Functional Behaviour Assessment Model for Distinguishing Challenging Behaviour from Criminal Offending in Intellectual Disability

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Abstract

A distinction of challenging behaviour and criminal offending in intellectually disabled persons is a complicated matter in forensic systems. Reinforcement contingencies and cognitive capacity are often seldom factored in behavioural incidents which are often interpreted through offence-based frameworks. This paper assessed an organized Functional Behaviour Assessment (FBA) -based decision model that was created to combine behavioural functional and recorded signs of intent with the forensic classification. The design adopted was a retrospective quantitative observational design with 60 case records of adults with mild or moderate intellectual disability. The antecedent-behaviour-consequence functional coding and the structured capacity indicators were used to analyze behavioural incidents. These incidents were mostly supported by recognizable reinforcement patterns; most of these are escape and attention functions. The use of the FBA-based framework entailed a significantly smaller criminal classification rate than that of conventional interpretation of the law. The statistical analysis showed a significant difference between classification approaches ($\chi^2 = 8.94$, $p = 0.003$), with moderate agreement between methods (Cohen's $\kappa = 0.46$). The results have shown that incorporation of functional behavioural analysis in the forensic decision-making has a significant impact on the result of classification. Organized use of reinforcement patterns and capacity signs can contribute to the accuracy of context and decrease inappropriate criminal labelling. The suggested framework offers an empirically based method of behavioural differentiation within people with intellectual disability and assists the validation of the same in the prospective and multi-site settings.

Keywords *Forensic Assessment, Behavioural Classification, Reinforcement Mechanisms, Capacity Evaluation, Diversion Services, Risk Differentiation, Neurodevelopmental Vulnerability.*

Introduction

The intellectual disabled are overrepresented in forensic and criminal justice systems where behavioural incidents are explained in offence-based constructs as opposed to systematic behaviour analysis. The difference between challenging behaviour and criminal offending is complicated especially in situations where the environmental vulnerability, cognitive limitation, and reinforcement contingency are overlapping. Boer and Iyer [1] highlight the fact that challenging behaviour and offending behaviour conceptually overlap, and hence, improper legal treatment can be caused by mistaking the two. Register based studies have shown that there are specific trends regarding crimes and sentencing performance of people with intellectual disability in forensic psychiatric situations [5]. Longitudinal data also suggest that recidivism patterns of individuals with intellectual disability vary and differ with those without intellectual disability [7]. These results indicate the significance of proper behavioral categorization in justice systems. Interpretation is even made more complex by system-level difficulties. Law enforcers note that it is challenging to locate and respond to intellectually disabled suspects in a proper manner [15], and liaison and diversion services have problems with proper identification in court [16]. Amongst custodial settings, programmed screening assessments have documented inhibitors to proper classification and intervention [11], and training demands assessments in forensic services have revealed inconsistency between professional preparedness [8]. The combination of these findings indicates that categorization of behaviour is often determined by institutional processes and not by the functional assessment which is structured.

Although several steps have been taken in the area of risk measurement and the development of intervention research, there has been minimal empirical study on the assessment of structured frameworks involving behavioural function assimilation and forensic decision parameters. Not many studies have addressed the issue of updating classification results in a systematic review of the inclusion of reinforcement contingencies and recorded signs of intent in comparison with conventional legal interpretation. This gap is filled in the present study through the empirical assessment of a structured Functional Behaviour Assessment (FBA) based decision model in order to not only differentiate between challenging and criminal offending in people of intellectual disability.

The research has three major contributions. To start with, it operationalizes a decision framework in which behavioural function and records of planning and awareness are combined. Second, it is a quantitative comparison of the results of classification using the traditional interpretation and the FBA-based model of law. Third, it offers empirical data on the degree to which the functional integration changes the rate of criminal classification among this population. This research will be conducted to find out whether an FBA-based classification framework can generate various behavioural classification results in comparison to traditional legal interpretation in intellectually disabled individuals.

The research questions that are covered in the study are as follows:

RQ1: Which behavioural functions are observed by structured Functional Behaviour Assessment in persons who are involved in behavioural or forensic incidents?

RQ2: Does the FBA based scheme of classification give different results in comparison to the traditional legal categorization?

The rest of the paper will be organized in the following way. Section 2 conducts a review of the literature on functional behavioural approaches, forensic assessment instruments, and intervention research, in population with intellectual disabilities. Section 3 presents the study design, sampling, coding and statistical analysis. Section 4 shows the empirical findings, such as functional distributions and comparison of classification. The implications and limitation of the findings are discussed in section 5. Section 6 is the conclusion of the paper, where a statistical summary and future research directions will be outlined.

Literature Review

The functional approaches to behavioural assessment have proved useful in determining the reinforcement contingencies that cause difficult behaviour among intellectually disabled individuals. A systematic review of applied behavioural analysis and positive behavioural support in forensic contexts found that functional based interventions are linked with objectively quantifiable results of reducing challenging behaviour when the factors maintaining the environmental conditions are addressed in a systematic way [2]. On the same note, residential based relational and environmental interventions have also been

reported to facilitate safer community involvement in individuals with severe challenging behaviour, a phenomenon that supports the significance of contextual variables in the management of behaviour [20]. Biopsychosocial models also stress the interplay between neurodevelopmental susceptibility and behavioural manifestation especially in challenging sexual behaviour scenarios, highlighting the importance of multidimensional methodological means of assessment [10].

In forensic settings, behavioural prediction has been tested using structured risk assessment instruments to enhance the process of prediction. In the case of the intellectually disabled offender, the predictive validity of the Broset Violence Checklist has been studied in a locked up institutional context, and it is shown that the checklist is useful in the short run in the management of violence-related risks [3]. The studies involving the evaluation of the reliability and validity of adaptive functioning instruments in the context of custodial settings also emphasize the relevance of systematic measurement in the classification procedure [19]. Nevertheless, these instruments are concerned more with prediction of risks and functional capability than the distinction of behaviour maintained by reinforcement and deliberate offending.

Studies on intervention-oriented research have been conducted on therapeutic responses after forensic classification. The case series designs have shown that schema therapy can be effective in those cases of intellectually disabled offenders [6]. The results of meta-analysis show that cognitive-behavioural therapy in groups have the potential to decrease the risk of recidivism in men with intellectual disabilities and sexual offending histories [9]. There is also structured violence rehabilitation programmed which have been developed to focus on behavioural risk within this population [4], and non-pharmacological treatment models of harmful sexual behaviour also focus on the structured approaches to interventions [14]. These research works support the effectiveness of post-classification treatment, but have no direct implications on the effectiveness of the initial classification process.

Further studies have made the complexity of behavioural pathways in intellectually disabled population of forensics more evident. The systematic reviews of in-patient psychiatric care show discrepancy in the effectiveness, patient safety, and experiential outcomes [12]. The conceptual offence-chain models like setting offence sequence of preliminary fire setting among adults with developmental disabilities are shown to display the stratified development of behavioural events and the involvement of environmental triggers [13]. The fact that the prevalence of developmental trauma is high in forensic intellectual disability populations compounds behavioural interpretation [18], and research investigating the co-occurrence of learning disabilities and neurological vulnerabilities indicates that there are other risk factors in the context [17]. Taken together, the literature illustrates significant progressions in the behavioural intervention, risk evaluation, and therapeutic program of persons having intellectual disability in the context of forensic systems. Nevertheless, empirical studies that explicitly combine the functions of Functional Behaviour Assessment with formal forensic classification criteria are scarce. Although the risk tools and therapeutic interventions reflect on management and rehabilitation, comparatively little research has been done to check whether the use of reinforcement contingencies and recorded indicators of intent make significant changes to the outcomes of behavioural classification. The current research paper fills this gap by empirically looking at the influence of an FBA-based decision-making model on behavioural categorization in a forensic setting.

Methods

Study Design

This article used a retrospective, quantitative, observational model to assess a Functional Behavior Assessment (FBA)-based model to differentiate challenging behavior and criminal offending in persons with intellectual disability. The main aim was to find out whether behavioral function analysis should be incorporated with structured evaluation of capacity and intent will generate different classification results to the traditional offence-based interpretation. The unit of analysis was the main behavioral episode recorded in every case file. All participants were asked to give one incident as this guaranteed independence of observations.

Participants and Eligibility Criteria

A total of 60 adults who had mild or moderate intellectual disability formed the sample of the study. Cases were discovered via systematized behavioral and incident records of documentation. Table 1 summarizes the eligibility criteria in the participants.

Table 1 Inclusion and Exclusion Criteria

Category	Criteria
Inclusion Criteria	
1	Age ≥ 18 years
2	Documented diagnosis of mild or moderate intellectual disability
3	At least one recorded behavioral or justice-related incident
4	Sufficient documentation to permit functional (ABC) analysis
Exclusion Criteria	
1	Severe or profound intellectual disability
2	Acute psychotic presentation at time of incident
3	Incomplete or missing behavioural documentation

Demographic information (age, gender), behavioral descriptions, contextual antecedents, consequences, and documented capacity indicators were extracted from case files. All data were anonymized prior to analysis.

Functional Behavior Assessment Framework

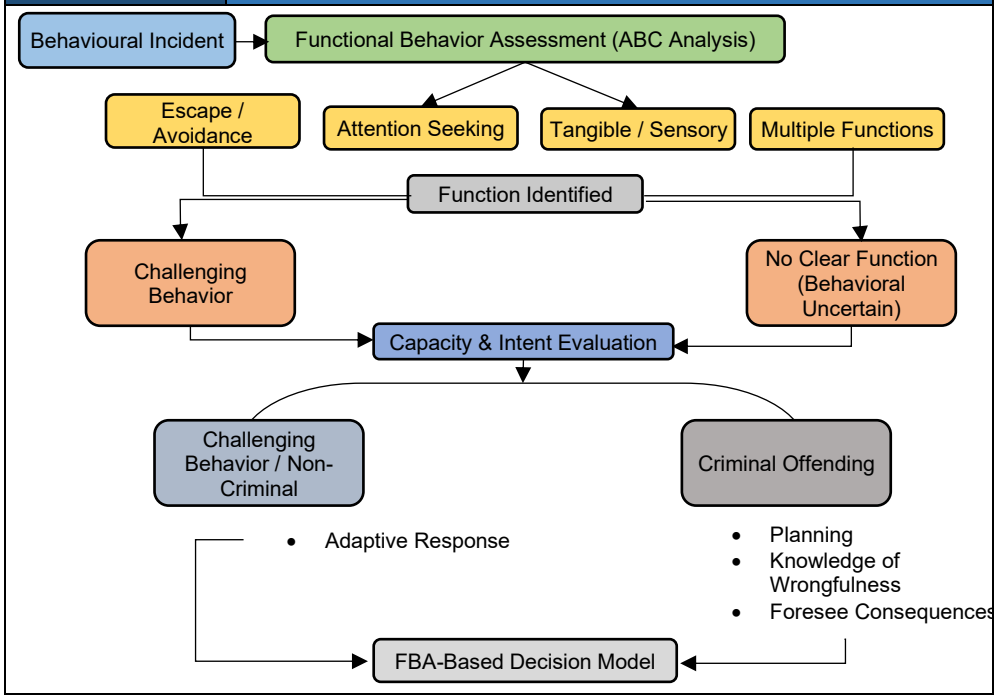
A structured Functional Behavior Assessment (FBA) based on the antecedent-behavior-consequence (ABC) framework was used to analyze the behavioral incidences. The purpose of this analysis was to establish the major maintaining role of each behavioral incident.

The structured assessment process involved:

1. Contextual and vulnerability assessment
2. ABC functional analysis
3. Evaluation of capacity and intent indicators
4. Final behavioral classification

Figure 1 depicts the model integrated pathway of decisions.

Figure 1 Functional Behavior Assessment–Based Decision Model



The model makes sure that the interpretation of behaviors is based on the patterns of environmental reinforcements and cognitive capacity, but not the legal categorization only.

Variables and Coding Procedures

The pre-definition of variables allowed preserving consistency and replicability. The demographic variables were age and gender. The core behavioral event reported in the two cases was the unit of analysis and was classified in terms of behavioral type. The antecedent behavior consequence (ABC) model was used to derive functional variables. The code of the main maintaining function of each incident (escape/avoidance, attention, tangible/sensory, or multiple) was determined regarding the reported patterns of reinforcement. The capacity indicators were the evidence of planning and knowledge of wrongfulness. These scales were marked on a dichotomous scale (present/absent). The ultimate classification was done through a combination of the functional findings and capacity indicators. Decision criteria were predetermined and taken successfully in cases of incidents categorized as challenging, borderline/hybrid, or criminal offending.

Statistical Analysis

The summary of demographic characteristics and behavioral distributions was done through descriptive statistics. The continuous variables are expressed in means and standard deviation, whereas the categorical variables are expressed as a percentage and frequency. The differences in the traditional legal classification and the FBA-based classification were tested by the chi-square test of independence. The statistical significance level was determined at $p < 0.05$. Cohen kappa coefficient was used to determine agreement between classification methods and it was calculated as in equation 1:

$$\kappa = \frac{P_o - P_e}{1 - P_e} \qquad (1)$$

where $P_o$represents observed agreement and $P_e$represents agreement expected by chance.

All the tests were done using the normal statistics programs.

Ethical Considerations

This paper has used retrospective case-based data. This was done through ethical approval up to the institutional requirements. To provide confidentiality and adhere to ethical standards, all identifying details were eliminated before the analysis.

Results

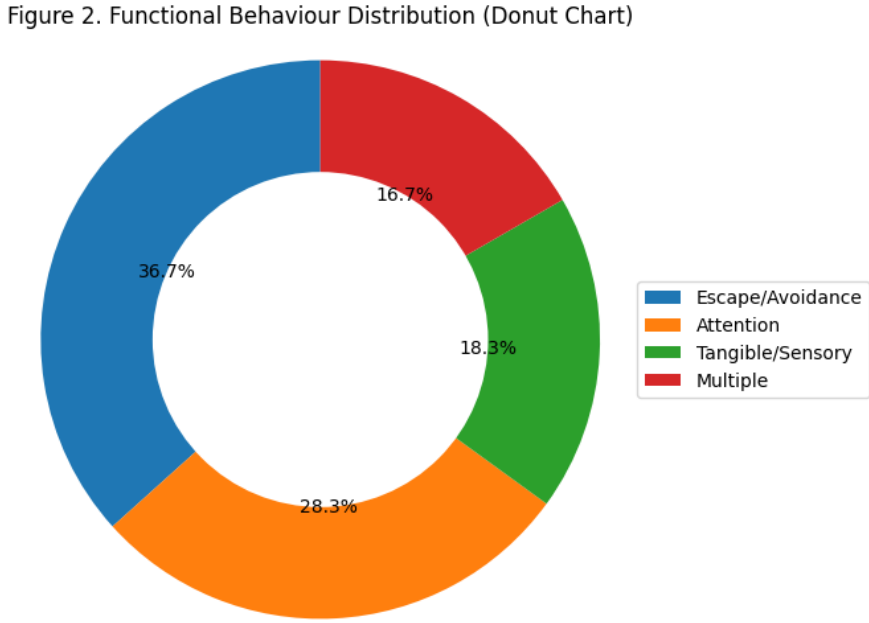
Functional Behaviour Assessment Outcomes

The results of the functional behaviour assessment would be as follows: The behavioural incidents were functional analysis revealed that most of the behavioural incidents were maintained by recognizable environmental reinforcement patterns. The most common function was escape or avoidance (36.7%), which was the next most common (28.3%), and then attention (12.9%). The 18.3% mentioned as Tangible or sensory reinforcement, and the 16.7% showed more than one maintaining activity. The summary of these results is presented in Table 2.

Table 2	Functional Behaviour Assessment Outcomes (n = 60)	
Behaviour Function	**n**	**%**
Escape / Avoidance	22	36.7
Attention	17	28.3
Tangible / Sensory	11	18.3
Multiple	10	16.7
Total	60	100

The percentage distribution of behavioural functions is shown in Figure 2, where the control of behaviours maintenance took by escapes and attention dominates. The fact that most of the cases were concentrated in such categories helps to justify the assumption that most of the incidences were context-specific and reinforcement-based instead of deliberate criminal behavior.

Figure 2	Functional Behaviour Distribution



Behavioural Classification Outcomes

When the decision criteria based on FBA was applied, 60 % of the incidents occurred were categorized as challenging behaviour, 25 % as borderline or hybrid, and 15 % as criminal offending.

These classification outcomes are presented in Table 3.

Table 3	Final Classification Under FBA Model (n = 60)	
Classification	**n**	**%**
Challenging behaviour	36	60.0
Borderline / Hybrid	15	25.0
Criminal offending	9	15.0
Total	60	100

The results have shown that a considerable percentage of the incidence would fail to qualify as criminal offending when the functional and capacity indicators are assessed in an institutionalized manner.

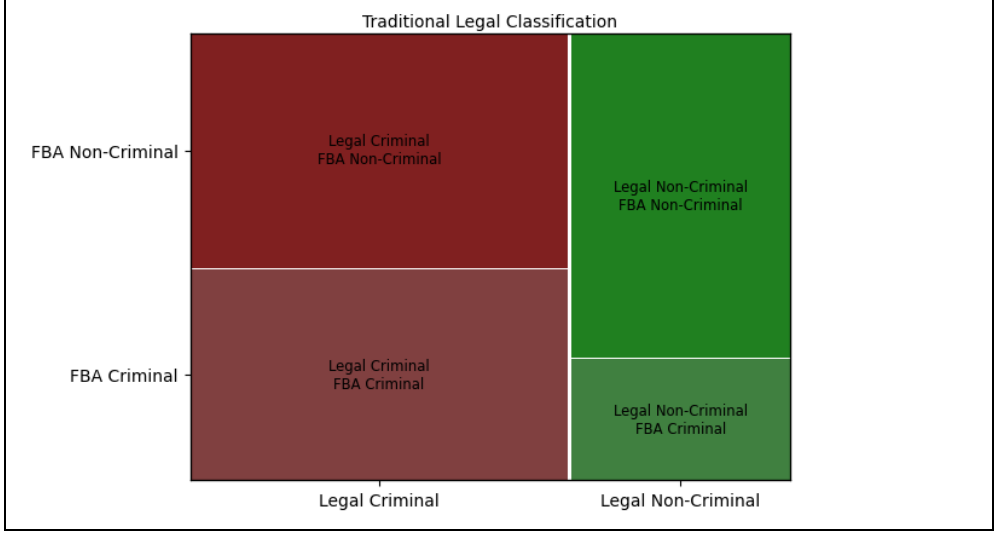
Comparison with Traditional Legal Classification

Compared to the traditional interpretation of the law, 63.3% of incidents were criminalized under traditional legal interpretation and 40 % criminalized under the FBA-based model when borderline cases were combined with criminal outcome cases to allow comparisons between them. Table 4 summarizes the comparison between the methods of classification.

Table 4	Comparison of Traditional Legal and FBA-Based Classification	
Classification Approach	**Non-Criminal**	**Criminal**
Traditional legal	22 (36.7%)	38 (63.3%)
FBA-based model	36 (60.0%)	24 (40.0%)

Figure 3 shows the structural relationship between the two classification approaches and this illustration represents areas of agreement and disagreement in a visual manner. An interesting percentage of the number of cases which were identified as criminal according to the traditional interpretation of the law was reshaped as non-criminal in the context of bringing in functional reinforcement and capacity indicators.

Figure 3 Mosaic Plot of Legal vs FBA Classification



Chi-square analysis confirmed a statistically significant difference between classification approaches ($\chi^2 = 8.94$, $p = 0.003$). Agreement between approaches was moderate (Cohen's $\kappa = 0.46$), indicating partial overlap but meaningful divergence between legal and functional classification systems.

Discussion

The results show that the results of classifying behavioural patterns vary when the functional reinforcement patterns and capacity indicators are included in the forensic assessment. The noted difference between the traditional categorization of the law and the FBA-based framework indicates that offence-based interpretation might not effectively capture the aspects of behavioural determinants in intellectually disabled individuals. The average consensus between methods validates that although there is a certain overlapping, structured functional analysis brings a respectable distinction in the classification decisions. The preponderance of behaviors reinforced underlines that a majority of the incidents are circumstantially determined as opposed to the intentionality of the majority. This reinforces the behavioural models that focus on environmental contingencies in realization of challenging behaviour.

The framework combines functional variables with the written indicators of planning and awareness which give a well-structured process of differentiating between reinforcement-motivated behaviour and deliberate offending. Forensically and clinically, the findings present the need to consider behavioural analysis in classification processes. Formatted functional assessment can facilitate the accuracy of the context and proportionate interpretation in the context of diversion services and forensic evaluation procedures. The framework provides a logical way of aligning the ideas of behavioural science and forensic decision making. There are a number of constraints to take note of. The study was retrospective and was based on the use of documented records, and this possibly limited the accuracy of functional coding. The average size of the sample and a situational source of data restrict the ability to generalize. Also, the coding procedure's inter-rater reliability was not formally assessed, which can affect the reproducibility.

Conclusion

This paper used an empirical assessment of a framework of differentiating between challenging behavior and criminal offending in intellectually disabled persons based on a Functional Behavior Assessment basis. The most common behavioral functions were escape (36.7%), and attention (28.3%). In the FBA-based model 60 % of incidences were categorized as challenging behavior and 15% as criminal offending. Comparatively, the traditional approach to legal interpretation categorized 63.3% of cases as criminal and the FBA-based approach categorized 40.0% as criminal when borderline cases were also aggregated in the comparison. The distinction between the classification methods was statistically important with moderate concurrence. These results prove that the inclusion of functional and capacity signs changes the behavioural classification results materially and

gives a systematic alternative to the offence-based categorization. Further studies are required to investigate the prospective use of the framework using large and multi-site samples, assess inter-rater reliability of coding process formally, and determine whether FBA-informed classification can better influence intervention results and decrease inappropriate criminalization in the context of forensic and community-based settings.

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