior prison terms. The type of criminal offense, classified according to the Organic Integral Criminal Code of the Republic of Ecuador, was also measured. Given that we failed to find any significant statistical differences between the two centers in terms of the sociodemographic variables, the data were processed and presented as a single sample (see Table 2).

Psychiatric symptoms and personality traits

The Spanish adaptation of the Personality Assessment Inventory (Ortiz-Tallo et al., 2011) was used to assess personality and psychopathology in adults**.** The PAI is composed of 344 items that use a Likert scale with four response alternatives: 1 = False, 2 = Slightly True, 3 = Mainly True, and 4 = Very True. Completion of the questionnaire requires fourth-grade reading level and takes 50-60 minutes. The Spanish adaptation of the PAI has adequate psychometric properties (Ortiz-Tallo et al., 2011). The median Cronbach's alpha coefficients of the scales and subscales were .78 y .70 in the normative sample and .83 and .74 in the clinical sample respectively. The median of the test-retest coefficients of the scales was .84, while for the subscales this was .79. In addition, Ortiz-Tallo *et al*. (2011) compared the average T scores of the typical sample of the Spanish adaptation with the American scale of the PAI and found differences in effect sizes that were non-significant for 17 of the 21 scales, and small for the remaining 4 scales. They concluded that the results obtained were consistent with those found in the original studies (Morey, 1991, 2007). Given the lack of specific norms for Spanish-speaking Latin American populations, the Spanish norms were used in the present study.

Validity criteria. Ortiz-Tallo *et al*. (2011) have indicated two strategies (high sensitivity and specificity in both cases) to detect random response in general and clinical populations using two validity scales: (1) Inconsistency (INC) ≥ 75T or Infrequency (INF) ≥ 75T, and (2) INC ≥ 64T and INF ≥ 60T. However, they also highlighted the

limited usefulness of the INF scale in correctional settings since the high scores on this scale appear to be more related to situational characteristics than to a random response pattern. Given these considerations, we preferred to apply the INC $\geq$ 75T cut-off point. For the Negative Impression (NIM) and Positive Impression (PIM) validity scales, the $\geq$ 101T and $\geq$ 65T cut-off points were taken into account (Ortiz-Tallo et al., 2011).

Table 2. Socio-demographic characteristics

Variable	Total sample ($N = 675$)	Subsample ($n = 538$)
	f (%)	f (%)
Age range:		
18–25 years	87 (12.9)	63 (11.7)
26–35 years	322 (47.7)	258 (48)
36–45 years	159 (23.5)	127 (23.6)
46–55 years	70 (10.4)	59 (11)
56–75 years	37 (5.5)	31 (5.7)
Country of origin:		
Ecuador	635 (94.1)	504 (93.7)
American countries	31 (4.6)	25 (4.6)
European countries	9 (1.3)	9 (1.7)
Current marital status:		
Single/Widowed	181 (26.8)	138 (25.7)
Married	86 (12.7)	76 (14.1)
Common law	336 (49.8)	270 (50.2)
Separated/Divorced	72 (10.7)	54 (10)
Level of education:		
None[a]	132 (19.6)	94 (17.5)
Primary	390 (57.8)	310 (57.6)
Secondary	132 (19.6)	116 (21.6)
Superior	21 (3)	18 (3.3)
Employment status:		
Employed	577 (85.5)	465 (86.4)
Unemployed	98 (14.5)	73 (13.6)
Prior prison terms:		
0	361 (53.5)	290 (53.9)
1	131 (19.4)	102 (19)
≥ 2	183 (27.1)	146 (27.1)
Type of criminal offense[b]		
AP	188 (27.9)	152 (28.3)
AIL	179 (26.5)	137 (25.5)
IPTS	124 (18.4)	99 (18.4)
ASRI	117 (17.3)	92 (17.1)
Other	67 (9.9)	58 (10.7)

Note. Subsample = PAI profiles that meet the validity criteria for the current study, AP = Against property, AIL = Against the inviolability of life, IPTS = Illegal production or trafficking of substances, ASRI = Against sexual and reproductive integrity.
[a]This condition does not imply illiteracy.
[b]According to Organic Integral Criminal Code of the Republic of Ecuador.

As a result, a subsample of 538 participants aged 18-75 years ($M = 35.90$; $SD = 10.58$) were classified as meeting the validity criteria for the current study. The distribution and proportion of this subsample strata, related to the reference population, were MIS = 124 (17.3%), MES = 140 (16.7%), MAS = 55 (16.1%), PRI = 44 (18.4%), and CRSG = 175 (16.7%). The PAI cut-off scores for clinical significance were Mania ≥ 65T, and other scales ≥ 70T (Ortiz-Tallo et al., 2011). Tables 3 and 4 show average T scores for 22 scales and 31 subscales of the PAI for both the total sample and the subsample.

Table 3. Average T scores for 22 scales and 31 subscales of the PAI

Scale/Subscale	Total sample ($N = 675$)		Subsample ($n = 538$)	
	M	*SD*	*M*	*SD*
Validity scales				
Inconsistency (INC)	60.04	11.54	57.57	9.36
Infrequency (INF)	71.34	10.67	71.17	10.58
Negative Impression (NIM)	68.47	19.04	64.70	15.23
Positive Impression (PIM)	49.64	10.51	50.79	8.79
Clinical scales				
Somatic Complaints (SOM)	60.37	11.76	59.04	10.78
Conversion (SOM-C)	58.79	12.69	57.13	11.39
Somatization (SOM-S)	57.10	11.13	56.08	10.48
Health Concerns (SOM-H)	60.82	11.21	60.03	10.80
Anxiety (ANX)	55.04	9.83	53.66	8.76
Cognitive (ANX-C)	55.01	9.53	53.80	8.66
Affective (ANX-A)	51.43	8.44	50.57	7.93
Physiological (ANX-P)	57.68	12.93	55.96	11.69
Anxiety-Related Disorders (ARD)	59.42	9	58.54	8.33
Obsessive-Compulsive (ARD-O)	60	8.95	59.77	8.81
Phobias (ARD-P)	52.08	10.41	51.56	10.42
Traumatic Stress (ARD-T)	59.13	10.51	57.97	9.72
Depression (DEP)	60.01	11.38	58.41	10.09
Cognitive (DEP-C)	54.93	12.75	52.98	11.32
Affective (DEP-A)	60.70	11.53	59.24	10.46
Physiological (DEP-P)	59.38	10.57	58.57	10.12
Mania (MAN)	61.44	9.76	60.54	9.19
Activity Level (MAN-A)	60.25	10.20	59.45	10
Grandiosity (MAN-G)	64.11	9.74	64.19	9.63
Irritability (MAN-I)	51.88	11.65	50.61	10.67
Paranoia (PAR)	63.26	9.05	62.49	8.50
Hypervigilance (PAR-H)	61.12	8.51	60.97	8.40
Persecution (PAR-P)	72.84	14.65	71.35	13.63
Resentment (PAR-R)	52.24	8.61	51.76	8.47

Note. PAI = Spanish adaptation of the Personality Assessment Inventory (Ortiz-Tallo et al., 2011), Subsample = PAI protocols that meet the validity criteria for the current study.

Table 4. Average T scores for 22 scales and 31 subscales of the PAI (continued)

Scale/Subscale	Total sample (*N* = 675)		Subsample (*n* = 538)	
	M	*SD*	*M*	*SD*
Clinical scales				
Schizophrenia (SCZ)	61.71	12.17	60	10.94
Psychotic Experiences (SCZ-P)	60.29	13.01	58.53	11.66
Social Detachment (SCZ-S)	58.59	10.24	57.63	9.95
Thought Disorder (SCZ-T)	57.66	11.70	56.44	11
Borderline Features (BOR)	59	10.55	57.53	9.33
Affective Instability (BOR-A)	52.90	9.14	51.83	8.73
Identity Problems (BOR-I)	60.19	10.23	59.40	9.53
Negative Relationships (BOR-N)	56.17	9.77	55.06	9.08
Self-Harm (BOR-S)	60.59	13.97	58.91	12.67
Antisocial Features (ANT)	65.19	12.25	63.47	10.81
Antisocial Behaviors (ANT-A)	64.70	11.27	63.60	10.84
Egocentricity (ANT-E)	64.09	13.38	62.29	11.77
Stimulus Seeking (ANT-S)	56.90	11.61	55.59	10.55
Alcohol Problems (ALC)	62.66	18.51	60.86	17.42
Drug Problems (DRG)	61.97	19.30	59.45	17.80
Treatment scales				
Aggression (AGG)	54.55	12.22	52.91	10.80
Aggressive Attitude (AGG-A)	53.87	11.91	52.44	10.91
Verbal Aggression (AGG-V)	48.87	9.27	48.26	8.92
Physical Aggression (AGG-P)	60.42	15.09	58.18	12.81
Suicidal Ideation (SUI)	56.37	15.16	53.91	12.28
Stress (STR)	61.70	10.63	60.84	10.08
Non-Support (NON)	64.02	11.17	62.78	10.42
Treatment Rejection (RXR)	43.75	8	44.52	7.49
Interpersonal scales				
Dominance (DOM)	53.70	10.03	54.08	10.23
Warmth (WRM)	53.51	9.18	54.29	8.85

Note. PAI = Spanish adaptation of the Personality Assessment Inventory (Ortiz-Tallo et al., 2011), Subsample = PAI protocols that meet the validity criteria for the current study.

Procedure

Descriptive cross-sectional methodology was used. In order to avoid some of the methodological problems in prior studies described above, a number of criteria were adopted. First, the sentenced male population was chosen, given that they are the most characteristic and stable population within prison. Consequently, due to the short-term period in prison or outside contact, remand prisoners or those who are on a pre-release regime were excluded. Second, the most crowed prisons were selected in order to access a higher and more representative sample. Third, a rigorous sampling procedure was applied, considering the target population, the strata, and all security levels. Fourth, a suitable tool to assess psychopathology in adults was used. Finally, the validity criteria necessary to detect invalid response styles were observed.

The Undersecretariat of Rehabilitation, Reintegration, and Precautionary Measures for Adults (MJDHC) granted the necessary permits. Statistical information and coordination of the study in the centers according to the required security rules were requested from the directors of the two prisons. A team of nine psychologists from the MSP conducted the fieldwork between February and April 2015, none of which had any authority or connections within the prison context. In addition, they received training in forensic psychopathology, mental health research, application of the research protocol, and recording the information. The *ad hoc* questionnaire was administered immediately after the PAI. In total, the individual evaluation took between 70 and 90 minutes. The participants received the necessary assistance to solve any difficulty caused by the linguistic differences between the Spanish used in Ecuador and that used in the PAI. In terms of the frequency and characteristics of the difficulties encountered during the evaluations, it can be said that there were no major drawbacks in this area. The present study is part of and uses data from a broader project entitled "Study of the Prevalence of Mental Disorders in Prison Population of Guayaquil".

Ethics statement

The National Directorate of Primary Healthcare (MSP) reviewed the technical aspects of the study. The Health Coordination Zone 8 (CZ8-S, MSP) managed both the ethics revision and the project approval. The inmates selected by the sampling method were contacted in their pavilion or their security level, where they were given, both individually and in a group, information regarding the characteristics of the study whereupon they could freely decide whether or not to participate in the study. The lack of any kind of benefit in the short, medium, or long-term for their participation in the study was explained, as well as their freedom to leave the study at any time. All individuals signed the Informed Consent Form after listening and reading about the characteristics of the study and the Rights guaranteed to research participants, established by the Constitution of the Republic of Ecuador. This study followed the ethical principles of the Declaration of Helsinki.

Data analysis

Analyzes were conducted using the statistical package IBM®SPSS.22 for Windows. In order to find possible differences between the two centers, Student's *t* test for the quantitative variables and χ^2 test for the categorical variables were conducted.

Significance levels were established (*p* <.05, <.01). Frequency, percentage, and confidence intervals were calculated in order to estimate the prevalence. We also calculated the percentage of the subsample that was within clinical range for two or more of the clinical scales (comorbidity).

6.3 Results

Socio-demographic characteristics

In the total sample, Ecuadorians accounted for the highest percentage (94.1%), Common law was the most representative marital status (49.8%), and 19.6% of participants had no level of education (this does not imply illiteracy), whereas 57.8% had only completed Primary School. The percentage of unemployed participants prior to entering prison was 14.5%. For 53.5% of the sample, this was described as their first conviction, 19.4% had been to prison once, and 27.1% of the sample reported having been convicted more than once. The criminal offenses committed by 90.1% of the participants can be classified into four groups: (a) Against property (27.9%), (b) Against the inviolability of life (26.5%), (c) Illegal production or trafficking of substances (18.4%), and (d) Against sexual and reproductive integrity (17.3%).

Prevalence of psychiatric symptoms and pathological personality traits

The proportions described below are related to the 538 valid clinical evaluations, whose data offers, *a priori*, higher accuracy (see Table 5). From this subsample, 69.9% reached the level of clinical significance for at least one of the studied clinical syndromes. The conditions that obtained the highest prevalence rate in each of the analyzed variables were those participants aged 18-25 years (79.4%), Ecuadorians (70.2%), Separated/Divorced (74.1%), participants without level of education (74.5%), Unemployed (75.3%), having two or more previous convictions (83.6%), and those that had committed a criminal offense against property (78.3%). The comorbidity rate reached 49.6%. The clinical symptoms measured by the ALC, DRG, and MAN scales showed higher prevalence than the others. The problems derived from substance use, taken together, account for the most significant proportions of the individuals that can be classified at the clinically significant level for each scale: BOR (71.4%), ANT (67.2%), SCZ and ARD (64.8%), DEP (64.1%), SOM and ANX (60%), PAR (57.4%), and MAN (55.8%). These scores are followed by manic episodic symptoms (MAN) for

each scale: BOR (71.4%), ARD (61.1%), SCZ (60%), ANT (58.6%), ANX (55%), PAR (52.2%), SOM (41.1%), and DEP (39.1%).

Table 5. Prevalence of psychiatric symptoms and pathological personality traits

PAI Clinical scales	Subsample (*n* = 538)		
	%	*f*	95% CI
Somatic Complaints (SOM)	17.7	95	[14.5. 20.9]
Anxiety (ANX)	3.7	20	[02.1. 05.3]
Anxiety-Related Disorders (ARD)	10	54	[07.5. 12.5]
Depression (DEP)	11.9	64	[09.2. 14.6]
Mania (MAN)	32.3	174	[28.3. 36.3]
Paranoia (PAR)	21.4	115	[17.9. 24.9]
Schizophrenia (SCZ)	19.5	105	[16.2. 22.8]
Borderline Features (BOR)	10.4	56	[07.8. 13.0]
Antisocial Features (ANT)	23.8	128	[20.2. 27.4]
Alcohol Problems (ALC)	33.6	181	[29.6. 37.6]
Drug Problems (DRG)	27.9	150	[24.1. 31.7]

Note. PAI = Spanish adaptation of the Personality Assessment Inventory (Ortiz-Tallo et al., 2011), Subsample = PAI protocols that meet the validity criteria for the current study, *f* = frequency, CI = confidence interval.

6.4 Discussion

The aim of this study was to analyze the current prevalence of psychiatric symptoms and personality traits that are clinically significant among sentenced male prisoners from the two most crowded prisons in Ecuador, using the clinical scales of the Spanish adaptation of the PAI (Ortiz-Tallo et al., 2011). As far as we know, there are no previous studies with these methodological characteristics. Actually, our methodological approach substantially differs from the ones used in previous studies (e.g., Fazel & Danesh, 2002; Fazel & Seewald, 2012; Prins, 2014). This approach allows us to obtain valid, accurate, and useful information for mental health services in the prison population. These characteristics are particularly necessary in environments where resources are usually limited or insufficient (LMICs).

Despite the methodological diversity in other prevalence studies (Prins, 2014), we compared our findings with those reported in previous studies, some of which were obtained in contexts that are related — both geographically and culturally — to the one studied here. This makes sense since most of the studies of prevalence of mental disorders have been developed in English-speaking prison population and in high-income-countries. Therefore, this study is particularly relevant in terms of psychological evaluation in the Latin American environment.

The current prevalence was 69.9% for any of the studied clinical syndromes. Benavides and Beitia (2012) found a rate of 68.7% among sentenced male prisoners from a Colombian prison, using the Self Reporting Questionnaire (Climent & De Arango, 1983). However, Vicens *et al.* (2011) detected 41.2% of 1-month prevalence of mental disorders among sentenced male prisoners. This study was conducted in Spanish prisons, using the Structured Clinical Interview for DSM-IV Axis I Disorders (First, Spitzer, Gibbon, & Williams, 1999) and the Spanish version of the International Personality Disorders Examination (López-Ibor, Pérez-Urdániz, & Rubio, 1996). A lower 12-month prevalence of psychiatric disorders among sentenced male prisoners of the state of São Paulo (Brazil) was reported by Andreoli *et al.* (2014). These authors found a rate of 19.1%, using the Brazilian version of the WHO-Composite International Diagnostic Interview [CIDI 2.1] (Quintana, Gastal, Jorge, Miranda, & Andreoli, 2007). Finally, the 12-month prevalence rate for any mental disorder in the Chilean male prison population was 26.6%, using the WHO-Composite International Diagnostic Interview [CIDI 3.0] (Haro et al., 2006; Kessler & Üstün, 2004), as described by Mundt *et al.* (2013).

Despite the psychometric diversity, there are similarities between the results obtained for six clinical syndromes in our study and those indicated in previous studies. First, the prevalence rates detected here for Alcohol and Drug Problems scales are consistent with those mentioned in a systematic review (Fazel, Bains, & Doll, 2006). These authors referred to a range of prevalence rates in male prisoners on reception into prison, from 18% to 30% for alcohol abuse and dependence and from 10% to 48% for drug abuse and dependence, respectively. Second, Vicens *et al.* (2011), Mundt *et al.* (2013), and Andreoli *et al.* (2014) reported prevalence rates for Major depressive disorder (7.8%), Major depressive episode (6.1%), and Depression (5.3%), respectively. The Depression scale used in the present study reveals a prevalence rate consistent with these data. Third, the Anxiety-Related Disorders scale measures symptoms and related behaviors with phobias, posttraumatic stress, and obsessive-compulsive disorders. The prevalence rate found in our study falls within the proportions reported by Vicens *et al.* (2011), Andreoli *et al.* (2014), and Mundt *et al.* (2013), i.e., 23.3%, 12.2%, and 7.5% respectively. Fourth, García-Campayo (2007) considers that the prevalence of unexplained somatic complaints amongst Spanish prison inmates may be around 15%, which is similar to the data found in the current study using the Somatic Complaints scale. Finally, the prevalence rate found with the Antisocial Features scale is consistent with the

23% reported by Vicens *et al.* (2011) for Antisocial Personality Disorder. Analogous data, i.e., 26.9%, was found by Pondé, Freire, and Mendonça (2011) among sentenced male prisoners from a Brazilian prison (Salvador, Brazil), using the Brazilian Portuguese version of the Mini International Neuropsychiatric Interview (Amorim, 2000).

For the other five clinical syndromes, our findings differ considerably from those of previous studies. First, contrary to expectations, the Anxiety scale showed the lowest prevalence rate in our study. This scale, which evaluates various manifestations of anxiety, should show similar or higher values to that obtained for the Anxiety-Related Disorders scale, which evaluates specific aspects of anxiety (Ortiz-Tallo et al., 2011). Benavides and Beitia (2012), for instance, reported a prevalence rate of 22%. Moreover, a study performed in the United Kingdom by Singleton, Meltzer, Gatward, Coid, and Deasy (1997) found a prevalence rate of 21% among sentenced male prisoners using the Clinical Interview Schedule (Lewis, Pelosi, Araya, & Dunne, 1992). Second, Pondé *et al.* (2011) and Vicens *et al.* (2011) have reported higher prevalence rates (19.7% and 44% respectively) for Borderline Personality Disorder than that described here for the Borderline Features scale. Third, for the Paranoid scale the prevalence rate was lower than the 37% found by Vicens *et al.* (2011). Fourth, the specific symptoms of a manic episode (Mania scale), i.e., emotional lability, agitation, exacerbated self-esteem, and high hostility (Ortiz-Tallo et al., 2011), obtained the second highest proportion in our study. Nevertheless, Mundt *et al.* (2013) and Andreoli *et al.* (2014) found prevalence rates of 1.4% and 0.2%, respectively, for this disorder. Finally, the prevalence of Schizophrenia scale is also higher than the results reported by Andreoli *et al.* (2014), Benavides and Beitia (2012), and Mundt *et al.* (2013), since these authors reported prevalence rates below 6%. Although the Schizophrenia scale is useful to detect psychotic disorders in prison populations (Rogers, Ustad, & Salekin, 1998), these results could be partially explained by the wide spectrum of symptoms that it covers. Further, this clinical syndrome usually shows high comorbidity with other syndromes (see Bo, Abu-Akel, Kongerslev, Haahr, & Simonsen, 2011 for a review).

The magnitude of the impact of drug use on the health of prison populations has been highlighted (Carpentier, Royuela, Noor, & Hedrich, 2012; UNODC, 2016). Although a prevalence study does not establish causality, the proportions reached by the related psychiatric symptoms with substance use and its high comorbidity with the remainder of clinical syndromes analyzed deserve special attention. In fact, the priorities

of the MJDHC and MSP include the eradication of substance trafficking within prisons as well as the provision of necessary health services to individuals presenting problems related to substance use and other associated disorders.

In order to provide a global analysis and to fully contextualize the findings, it would be necessary to evaluate a set of risk factors before entering prison (Frank & Glied, 2006; Marín-Basallote & Navarro-Repiso, 2012), as well as the inherent conditions of the prison context that act as mental health determinants in prisoners (Arroyo & Ortega, 2009; Gadon et al., 2006). It is also important to note that this influence is not the same during incarceration (Dettbarn, 2012) and that the living conditions of inmates depend partially on the financial resources assigned and available (Kim, Becker-Cohen, & Serakos, 2015).

In this line, certain contextual characteristics such as coercion and victimization act as risk factors (Boxer, Middlemass, & Delorenzo, 2009; Listwan, Colvin, Hanley, & Flannery, 2010). For these authors, coexistence in a hostile environment and victimization can create psychosocial adaptation problems that can result in aggressive behaviors, anger, anxiety, and depression. On the other hand, sources of social support arise as protective factors, and rehabilitation programs and activities have shown to be the most important (Colvin, 2007). This suggests the importance of assessing contextual and situational factors such as living conditions, coercion, victimization, etc., on the inmates' mental health. Additionally, it would be recommended to assess available social support, inmates' perception on their social support sources and their attitude towards them when planning any type of intervention. This approach has been previously suggested by Day, Brauer, and Butler (2014) with regard to misconduct and resistance. Undoubtedly, an integral analysis of inmates' health and its risk and protective factors will allow to integrate the strategies involving promotion, prevention and intervention efficiently in this environment. Therefore, the results of this study can serve as a starting point for a comprehensive analysis of the individual and contextual determinants of prisoners' physical and mental health. This would result in an optimization of the resources available for the assessment and treatment of prisoners in Ecuadorian penitentiary centers.

Strengths and limitations

The findings obtained in this study extend the knowledge of psychopathology in prison populations, particularly in the South American context where studies of this sort

are scarce. For the first time PAI data are provided for Latin American prison population. Another strength of this study is related to its methodological approach: (a) we chose the most populated prisons and took into account different strata and security levels; (b) we applied a rigorous sampling technique to avoid over-representation of any of the strata and to guarantee the generalization of the findings to the Ecuadorian prison population; (c) in order to minimize the effect of invalid response styles on the results, validity criteria were adopted; and (d) psychologists outside of the forensic settings conducted the fieldwork, which reduces the risk of response bias, given their inability to provide some benefit.

With respect to limitations of our study, there is an absence of females in our studied population. Moreover, it is reasonable to raise some concerns regarding the degree of understanding of Spanish used in the PAI questionnaire by the South American population. This supposed limitation was analyzed in the studies of linguistic adaptation of the Argentinian version of the PAI (Stover, Castro, & Fernández, 2015), where the content of only 4 of the 344 items that compose the PAI had to be modified to improve its comprehension. In any case, it is convenient to emphasize the need to have instruments that are sensitive to the cultural factors of each population (Alamilla & Wojcik, 2013; Benuto, 2013; Puente, Zink, Hernandez, Jackman-Venanzi, & Ardila, 2013).

We should also mention the tendency of self-report questionnaires to overestimate the prevalence rates. However, given the findings just described, it appears that this effect is not evident in the current study. We believe that the technical and psychometric features of PAI make it a good alternative to analyze the psychopathological changes that occur in this environment. Finally, disciplinary rules of prisons, individual characteristics (physical and psychological) of participants, and the time available for the fieldwork, suggested an assessment procedure that was as short and useful as possible.

Conclusions and future directions

Our study shows that 69.9% of the sample presented psychiatric symptoms and personality traits that are clinically significant, at least for one of the analyzed clinical syndromes. The three clinical syndromes with the highest prevalence rates were Alcohol Problems (33.6%), Mania (32.3%), and Drug Problems (27.9%). The observed comorbidity rate was 49.8%. Taken together, Alcohol Problems and Drug Problems accounted for the highest prevalence (between 55.8% and 71.4%) among individuals with

clinically significant scores in each of the syndromes analyzed. Longitudinal studies could help to identify more precisely the effects of short, medium, and long-term incarceration on mental health, along with the variables that have higher consequences for the development, course, and chronicity of different psychopathologies, and the circumstances that can improve mental health and the adherence to multidisciplinary interventions.

Acknowledgements and funding

Capítulo 7. Estudio 3

Are psychological measures and actuarial data equally effective in discriminating among the prison population? Analysis by crimes

Burneo-Garcés, C., Fernández-Alcántara, M., Marín-Morales, A., & Pérez-García, M. (2017). Are psychological measures and actuarial data equally effective in discriminating among the prison population? Analysis by crimes. *PLoS ONE* (Under review).

7.1 Introduction

In-prison violence has attracted the attention of researchers because of its implications for processes related to security and intervention (Auty, Cope, & Liebling, 2017; Byrne & Hummer, 2007; Gardner, Boccaccini, Bitting, & Edens, 2015). An example of this is the importance given to the identification of variables that are strongly associated with a variety of forms of aggression, from which models have been designed to predict recidivism (Monahan & Skeem, 2013, 2014). In fact, data from different individual facets (e.g., socio-demographic characteristics, criminal history, personality, psychopathology, interpersonal relationships, and interaction with the environment) is frequently used to analyze violent behavior in correctional settings. However, the exclusive or predominant presence of a class of measures in a study often depends on establishing their usefulness *a priori*.

This trend can be seen, for example, in the systematic review conducted by Schenk and Fremouw (2012) on individual characteristics related to prison violence in English-speaking populations. The analyzed variables were divided into three categories: demographic, criminal history, and psychological. Studies revealed that the likelihood of being involved in violent acts is inversely related to age and education (Cunningham, Sorensen, & Reidy, 2005; Cunningham & Sorensen, 2007). In addition, having a more extensive arrest history (DeLisi, 2003; DeLisi, Berg, & Hochstetler, 2004), being convicted of less violent crimes (Cunningham & Sorensen, 2006, 2007), serving shorter sentences (DeLisi, 2003; Sorensen & Cunningham, 2010) and belonging to a gang (Gaes, Wallace, Gilman, Klein-Saffran, & Suppa, 2002; Griffin & Hepburn, 2006) correlates positively with a greater occurrence of violent behavior in prison. With regard to psychological variables, the conclusions indicate that individuals with more aggressive tendencies, a history of severe mental disorders, symptoms of confusion, high self-esteem (for white inmates) and less social support are more likely to be involved in acts of violence (Baskin, Sommers, & Steadman, 1991; Berg & DeLisi, 2006; Gillespie, 2005; Lahm, 2008; Walters, 2011). Although only a few studies that provide data on psychological measures met the inclusion criteria, the findings provided by these measures were not as consistent as those provided by the other variables. Finally, one of the main methodological weaknesses identified is the lack of integration of variables of a different nature within the same study, which would serve to identify the contribution or relative importance of each one.

This limitation also affects similar and complementary subjects of study related to violence in the prison population, as in the case of detecting measures that differentiate — within prison and with sufficient accuracy — individuals who have committed crimes with and without violence. This is due to the fact that it is not usual to analyze several crimes within the same study, let alone use a wide range of measures (e.g., socio-demographic, judicial, and psychological) for the aforementioned purpose. Moreover, to the best of our knowledge, there is no study that meets all of these characteristics. Even among studies analyzing the same type of offenders, the existing methodological diversity hinders the acquisition of consistent data that lead to the construction of a clear and distinct profile (Chan & Heide, 2016; Gerard, Jackson, Chou, Whitfield, & Browne, 2014). Consequently, greater methodological rigor could have an impact on obtaining reliable and useful data on related study topics within prisons (e.g., defining characteristics of offender populations, violence, and prediction of recidivism risk).

This conclusion is particularly relevant to psychological variables (Schenk & Fremouw, 2012), which can play a role in intervention, risk assessment, and risk reduction (Kraemer et al., 1997; Monahan & Skeem, 2013, 2014). The latter authors have defined four types of risk factor for violence: (a) Fixed marker, (b) Variable marker, (c) Variable risk factor, and (d) Causal risk factor. Fixed markers (e.g., Male gender) cannot be modified; Variable markers (e.g., young age) can change over time but cannot be modified through intervention, while variable risk factors (e.g., unemployed) and causal risk factors (e.g., substance abuse) can be modified through intervention. Moreover, the changes that the intervention generates in the causal risk factors can have repercussions for the reduction of recidivism, a capacity that doubles their utility. Therefore, the need to obtain psychological measures with sufficient psychometric properties is evident, a quality that may favor its inclusion in studies of this nature (Hanson & Morton-Bourgon, 2009).

It is important to note that a correspondence between the discriminative capacity of a variable and its predictive capacity for recidivism should not necessarily be expected. In fact, not all the distinguishing factors of individuals who have committed a crime are strong predictors of their recurrence (Hanson & Morton-Bourgon, 2005). In addition, the same risk factors may appear as the main predictors of general and violent recidivism in some populations of offenders (Hanson & Morton-Bourgon, 2005). This

suggests the need to improve the accuracy of the instruments used for this purpose (Desmarais, Johnson, & Singh, 2016), an objective that involves refining the analyses at different levels of complexity. One conclusion that sums up the previous considerations is that certain shortcomings could be solved with methodologically exhaustive and rigorous approaches that explore the distinctive characteristics of several types of offenders within the same study and that employ a broad set of psychological measures (PM) and actuarial data (AD). Such designs would be of multiple use as they would make it possible to ascertain the effectiveness of different types of measures to accurately characterize the prison population in terms of crimes and, by extension, to identify the measures that have the greatest discriminatory power for each of them.

Therefore, the main objective of this study was to determine whether the discriminatory capacity of PM and AD — including socio-demographic measures (SDM) and judicial measures (JM) — varies according to the crime. For this, a large sample of males convicted of Robbery, Murder, Rape, and Drug Possession were employed. On the basis of the above review, two hypotheses are proposed: (a) That the AD will show a greater discriminatory capacity in the four crimes of study, and (b) that each crime will present a specific profile.

7.2 Method

Participants

A set of 811 individuals was selected by random sampling, using the official list of male sentenced prisoners from the Regional Guayas Social Rehabilitation Center (CRSRG) and the Guayaquil Social Rehabilitation Center (CRSG). These adult male prisons, which house approximately 9,000 inmates, are located in Guayaquil, Ecuador. The prison population in this country is estimated to be around 26,000 (ICPR, 2017). For the purpose of this study, individuals were grouped according to whether they were serving sentences for the four most frequent crimes. Thus, the study sample was composed of 576 male sentenced prisoners aged 19-74 years ($M = 35.58$; $SD = 10.13$) for the crimes of Robbery ($N = 210$; 36.5%), Murder ($N = 158$; 27.4%), Rape ($N = 108$; 18.8%) and Drug Possession ($N = 100$; 17.4%). The distribution of the sample by centers was as follows: CRSRG = 371 (64.4%) and CRSG = 205 (35.6%).

Inclusion and exclusion criteria

The inclusion criteria were: (1) serving a sentence in either CRSRG or CRSG, and (2) participating voluntarily in the study. The exclusion criteria were: (1) having insufficient knowledge of the Spanish language, (2) being in an inadequate physical or mental state to complete the questionnaires, and (3) having an attitude that precludes the development of evaluation. The exclusion criteria were taken into account from the first contact with the inmate until the end of the evaluation. Thus, the proportion of excluded participants (5%) was composed of individuals that did not declare interest in the study, had difficulties with language understanding, or, upon beginning the evaluation, showed misconduct or lack of motivation to continue the study. For those cases, the information provided by the participants was deleted immediately. The excluded participants had the same characteristics as the 576 individuals who had satisfactorily completed the evaluation.

Instruments and measures

The main criteria applied for the selection of PM and AD were psychometric utility and frequency of use in correctional settings (Archer, Buffington-Vollum, Stredny, & Handel, 2006; Edens & Ruiz, 2005; Schenk & Fremouw, 2012). The measures included in this study were from three sources: (1) an *ad hoc* questionnaire to gather socio-demographic and criminal history, (2) the criminal justice records of both prisons, and (3) the Spanish adaptation of the PAI (Ortiz-Tallo, Santamaría, Cardenal, & Sánchez, 2011).

The PAI is a self-report that measures the effect of thoughts, attitudes, behaviors, facts, and past and present circumstances on the development of symptoms, the characteristics of personality, and the individual's behavior at the time of evaluation. It is composed of 4 validity scales, 11 clinical scales, 5 scales for treatment consideration, 2 scales of interpersonal relations, and 10 complementary indexes (the content of the 22 scales is non-overlapping). Moreover, 9 clinical scales and 1 treatment scale have subscales. The clinical scales represent the clinical syndromes of the highest significance in diagnostic practice, whereas the scales related to the treatment provide complementary information that could be relevant to a possible intervention. Finally, the interpersonal scales measure the interpersonal relationship style, whereas the complementary indexes can be used to obtain a more precise interpretation of some of

the scores. This tool is composed of 344 items that use a Likert scale with four response alternatives: 1 = False, 2 = Slightly True, 3 = Mainly True, and 4 = Very True. Completion of the questionnaire requires fourth-grade reading level and takes between 50 and 60 minutes.

The Spanish adaptation of the PAI has adequate psychometric properties (Ortiz-Tallo et al., 2011). The median Cronbach's alpha coefficients of the scales and subscales were .78 y .70 in the normative sample and .83 and .74 in the clinical sample respectively. The median of the test-retest coefficients of the scales was .84, while for the subscales this was .79. In addition, Ortiz-Tallo *et al*. (2011) compared the average T scores of the typical sample of the Spanish adaptation with the American scale of the PAI and found differences in effect sizes that were non-significant for 17 of the 21 scales, and small for the remaining 4 scales. They concluded that the results obtained were consistent with those found in the original studies (Morey, 1991, 2007). Given the lack of specific norms for Spanish-speaking Latin American populations, the Spanish norms were used in the present study.

Validity criteria. Ortiz-Tallo *et al*. (2011) have indicated two strategies (high sensitivity and specificity in both cases) to detect random response in general and clinical populations using two validity scales: (1) Inconsistency (INC) $\geq$ 75T or Infrequency (INF) $\geq$ 75T, and (2) INC $\geq$ 64T and INF $\geq$ 60T. However, they also highlighted the limited usefulness of the INF scale in correctional settings since the high scores on this scale appear to be more related to situational characteristics than to a random response pattern. Given these considerations, we preferred to apply the INC $\geq$ 75T cut-off point. For the Negative Impression (NIM) and Positive Impression (PIM) validity scales, the $\geq$ 101T and $\geq$ 65T cut-off points were taken into account (Ortiz-Tallo et al., 2011). As a result, a subsample of 450 participants aged 20-74 years (*M* = 35.10; *SD* = 9.94) were classified as meeting the validity criteria for the current study, and the distribution by crime was as follows: Robbery (*N* = 166; 36.9%), Murder (*N* = 127; 28.2%), Rape (*N* = 82; 18.2%) and Drug Possession (*N* = 75; 16.7%). Finally, the distribution of the subsample by center was CRSRG = 298 (66.2%) and CRSG = 152 (33.8%).

Categorical and explanatory variables

The crimes of Robbery, Murder, Rape and Drug Possession, classified according to the Organic Integral Criminal Code of the Republic of Ecuador, were designated as

dependent variables. Regarding the explanatory variables, 9 SDM, 2 JM and 18 PM (11 clinical, 5 related to treatment, and 2 of interpersonal relationships) were included in the study. The SDM were represented by: (a) Age, (b) Marital status at the time of evaluation, broken down into Single/Widowed, Common law, Married, and Separated/Divorced, (c) Number of children, (d) Years of education (total years of study), (e) Education (level of education completed), and (f) Employment status (considering any job or professional activity, formal or informal, with a stable and regular income prior to entering prison). In addition, the JM considered were Prior prison terms and Total prison terms. Finally, the PAI provided a wide range of PM through its 11 clinical scales (Somatic Complaints, SOM; Anxiety, ANX; Anxiety-Related Disorders, ARD; Depression, DEP; Mania, MAN; Paranoia, PAR; Schizophrenia, SCZ; Borderline Features, BOR; Antisocial Features, ANT; Alcohol Problems, ALC; and Drug Problems, DRG), 5 scales for treatment consideration (Aggression, AGG; Suicide Ideation, SUI; Stress, STR; Treatment Rejection, RXR), and 2 interpersonal relation scales (Dominance, DOM; and Warmth, WRM).

Procedure

The Undersecretariat of Rehabilitation, Reintegration, and Precautionary Measures for Adults (Ministry of Justice, Human Rights, and Cults of Ecuador) granted the necessary permits. Statistical information and coordination of the study in the centers according to the required security rules were requested from the directors of the two prisons. A team of nine psychologists from the Ministry of Public Health of Ecuador (MSP) conducted the fieldwork between February and April 2015, none of which had any authority or connections within the prison context. In addition, they received training in forensic psychopathology, mental health research, application of the research protocol, and recording the information. The *ad hoc* questionnaire was administered immediately after the PAI. In total, the individual evaluation took between 70 and 90 minutes. The participants received the necessary assistance to solve any difficulty caused by the linguistic differences between the Spanish used in Ecuador and that used in the PAI. In terms of the frequency and characteristics of the difficulties encountered during the evaluations, it can be said that there were no major drawbacks in this area. The present study is part of and uses data from a broader project entitled "Study of the Prevalence of Mental Disorders in Prison Population of Guayaquil".

Ethics statement

The National Directorate of Primary Healthcare (MSP) reviewed the technical aspects of the study. The Health Coordination Zone 8 (CZ8-S, MSP) managed both the ethics revision and the project approval. The inmates selected by the sampling method were contacted in their pavilion or their security level, where they were given, both individually and in a group, information regarding the characteristics of the study whereupon they could freely decide whether or not to participate in the study. The lack of any kind of benefit in the short, medium, or long-term for their participation in the study was explained, as well as their freedom to leave the study at any time. All individuals signed the Informed Consent Form after listening and reading about the characteristics of the study and the Rights guaranteed to research participants, established by the Constitution of the Republic of Ecuador. This study followed the ethical principles of the Declaration of Helsinki.

Data analysis

Descriptive statistics were used to present the sociodemographic, judicial, and psychological characteristics of the participants. A discriminant analysis (DA) was conducted, introducing all explanatory variables simultaneously, into two models: Model 1 = AD; and Model 2 = Full set of measures. Regarding PM, the raw scores of the 18 PAI scales were used. This allowed us to evaluate the discriminant capacity of the explanatory variables and the predictive accuracy of the discriminant function of each model. Finally, to compare the relevance of the contribution of all the explanatory variables, the correlation between its value and the probability of belonging to the group was also analyzed. From these results, a profile of each crime was configured with correlations that obtained values $r > .25$ and with a level of significance $p < .001$. These criteria were applied to ensure a reasonable minimum percentage of shared variance. All data were processed using the statistical packages IBM®SPSS.22 for Windows.

7.3 Results

Socio-demographic and psychological characteristics

Given that we failed to find any significant statistical differences between the two centers in terms of socio-demographic characteristics, the data were processed as a single sample (see Table 1). In the present study, we will provide information only on

the subsample ($N = 450$). This is based on the assumption that the application of the validity criteria to the PAI protocols ensures more reliable information. Tables 2 and 3 show the mean and standard deviation of the raw and T scores of the 22 PAI scales for the subsample for each crime.

Discriminant capacity of explanatory variables

The tests of equality of group means yielded the following significant values, in order of minor to major Wilk's Lambda: Prior prison terms, Age, Total prison terms, Antisocial Features (ANT), Marital status, Alcohol Problems (ALC), Suicide Ideation (SUI), Drug Problems (DRG) and Aggression (AGG). In addition, Depression (DEP) revealed a marginally significant value. Therefore, only 4 SDM, 2 JM, and 6 PM showed discriminant capacity (see Table 4). Complementarily, the Box test ($p < .001$) confirmed that the covariance matrices were not the same.

Table 1. Sociodemographic and judicial characteristics of the subsample and the four crimes

Variable	Subsample $N = 450$ f (%)	Robbery $N = 166$ f (%)	Murder $N = 127$ f (%)	Rape $N = 82$ f (%)	Drug Possession $N = 75$ f (%)
Age (M; SD)	35.10 (9.94)	31.09 (7.89)	34.78 (8.19)	39.21 (12.01)	40 (10.43)
Age range:					
18–30 years	183 (40.7)	105 (63.3)	43 (33.9)	22 (26.8)	13 (17.3)
31-45 years	199 (44.2)	51 (30.7)	70 (55.1)	35 (42.7)	43 (57.3)
46-60 years	58 (12.9)	10 (6)	13 (10.2)	21 (25.6)	14 (18.7)
61-75 years	10 (2.2)		1 (0.8)	4 (4.9)	5 (6.7)
Country of origin:					
Ecuador	427 (94.9)	162 (97.6)	121 (95.3)	82 (100)	62 (82.7)
Other countries	23 (5.1)	4 (2.4)	6 (4.7)		13 (17.3)
Marital status:					
Single/Widowed	127 (28.2)	56 (33.7)	29 (22.8)	25 (30.5)	17 (22.7)
Common law	224 (49.8)	82 (49.5)	81 (63.8)	31 (37.8)	30 (40)
Married	52 (11.6)	14 (8.4)	6 (4.7)	14 (17.1)	18 (24)
Separated/Divorced	47 (10.4)	14 (8.4)	11 (8.7)	12 (14.6)	10 (13.3)
Number of children (M; SD)	2.36 (2.18)	1.81 (1.73)	2.61 (2.16)	3.02 (2.61)	2.41 (2.34)
Years of education (M; SD)	8.54 (3.49)	8.46 (3.12)	8.14 (3.41)	8.50 (3.82)	9.43 (3.95)
Education:					
None	74 (16.4)	24 (14.4)	26 (20.5)	12 (14.6)	12 (16)
Primary	281 (62.5)	109 (65.7)	76 (59.8)	57 (69.5)	39 (52)
Secondary	87 (19.3)	32 (19.3)	24 (18.9)	10 (12.2)	21 (28)
Superior	8 (1.8)	1 (0.6)	1 (0.8)	3 (3.7)	3 (4)
Employment status:					
Employed	390 (86.7)	148 (89.2)	107 (84.3)	75 (91.5)	60 (80)
Unemployed	60 (13.3)	18 (10.8)	20 (15.7)	7 (8.5)	15 (20)
Prior prison terms:					
No	228 (50.7)	47 (28.3)	75 (59.1)	65 (79.3)	41 (54.7)
Yes	222 (49.3)	119 (71.7)	52 (40.9)	17 (20.7)	34 (45.3)
Total prison terms (M; SD)	1.16 (1.81)	1.90 (2.26)	.80 (1.29)	.48 (1.28)	.88 (1.36)

Note. Subsample = PAI profiles that meet the validity criteria for the current study.

Table 2. Mean and standard deviation of the RAW scores of the 22 PAI scales for the subsample and the four crimes

PAI scale	Subsample N = 450 M (SD)	Robbery N = 166 M (SD)	Murder N = 127 M (SD)	Rape N = 82 M (SD)	Drug Possession N = 75 M (SD)
Inconsistency (INC)	13.84 (4.01)	13.84 (4.12)	13.98 (3.78)	13.87 (4.14)	13.59 (4.07)
Infrequency (INF)	7.63 (2.43)	7.92 (2.47)	7.46 (2.30)	7.57 (2.23)	7.37 (2.71)
Negative Impression (NIM)	5.20 (3.40)	5.64 (3.35)	5.13 (3.25)	4.95 (3.67)	4.60 (3.38)
Positive Impression (PIM)	15.04 (4.54)	14.54 (4.45)	15.03 (4.42)	15.26 (4.91)	15.92 (4.48)
Somatic Complaints (SOM)	21.01 (10.41)	20.39 (9.90)	21.78 (10.07)	22.12 (10.94)	19.88 (11.42)
Anxiety (ANX)	24.91 (9.84)	25.04 (9.34)	25.87 (9.44)	24.78 (10.94)	23.13 (10.30)
Anxiety-Related Disorders (ARD)	30.02 (9.07)	30.48 (8.29)	30.55 (8.65)	29.37 (9.96)	28.84 (10.33)
Depression (DEP)	23.58 (9.51)	23.70 (9.16)	24.89 (9.40)	23.60 (9.91)	21.05 (9.71)
Mania (MAN)	30.38 (8.62)	31.43 (8.07)	29.23 (8.77)	30.61 (8.56)	29.75 (9.46)
Paranoia (PAR)	31.92 (7.82)	32.81 (7.14)	31.49 (7.91)	30.80 (8.36)	31.88 (8.41)
Schizophrenia (SCZ)	22.85 (8.77)	23.85 (8.86)	22.57 (7.99)	22.63 (9.06)	21.32 (9.38)
Borderline Features (BOR)	27.88 (9.41)	29.10 (9.01)	27.98 (9.19)	26.46 (10.36)	26.53 (9.34)
Antisocial Features (ANT)	24.38 (8.90)	26.90 (8.74)	22.35 (8.51)	23.12 (9.04)	23.63 (8.59)
Alcohol Problems (ALC)	8.23 (7.26)	9.48 (7.60)	6.53 (6.74)	8.76 (7.35)	7.80 (6.76)
Drug Problems (DRG)	8.92 (8.33)	10.60 (8.29)	7.38 (7.88)	7.98 (8.33)	8.85 (8.65)
Aggression (AGG)	16.48 (8.56)	18.15 (8.26)	14.97 (8.15)	16.16 (9.01)	15.69 (8.94)
Suicide Ideation (SUI)	4 (4.86)	3.60 (4.26)	4.37 (5.32)	5.32 (5.74)	2.80 (3.83)
Stress (STR)	10.58 (3.99)	10.90 (3.75)	10.89 (3.66)	10.32 (4.61)	9.63 (4.24)
Non-Support (NON)	9.85 (3.66)	10.01 (3.51)	9.67 (3.52)	9.76 (3.87)	9.93 (4.04)
Treatment Rejection (RXR)	11.96 (3.84)	11.64 (3.80)	12.17 (3.80)	11.57 (3.73)	12.73 (4.05)
Dominance (DOM)	21.32 (6.28)	21.08 (6.18)	20.98 (6.52)	21.67 (6.25)	22.05 (6.18)
Warmth (WRM)	22.98 (5.68)	22.57 (5.91)	23.50 (5.62)	22.63 (6.02)	23.36 (4.85)

Note. Subsample = PAI protocols that meet the validity criteria for the current study.

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Table 3. Mean and standard deviation of the T scores of the 22 PAI scales for the subsample and the four crimes

PAI scale	Subsample	Robbery	Murder	Rape	Drug Possession
	N = 450	N = 166	N = 127	N = 82	N = 75
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Inconsistency (INC)	57.96 (9.34)	57.87 (9.71)	58.34 (8.47)	58.24 (10.03)	57.19 (9.24)
Infrequency (INF)	71.59 (10.67)	72.58 (10.53)	71.05 (10.27)	71.79 (10.62)	70.08 (11.63)
Negative Impression (NIM)	65.65 (15.02)	67.64 (15.10)	65.39 (14.20)	64.59 (16.19)	62.85 (14.59)
Positive Impression (PIM)	49.39 (9.35)	48.09 (9.19)	49.50 (8.88)	50.10 (10.21)	51.33 (9.26)
Somatic Complaints (SOM)	59.74 (10.76)	58.98 (10.32)	60.78 (10.65)	60.94 (10.85)	58.35 (11.65)
Anxiety (ANX)	54.77 (8.88)	54.80 (8.59)	55.80 (8.70)	54.73 (9.37)	52.99 (9.13)
Anxiety-Related Disorders (ARD)	59.10 (8.40)	59.52 (8.07)	59.72 (7.74)	58.51 (8.91)	57.79 (9.55)
Depression (DEP)	59.68 (10.36)	59.69 (10.02)	61.29 (10.41)	59.88 (10.64)	56.71 (10.31)
Mania (MAN)	61.14 (9.31)	62.34 (9.07)	59.87 (9.23)	61.63 (9.12)	60.12 (9.92)
Paranoia (PAR)	62.98 (8.18)	63.84 (7.37)	62.66 (8.27)	61.85 (8.66)	62.87 (9.13)
Schizophrenia (SCZ)	60.84 (10.79)	61.97 (10.88)	60.61 (9.77)	60.83 (11.38)	58.72 (11.44)
Borderline Features (BOR)	58.89 (9.41)	60.05 (9.13)	59.08 (9.05)	57.60 (10.43)	57.40 (9.26)
Antisocial Features (ANT)	64.25 (10.81)	67.53 (10.80)	61.61 (10.04)	62.83 (10.93)	63.01 (10.31)
Alcohol Problems (ALC)	61.81 (17.82)	65 (18.82)	57.60 (16.36)	63.04 (17.54)	60.53 (16.99)
Drug Problems (DRG)	61.08 (18.80)	64.91 (18.83)	57.65 (17.86)	59.18 (19.13)	60.45 (18.77)
Aggression (AGG)	54.11 (10.94)	56.17 (10.28)	52.09 (10.39)	54.24 (12.25)	52.80 (11.14)
Suicide Ideation (SUI)	54.65 (12.97)	53.55 (11.35)	55.69 (14.13)	57.82 (14.65)	51.87 (11.69)
Stress (STR)	61.89 (10.37)	62.65 (10.12)	62.77 (9.32)	61.24 (11.26)	59.43 (11.32)
Non-Support (NON)	62.76 (10.16)	63.11 (9.64)	62.31 (9.96)	62.56 (10.77)	63 (11.47)
Treatment Rejection (RXR)	43.73 (7.61)	42.87 (7.56)	44.40 (7.56)	42.96 (7.33)	45.33 (7.91)
Dominance (DOM)	53.36 (10.46)	52.63 (10.67)	52.77 (10.51)	54.55 (9.90)	54.69 (10.48)
Warmth (WRM)	54.16 (8.64)	53.14 (9.46)	55.36 (7.80)	53.87 (9.31)	54.68 (7.11)

Note. Subsample = PAI protocols that meet the validity criteria for the current study.

Table 4. Tests of equality of group means

Independent variable	Wilk's Lambda	F	*p*
Age	.868	22.678	.000***
Single/Widowed	.987	1.894	.130
Common law	.961	6.029	.000***
Married	.953	7.346	.000***
Separated/Divorced	.993	1.117	.342
Number of children	.956	6.839	.000***
Years of education	.985	2.212	.086
Education	.989	1.708	.165
Employment status	.987	2.026	.110
Prior prison terms	.858	24.684	.000***
Total prison terms	.896	17.183	.000***
Somatic Complaints (SOM)	.993	1.033	.378
Anxiety (ANX)	.992	1.237	.296
Anxiety-Related Disorders (ARD)	.994	.853	.465
Depression (DEP)	.983	2.606	.051
Mania (MAN)	.988	1.745	.157
Paranoia (PAR)	.991	1.412	.239
Schizophrenia (SCZ)	.990	1.543	.203
Borderline Features (BOR)	.986	2.085	.101
Antisocial Features (ANT)	.951	7.674	.000***
Alcohol Problems (ALC)	.972	4.279	.005**
Drug Problems (DRG)	.973	4.145	.006**
Aggression (AGG)	.975	3.742	.011*
Suicide Ideation (SUI)	.972	4.230	.006**
Stress (STR)	.986	2.176	.090
Non-Support (NON)	.998	.233	.874
Treatment Rejection (RXR)	.988	1.805	.145
Dominance (DOM)	.996	.629	.597
Warmth (WRM)	.994	.865	.459

Note. *p <.05, **p <.01, ***p <.001.

Table 5. Statistics of discriminant functions for models 1 and 2

	Function	Eigenvalue	Variance %	Canonical correlation	Wilk's Lambda	χ^2	df
Model 1	1	.332	70.7	.499	.658	185.157***	30
	2	.100	21.3	.302	.876	58.380***	18
	3	.037	7.9	.190	.964	16.168*	8
Model 2	1	.400	56.2	.534	.536	270.400***	84
	2	.197	27.7	.406	.750	124.768***	54
	3	.115	16.1	.321	.897	46.961**	26

Note. *p <.05, **p <.01, ***p <.001, Model 1 = Actuarial data, Model 2 = Full set of measures.

The DA of the Models 1 and 2 incorporated all the measures of study in each case, not only those that showed discriminant capacity. Three discriminant functions were obtained in each model. The comparison between the values of the discriminant functions (referred to as Function 1) of both models shows that the relation of Model 2 to the four groups is somewhat stronger than that of Model 1. In any case, the canonical correlations of two discriminant functions are moderate (see Table 5). Considering the standardized canonical discriminant function coefficients, Age (.638), Prior prison terms (-.533), Total prison terms (-.303), Suicide Ideation (.300), Antisocial Features (-.290), Drug Problems (.217), Schizophrenia (-.191), Borderline Features (.152), Number of children (.137), Stress (-.135), and Years of education (.132) are the measures of relatively greatest importance in the discriminant function of Model 2.

Predictive accuracy of models

By contrasting the degree of confidence in the predictions of each model, different results were recorded for each crime (see Figure 1). Model 1 correctly classified 123 of the 166 convicted of Robbery, 59 of the 127 convicted of Murder, 29 of the 82 sentenced for Rape, and 20 of 75 convicted of Drug Possession. Model 2 correctly classified 124 of the 166 convicted of Robbery, 67 of the 127 sentenced for Murder, 37 of the 82 sentenced for Rape, and 27 of the 75 sentenced for Drug Possession. Figure 1 shows the previous percentages of classification according to the size of each group and percentage of correct classification (PCC) for each model.
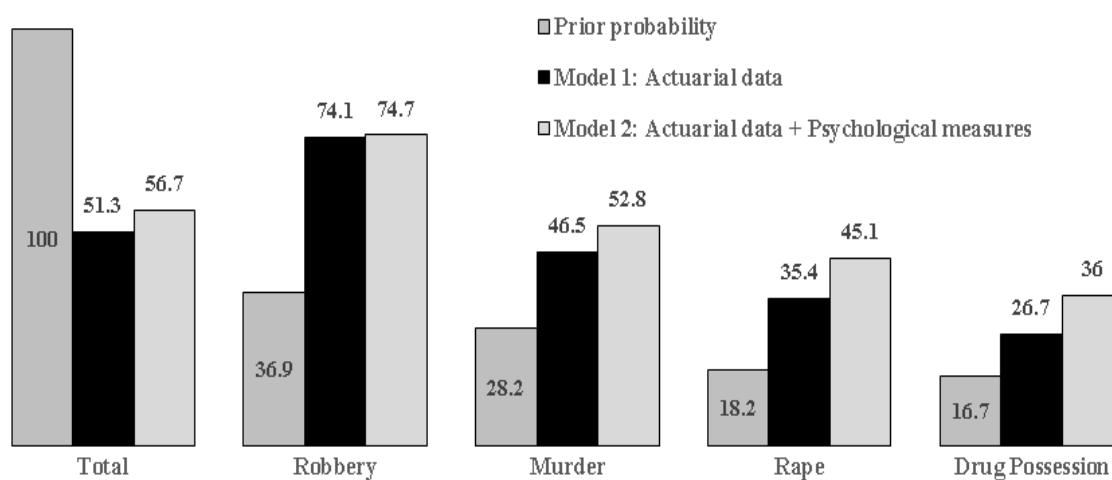

Figure 1. Percentages of correct classification for models 1 and 2

Distinct profile of each crime

Table 6 contains the correlations between the value of each measure and the probability of belonging to a group. Of all the explanatory variables, 5 SDM, 2 JM, and 6 PM met the established criteria ($r > .25$ and $p < .001$). The strength and direction of the contribution of these 13 correlations allowed us to construct four specific profiles. As a summary of the results, Table 7 facilitates the understanding of the characteristics that best differentiate each crime.

Table 6. Correlation between the value of each variable and the probability of belonging to a group

Independent variable	Robbery	Murder	Rape	Drug possession
Age	**- .538*****	- .126*	**.432*****	**.496*****
Single/Widowed	.185***	- .174***	.059	- .142**
Common law	- .019	**.446*****	- .240***	- .223***
Married	- .185***	- .319***	.159*	**.469*****
Separated/Divorced	- .047	- .140**	.140**	.083
Number of children	**- .330*****	.117*	**.363*****	- .017
Years of education	- .050	- .165***	- .014	**.274*****
Education	- .041	- .159**	- .005	.246***
Employment status	.091	- .090	.128**	- .168***
Prior prison terms	**.678*****	**- .279*****	**- .578*****	- .098*
Total prison terms	**.612*****	**- .296*****	**- .399*****	- .166***
Somatic Complaints (SOM)	- .060	.097*	.082	- .106*
Anxiety (ANX)	.046	.129**	- .030	- .183***
Anxiety-Related Disorders (ARD)	.086	.080	- .078	- .137**
Depression (DEP)	.030	.206***	- .015	**- .260*****
Mania (MAN)	.198***	- .231***	.041	- .078
Paranoia (PAR)	.185***	- .089	- .125**	- .046
Schizophrenia (SCZ)	.187***	- .072	- .011	- .188***
Borderline Features (BOR)	.204***	- .001	- .137**	- .162**
Antisocial Features (ANT)	**.387*****	**- .323*****	- .144**	- .065
Alcohol Problems (ALC)	**.263*****	**- .325*****	.052	- .083
Drug Problems (DRG)	**.306*****	**- .259*****	- .124**	- .037
Aggression (AGG)	**.312*****	**- .277*****	- .037	- .115*
Suicide Ideation (SUI)	- .114*	.093*	**.262*****	- .207***
Stress (STR)	.120*	.118*	- .078	- .232***
Non-Support (NON)	.080	- .099*	- .021	.014
Treatment Rejection (RXR)	- .134**	.113*	- .120*	.198***
Dominance (DOM)	- .059	- .079	.059	.115*
Warmth (WRM)	- .122**	.179***	- .089	.073

Note. *$p < .05$, **$p < .01$, ***$p < .001$, Canonical load higher than $r > .25$ highlighted in bold.

Table 7. Summary of discriminant characteristics for crimes

Crime	Direction	Discriminant features	
		Actuarial data	Psychological measures
Robbery	+	Criminal records	ANT, ALC, DRG, AGG
	-	Age, Children	—
Murder	+	Common law	—
	-	Criminal records	ANT, ALC, DRG, AGG
Rape	+	Age, Children	SUI
	-	Criminal records	—
Drug Possession	+	Age, Married, Years of study	—
	-	—	DEP

Note. PAI scales: ANT = Antisocial Features, ALC = Alcohol Problems, DRG = Drug Problems, AGG = Aggression, SUI = Suicide Ideation, DEP = Depression.

7.4 Discussion

The main objective of the present study was to analyze whether the discriminatory capacity of PM and DA varies according to the crime, using four groups of individuals convicted of common crimes. The analyses allowed us to determine the discriminating capacity and the classification accuracy of both types of measures within the same study and with the same sample. In addition, specific profiles of each crime were created based on their distinctive characteristics, for which the strongest significant correlations between the value of each explanatory variable and the probability of belonging to the group were considered. In short, it can be concluded that the findings provide support for the hypotheses. Next, we will discuss the results regarding the classification accuracy of the models tested, the discriminating capacity of the PM and the AD, and the profile corresponding to each crime. Since the exhaustive assessment of the presence and contribution of each measure to identify a crime is beyond the scope of this study, we will mention the most noteworthy aspects of the structure of each profile.

Classification accuracy of the models

The variance explained and the overall PCC of both models are quite acceptable. Indeed, the accuracy achieved by models 1 and 2, both generally and by crime, far exceeds the results that could be obtained by chance (Burns & Burns, 2008). It is worth recalling that the purpose of this study is not to test a model that is supposed to have

optimal classification accuracy, but to compare the usefulness of measures of a different nature to characterize the prison population by crimes. For this purpose, we used contrasting measures and those whose utility is assumed to be satisfactory in correctional settings (Archer et al., 2006; Edens & Ruiz, 2005; Schenk & Fremouw, 2012).

Discriminant capacity of psychological measures and actuarial data

The discriminant capacity analysis yields different results for both types of measures. The DA reveals superior discriminatory capacity with respect to PM, although their contribution varies substantially for each crime. The PCC of these measures obtains its maximum value for the crime of Robbery and progressively decreases for the three remaining crimes, reaching a discrepancy of almost 50% between the crimes of Robbery and Drug Possession. Instead, the PM reveal a different pattern and an inverse trend, as their PCC is insignificant in the case of Robbery, increases for Murder and reaches its highest values for the crimes of Rape and Drug Possession. These results appear to indicate that the importance given by the literature to socio-demographic data and that related to the individual's criminal history (Bonta, Law, & Hanson, 1998; Cunningham et al., 2005; Hanson & Morton-Bourgon, 2005, 2009; Harris & Rice, 2003; Schenk & Fremouw, 2012; Sorensen & Cunningham, 2010) is consistent across different crimes. This contributes to the discriminatory strength of criminal records and age, particularly for Robbery, where the contribution of AD is almost exclusive.

In any case, the strength of the AD is not the same in the four crimes studied, which allows us to conclude that PM can enrich actuarial models, especially where they are less powerful. Support for this comes from the results obtained in PAI scales (Morey, 1991, 2007) that measure psychological constructs related to antisocial personality, substance abuse, depressive symptoms, and suicidal ideation. It is reasonable, therefore, to expect that the classificatory diversity demonstrated by the PM and AD in four very frequent crimes worldwide (UN, 2016) will occur in other crimes. To demonstrate this, it would be necessary to test more complete and rigorous designs in different populations of offenders. In this way, the measures that possess a high discriminatory power could be identified so that, when combined with those already mentioned in the literature, they form more accurate models for each crime. The classification and risk assessment approaches of various types of violence, useful for

various intervention strategies, would benefit from the incorporation of these types of measures (Hanson & Morton-Bourgon, 2009; Schenk & Fremouw, 2012).

Profile of Robbery crime

From the analysis of this profile it can be concluded that people convicted of Robbery tend to be younger, have fewer children, have more criminal records, possess more antisocial characteristics, are more aggressive, and have more substance abuse problems. It is likely that the strength of this profile is due to the homogeneity of the group of individuals convicted of this crime and the discriminatory capacity of criminal records. The early onset of criminal activity, particularly in crimes against property (Farrington, 1986, 1990), as well as the consistent relationship between age and violent recidivism (Piquero, Jennings, Diamond, & Reingle, 2015) could explain the tendency of these individuals to accumulate a greater number of convictions for different crimes. In addition, the high frequency of individuals convicted of this crime in our study, particularly in the age range 18 to 30 years, is consistent with the trend observed worldwide (UN, 2016). On the other hand, the low average number of children could be explained by age and in terms of the theory of cumulative disadvantage (Sampson & Laub, 1997), considering that the factors associated with criminal behavior during adolescence influence the adoption of a lifestyle that leads to poor social integration (Martín Solbes, 2008; Sobral, Romero, Luengo, & Marzoa, 2000). In addition, this profile is the only one where the ANT, ALC, DRG and AGG scales show moderate and direct loadings. This corroborates the marked presence of antisocial characteristics, violent behavior, and substance abuse in this population (Cunningham et al., 2005; Martín Solbes, 2008; Sorensen & Cunningham, 2010; UNODC, 2016).

Profile of Murder crime

The findings appear to indicate that murderers are characterized by having a stable relationship, fewer criminal records, less antisocial characteristics, less aggressive behavior, and less substance use problems. In interpreting these results it should be considered that the contradictory data provided by the literature may be due to the complexity of the interaction between factors associated with homicide (Botelho & Gonçalves, 2016). As for the first characteristic described, some authors point out the importance of marriage as a deterrent or attenuating factor in criminal activity in general (Horney, Tolan, & Weisburd, 2012; King, Massoglia, & Macmillan, 2007; Laub &

Sampson, 2003). Taking into account the components of the profile, and if we assume that having a partner has a status analogous to marriage in this population, the tendency of these individuals to have fewer criminal records can be explained. Within the various results provided by the literature, the remainder of our findings are consistent with those that suggest that murderers do not present more psychopathic characteristics and aggressiveness than other offenders (Cunningham et al., 2005; Sherretts, Boduszek, Debowska, & Willmott, 2017; Sorensen & Cunningham, 2010). Finally, although substance use is highly prevalent throughout the prison population (Fazel, Bains, & Doll, 2006), this problem does not appear to be one of the main characteristics of the killers.

Profile of Rape crime

By way of a summary, it can be concluded that people convicted of rape tend to be older, have fewer criminal records, have more children, and present a higher level of suicidal ideation. This is incompatible, to a certain extent, with findings indicating that being young, being single, possessing certain antisocial characteristics of personality, and having a criminal record are factors that characterize a sex offender and contribute towards predicting their recidivism (Erdogan et al., 2011; Hanson & Morton-Bourgon, 2005; Hanson & Thornton, 2000; McCuish, Lussier, & Corrado, 2015; Shin, Ryu, Kim, Lee, & Lee, 2012; Zeigler-Hill, Enjaian, & Essa, 2013). One explanation for this discrepancy is that subtypes of sex offender (e.g., rapist, abuser of children with and without paraphilia) may have unique defining characteristics (Dunsieth et al., 2004; Rosenfeld, White, & Esbensen, 2012; Sigre-Leirós, Carvalho, & Nobre, 2015). This leads us to suppose that the subsample of sex offenders analyzed, which does not distinguish subtypes, could be composed mainly of people with a higher level of social integration, and who are unfamiliar with the delinquency and prison environment. In fact, this group of sex offenders does not reveal major psychopathological problems, particular those related to substance use that are common in other samples (Dunsieth et al., 2004; Erdogan et al., 2011; Negredo López, Melis Pont, & Herrero Mejías, 2011; Sigre-Leirós et al., 2015). The presence of suicidal ideation, frequent in sexual aggressors, could be explained by the impact of incarceration, particularly for the first time, and aspects related to crime (Negredo López et al., 2011). For those who lead an integrated social life (e.g., family, children, work), an abrupt change of context may represent a risk factor for various suicidal behaviors due to the loss of social references (Fazel, Cartwright, Norman-Nott, & Hawton, 2008). Other contributing factors in this

regard are the expectations of a sentence, victimization by other inmates, and the feeling of guilt (Negredo López et al., 2011).

Profile of Drug Possession crime

If we adhere to the factors that are part of this profile, those convicted of this crime appear to be characterized by being older, married, having a higher level of education and presenting fewer depressive symptoms. However, the reduced classification accuracy of the models for this crime and the scarce number of measures with relevant correlations make this profile the least strong of the four. Therefore, any interpretation must be taken with caution, and even more so if we consider that the heterogeneity of the subsample can account for the number and strength of the components of the profile. For example, it is not possible to determine whether the absence of criminal records in this group of offenders is truly a characteristic that identifies them or whether this is due to limitations of the model or variables that have not been controlled. Although we know that possession and drug trafficking are among the most persistent crimes from adolescence to adulthood (Rosenfeld et al., 2012), the factors that explain the late onset of crime have, however, not been clearly defined (Loeber, Farrington, & Redondo, 2011; Zara & Farrington, 2009). In this sense, the association between age, more years of study and marriage could explain the late onset of crime or a lower involvement in criminal activities compared with the other groups analyzed (Horney et al., 2012; King et al., 2007; Laub & Sampson, 2003). This level of social integration could reflect the provision of more individual resources and social support to cope with the conditions of life in prison. The tendency of these individuals to present less depressive symptoms and the absence of psychopathological indicators gives support to this interpretation.

Strengths, limitations, and conclusions

This study compares, for the first time, the discriminant capacity and the classification accuracy of a broad set of psychological measures and actuarial data in a single study, with the same sample, and in several frequent crimes. In this context, this is the first work that uses the Spanish adaptation of the PAI, an ideal instrument for this type of approach because it allows for measuring the main variables of personality and psychopathology in a short time. However, it is reasonable to raise some concerns regarding the degree of understanding of Spanish used in the PAI questionnaire by the

South American population. This supposed limitation was analyzed in the studies of linguistic adaptation of the Argentinian version of the PAI (Stover, Castro, & Fernández, 2015), where the content of only 4 of the 344 items that compose the PAI had to be modified to improve its comprehension. The experience accumulated as a result of hundreds of evaluations in the two Ecuadorian penitentiary centers is consistent with this finding, since the difficulties of understanding the content of the items were minimal. In addition, the version used in this study shows acceptable values of validity and reliability in the Ecuadorian penitentiary population (Burneo-Garcés, Fernández-Alcántara, Aguayo-Extremera, & Pérez-García, under review). Other strengths to highlight are the sample size used, which allowed us to include a greater number of explanatory variables in the analysis, as well as the chosen crimes as opposed to categories of crimes.

One limitation of this study worth mentioning is the absence of important measures such as the crimes for which the sentence has been served in the past, the time of conviction for the current crime, gang membership, number of previous arrests, number and type of disciplinary infractions within prison and clinical and psychopathological antecedents before entering prison. Regarding the first five measures mentioned we were not able to access this type of information. However, the participants did report their clinical and psychopathological antecedents, but the low frequency of these did not allow their inclusion in the analyses. Finally, it is likely that recording the previous convictions would have allowed for more sophisticated groups to be formed. We do not know, therefore, if this information had any impact on the accuracy of the results and subsequent construction of the profiles.

In conclusion, the results of the present study indicate that the AD model is more robust when these four crimes are characterized; the contribution of AD and PM depends on the crime; and the inclusion of PM in actuarial models moderately optimizes the accuracy of classification in Murder, Rape and Drug Possession crimes. Specific profiles of each crime, composed of AD and PM, were also obtained, which demonstrates their usefulness in characterizing these crimes. These findings suggest the convenience of studying the prison population by crimes, given that the latter have specific characteristics, using models that include the most relevant measures in each case. Future studies should analyze behavior using a wider range of measures for a greater number of crimes.

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Capítulo 8. Estudio 4

Relationship between expressions of aggression and individual characteristics in correctional settings: A Path Analysis

8.1 Introduction

The reduction of misconduct levels and its prevention are two important objectives in prison settings, for which a number of strategies and control mechanisms are implemented (Byrne & Hummer, 2007). Thus, management, security and intervention needs within the prison setting have generated interest in identifying the main indicators of various types of misconduct (Sorensen, Cunningham, Vigen, & Woods, 2011; Wolff, Blitz, Shi, Siegel, & Bachman, 2007). Amongst the main detected indicators, we find age (Cunningham & Sorensen, 2007; Griffin & Hepburn, 2006), education (Berg & DeLisi, 2006; Cunningham, Sorensen, & Reidy, 2005), prior prison terms (DeLisi, 2003; DeLisi, Berg, & Hochstetler, 2004), type of conviction offense (Cunningham et al., 2005; Sorensen & Cunningham, 2010), personality (Gilbert, Daffern, Talevski, & Ogloff, 2015; Newberry & Shuker, 2012), psychopathology (Baskin, Sommers, & Steadman, 1991; Logan & Johnstone, 2010), social support (Berg & DeLisi, 2006; Colvin, Cullen, & Vander Ven, 2002), and situational factors (Day, Brauer, & Butler, 2014; Teasdale, Daigle, Hawk, & Daquin, 2016). Due to this type of information it has been possible to classify the inmates according to low and high violence risk criteria (see Schenk & Fremouw, 2012 for a review). However, these authors suggest that the diversity of conceptualizations of misconduct (e.g., hostility, impulsivity, anger, threatening behavior, aggression, disciplinary offenses, and all levels of physical violence) has an impact on its operationalization and, thus, on the evaluation of the results of various studies.

From a psychometric perspective, there have been attempts to explore the structure of aggressiveness as a construct. One of the most relevant studies is that of Riley and Treiber (1989), who analyzed a set of multidimensional measures of anger and hostility. The factor analysis of the scales included in their study yielded three factors: anger experience-hostility, verbal-adaptive anger expression, and maladaptive-physical anger expression. Although the theoretical usefulness of determining this factorial structure is evident, it is necessary to consider the clinical implications of each construct as well its relationship and overlap with other aggressive behaviors (Riley & Treiber, 1989). Indeed, this factorial structure formed the basis of the design of the Aggression scale (AGG), which is part of the Personality Assessment Inventory (PAI; Morey, 1991, 2007). This self-report questionnaire, which measures personality and psychopathology, has been widely used in the forensic context (Archer, Buffington-Vollum, Stredny, & Handel, 2006; Edens & Ruiz, 2005; Lally, 2003; Ruiz & Ochshorn,

2010). The AGG scale was developed to measure characteristics associated with anger, assertiveness, hostility and aggression (Ortiz-Tallo, Santamaría, Cardenal, & Sánchez, 2011), and includes three subscales that allow for the distinct analysis of three expressions of aggression: Aggressive Attitude (AGG-A), Verbal Aggression (AGG-V), and Physical Aggression (AGG-P). The AGG-A subscale evaluates hostility, the lack of anger control, and beliefs about instrumental use of aggression. Further, the AGG-V subscale measures both the tendency to exhibit verbal expressions of anger and the range of such expressions; whereas the AGG-P subscale evaluates the tendency to physically express anger, specific acts of violence, and threats.

The literature includes a wide number of studies concerning the predictive capacity of the AAG scale. In a recent meta-analysis, Gardner, Boccaccini, Bitting, and Edens (2015) found that the scores on the AGG scale and their subscales emerged as consistent predictors of misconduct, with small to medium effects. However, there are no studies that have specifically focused on investigating the relationship between sociodemographic, judicial, clinical, and personality variables and AGG-A, AGG-V, and AGG-P subscales in the prison population. Consequently, we do not know which variables are closely related to these subscales and whether they are the same or different for each of them. Considering the common and unique features of AGG-A, AGG-V, and AGG-P subscales, their inclusion as outcome measures in an exploratory study could provide useful information in correctional settings.

Thus, the aim of this study was to explore, using path analysis (PA), the relationship between a set of sociodemographic, judicial, clinical, and personality variables and three expressions of aggression, according to the model of aggression assumed by the PAI (Morey, 1991, 2007), using as outcome measures the subscales AGG-A, AGG-V, and AGG-P in a Spanish-speaking prison population. The importance of conducting a study with such features is based on several assumptions: (1) given that the potential of these scores for predicting misconduct (AGG-A, AGG-V, and AGG-P subscales) has been well established, as Gardner *et al.* (2015) reported, it makes sense to analyze their main indicators using a set of relevant variables in the penitentiary environment (Schenk & Fremouw, 2012); (2) path analysis allows us to verify the interaction between independent variables and their influence on a dependent variable, without necessarily implying the demonstration of causal relationships (Aron & Aron, 2001; Batista-Foguet & Coenders, 2000); (3) the psychometric characteristics of the

subscales AGG-A, AGG-V, and AGG-P suggest the existence of indicators that are common to the three expressions of aggression, as well as those that are unique to each of these expressions; (4) if certain individual features are related to a specific expression of aggression, we might expect that the inmates possessing such features would have a higher tendency to express this type of aggressive behavior; (5) identifying indicators of specific expressions of aggression and their interaction could provide a useful resource for prevention and intervention strategies; and (6) given that previous studies on this topic have been carried out primarily in English-speaking correctional settings, it is of interest to extend this work to the Spanish-speaking prison population.

Regarding the possible indicators of the expressions of aggression, previous findings suggest a relationship between certain variables and various types of aggressive behavior in forensic environments. For instance, antisocial features and traits appear to be associated with certain violent behaviors (Yu, Geddes, & Fazel, 2012), especially when there is drug abuse (see Fountoulakis, Leucht, & Kaprinis, 2008 for a review). Other authors suggest that the conjoined presence of the Anti-Social Personality Disorder (ASPD) and the Borderline Personality Disorder (BPD) are strongly related to severe violence (Howard, Khalifa, & Duggan, 2014). Further, it appears that considerable levels of anger and aggression are frequent in individuals with Post-Traumatic Stress Disorder (PTSD) (Calhoun et al., 2002; Crawford, Calhoun, Braxton, & Beckham, 2007), and a similar relationship can be seen between emotional regulation, impulsivity and anger in patients with Obsessive-Compulsive Disorders (OCD) (Besharat & Dehghani, 2014; Sheys, 2016). In addition, several factors related to schizophrenia (e.g., disorders/psychopathy, mental disabilities, positive psychotic symptoms/first-episode psychosis, substance abuse, and demographics) intervene in the genesis and development of several types of misconduct (see Bo, Abu-Akel, Kongerslev, Haahr, & Simonsen, 2011 for a review). Other relevant results refer to the roles played by the specific correctional setting and social support. Thus, contextual factors can have a considerable impact on the inmates and hence prison violence (see Gadon, Johnstone, & Cooke, 2006 for a review) whilst social support could help to prevent misconduct (Colvin et al., 2002; Edens & Ruiz, 2009).

On the basis of the most consistent findings described, we expect that antisocial and borderline personality features (Howard et al., 2014; Yu et al., 2012), schizophrenia symptoms (Bo et al., 2011), problems related to drugs (Fountoulakis et al., 2008), and

situational factors (Gadon et al., 2006) will all have a relevant presence in the resulting theoretical path models.

8.2 Method

Participants

The sample was composed of 675 male sentenced prisoners aged 18-75 years (M = 35.58; SD = 10.57) from the Regional Guayas Social Rehabilitation Center (CRSRG) and the Guayaquil Social Rehabilitation Center (CRSG). These adult male prisons, which house approximately 9,000 inmates, are located in Guayaquil, Ecuador. The prison population in this country is estimated to be around 26,000 (ICPR, 2017). According to the characteristics of the centers, we can distinguish five strata. For the CRSRG, these strata are Minimum Security (MIS), Medium Security (MES), Maximum Security (MAS), and Priority (PRI), which is a specific area for those individuals who meet vulnerable situations criteria (e.g., being a senior adult, having a critical illness, disability, or severe physical or mental illness). Finally, the fifth stratum is the CRSG considered as a whole. A stratified sampling procedure with proportional affixation was conducted. The distribution and proportion of the sample strata, related to the reference population, were MIS = 152 (21.2%), MES = 178 (21.2%), MAS = 72 (21.1%), PRI = 51 (21.3%), and CRSG = 222 (21.2%).

Inclusion and exclusion criteria

The inclusion criteria were: (1) serving a sentence in either CRSRG or CRSG, and (2) participating voluntarily in the study. The exclusion criteria were: (1) having insufficient knowledge of the Spanish language, (2) being in an inadequate physical or mental state to complete the questionnaires, and (3) having an attitude that precludes the development of evaluation. The exclusion criteria were taken into account from the first contact with the inmate until the end of the evaluation. Thus, the proportion of excluded participants (5%) was composed of individuals that did not declare interest in the study, had difficulties with language understanding, or, upon beginning the evaluation, showed misconduct or lack of motivation to continue the study. For those cases, the information provided by the participants was deleted immediately. The excluded participants had the same characteristics as the 675 individuals who had satisfactorily completed the evaluation.

Measures

The measures included in this study were from three types of source: (1) an *ad hoc* questionnaire to gather socio-demographic and judicial information, (2) the criminal justice records of both prisons, and (3) the Spanish adaptation of de PAI (Ortiz-Tallo et al., 2011).

The PAI is a self-report that measures the effect of thoughts, attitudes, behaviors, facts, and past and present circumstances on the development of symptoms, the characteristics of personality, and the individual's behavior at the time of evaluation. It is composed of 4 validity scales, 11 clinical scales, 5 scales for treatment consideration, 2 scales of interpersonal relations, and 10 complementary indexes (the content of the 22 scales is non-overlapping). Moreover, 9 clinical scales and 1 treatment scale have subscales. The clinical scales represent the clinical syndromes of the highest significance in diagnostic practice, whereas the scales related to the treatment provide complementary information that could be relevant to a possible intervention. Finally, the interpersonal scales measure the interpersonal relationship style, whereas the complementary indexes can be used to obtain a more precise interpretation of some of the scores. This tool is composed of 344 items that use a Likert scale with four response alternatives: 1 = False, 2 = Slightly True, 3 = Mainly True, and 4 = Very True. Completion of the questionnaire requires fourth-grade reading level and takes between 50 and 60 minutes.

The Spanish adaptation of the PAI has adequate psychometric properties (Ortiz-Tallo et al., 2011). The median Cronbach's alpha coefficients of the scales and subscales were .78 y .70 in the normative sample and .83 and .74 in the clinical sample respectively. The median of the test-retest coefficients of the scales was .84, while for the subscales this was .79. The confirmatory factor analysis (CFA) was conducted for the 10 scales that have subscales. Using the Unweighted Least Squares (ULS) factor analysis algorithm (Brown, 2006) in data analyzes of the clinical sample, the scores obtained for NFI and AGFI were between .90 and .97, and between .93 and .98, respectively. In addition, Ortiz-Tallo *et al*. (2011) compared the average T scores of the typical sample of the Spanish adaptation with the American scale of the PAI and found differences in effect sizes that were non-significant for 17 of the 21 scales, and small for the remaining 4 scales. They concluded that the results obtained were consistent with

those found in the original studies (Morey, 1991, 2007). Given the lack of specific norms for Spanish-speaking Latin American populations, the Spanish norms were used in the present study.

Validity criteria. Ortiz-Tallo *et al*. (2011) have indicated two strategies (high sensitivity and specificity in both cases) to detect random response in general and clinical populations using two validity scales: (1) Inconsistency (INC) $\geq$ 75T or Infrequency (INF) $\geq$ 75T, and (2) INC $\geq$ 64T and INF $\geq$ 60T. However, they also highlighted the limited usefulness of the INF scale in correctional settings since the high scores on this scale appear to be more related to situational characteristics than to a random response pattern. Given these considerations, we preferred to apply the INC $\geq$ 75T cut-off point. For the Negative Impression (NIM) and Positive Impression (PIM) validity scales, the $\geq$ 101T and $\geq$ 65T cut-off points were taken into account (Ortiz-Tallo et al., 2011). As a result, a subsample of 538 participants aged 18-75 years (*M* = 35.90; *SD* = 10.58) were classified as meeting the validity criteria for the current study. The distribution and proportion of this subsample strata, related to the reference population, were MIS = 124 (17.3%), MES = 140 (16.7%), MAS = 55 (16.1%), PRI = 44 (18.4%), and CRSG = 175 (16.7%).

Outcome measures. We proposed Aggressive Attitude, Verbal Aggression, and Physical Aggression subscales as a measure of three different expressions of aggression, according to the model of aggression assumed by the PAI (Morey, 1991, 2007).

Independent variables. Several variables were considered for the PA: (1) Age, (2) Single/Widowed, (3) Married, (4) Common law, (5) Separated/Divorced, (6) Total years of study, (7) Employment status prior to entering prison (including any job or professional activity, formal or informal, with a stable and regular income), (8) Number of prior prison terms, (9) Crimes against property, (10) Crimes against the inviolability of life, (11) Crimes of illegal production or trafficking of substances, and (12) Crimes against sexual and reproductive integrity. The type of criminal offense was classified according to the Organic Integral Criminal Code of the Republic of Ecuador. Moreover, 11 clinical (Somatic Complaints, SOM; Anxiety, ANX; Anxiety-Related Disorders, ARD; Depression, DEP; Mania, MAN; Paranoia, PAR; Schizophrenia, SCZ; Borderline Features, BOR; Antisocial Features, ANT; Alcohol Problems, ALC; and Drug

Problems, DRG) and 4 treatment consideration (Suicide Ideation, SUI; Stress, STR; Non-Support, NON; and Treatment Rejection, RXR) PAI scales were included.

Procedure

The Undersecretariat of Rehabilitation, Reintegration, and Precautionary Measures for Adults (Ministry of Justice, Human Rights, and Cults of Ecuador) granted the necessary permits. Statistical information and coordination of the study in the centers according to the required security rules were requested from the directors of the two prisons. A team of nine psychologists from the Ministry of Public Health of Ecuador (MSP) conducted the fieldwork between February and April 2015, none of which had any authority or connections within the prison context. In addition, they received training in forensic psychopathology, mental health research, application of the research protocol, and recording the information. The *ad hoc* questionnaire was administered immediately after the PAI. In total, the individual evaluation took between 70 and 90 minutes. The participants received the necessary assistance to solve any difficulty caused by the linguistic differences between the Spanish used in Ecuador and that used in the PAI. In terms of the frequency and characteristics of the difficulties encountered during the evaluations, it can be said that there were no major drawbacks in this area. The present study is part of and uses data from a broader project entitled "Study of the Prevalence of Mental Disorders in Prison Population of Guayaquil".

Ethics statement

The National Directorate of Primary Healthcare (MSP) reviewed the technical aspects of the study. The Health Coordination Zone 8 (CZ8-S, MSP) managed both the ethics revision and the project approval. The inmates selected by the sampling method were contacted in their pavilion or their security level, where they were given, both individually and in a group, information regarding the characteristics of the study whereupon they could freely decide whether or not to participate in the study. The lack of any kind of benefit in the short, medium, or long-term for their participation in the study was explained, as well as their freedom to leave the study at any time. All individuals signed the Informed Consent Form after listening and reading about the characteristics of the study and the Rights guaranteed to research participants, established by the Constitution of the Republic of Ecuador. This study followed the ethical principles of the Declaration of Helsinki.

Data analysis

Analyzes were conducted with the total sample and the subsample using the T scores. This allowed us to evaluate the consistency of the results obtained both with and without the application of validity criteria. We carried out Pearson's *r* test to analyze the correlation between the independent variables and each expression of aggression proposed. Once we had verified the necessary assumptions for the PA, we analyzed all the possible combinations between the 27 independent variables and the 3 outcome measures using the maximum-likelihood method, in order to find the most parsimonious theoretical model with the best fit. For this purpose, we excluded all the non-statistically significant relations ($p < .001$). To analyze the direct and indirect effects, we considered the standardized path coefficients. The goodness-of-fit was assessed with measures and criteria frequently suggested in the literature (Bentler, 1990; Bentler & Bonett, 1980; Browne & Cudeck, 1993; Jöreskog & Sörbom, 1982; Raftery, 1995; Schwarz, 1978): χ^2, χ^2 test *p*-value, Adjusted goodness-of-fit index (AGFI), Tucker–Lewis index (TLI), Comparative fit index (CFI), Standardized root mean square residual (SRMR), Root mean square error of approximation (RMSEA), and Bayes information criterion (BIC). Considering the previously mentioned criteria, we also tested the outcome measures as independent variables to confirm the direction of the relationship between the variables of the analyzed models All data gathered were processed using the statistical packages IBM®SPSS.22 and Amos 23.0 for Windows.

8.3 Results

Socio-demographic characteristics

Given that we failed to find any significant statistical differences between the two centers in terms of socio-demographic variables, the data were processed as a single sample for the total sample and the subsample (see Table 1). From the total sample, three out of five participants were under 35 years of age, and the majority of the sample was composed of Ecuadorians. Half of the sample was living with a partner, one in every five participants did not have any level of studies (this does not imply illiteracy), and the average years of completed education was 8.41. Moreover, 14.5% of the sample had not engaged in any work-related activity prior to entering prison. The recidivist percentage was around 50% (one or more prior prison terms), and the criminal offenses

against property and life were the most frequent. The results for the subsample followed a very similar pattern.

Table 1. Socio-demographic characteristics

Variable	Total sample ($N = 675$)	Subsample ($n = 538$)
	f (%)	f (%)
Age range:		
18–25 years	87 (12.9)	63 (11.7)
26–35 years	322 (47.7)	258 (48)
36–45 years	159 (23.5)	127 (23.6)
46–55 years	70 (10.4)	59 (11)
56–75 years	37 (5.5)	31 (5.7)
Country of origin:		
Ecuador	635 (94.1)	504 (93.7)
American countries	31 (4.6)	25 (4.6)
European countries	9 (1.3)	9 (1.7)
Current marital status:		
Single/Widowed	181 (26.8)	138 (25.7)
Married	86 (12.7)	76 (14.1)
Common law	336 (49.8)	270 (50.2)
Separated/Divorced	72 (10.7)	54 (10)
Level of education:		
None[a]	132 (19.6)	94 (17.5)
Primary	390 (57.8)	310 (57.6)
Secondary	132 (19.6)	116 (21.6)
Superior	21 (3)	18 (3.3)
Employment status:		
Employed	577 (85.5)	465 (86.4)
Unemployed	98 (14.5)	73 (13.6)
Prior prison terms:		
0	361 (53.5)	290 (53.9)
1	131 (19.4)	102 (19)
≥ 2	183 (27.1)	146 (27.1)
Type of criminal offense[b]		
AP	188 (27.9)	152 (28.3)
AIL	179 (26.5)	137 (25.5)
IPTS	124 (18.4)	99 (18.4)
ASRI	117 (17.3)	92 (17.1)
Other	67 (9.9)	58 (10.7)

Note. Subsample = PAI profiles that meet the validity criteria for the current study, AP = Against property, AIL = Against the inviolability of life, IPTS = Illegal production or trafficking of substances, ASRI = Against sexual and reproductive integrity.
[a]This condition does not imply illiteracy.
[b]According to Organic Integral Criminal Code of the Republic of Ecuador.

Correlations and fit indices for path analysis

The scales BOR and ANT showed the highest and significant ($p < .01$) correlations with the three outcome measures when the total sample and the subsample were analyzed (see Table 2). Since the three final path models obtained the best-fit indices for the total sample and the subsample (see Table 3), we will provide a

description and commentary of the results found for the subsample. This is based on the assumption that the application of the validity criteria to the PAI protocols ensures more reliable information. In any case, the final path models included four indicators, two of which were common endogenous indicators (the ANT and BOR scales) and two of which were exogenous and specific to each of the outcome measures (Aggressive Attitude: the ARD and NON scales; Verbal Aggression: the SCZ and NON scales; Physical Aggression: the DRG scale and Crimes against property).

Table 2. Correlations between independent variables and outcome measures

Variable	Total sample ($N = 675$)			Subsample ($n = 538$)		
	AGG-A	AGG-V	AGG-P	AGG-A	AGG-V	AGG-P
Age	- .183[**]	- .121[**]	- .224[**]	- .157[**]	- .116[**]	- .221[**]
Single/Widowed	.036	.033	.053	.020	.045	.047
Married	- .094[*]	- .079[*]	- .168[**]	- .034	- .053	- .141[**]
Common law	.024	- .005	.029	- .020	- .033	.007
Separated/Divorced	.011	.046	.059	.044	.051	.082
Total years of study	- .085[*]	- .064	- .183[**]	- .006	.001	- .124[**]
Employment status	- .089[*]	- .061	- .140[**]	- .050	- .024	- .117[**]
Prior prison terms	.208[**]	.178[**]	.263[**]	.156[**]	.132[**]	.253[**]
CAP[a]	.152[**]	.143[**]	.173[**]	.152[**]	.129[**]	.174[**]
CAIL[a]	.015	.001	.055	- .021	- .026	.022
CIPTS[a]	- .109[**]	- .109[**]	- .172[**]	- .044	- .080	- .126[**]
CASRI[a]	- .056	- .045	- .057	- .075	- .026	- .074
Somatic Complaints (SOM)	.319[**]	.198[**]	.351[**]	.204[**]	.107[*]	.198[**]
Anxiety (ANX)	.541[**]	.367[**]	.553[**]	.451[**]	.290[**]	.439[**]
Anxiety-Related Disorders (ARD)	.438[**]	.265[**]	.461[**]	.346[**]	.181[**]	.344[**]
Depression (DEP)	.463[**]	.349[**]	.519[**]	.372[**]	.272[**]	.388[**]
Mania (MAN)	.516[**]	.448[**]	.536[**]	.461[**]	.413[**]	.458[**]
Paranoia (PAR)	.491[**]	.371[**]	.476[**]	.420[**]	.333[**]	.418[**]
Schizophrenia (SCZ)	.531[**]	.405[**]	.596[**]	.463[**]	.339[**]	.494[**]
Borderline Features (BOR)	.684[**]	.543[**]	.721[**]	.619[**]	.511[**]	.653[**]
Antisocial Features (ANT)	.606[**]	.549[**]	.711[**]	.513[**]	.507[**]	.639[**]
Alcohol Problems (ALC)	.441[**]	.389[**]	.492[**]	.348[**]	.323[**]	.394[**]
Drug Problems (DRG)	.489[**]	.412[**]	.584[**]	.425[**]	.375[**]	.547[**]
Suicide Ideation (SUI)	.414[**]	.294[**]	.491[**]	.269[**]	.172[**]	.323[**]
Stress (STR)	.369[**]	.276[**]	.428[**]	.293[**]	.246[**]	.334[**]
Non-Support (NON)	.352[**]	.260[**]	.347[**]	.266[**]	.241[**]	.260[**]
Treatment Rejection (RXR)	- .322[**]	- .214[**]	- .319[**]	- .235[**]	- .160[**]	- .216[**]

Note. Subsample = PAI protocols that meet the validity criteria for the current study, AGG-A = Aggressive attitude subscale, AGG-V = Verbal aggression subscale, AGG-P = Physical aggression subscale, CAP = Crimes against property, CAIL = Crimes against the inviolability of life, CIPTS = Crimes of illegal production or trafficking of substances, CASRI = Crimes against sexual and reproductive integrity.
[a]According to Organic Integral Criminal Code of the Republic of Ecuador.
[*]$p <.05$, [**]$p <.01$.

Table 3. Fit indices for final path models of three expressions of aggression

	Total sample ($N = 675$)			Subsample ($n = 538$)		
	AGG-A	AGG-V	AGG-P	AGG-A	AGG-V	AGG-P
R^2	.50	.35	.62	.41	.32	.55
χ^2	.247	.822	.335	.097	.644	.479
df	2	2	2	2	2	2
p	.884	.663	.846	.953	.725	.787
AGFI	.999	.996	.999	.999	.996	.997
TLI	1.006	1.004	1.006	1.011	1.007	1.008
CFI	1.000	1.000	1.000	1.000	1.000	1.000
SRMR	.0027	.0064	.0030	.0022	.0051	.0065
RMSEA	.000	.000	.000	.000	.000	.000
BIC	84.938	85.514	85.027	81.839	82.386	82.221

Note. AGG-A = Aggressive Attitude subscale, AGG-V = Verbal Aggression subscale, AGG-P = Physical Aggression subscale, df = Degrees of freedom, AGFI = Adjusted goodness of fit index, TLI = Tucker-Lewis coefficient, CFI = Comparative fit index, SRMR = Standardized root mean square residual, RMSEA = Root mean square error of approximation, BIC = Bayes information criterion.
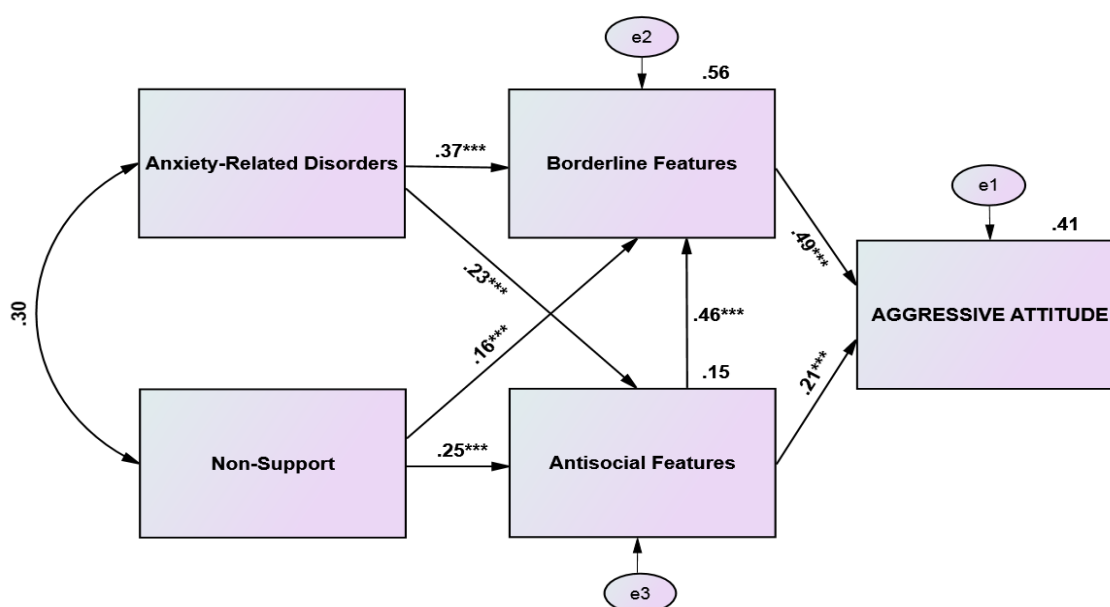

Figure 1. Final path model for Aggressive Attitude subscale (AGG-A)
Note. n = 538; Estimates of variance explained, standardized regression weights, and correlation are reported; Model fit: Chi-square/df ratio = .048, p = .953, AGFI = .999, TLI = 1.011, CFI = 1.000, SRMR = .0022, RMSEA = .000, ***p <.001.

Path analysis for Aggressive Attitude

Figure 1 shows the path model with the best fit (Chi-square/df ratio = .048; p = .953; AGFI = .999; TLI = 1.011; CFI = 1.000; SRMR = .0022; RMSEA = .000) and the highest explained variance (R^2 = .41) of all models tested. The BOR scale explains a higher percentage of the variance (R^2 = .56) compared with the ANT scale (R^2 = .15). Regarding the Aggressive Attitude, the BOR scale has a direct and medium impact (β = .49), whereas the ANT scale has a small and direct impact (β = .21) and a small and indirect impact (β' = .22). The scales ARD and NON are both exogenous variables (r =

.30). The ARD scale has a medium and direct impact (β = .37) on the BOR scale, a direct and small impact (β = .23) on the ANT scale, and an indirect and small impact (β' = .28) on the Aggressive Attitude. Finally, the NON scale has direct and small effects on the scales ANT (β = .25) and BOR (β = .16), and an indirect and small effect on Aggressive Attitude (β' = .19).
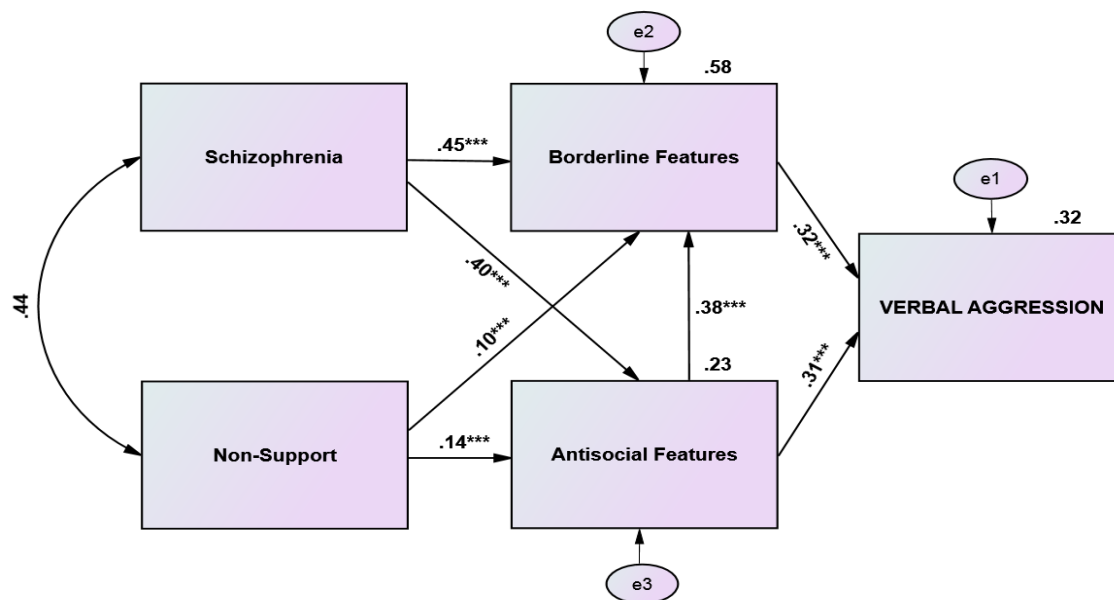

Figure 2. Final path model for Verbal Aggression subscale (AGG-V)
Note. n = 538; Estimates of variance explained, standardized regression weights, and correlation are reported; Model fit: Chi-square/df ratio = .322, *p* = .725, AGFI = .996, TLI = 1.007, CFI = 1.000, SRMR = .0051, RMSEA = .000, ***p <.001.

Path analysis for Verbal Aggression

Figure 2 represents the path model with the best fit (Chi-square/df ratio = .322; *p* = .725; AGFI = .996; TLI = 1.007; CFI = 1.000; SRMR = .0051; RMSEA = .000) and the highest explained variance (R^2 = .32) of all models tested. The scale BOR explains the highest percentage of the variance (R^2 = .58) compared with the scale ANT (R^2 = .23). The scale BOR has a medium and direct impact (β = .32) on Verbal Aggression, identical to that for the scale ANT (β = .31). The ANT scale also shows an indirect and small effect on Verbal Aggression (β' = .12). The scales SCZ and NON are both exogenous variables (*r* = .44). The former revealed direct and moderate effects on the BOR (β = .45) and ANT (β = .40) scales, and an indirect and medium effect (β' = .32) on the Verbal Aggression. The latter, however, showed direct and small effects on the BOR (β = .10) and ANT (β = .14) scales, and an indirect and negligible effect on Verbal Aggression (β' = .09).
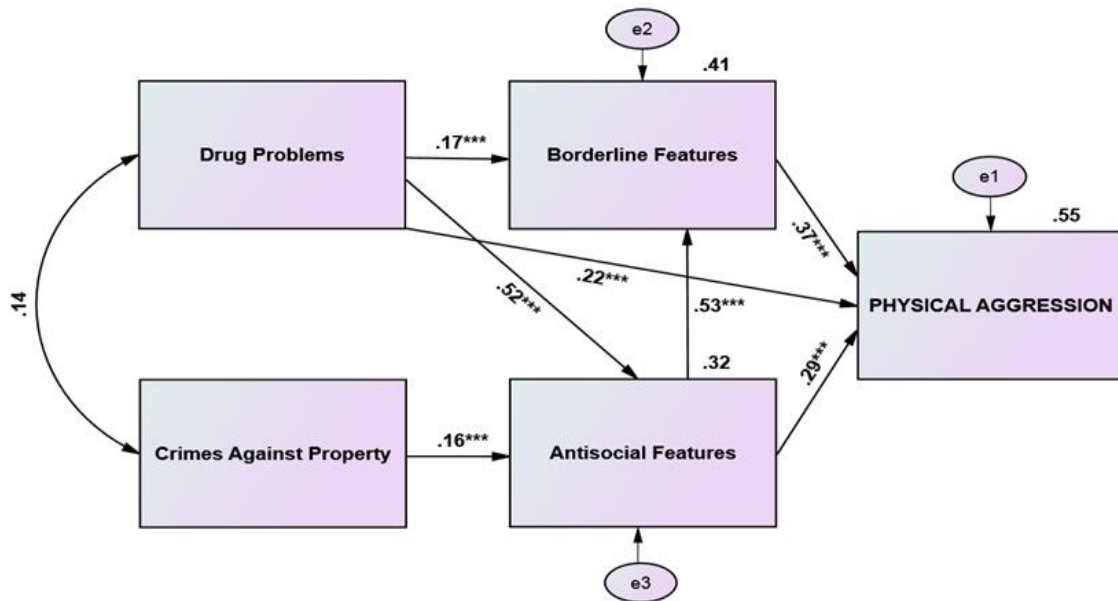
Figure 3. Final path model for Physical Aggression subscale (AGG-P)
Note. n = 538; Estimates of variance explained, standardized regression weights, and correlation are reported; Model fit: Chi-square/df ratio = .240, *p* = .787, AGFI = .997, TLI = 1.008, CFI = 1.000, SRMR = .0065, RMSEA = .000, ***p <.001.

Path analysis for Physical Aggression

Figure 3 shows the path model with the best fit (Chi-square/df ratio = .240; *p* = .787; AGFI = .997; TLI = 1.008; CFI = 1.000; SRMR = .0065; RMSEA = .000) and the highest explained variance (R^2 = .55) of all models tested. The BOR scale explains the higher percentage of the variance (R^2 = .41) compared with the scale ANT (R^2 = .32). In addition, this scale shows a direct and medium effect on Physical Aggression (β = .37), whereas for the ANT scale the direct effect (β = .29) and indirect effect (β' = .20) are small. The scale DGR and Crimes against property are exogenous variables (*r* = .14). The DRG scale has a small and direct impact (β = .22) and an indirect and medium impact on Physical Aggression (β' = .32), a direct and small impact (β = .17) on the BOR scale, and a direct and large impact on the ANT scale (β = .52). Finally, Crimes against property has a direct and small effect on the ANT scale (β = .16) and a negligible and indirect effect on Physical Aggression (β' = .08).

8.4 Discussion

The aim of this study was to explore, using path analysis, the relationship between a set of sociodemographic, judicial, clinical, and personality variables and three expressions of aggression, using AGG-A, AGG-V, and AGG-P subscales of the PAI as outcome measures in a Spanish-speaking prison population. Assuming the

overlap between certain aggressive behaviors, we expected to obtain three structures composed of indicators that are both common and unique to the three expressions of aggression. We succeeded in achieving this objective in the three resulting models, which meet the higher parsimony and fit criteria. Aggressive Attitude, Verbal Aggression, and Physical Aggression showed four indicators each, two of which are common and two specific. From the three models, Physical Aggression and Verbal Aggression presented the highest and lowest variance respectively, which indicates the existence of differences in their explanatory power. We obtained these results when we analyzed the total sample and the subsample, suggesting the consistency of the structure of the three models. Although similar fit indexes were obtained for the total sample and the subsample, the three models explain a higher percentage of the variance for the total sample, which is possibly due to the variability in the sample. Due to the aim of this study, the following interpretations focus on the configuration of indicators for each model and their clinical implications.

Common indicators of the theoretical models

The scales BOR and ANT appear as endogenous variables and showed a direct effect on three expressions of aggression (see Figures 1, 2, and 3). These results confirm the contribution of personality disorders to the study of violence and criminal behavior (Yu et al., 2012). Therefore, depending on the level of variance explained by both endogenous variables and the extent to which they directly affect each outcome measure, the impact of the BOR scale is higher for the three models, showing the highest impact on Aggressive Attitude and the lowest impact on Physical Aggression. The direct effects of both indicators are only similar for the Verbal Aggression model. With respect to the contribution of the ANT scale to the models, the explained variance is higher for Physical Aggression and lower for Aggressive Attitude, whereas the direct effect on each outcome is similar for Verbal Aggression and Physical Aggression, and lower for Aggressive Attitude. The predominance of the BOR scale and the moderate presence of the ANT scale in the three models suggest that the problems of impulsivity, emotional regulation and anger control — which are also components of the antisocial personality style — are closely related to the three expressions of aggression. Moreover, we can clearly identify a higher and lower incidence of the antisocial personality style on Physical Aggression and Aggressive Attitude respectively. This tendency can also be observed in the strength of the paths that link the ANT scale with the BOR scale.

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In general, these results are consistent with previous findings. For instance, Wang and Diamond (1999) found that anger, impulsivity, and antisocial personality style are strongly related to institutional aggression. In particular, these authors suggested that anger and antisocial personality style are directly related to physical aggression. Moreover, anger showed a considerably stronger path coefficient, whereas impulsivity was directly related to verbal aggression. However, other authors failed to find relevant results when studying anger as a predictor of institutional misconduct and recidivism (Mills & Kroner, 2003). Other studies highlight the possibility that contextual and situational factors inflict higher levels of stress on people with BDP, thus generating or potentiating violent behaviors of different nature (Black et al., 2007). Moreover, in a state of extreme emotional deregulation, some contextual stimuli that are perceived as aversive can operate as triggers of violent behaviors (Logan & Johnstone, 2010). The high presence of traits and symptoms of BDP and ASPD in prison population (Black et al., 2007; Rotter, Way, Steinbacher, Sawyer, & Smith, 2002), considered as predictors of aggression by these authors, provides support for this suggestion. With respect to ASPD, the link between this disorder and a higher risk of violent behavior has been well documented (Yu et al., 2012). Although the analysis of the two endogenous variables has revealed some important characteristics, the exogenous variables provide complementary information that allows us to identify the specificity of each model.

Specific indicators of the theoretical models

Aggressive Attitude theoretical model

The ARD and NON scales are described as exogenous indicators that are specific to this model. Both the direct and indirect effects of the ARD scale on the BOR and ANT scales, and the Aggressive Attitude, suggest a higher impact in the model than the NON scale. Moreover, the strongest association established is that between the ARD scale and the BOR scale. The relationship between both indicators is unsurprising given that the PTSD is also one of the mental disorders with the highest prevalence in correctional settings (Wood & Buttaro, 2013). Further, the frequent presence of anger and aggression in people with PTSD (Calhoun et al., 2002; Crawford et al., 2007) could explain why they show a high risk of becoming victims of aggression and, at the same time, aggressors (Wood & Buttaro, 2013). There is a strong likelihood that crime-

related experiences and their consequences, particularly for recidivists (around 50% of the participants in our study), could contribute to the development of these types of symptoms. It is understandable that obsessive-compulsive symptoms have a strong presence in correctional settings, where contextual conditions, coercion, and victimization operate as risk factors (Boxer, Middlemass, & Delorenzo, 2009; Listwan, Colvin, Hanley, & Flannery, 2010). In addition, along with the limitations in emotional regulation and impulsivity, anger has been observed as a predictor of obsessive-compulsive symptoms (Besharat & Dehghani, 2014). In particular, anger reaches high levels in patients with OCD, and its relation with obsessive-compulsive beliefs appears to be mediated by anxiety (Sheys, 2016).

The presence of the NON scale in the model, although weaker than that of the other indicators, reveals the impact of both individual factors and the context on aggressive attitude. These variables should be analyzed in studies of violence in prison (Colvin et al., 2002; Lahm, 2008) for a number of reasons, but particularly because poor living conditions can be reflected in increased rates of violence (Bierie, 2012). In this regard, coercion and victimization have specifically been studied (Colvin et al., 2002; Teasdale et al., 2016). Coercion favors violent behavior, whereas social support helps to prevent such behavior (Colvin et al., 2002). Thus, coercive experiences could decrease the beneficial effect of social support sources (Day et al., 2014), of which rehabilitation programs and activities are the most relevant (Colvin, 2007). This negative association between the NON scale and aggressive behaviors was confirmed by Edens and Ruiz (2009). One possible interpretation of the model is that the presence of emotional regulation difficulties, emphasized by posttraumatic stress and obsessive-compulsive symptoms in living conditions perceived as deficient, could explain aggressive attitude. This expression of aggression, according to the obtained results, is comprised more of attitudinal elements that predispose individuals towards other forms of aggression, rather than specific expressions of violence.

Verbal Aggression theoretical model

The scales SCZ and NON appear to be exogenous and specific indicators of this model, although the NON scale is also present in the previous model. This could be due to the fact that the contextual factors have a direct impact on the quality of life of the individual. Thus, coexistence in a hostile context can generate psychosocial adaptation

problems that can emerge as aggressive behaviors, anger, anxiety, and depression (Boxer et al., 2009; Listwan et al., 2010). This suggests the importance of detecting potentiation and inhibition factors of aggression. A first step could be to evaluate the impact of contextual factors (e.g., center structure, quality of living space, overcrowding, and attention from staff) on the inmates and institutional violence (Gadon et al., 2006). Second, it is necessary to appropriately measure both available and perceived social support, and the attitude of the individual towards the source of support (Day et al., 2014).

From the information above, we can observe that the impact of the SCZ scale is a distinctive feature of this model compared with that described previously. There are several factors that intervene in the relationship between schizophrenia and violence. Some of these factors include personality disorders/psychopathy, mental disabilities, positive psychotic symptoms/first-episode psychosis, substance abuse, and demographics (Bo et al., 2011). The latter authors suggest that violent behavior in schizophrenia follows two different paths. The first is the lack of antecedents of violence or criminal behavior, in which positive symptoms appear to explain violent behavior, whereas in the second, the presence of personality disorders can predict violent behavior regardless of the symptoms. This could account for the contradictory data found in the literature with respect to this matter. Whilst schizophrenia — with or without the use of substances — is related to violence, only a minority of patients are involved in violent episodes towards others (see Joyal, Dubreucq, Gendron, & Millaud, 2007 for a review). We can also find subgroups within the population with schizophrenia that show different expressions of violent behavior and different levels of psychopathy and impulsivity (Joyal, Côté, Meloche, & Hodgins, 2011).

Although the nature of this study does not allow us to make such a distinction, these findings do permit us to make some sense of the role played by the SCZ scale in the model, especially given the strength of the paths that link it to the BOR and ANT scales, which show effects of a similar magnitude. We could suggest that the impact of this scale allows us to detect an aggression episode with attitudinal hostile elements, and aggressive expressions that are non-physical. Moreover, it is important to note that the correctional setting can play a role in exacerbating psychotic symptoms (Jarrett et al., 2012), which is sometimes a consequence of the stress suffered by inmates with schizophrenia and the perception of vulnerability when they are victims of abuse from

other inmates (Nastasi, 2005). Thus, treating these symptoms correctly can help to decrease aggressive behaviour in these patients (Keers, Ullrich, DeStavola, & Coid, 2014). It appears then, that verbal aggression could be explained by the emotional regulation difficulties that are exacerbated by the presence of psychotic symptoms within deficient living conditions.

Physical Aggression theoretical model

The presence of the DRG scale as the third direct indicator modifies the configuration observed in the previous models, where none of the exogenous indicators showed a direct impact on the outcome measure. This variable (which measures the negative consequences of drug abuse and the indicators of drug addiction), whilst having a lower direct impact on Physical Aggression than the endogenous indicators, shows a stronger association with the ANT scale than with the BOR scale. These data are consistent with those reported in previous studies, where ASPD has been linked to violence (Wormith, Olver, Stevenson, & Girard, 2007), particularly when drug abuse is present (Fountoulakis et al., 2008). Similarly, and in contrast with the two previous models, the effect of the context and perception of social support do not appear to be determinant factors, unlike drug abuse.

However, some authors have questioned the reliability of psychological measures (e.g., ANT scale, impulsivity, and the use of alcohol and drugs) to predict severe violence in prison (e.g., Cunningham et al., 2005). It is possible that methodological differences, such as conceptualization and measurement of the violence construct, might have an impact on these results (Schenk & Fremouw, 2012). Thus, it is important to note that the ANT scale measures not only the severe or extreme violent behaviors that are relatively infrequent within the prison context (Cunningham & Reidy, 2002), but also the tendency to physically express anger. Finally, Crimes against property emerges as a fourth indicator of the path model, showing a small impact on the ANT scale and a negligible indirect impact on Physical Aggression. This variable is associated exclusively with the ANT scale. This result appears logical given that it is reasonable to find an affinity between this scale (due to its psychometric features) and certain criminal offenses, particularly those against property. Moreover, the presence of Crimes against property in this model is consistent with the findings of Cunningham *et al.* (2005) with respect to its capacity to predict violence over other types of offenses. One possible

interpretation of the model is that the presence of an antisocial living style and poor anger control, influenced by the consequences of drug abuse, can explain physical aggression, particularly for people serving sentences for crimes against property.

Strengths, limitations, and conclusions

This is the first study to employ the Spanish adaptation of the PAI to analyze the association between indicators of various expressions of aggression in correctional settings. Given that previous studies on this topic have been carried out primarily in the English speaking population, it is enlightening to have information available from a Spanish-speaking sample (Latin American prison population). For this purpose, we paid special attention to some methodological aspects in order to strengthen the reliability of the results. In addition, it is reasonable to raise some concerns regarding the degree of understanding of Spanish used in the PAI questionnaire by the South American population. This supposed limitation was analyzed in the studies of linguistic adaptation of the Argentinian version of the PAI (Stover, Castro, & Fernández, 2015), where the content of only 4 of the 344 items that compose the PAI had to be modified to improve its comprehension. In any case, it is convenient to emphasize the need to have instruments that are sensitive to the cultural factors of each population (Alamilla y Wojcik, 2013; Benuto, 2013; Puente, Zink, Hernandez, Jackman-Venanzi, & Ardila, 2013).

There are also some limitations in this study. One of these limitations is that we simultaneously used, as dependent and independent variables, several scales and subscales from the same instrument, which can suggest a lack of independence of the variances (Shadish, Cook, & Campbell, 2002). However, it is worth noting that the PAI is composed of non-overlapping scales (Morey, 1991, 2007). Moreover, this assumption could not be confirmed in previous studies when the incremental validity of the ANT scale was analyzed, which is one of the most robust predictors of misconduct (Caperton, Edens, & Johnson, 2004; Skopp, Edens, & Ruiz, 2007). In any case, we suggest using more indicators and sources to improve the quality and usefulness of the data (Walters, Diamond, Magaletta, Geyer, & Duncan, 2007). We were also unable to increase the number of judicial, disciplinary, and clinical measures, since it was impossible to access this type of information. Another characteristic of this study is that it does not include other correctional samples, which can limit the generalization of the results.

Regardless of the interpretation of our findings, we have proposed structures composed of factors that are associated with three expressions of aggression. We can thus suggest the usefulness of these indicators of aggressive tendencies within the framework of prevention and intervention strategies in correctional settings. In conclusion, the results of this study indicate that the three subscales of the PAI can measure distinct expressions of aggression. Each of the expressions of aggression that we analyzed has a structure of indicators that are associated in a specific way within the correctional population when the sociodemographic, judicial, clinical, and personality characteristics are analyzed. These structures are composed of two common endogenous indicators (Borderline Features and Antisocial Features scales) and two exogenous indicators that are specific to each of the scales: the Anxiety-Related Disorders and Non-Support scales, for Aggressive Attitude; the Schizophrenia and Non-Support scales, for Verbal Aggression; and the Drug Problems scale and Crimes against property, for Physical Aggression. Further studies should test the predictive validity of these three theoretical models, using objective measures for each expression of aggression and integrating a range of different instruments that measure analogous constructs.

Acknowledgements and funding

Capítulo 9. Estudio 5

¿Está asociado el abuso de drogas a un funcionamiento ejecutivo específico en maltratadores?

Burneo-Garcés, C., Bueso-Izquierdo, N., Hart, S., Randall Kropp, P., & Pérez-García, M. (2017). ¿Está asociado el abuso de drogas a un funcionamiento ejecutivo específico en maltratadores?

9.1 Introducción

La violencia que se ejerce contra la mujer, considerada en sus diferentes manifestaciones, es uno de los problemas sociales y de salud más alarmantes. En efecto, la Organización Mundial de la Salud (OMS, 2013) recuerda que esta clase de violencia es un problema de salud que ha alcanzado proporciones epidémicas, siendo la violencia de género una de sus facetas.

Se conoce que el consumo de sustancias es uno de los principales factores de riesgo y desencadenantes del comportamiento agresivo contra la pareja (Chermack, Fuller y Blow, 2000; Chermack, Walton, Fuller y Blow, 2001; Fals-Stewart, 2003), cuya asociación es ampliamente referida en la literatura. Algunos autores reportan que la incidencia del uso de sustancias en hombres violentos se encuentra en torno al 50% (Kraanen, Scholing y Emmelkamp, 2010).

Si focalizamos la atención en la población penitenciaria general, compuesta por individuos que han cometido delitos con y sin violencia, encontramos prevalencias de abuso y dependencia de drogas que oscilan entre el 10% y el 48%, en el momento de ingresar en prisión (para una revisión, ver Fazel, Bains y Doll, 2006). En el entorno penitenciario español, por ejemplo, la prevalencia de vida del trastorno por consumo de sustancias alcanza el 76,2% (Vicens et al., 2011), constituyendo el problema de salud más frecuente entre los reclusos. Estos datos permiten valorar la magnitud del consumo de sustancias en los establecimientos penitenciarios, con independencia del tipo de delito cometido y del tiempo de permanencia en prisión.

La realidad descrita previamente ha fomentado el estudio de las drogas que consumen las personas que tienden a presentar conductas violentas con mayor frecuencia. Esto cobra particular sentido en los maltratadores consumidores de sustancias, puesto que se trata de una población que emplea más violencia psicológica y física contra la pareja o expareja, en comparación con los maltratadores que no tienen esta tendencia (Thomas, Bennett y Stoops, 2012). Como síntesis de los resultados que arrojan ciertos estudios en esta materia, se puede decir que el alcohol, el cannabis y la cocaína son sustancias que mantienen una fuerte relación con las conductas agresivas (Amor et al., 2010; Choenni, Hammink y van de Mheen, 2015; Kraanen, Vedel, Scholing y Emmelkamp, 2014).

Estos hallazgos permiten plantear que la identificación de indicadores potentes de las conductas violentas, así como el estudio de su interacción, pueden ser de gran utilidad para el diseño de una tipología del maltratador más completa y precisa (Loinaz, 2010, 2017). Para la consecución de este objetivo resulta indispensable la participación de diferentes disciplinas, algo que otorgaría al estudio de la violencia de género un carácter integrador desde el punto de vista científico.

Efectivamente, toda aportación resulta valiosa para enriquecer el conocimiento de los rasgos que diferencian al maltratador. Desde la Neuropsicología se han hecho y se pueden realizar contribuciones importantes a este campo de estudio (Bueso-Izquierdo, Hart, Hidalgo-Ruzzante, Kropp y Pérez-García, 2015; Farrell, 2011). Ciertos autores refieren que los agresores no consumidores de sustancias presentan un funcionamiento cerebral distinto al de otros delincuentes cuando observan imágenes de violencia contra la pareja y de violencia general (Bueso-Izquierdo et al., 2016). Esto puede ser un indicio de que estamos frente a una población con atributos específicos, con independencia de la presencia de problemas de consumo de sustancias.

En lo que respecta al funcionamiento neuropsicológico del consumidor habitual de sustancias, el abuso de drogas guarda relación con problemas de impulsividad, baja flexibilidad y dificultades en la toma de decisiones (Fernández-Serrano, Pérez-García, Schmidt Río-Valle y Verdejo-García, 2010). Estas características podrían potenciar la aparición de conductas violentas (Alcázar-Córcoles, Verdejo-García, Bouso-Saiz y Bezos-Saldaña, 2010; Bushman, 1993; Romero-Martínez y Moya-Albiol, 2015).

Aunque se sabe que los maltratadores muestran, en general, un rendimiento neurocognitivo deficitario (Corvo y Johnson, 2013; Pinto et al., 2010), se han identificado limitaciones específicas relacionadas con la atención, la memoria, la impulsividad, el aprendizaje y las habilidades verbales (Cohen et al., 2003; Cohen, Rosenbaum, Kane, Warnken y Benjamin, 1999; Teichner, Golden, Van Hasselt y Peterson, 2001). De hecho, los problemas que se reportan con más frecuencia tienen que ver con el funcionamiento ejecutivo, las habilidades verbales y el vocabulario (Bueso-Izquierdo et al., 2015).

De modo global, los datos que aporta la literatura en esta materia sugieren que la inclusión de medidas neuropsicológicas en los protocolos de evaluación podría potenciar el estudio de la violencia de género (Corvo, Halpern y Ferraro, 2006). Desde

esta perspectiva, la interacción del consumo de sustancias y el funcionamiento neuropsicológico podría despejar ciertas incógnitas sobre aspectos que subyacen a la conducta violenta contra la pareja o expareja (Walling, Meehan, Marshall y Holtzworth-Munroe, 2012). Sin embargo, no nos consta que se haya explorado, en un mismo estudio, el funcionamiento ejecutivo de maltratadores consumidores y no consumidores de sustancias. Este enfoque podría aportar información sobre el perfil neuropsicológico de estas dos condiciones, permitiendo establecer si el consumo problemático de sustancias está asociado a un perfil neuropsicológico específico en los maltratadores. Esta clase de datos es relevante para el diseño de estrategias dirigidas tanto a la prevención de conductas violentas como a la intervención con maltratadores que poseen un perfil de mayor peligrosidad.

Con base en las consideraciones anteriores, el objetivo de este estudio fue explorar el desempeño neuropsicológico de dos grupos de maltratadores: 1) maltratadores con historia de abuso/dependencia de sustancias y 2) maltratadores sin historia de abuso/dependencia de sustancias. A ambos grupos se les administró un protocolo de evaluación del funcionamiento ejecutivo, compuesto por pruebas que miden los componentes Actualización, Control inhibitorio, Flexibilidad y Toma de decisiones. Teniendo en cuenta la literatura revisada, nosotros hipotetizamos que los maltratadores con historia de abuso/dependencia de sustancias presentarán un perfil neuropsicológico diferenciado, caracterizado por un desempeño ejecutivo más pobre que el de los maltratadores que no poseen tales antecedentes.

9.2 Método

Participantes

La muestra estuvo compuesta por dos grupos de participantes: 1) MCA = 38 maltratadores con antecedentes de abuso/dependencia de sustancias, de edades comprendidas entre los 21 y 49 años ($M = 38,46$; $DT = 7,17$), y 2) MSA = 39 maltratadores sin antecedentes de abuso/dependencia de sustancias, de edades comprendidas entre los 21 y 50 años ($M = 35,59$; $DT = 7,95$). Los 77 participantes cumplían condena por agresión física, psicológica o sexual contra la pareja o expareja en dos centros penitenciarios de la ciudad de Granada (España): Prisión de Albolote y Centro de Inserción Social "Matilde Cantos Fernández".

Criterios de inclusión y exclusión

Los criterios de inclusión aplicados en el estudio fueron los siguientes: 1) tener 18 años de edad o más, 2) haber sido condenado por agresión física, psicológica o sexual contra la pareja o expareja, de acuerdo a lo estipulado en la Ley Orgánica 1/2004, y 3) cumplir criterios diagnósticos DSM-IV (APA, 1994) de abuso/dependencia de alcohol u otras drogas (únicamente para el grupo MCA).

En cuanto a los criterios de exclusión, se establecieron las siguientes condiciones: 1) ser analfabeto, 2) contar con antecedentes de lesión cerebral (en caso de traumatismo craneoencefálico, se adoptó el criterio de pérdida de consciencia por más de una hora) y 3) tener antecedentes de alteraciones psicopatológicas severas. El criterio de exclusión número 2 obedece a las recomendaciones de Walling *et al*. (2012) acerca de la conveniencia de controlar los antecedentes de lesión cerebral cuando se examina el desempeño neuropsicológico.

Medidas

Sociodemográficas

Se registró información sobre la edad, el nivel de educación finalizado, el estado civil en el momento de la evaluación, el nivel socioeconómico y el tipo de violencia ejercida contra la víctima, utilizando el Cuestionario de valoración de riesgo de violencia grave en la relación de pareja (Echeburúa, de Corral y Fernández-Montalvo, 2008).

Abuso/Dependencia de sustancias

Para determinar la existencia de antecedentes de algún trastorno por consumo de sustancias en los participantes, se empleó la Entrevista clínica estructurada para los trastornos del eje I del DSM-IV (First, Spitzer, Gibbon y Williams, 1999).

Cociente intelectual

El K-BIT (Kaufman, Cordero y Calongue, 1997) es un instrumento que permite obtener una medida del nivel de inteligencia por medio de la valoración de dos áreas o componentes: verbal (inteligencia cristalizada) y no verbal (inteligencia fluida). La combinación de las puntuaciones totales de ambos componentes genera un valor denominado cociente intelectual (CI). Gracias a los resultados que arroja esta prueba se

pueden descartar diferencias entre los grupos en cuanto al cociente intelectual, característica que puede repercutir en la ejecución de las pruebas que conforman el protocolo de evaluación y, por extensión, en los resultados.

Función ejecutiva

Se adoptó la aproximación que considera que la función ejecutiva está integrada por cuatro componentes: Actualización, Control inhibitorio, Flexibilidad y Toma de decisiones (Miyake et al., 2000; Verdejo-García y Pérez-García, 2007). A continuación se describen las pruebas empleadas para medir estos dominios.

Actualización: Letras y Números (Wechsler, 1997), para valorar memoria de trabajo. Variable dependiente: número total de aciertos.

Control inhibitorio: Color-Palabra, del *Delis-Kaplan Executive Function System* [D-KEFS] (Delis, Kaplan y Kramer, 2001). Variables dependientes: 1) Inhibición frente a Denominación de color (tiempo de Bloque 3 menos tiempo de Bloque 1), 2) Alternancia frente a Inhibición (tiempo de Bloque 4 menos tiempo de Bloque 3), 3) Número de errores en Inhibición (Bloque 3) y 4) Número de errores en Alternancia (Bloque 4).

Flexibilidad cognitiva: Trail Making Test, del *Delis-Kaplan Executive Function System* [D-KEFS] (Delis et al., 2001). Variable dependiente: tiempo de la tarea 4 (alternancia entre número y letra).

Toma de decisiones: Iowa Gambling Task (IGT; Bechara, Damasio, Tranel y Damasio, 2005). De todo el protocolo de evaluación, la IGT es la única prueba de aplicación informatizada. A efectos de análisis de resultados, los autores recomiendan dividir los 100 ensayos en bloques de 20. Al restar el número de decisiones desfavorables del total de decisiones favorables en cada bloque se obtienen cinco puntuaciones. También se puede calcular una puntuación total aplicando el mismo procedimiento con los 100 ensayos. Estas seis puntuaciones fueron consideradas como variables dependientes.

Procedimiento

Una vez que la Secretaría General de Instituciones Penitenciarias (Ministerio del Interior del Gobierno de España) concedió los permisos necesarios, fue reclutado un total de 77 participantes en dos centros penitenciarios de la ciudad de Granada (España): Prisión de Albolote y Centro de Inserción Social "Matilde Cantos Fernández". De forma

voluntaria, los individuos seleccionados leyeron la Hoja de Información -documento que describe las características del estudio y sus derechos como participantes en una investigación de esta naturaleza- y firmaron el Consentimiento Informado. En este aspecto, conviene señalar que la legislación española garantiza la confidencialidad de los datos personales (Ley Orgánica 15/1999). Las evaluaciones fueron desarrolladas en lugares idóneos dentro de las instalaciones de cada centro penitenciario, estuvieron bajo la responsabilidad de psicólogos entrenados y fueron supervisadas por un profesional experto en evaluación neuropsicológica e investigación. Los participantes recibieron 20 euros como gratificación por su colaboración. El estudio fue aprobado por el Comité de Ética en Investigación de la Universidad de Granada (España) y observó los principios éticos de la Declaración de Helsinki.

Análisis de datos

Los análisis se llevaron a cabo empleando el paquete estadístico IBM®SPSS.22 para Windows. Para valorar posibles diferencias entre los dos grupos de maltratadores se utilizaron las pruebas t de Student (para las variables cuantitativas) y χ^2 (para las variables categóricas). También se empleó la d de Cohen para comparar los resultados obtenidos por los grupos en cada variable neuropsicológica. Por último, se establecieron los siguientes niveles de significación estadística: $p <.05, <.01, <.001$.

Tabla 1. Estadísticos descriptivos: variables sociodemográficas y CI

Variables	MCA ($n = 38$)	MSA ($n = 39$)	t / χ^2	p
	f (%)	f (%)		
Edad: M (DT)	38,46 (7,17)	35,59 (7,95)	1,69	.062
Nivel de educación finalizado			11,93	.008**
Primaria	32 (84,2%)	20 (51,3%)		
Secundaria	6 (15,8%)	13 (33,3%)		
Superior		6 (15,4%)		
Estado civil			9,186	.420
Soltero	14 (36,8%)	13 (33,3%)		
Casado/Con pareja	6 (15,8%)	3 (7,7%)		
Separado/Divorciado	18 (47,4%)	23 (59%)		
Nivel socioeconómico			5,708	.127
Bajo	19 (50%)	12 (30,8%)		
Medio	17 (44,7%)	20 (51,3%)		
Alto	2 (5,3%)	7 (17,9%)		
Cociente intelectual	92,51	96,39	-1,25	.213

Nota. CI = Cociente intelectual, MCA = Maltratadores con antecedentes de abuso/dependencia de sustancias, MSA = Maltratadores sin antecedentes de abuso/dependencia de sustancias.
** $p <.01$.

9.3 Resultados

Medidas sociodemográficas

En ambos grupos, el porcentaje de individuos separados o divorciados fue el más alto (47,4% y 59% para MCA y MSA respectivamente). Tanto el 69,2% de los MCA como el 59,9% de los MSA habían ejercido violencia psicológica y física contra la víctima, mientras que en las agresiones que infligió el resto de individuos no estuvo presente el componente físico. Además, no se encontraron diferencias estadísticamente significativas entre los grupos de estudio para las variables edad, estado civil, estatus socioeconómico y CI, pero sí para el nivel de educación finalizado [χ^2 (3) = 11,93; p <.008] (ver Tabla 1). Finalmente, alcohol (51,3%), cocaína (43,2%), heroína (36,8%) y cannabis (34,35%) fueron las sustancias que obtuvieron los porcentajes más elevados de diagnóstico de abuso/dependencia.

Tabla 2. Desempeño de los maltratadores en pruebas que miden funciones ejecutivas

Función/Tarea	MCA (n = 38)	MSA (n = 39)	t	p	d
	M (DT)	M (DT)			
Actualización					
Letras y Números (aciertos)	8,61 (3,04)	9,95 (2,52)	-2,091	.040*	.47
Control Inhibitorio					
Denominación (tiempo)	31,66 (5,08)	27,43 (4,64)	3,675	.000***	.87
Lectura (tiempo)	22,66 (3,61)	20,38 (3,90)	2,676	.009**	.60
Inhibición (tiempo)	54,39 (1,36)	50,18 (9,98)	1,512	.139	.34
Alternancia (tiempo)	68,03 (16,88)	59,28 (12,68)	2,597	.011*	.58
Flexibilidad					
TMT1 (tiempo)	22,20 (6,26)	18,78 (4,19)	2,897	.005**	.66
TMT2 (tiempo)	43,32 (17,38)	40,53 (14,98)	,759	.450	.17
TMT3 (tiempo)	55,49 (26,47)	48,42 (18,48)	1,344	.183	.31
TMT4 (tiempo)	114 (47,79)	93,61 (35,11)	2,100	.039*	.48
TMT5 (tiempo)	74,97 (40,24)	60,03 (24,88)	1,771	.083	.44
Toma de decisiones					
IGT 1 (f – d)	-2,54 (5,68)	-2,90 (5,67)	,292	.771	.06
IGT 2 (f – d)	,24 (5,35)	-1,81 (5,72)	1,688	.095	.28
IGT 3 (f – d)	,44 (7,46)	,38 (8,13)	,034	.973	.01
IGT 4 (f – d)	-,54 (9,06)	1,81 (8,37)	-1,221	.226	.26
IGT 5 (f – d)	-,63 (9,92)	1,29 (8,29)	-,957	.341	.21
IGT Total (f – d)	-3,02 (23,94)	-,69 (23,86)	-,445	.658	.10

Nota. MCA = Maltratadores con antecedentes de abuso/dependencia de sustancias, MSA = Maltratadores sin antecedentes de abuso/dependencia de sustancias, f – d = Decisiones favorables menos Decisiones desfavorables.
*p <.05, **p <.01, ***p <.001.

Dominios neuropsicológicos

La Tabla 2 muestra las diferencias estadísticamente significativas entre los grupos de estudio para las pruebas Letras y Números [t (1,74) = -2,091; p <.040]; CWIT, en los bloques Denominación [t (1,76) = 3,675; p <.000], Lectura [t (1,76) = 2,676; p <.009] y Alternancia [t (1,76) = 2,597; p <.011]; y TMT, en la Tarea 4 [t (1,72) = 2,100; p <.039]. Sin embargo, en la IGT no se encontraron resultados relevantes. El tamaño de efecto (*d* de Cohen) fue moderado para Letras y Números y Tarea 4 (TMT), grande para Denominación, Lectura y Alternancia (CWIT), y pequeño para los bloques de la IGT.

9.4 Discusión

El objetivo de este estudio fue explorar el funcionamiento ejecutivo de maltratadores con historia de abuso/dependencia de sustancias y maltratadores que no poseen esta clase de antecedentes. Se puede decir que los resultados apuntan en la dirección de la hipótesis propuesta. En comparación con los MSA, los MCA muestran un rendimiento inferior en tres de las cuatro funciones ejecutivas analizadas. Estos hallazgos tienen especial relevancia porque es la primera vez que se valora en un mismo estudio el funcionamiento ejecutivo de estos dos tipos de maltratador. Además, los criterios de exclusión aplicados disminuyen el riesgo de que una ejecución deficiente en las pruebas neuropsicológicas pueda ser atribuida a los antecedentes de sintomatología psiquiátrica y daño cerebral. Finalmente, el hecho de que los grupos sean similares en edad y CI refuerza la fiabilidad de los datos.

A la luz de algunos datos sociodemográficos, los MSA poseen, en general, mejor nivel de estudio que los MCA, característica que parece ir de la mano con la tendencia a pertenecer a un estatus socioeconómico más elevado. En lo que respecta a la repercusión del consumo de drogas en el funcionamiento ejecutivo, nuestros resultados son consistentes con los reportados en la literatura (Fals-Stewart y Bates, 2003; Fernández-Serrano et al., 2012; Romero-Martínez y Moya-Albiol, 2015; Verdejo-García, Bechara, Recknor y Pérez-García, 2006), excepto en Toma de decisiones. En cuanto al desempeño de ambos grupos en el protocolo de evaluación de las funciones ejecutivas aplicado, los MCA revelan peor memoria de trabajo, control inhibitorio y flexibilidad que los MSA. Estos hallazgos concuerdan con lo que refieren Easton,

Sacco, Neavins, Wupperman y George (2008) sobre el pobre funcionamiento neuropsicológico de los maltratadores con dependencia del alcohol.

Se sabe que el consumo de sustancias es un importante factor de riesgo y desencadenante de conductas violentas en los maltratadores (Thomas et al., 2012), como también que han sido detectados patrones neuropsicológicos específicos en este tipo de agresores (Cohen et al., 1999, 2003; Teichner et al., 2001). Sin embargo, los datos aportados por Bueso-Izquierdo *et al.* (2016) son indicios de la existencia de un funcionamiento cerebral específico en maltratadores no consumidores de sustancias. En otras palabras, los maltratadores podrían poseer rasgos neuropsicológicos que los diferencian de otras poblaciones penitenciarias, clínicas y normativas.

En esta misma línea de investigación, Becerra-García (2015) encontró un perfil neuropsicológico similar entre maltratadores y agresores sexuales, a la vez que deficiente en comparación con el del grupo control. En opinión del autor, mecanismos o procesos psicológicos comunes a la agresividad podrían explicar estos resultados. Si bien este estudio preliminar no controló el consumo de sustancias, sus hallazgos suponen una contribución interesante a la identificación de las características neuropsicológicas de los agresores y, de modo más específico, de los maltratadores.

Aunque la finalidad de nuestro estudio no es demostrar la relación entre abuso de sustancias y tipos de violencia -esto requeriría una metodología más compleja-, sorprende que los porcentajes de violencia psicológica y física en ambos grupos sean elevados y similares. La literatura y los resultados obtenidos en este estudio dan lugar a que se pueda plantear la existencia de un patrón de funcionamiento neuropsicológico propio de los maltratadores, con independencia del consumo de sustancias. De acuerdo a este postulado, el consumo de sustancias actuaría como factor modulador de un patrón neuropsicológico específico del maltratador, generando las correspondientes consecuencias en su conducta personal, familiar y social. En otros términos, se puede decir que el consumo de sustancias opera como factor de riesgo y desencadenante de conductas violentas contra la pareja y expareja, pero resulta insuficiente para explicar los rasgos esenciales y la conducta del maltratador.

Como se ha señalado al inicio, no cabe duda de que los enfoques integradores que incluyen en sus protocolos de evaluación variables de naturaleza múltiple están en mejores condiciones de generar información que arroje luz sobre los mecanismos que

subyacen al maltrato en las relaciones de pareja. Para superar ciertas limitaciones que presentan los enfoques clásicos (Herrero, Torres, Fernández-Suárez y Rodríguez-Díaz, 2016) es necesario detectar indicadores potentes que diferencien con precisión los tipos de maltratador y los rasgos que guardan relación con conductas agresivas de distinta índole e intensidad. Esta información ayudaría a optimizar las estrategias de prevención de conductas nocivas contra la pareja, expareja y otras personas del entorno familiar. Además, en el ámbito de la intervención, el diseño de perfiles integradores y específicos del maltratador permitiría hacer los ajustes necesarios en los programas de tratamiento, abriendo la posibilidad de mejorar los resultados obtenidos hasta la fecha (Carbajosa, Catalá-Miñana, Lila y Gracia, 2017; Ferrer-Pérez y Bosch-Fiol, 2016).

Fortalezas, limitaciones y conclusiones

La principal fortaleza de este estudio radica en que examina el funcionamiento ejecutivo de una muestra que incorpora dos tipos de maltratador. De este modo, los datos obtenidos pueden ayudar a comprender mejor las características neuropsicológicas de los maltratadores de acuerdo a su historia de consumo de sustancias. Sin embargo, la generalización de los hallazgos se ve afectada por el tamaño de la muestra, resultando imposible establecer un perfil de desempeño neuropsicológico por sustancia y de acuerdo al estatus legal de los maltratadores (tipo de agresión a la pareja o expareja por el que cumplen condena).

En conclusión, los hallazgos corroboran la asociación entre el abuso/dependencia de sustancias y un funcionamiento ejecutivo específico en los maltratadores. Estudios futuros deberán analizar la relación entre un conjunto amplio y diversificado de variables y diferentes manifestaciones de violencia contra la pareja o expareja, con la finalidad de optimizar las estrategias de prevención e intervención.

Agradecimientos y financiación

Apartado III

Discusión General

Capítulo 10.

Discusión e implicaciones teóricas y prácticas

10.1 Discusión

El eje principal de esta Tesis doctoral ha sido el estudio de las modalidades de agresión y los rasgos que diferencian a unos delincuentes de otros en entornos penitenciarios hispanohablantes, considerando que el control y la prevención de las manifestaciones de agresión y violencia ocupan un lugar prioritario en la gestión de los centros de rehabilitación social.

La finalidad última de esta investigación no es otra que aportar recursos que favorezcan el proceso de reinserción social de las personas privadas de libertad. En efecto, la Tesis doctoral aborda temáticas específicas y estrechamente relacionadas entre sí, cuyo punto de convergencia es la relación de las características sociodemográficas, judiciales y clínicas de los reclusos con la agresión y algunos delitos frecuentes. Aunque los cinco estudios que la conforman han sido diseñados en función de ciertas necesidades de dos sistemas penitenciarios, buena parte de los resultados obtenidos posee un alcance que trasciende estos contextos.

A continuación se exponen, a modo de discusión general, unas cuantas reflexiones globales sobre los hallazgos más sobresalientes.

Sobre el Inventario de Evaluación de la Personalidad

El PAI (Morey, 1991, 2007) fue escogido como herramienta principal en los cuatro primeros estudios, particularmente por sus propiedades psicométricas y su capacidad para obtener información relevante sobre personalidad y psicopatología en poco tiempo y con una mínima inversión de recursos en su administración y el procesamiento de los datos recogidos. Estas cualidades son muy apreciadas en el medio penitenciario, especialmente por las características de las personas privadas de libertad, las medidas de seguridad, las normas disciplinarias y, en algunos casos, la insuficiencia de recursos de distinta índole. Sin embargo, no nos consta la existencia de una investigación que haya explorado las propiedades psicométricas de la versión española del PAI (Ortiz-Tallo et al., 2011) en esta población.

En síntesis, se puede afirmar que nuestros hallazgos concuerdan con la literatura en cuanto a las bondades del PAI en diferentes poblaciones y entornos de evaluación e intervención (Archer et al., 2006; Blais et al., 2010; White, 1996). De todos modos, es indispensable reforzar la tendencia a desarrollar versiones que se ajusten adecuadamente

a las particularidades culturales de cada población (Alamilla y Wojcik, 2013; Benuto, 2013; Puente et al., 2013).

Sobre el perfil psicopatológico de la población penitenciaria ecuatoriana

La presencia preponderante de problemas relacionados con el consumo de sustancias y su elevada comorbilidad con otros síndromes clínicos en población penitenciaria van en la misma línea de lo que refiere la literatura (Fazel y Baillargeon, 2011; Fazel et al., 2006; Fazel y Seewald, 2012). Como consecuencia lógica de esta realidad, el tráfico y el consumo de sustancias reciben atención prioritaria en cárceles y prisiones (Carpentier et al., 2012; UNODC, 2016). Además, no hay que olvidar que la comorbilidad de trastornos mentales dentro de prisión confiere mayor complejidad a las tareas de intervención individual y grupal. Aunque se sabe que el consumo de sustancias está involucrado en el desarrollo de nuevas patologías y el agravamiento de patologías preexistentes, es recomendable analizar el efecto de otras variables en la salud mental de los reclusos. Esta información puede ayudar a identificar y explicar el perfil psicopatológico que los caracteriza en cada centro penitenciario, nivel de seguridad y pabellón.

Al analizar la interacción del entorno penitenciario y el individuo, algunos autores (Black et al., 2007; Boxer et al., 2009; Gadon et al., 2006; Listwan et al., 2010) sugieren que los factores contextuales y situacionales (p. ej., características estructurales de los centros, condiciones de vida, acceso a los servicios de salud y programas socioeducativos, atención jurídica, apoyo social, relación con el personal, etc.) son moduladores importantes de la calidad de vida y la salud mental de la persona. Dado que estos factores repercuten en la adherencia del recluso a las intervenciones multidisciplinares individuales y grupales, no deberían ser subestimados.

Sobre la utilidad de las medidas psicológicas y los datos actuariales

Schenk y Fremouw (2012) hacen un sinnúmero de observaciones interesantes sobre las características individuales que guardan correspondencia con la violencia en prisión. Entre otras reflexiones relevantes, ellos llaman la atención sobre la escasez de estudios que exploren la relación entre las variables psicológicas y la violencia en el medio penitenciario, situación opuesta a la de las variables sociodemográficas y judiciales. Es más, hasta el presente momento no se ha contrastado el potencial de estas

medidas para predecir diversas formas de violencia, en un mismo estudio y con adecuado rigor metodológico. En consecuencia, resulta difícil realizar una comparación objetiva de la capacidad predictiva de estas tres clases de variables, frecuentemente utilizadas en el ámbito penitenciario. Esto inspiró el diseño del Estudio 3, dirigido a valorar la precisión clasificatoria de un conjunto de medidas sociodemográficas, judiciales y psicológicas, empleando grupos de individuos condenados por cuatro delitos frecuentes (robo, asesinato, violación y posesión de drogas). De modo complementario, se analizó la capacidad de estas medidas para configurar un perfil específico de cada delito.

Aunque los datos actuariales muestran, en general, mayor robustez que las medidas psicológicas, su capacidad discriminante no es la misma para los cuatro delitos estudiados. Las medidas psicológicas, en una magnitud menor pero notable, tienden a ser más útiles donde el modelo actuarial revela menos fuerza, fenómeno que también es evidente en la configuración del perfil específico de cada delito. Estos resultados sugieren la conveniencia de estudiar la población penitenciaria por delito, haciendo uso conjunto de las medidas sociodemográficas, judiciales y psicológicas más potentes y pertinentes en cada caso. Por lo tanto, no parece prudente otorgar a los datos actuariales un valor absoluto y exclusivo en este campo de estudio sin contar con información que permita realizar afirmaciones precisas y concluyentes. En este sentido, aún queda camino por recorrer en lo que respecta a la delimitación del potencial de las variables psicológicas dentro del ámbito forense.

Sobre las modalidades de agresión

El Estudio 4 ha permitido corroborar la capacidad de tres subescalas del PAI (Actitud agresiva: AGR-A; Agresiones verbales: AGR-V; y Agresiones físicas: AGR-F) para medir un constructo complejo (Anderson y Bushman, 2002; Carrasco y González, 2006), compuesto por factores que interactúan en la expresión de cada conducta agresiva (Morey, 1991, 2007; Riley y Treiber, 1989).

Los hallazgos indican que cada una de las tres manifestaciones de agresión estudiadas presenta, dentro del medio penitenciario, una asociación de indicadores que facilita su diferenciación. Esta información es valiosa porque permite detectar la tendencia predominante en cada individuo o grupo de individuos a expresar una modalidad de agresión, a la vez que identificar los factores que tienen mayor incidencia

en el desarrollo y la potenciación de cada conducta agresiva. Al hablar de tendencia predominante en una persona a expresar una forma de agresión, se hace referencia a la modalidad de conducta agresiva más frecuente.

En concreto, la elevada prevalencia de trastornos de la personalidad límite y antisocial en la población penitenciaria (Black et al., 2007; Rotter et al., 2002), así como el solapamiento de ciertas características de diferentes conductas agresivas, justifican la presencia de los rasgos límites y antisociales como indicadores principales de las tres modalidades de agresión. Si bien estos rasgos parecen explicar, en gran medida, la agresión en las personas privadas de libertad, con independencia del componente (actitudinal, verbal o físico) que predomine, cada modalidad de agresión posee también dos indicadores específicos y secundarios que la diferencian de las otras dos.

Los problemas relacionados con las drogas y cumplir condena por delitos contra la propiedad son indicadores específicos de la tendencia a agredir físicamente, mientras que la falta de apoyo social muestra un efecto discreto en la propensión a tener una actitud agresiva y a agredir verbalmente. Sin embargo, en el modelo explicativo de la actitud agresiva, los trastornos relacionados con la ansiedad revelan una marcada incidencia. En el marco de un entorno hostil, es posible que el malestar subjetivo continuado, asociado a experiencias pasadas y presentes, contribuya a esta disposición, que no tiene que conducir necesariamente a otra forma de agresión. Por último, los trastornos relacionados con la ansiedad ceden protagonismo a los síntomas de esquizofrenia como indicadores específicos de las agresiones verbales. La hostilidad del contexto y la victimización pueden exacerbar síntomas de esta naturaleza (Jarrett et al., 2012; Nastasi, 2005), reforzando en el individuo esta forma de reaccionar ante estímulos que él considera nocivos para su integridad o contrarios a sus intereses.

Sobre el perfil neuropsicológico de los maltratadores

La magnitud del fenómeno violencia de género y su repercusión han conseguido implicar a algunas disciplinas, una de ellas la Neuropsicología. Desde cualquier enfoque, la víctima debe recibir atención prioritaria en todas las áreas asistenciales. En el contexto español, la Ley Orgánica 1/2004 de Medidas de Protección Integral contra la Violencia de Género significó un paso histórico en esta materia.

De modo paralelo al trabajo que se lleva a cabo con la víctima, existe un empeño especial en desarrollar estrategias de evaluación e intervención dirigidas al maltratador, la mayoría de ellas de carácter preventivo. En esta línea, innumerables estudios se han propuesto, desde diferentes perspectivas, identificar los rasgos distintivos de los tipos de maltratador. El propósito de estas iniciativas es establecer perfiles que permitan optimizar tanto las estrategias de prevención de conductas agresivas contra la pareja o expareja como el diseño de programas de tratamiento para agresores.

Dentro de la población de maltratadores, aquellos que cuentan con historia de abuso/dependencia de sustancias revelan un patrón neuropsicológico diferenciado, caracterizado por un rendimiento inferior en pruebas que miden la función ejecutiva, en comparación con los maltratadores que no ostentan tal condición. Considerando que el consumo de sustancias es un factor de riesgo importante y desencadenante de diversas formas de violencia (Chermack et al., 2000; Chermack et al., 2001), estos resultados contribuyen a mejorar la identificación de los rasgos individuales que distinguen a los maltratadores más violentos.

Para finalizar, es necesario subrayar la relevancia de algunas variables psicológicas (de personalidad, psicopatológicas y neuropsicológicas) en los estudios que forman parte de esta Tesis doctoral, lo que sugiere que la combinación de medidas potentes (sociodemográficas, judiciales y clínicas) puede significar un salto cualitativo en el diseño de una tipología del maltratador más depurada, precisa y eficaz.

10.2 Implicaciones teóricas

Los hallazgos resultantes de los estudios desarrollados en esta Tesis doctoral mejoran el conocimiento de la utilidad de las medidas psicológicas para la evaluación de la agresión y la clasificación de los delincuentes dentro de prisión según el delito por el que cumplen condena.

En general, la literatura tiende a conceder a los datos actuariales mayor potencial que las medidas psicológicas en el ámbito penitenciario. De hecho, son escasos los estudios que aportan datos consistentes sobre la capacidad de las medidas psicológicas para predecir un rango amplio de conductas inadecuadas y violentas y clasificar con precisión a los delincuentes. Es probable que la excesiva subjetividad de algunas medidas psicológicas, sumada a limitaciones metodológicas reportadas con frecuencia

en la literatura, explique esta realidad. Además, muchos estudios que se llevan a cabo dentro de esta línea de investigación suelen utilizar muestras penitenciarias generales, y si consideran el delito u otras categorizaciones análogas, no hacen uso de un protocolo de evaluación que incorpore un conjunto exhaustivo de medidas.

En el Estudio 3 se ha podido demostrar que poniendo a prueba diferentes tipos de medidas, en un mismo estudio y con suficiente rigor metodológico, es posible obtener datos fiables sobre la contribución de cada uno de ellos. Los resultados revelan que la capacidad clasificatoria de los datos actuariales varía de acuerdo al delito. En el caso del delito de robo, los datos actuariales son los mejores predictores, siendo insignificante la contribución de las medidas psicológicas. Sin embargo, éstas juegan un rol importante en los delitos de violación y posesión de drogas. En síntesis, los datos actuariales aportan la principal contribución a la varianza explicada, pero la adición de medidas psicológicas al modelo actuarial genera un aumento en su precisión clasificatoria en los delitos donde se muestra menos robusto.

La utilidad complementaria de los datos actuariales (sociodemográficos y judiciales) y las medidas psicológicas, evidente en los Estudios 3 y 4, sugiere la conveniencia de enriquecer los modelos con nuevas medidas que muestren una adecuada capacidad predictiva tanto de las diferentes formas de agresión como de los rasgos característicos de las categorías de delincuentes dentro de prisión.

10.3 Implicaciones prácticas

Una vez confirmadas las cualidades psicométricas de la adaptación española del PAI en población penitenciaria, queda establecido el punto de partida de la expansión de su uso en centros penitenciarios de habla hispana. De este modo, los psicólogos que trabajan con personas privadas de libertad disponen de un instrumento de gran valor clínico, mientras no exista una versión adaptada a esta población. Como veremos a continuación, el PAI puede ser una herramienta de trabajo muy provechosa para la prestación de servicios de salud en estos contextos.

El PAI aporta información sobre personalidad y psicopatología, útil para evaluación, intervención individual y grupal y toma de decisiones que tienen que ver con la salud mental de los reclusos, las medidas de seguridad y los procedimientos de clasificación. Las cualidades psicométricas de las escalas, las subescalas y los índices

que conforman este instrumento son idóneas para el trabajo dentro de prisión, un entorno complejo donde es necesario hacer uso adecuado de los recursos humanos y económicos disponibles, frecuentemente insuficientes. Además, el PAI explora las dimensiones psicológica, psicosocial e interpersonal del individuo, propiedad que le da un carácter interdisciplinar. Habida cuenta de la variedad de programas socioeducativos que se desarrollan en las cárceles y prisiones, esta capacidad es especialmente valorada.

Como se ha podido observar en los primeros cuatro estudios de esta Tesis doctoral, el PAI es sensible a la incidencia de circunstancias individuales y contextuales -pasadas y presentes- en el estado mental y el comportamiento del recluso. Esto le concede un valor singular como complemento del diagnóstico clínico y para el diseño de estrategias de intervención psicológica y multidisciplinar. Una mención especial requiere la capacidad de ciertas escalas y subescalas del PAI para valorar la tendencia predominante en cada individuo a expresar una forma de agresión, así como para diferenciar, junto con algunos datos actuariales, los tipos de delincuentes más frecuentes. Por último, la información que aporta el PAI también es de gran interés para las actuaciones inherentes a los procedimientos de clasificación, en los distintos momentos de permanencia del individuo en el centro penitenciario, de acuerdo al sistema de progresión y regresión de grado establecido en cada sistema penitenciario.

Las reflexiones anteriores nos conducen a creer, considerando la necesidad de realizar un trabajo metódico, integral y multidisciplinar con cada recluso desde el primer momento de su estancia en prisión, que el uso del PAI puede optimizar las tareas de rehabilitación y reinserción social de las personas privadas de libertad.

Apartado IV

Conclusiones

Capítulo 11.

Conclusiones generales y perspectivas futuras

11.1 Conclusiones generales

La presente Tesis doctoral da origen a las siguientes conclusiones:

1. Con respecto a la adaptación española del Inventario de Evaluación de la Personalidad.

La adaptación española del Inventario de Evaluación de la Personalidad (Ortiz-Tallo et al., 2011) muestra aceptables propiedades psicométricas en población penitenciaria ecuatoriana.

2. Con respecto al perfil psicopatológico de la población penitenciaria ecuatoriana.

Los problemas relacionados con el consumo de sustancias son los más prevalentes y presentan la mayor comorbilidad con otros síndromes clínicos.

3. Con respecto a la precisión clasificatoria de las medidas psicológicas y los datos actuariales.

En primer lugar, los datos actuariales revelan mayor potencial que las medidas psicológicas para clasificar a la población penitenciaria por delito. En segundo lugar, la adición de medidas psicológicas al modelo actuarial genera un aumento notable en su precisión clasificatoria en los delitos donde se muestra menos robusto. Finalmente, la conjugación de los datos actuariales y las medidas psicológicas más potentes permite configurar un perfil específico de cada delito.

4. Con respecto a los indicadores de las modalidades de agresión en población penitenciaria: Actitud agresiva, Agresiones verbales y Agresiones físicas.

Las tres modalidades de agresión poseen estructuras diferenciadas, compuestas por los mismos indicadores principales (rasgos límites y antisociales) e indicadores secundarios y específicos de cada una de ellas: los trastornos relacionados con la ansiedad y la falta de apoyo social, de la Actitud agresiva; la esquizofrenia y la falta de apoyo social, de las Agresiones verbales; y los problemas relacionados con el consumo de drogas y cumplir condena por delitos contra la propiedad, de las Agresiones físicas.

5. Con respecto al funcionamiento ejecutivo de los maltratadores con y sin historia de abuso/dependencia de sustancias.

Los maltratadores con historia de abuso/dependencia de sustancias evidencian un funcionamiento ejecutivo inferior al de los maltratadores que no cuentan con esta clase de antecedentes. Estas diferencias son notorias en los componentes Actualización, Control inhibitorio y Flexibilidad, pero no en Toma de Decisiones.

11.2 Perspectivas futuras

A partir de los estudios realizados en esta Tesis doctoral se pueden plantear varias líneas de investigación en población penitenciaria masculina y femenina.

Primera. Estandarización del PAI en población ecuatoriana (muestras normativa, clínica y penitenciaria). Esto promovería el desarrollo de estudios similares en otros contextos de habla hispana.

Segunda. Identificación de los perfiles psicopatológicos de los reclusos que cumplen condena por los delitos más frecuentes, por estratos (p. ej., centro penitenciario, nivel de seguridad, pabellón, etc.). Esto permitiría determinar el efecto de ciertos factores contextuales en la salud mental de los individuos que pertenecen a cada categoría.

Tercera. Desarrollo de estudios con aproximaciones metodológicas similares a las empleadas en los Estudios 3 y 4, que incorporen variables neuropsicológicas. Hasta la fecha no se han utilizado conjuntamente variables actuariales, clínicas, de personalidad y neuropsicológicas para clasificar a la población penitenciaria por delito y construir modelos predictivos de diferentes expresiones de agresión. La inclusión de variables neuropsicológicas en el estudio de la violencia y de los perfiles criminales dentro de prisión podría representar una contribución importante.

Cuarta. Diseño de estudios de corte longitudinal para comprobar, de modo prospectivo, la capacidad de las subescalas del PAI (Actitud agresiva, Agresiones verbales y Agresiones físicas) para predecir diversas conductas agresivas y violentas, teniendo como fundamento teórico los modelos obtenidos en el Estudio 4.

Capítulo 12. Conclusions

CONCLUSIONS

We obtained the following conclusions from this doctoral thesis:

1. With respect to the Spanish adaptation of the Personality Assessment Inventory.

The Spanish adaptation of the Personality Assessment Inventory (Ortiz-Tallo et al., 2011) is a useful tool in the clinical context, showing acceptable psychometric properties in the Ecuadorian prison population.

2. With respect to the psychopathological profile of the Ecuadorian prison population.

Problems related to drug use are the most prevalent and show the highest comorbidity with other clinical syndromes in the Ecuadorian prison population.

3. With respect to the classification accuracy of the psychological measures and actuarial data.

The actuarial data show a higher potential than psychological measures in terms of classifying prison populations by criminal offense. However, psychological measures increase the accuracy of the actuarial models for criminal offenses where they are less robust. The use of both types of variables allows us to develop specific profiles for each criminal offense.

4. With respect to the indicators of modalities of aggression.

Although the modalities of aggression show a differentiated and characteristic structure within the Ecuadorian prison population, the borderline personality and antisocial traits show a particularly strong association with each of them.

5. With respect to the executive functions of batterers with drug abuse/dependency records.

Batterers with previous drug abuse/dependency show lower executive functioning compared to batterers without such history. These differences are important for self-monitoring, inhibitory control, and flexibility.

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