

Case formulation in forensic practice: challenges and opportunities

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Abstract

Purpose – *The purpose of this paper is to provide an overview of current practice in forensic case formulation, describing different approaches and discussing some of the practical and ethical issues that routinely arise. The paper further identifies areas where future practice and research might be strengthened.*

Design/methodology/approach – *There is only a very small literature to draw upon in reviewing this topic. Therefore a narrative literature review was undertaken, synthesising findings from published, peer-reviewed studies, and papers that addressed case formulation in psychological practice.*

Findings – *Despite case formation being considered by many to be a core competency of evidence-based forensic practice, it is not currently possible to describe a typical forensic case formulation or advocate for a particular approach to practice.*

Practical implications – *A number of practical and ethical issues routinely arise in the process of conducting a forensic case formulation. Ultimately, the absence of a consistent approach can lead to poor clinical decision-making and the delivery of inadequate or inappropriate intervention.*

Originality/value – *This is one of the few discussions of case formulation that have been prepared for forensic practitioners. It is likely to be of interest to readers of the journal given the importance of the formulation process in contemporary forensic practice.*

Keywords *Psychology, Forensic psychology, Case formulation, Ethical issues, Evidence based, Forensic practice*

Paper type *General review*

Introduction

Case formulation is considered by many to be a core skill for both therapists (e.g. Bieling and Kuyken, 2003) and mental health workers (e.g. Eells and Lombart, 2011). Although it has been described as one of the core competencies required for evidence-based forensic practice (Davies *et al.*, 2013), “there is almost no empirical literature on forensic case formulation” (Sturmey and McMurren, 2011, p. 288), resulting in what Davies *et al.* (2013) refer to as an evidence vacuum. The purpose of this review is to provide an overview of current practice in this area, outline the different approaches to forensic case formulation that have been proposed, and consider some of the practical and ethical issues that can arise during the formulation process.

Given the paucity of literature and guidelines relating to case formulation in forensic psychology, as well as the large variability of methods and construct definitions used in different papers, a narrative review methodology was adopted (Cronin *et al.*, 2008). This approach represents a critique and summary of relevant studies and knowledge that address a specific subject area and is particularly useful when the goal is to synthesise a disparate body of knowledge rather than to answer a specific research question. Relevant studies were identified through a search of the

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PsycINFO database using case formulation as the key word. Full text articles were then reviewed for relevance, with additional articles and books identified in the reference lists of identified papers. We begin this review by discussing what the term case formulation actually means.

What is case formulation?

Several definitions of case formulation have been proposed, many of which describe the formulation in terms of a hypothesis about a person's difficulties which links theory with practice and guides the intervention (e.g. Johnstone *et al.*, 2011). Eells (1997), for example, define the formulation as a "hypothesis about the causes, precipitants and maintaining influences of patient's psychological, interpersonal and behavioural problems" (p. 1). For Tarrier (2006), however, it is important that any hypothesis provides a meaningful account of a patient's problems and is accurate, parsimonious, comprehensive, logical, and functional.

These definitions clearly suggest that the primary aim of any case formulation is to inform intervention (Bieling and Kuyken, 2003), primarily by helping the assessor to better develop a therapeutic relationship (Sim *et al.*, 2005) and by providing a reference point from which to evaluate treatment progress (e.g. Davies *et al.*, 2010). In other words it enables practitioners to develop a coherent set of explanatory inferences – based in theory – that describe and explain why the person has a particular problem at a particular time in a way that can usefully identify possible interventions (Kuyken, 2006). Thus, instead of simply providing a narrative of an individual's life or a description of his or her overall functioning, the formulation aims to explain why a particular person might be experiencing specific difficulties at a given time and in a given context (Bieling and Kuyken, 2003; Misch, 2000).

Indeed, the consideration of context is crucial in the case formulation process, as it is this that allows a deeper and more individualised understanding of the circumstances in which presenting problems arise. These contextual factors are not typically considered in more structured or psychometric approaches to assessment.

In the forensic arena, one of the primary purposes of conducting a case formulation is to better understand risk of future offending and the role that treatment can play in managing this risk. The formulation provides a structure to develop answers to questions such as why the person offends and which are the most relevant factors that maintain the offending. For Logan (2014), the forensic case formulation serves to organise information, to create an understanding of the service contract that is agreed upon between the clinician and the client, to make links between various pieces of information, and to act as "the springboard for intervention" (p. 174). Implementing those interventions that are suggested then allows the formulation to be tested and, ultimately, confirmed or rejected. Lastly, and importantly for those who work in a forensic setting, the formulation is seen as an effective means of communicating risk-relevant information to an intended audience. Logan argues that without a formulation, offenders who have complex presentations (or are not well understood) will not be risk managed with focus, clarity, or confidence, and inappropriate interventions will be more likely to be offered (see also Logan *et al.*, 2011; Reid and Thorne, 2007). This suggests that if case formulation is not undertaken, or perhaps completed too quickly or superficially (or even overdone), then poor decision-making will result (Eells *et al.*, 1998; Hart *et al.*, 2011; Persons, 1989).

According to Sturme (2010), case formulations (regardless of setting or underlying theory or model) share a number of common features: namely, "they are relatively brief; attempt to integrate information into key concepts; provide developmental and maintenance information; provide direction for individual treatment and are tentative/subject to revision" (p. 27). Indeed, the key elements of case formulation relate to all areas of professional psychological practice. Bieling and Kuyken (2003) list these as follows: a description of manifest presenting problems, relevant developmental history, causal factors (distal and proximal), maintaining factors, coping strengths and weaknesses, and guides for intervention. The case formulation is quintessentially a set of hypotheses about how each of these elements is linked. For example, it might elucidate the mechanisms by which sexual abuse as a child (relevant developmental history) led a client to develop mental health issues in adulthood that were relevant to subsequent sexual offending (manifest presenting problems). In this example, the hypothesised mechanisms might include the

social learning of inappropriate sexual behaviour, the behavioural reinforcement of abusive sexual behaviour, the development of cognitive distortions around normal sexuality, the failure to acquire interpersonal skills that would have otherwise led to functional sexual relationships, and the activation of underlying schemas about the self and the world that facilitated sexual abusive behaviour. This knowledge can then be used to identify a discrete set of treatment and risk management targets, as well as identifying those circumstances in which risk is likely to be elevated.

Different approaches in case formulation

Not only do different theoretical approaches to case formulation exist (see, e.g. Johnstone and Dallos, 2006; Sturmey and McMurren, 2011), but a variety of methods of case formulation are used in practice, even within the same discipline. As noted by Day (2016), there is no single correct approach to forensic case formulation; rather, the aim/purpose of the formulation, the specific referral question(s), the intended audience, and the specific matters under consideration will all play a part in the type of approach adopted. Nonetheless, consistent routine clinical practice cannot currently be described (Davies *et al.*, 2010) and practitioner personal preferences seem to prevail. Sturmey (2010) further notes that formulations differ depending on which variables are considered most important, the extent to which the formulation identifies opportunities for intervention, and the role that the therapeutic relationship plays in the assessment process. Whilst some see these differences as relatively unimportant, “others see them as fundamental and irreconcilable” (Sturmey, 2010, p. 27). It is perhaps unsurprising then that some studies have shown low levels of inter-rater reliability between therapists who formulate the same cases (Persons *et al.*, 1995). This is a problem, not only for the development of evidence-based practice (where the concept of reliability is paramount), but also for the way in which the profession of psychology presents itself to the wider criminal justice system.

A number of frameworks are nonetheless available to assist with organising information relevant to a forensic case formulation (Hart and Logan, 2011). One of these, a precursor to the case formulation approach as it is understood today, is Kanfer and Saslow’s (1965) account of behavioural or functional analysis. They proposed a model of understanding clinical problems that took into consideration the individual’s life circumstances, relationships among their behaviours, subjective experiences, and the influence of external/environmental factors. For example, they suggested that the clinician should collect and organise information from a number of areas, such as classifying the problem, motivational analysis (i.e. identifying reinforcers of behaviours), developmental analysis (including biological predispositions and socio-cultural experiences), examining self-control, and analysing the individual’s relationships. This approach is illustrated by a brief clinical vignette reproduced in the text box below (Case Study A).

Case Study A: Jane

Jane is an 11 year-old female who presented with depressive symptoms at home, including lethargy, loss of interest in enjoyable activities, irritability, and wanting to go to bed shortly after arriving home from school. She had also stopped eating, which was causing her parents a great deal of distress. After meeting with Jane, the psychologist Mary utilised basic functional analysis to formulate an explanation of Jane’s symptoms. First, she consulted with Jane’s schoolteachers, who all told her that Jane was “the same” at school, although possibly a little withdrawn. Mary then talked to Jane’s parents, who disclosed that they are currently going through a separation, and have been fighting frequently. On the basis of this, Mary formulates that Jane’s behaviour is most likely motivated by a need to express her distress and sadness regarding her parent’s fighting, and behaviour such as refusing to eat dinner is reinforced by her parents increased attention and efforts to unite to try and get her to eat.

One of the limitations of the functional analysis approach, however, is that it is difficult to measure the utility of the formulation; in other words, the extent to which it is clinically useful. In addition, the inherent subjectivity means that it is difficult to identify and discriminate a “right” from a “wrong”

formulation, and a number of clinical errors may occur as a result of this subjectivity (Nezu and Nezu, 1989). Tarrier (2006) suggests that clinicians may be subject to a number of sources of bias such as:

[...] being overly influenced by recent clinical experience, being too quick to categorise or reach a conclusion on insufficient information and without the flexibility to adjust or modify those conclusions, selectively attending to types or aspects of information and further searching for information based upon a confirmatory bias, and being unable to react to new information in a way that increases accuracy and precision rather than confirms initial impressions (p. 3).

In the case of Jane, Mary may not have considered that Jane's symptoms could be the result of hormonal changes or a medical condition. She also may have not fully considered the possibility that Jane is experiencing difficulties with school peers (e.g. being bullied), which may account for her loss of energy and appetite. Thus, as a result of wanting to confirm her original formulation, Mary may have missed crucial information that would suggest such alternative explanations.

As a successor – and an alternative – to Kanfer and Saslow's (1965) approach of behaviour analysis, Persons (1989) divides the process of case formulation into six parts: creating a problem list; describing the proposed underlying psychological mechanisms; drawing an explanatory link between the proposed mechanisms and the problems on the problem list; identifying the precipitants of any current problems; identifying the origins of the psychological mechanism(s) in the patient's early life; and predicting potential obstacles to treatment based on the resulting formulation. Persons' approach thus takes the antecedents and consequences of a problematic behaviour into account whilst also examining underlying psychological mechanisms in the form of cognitive and information-processing factors (Tarrier, 2006).

Persons (1989) acknowledges that psychological mechanisms are not typically observable, and therefore suggests a number of ways in which the hypothesised underlying psychological mechanisms can be tested (see Tarrier, 2006). The first relates to how well the mechanisms account for the identified problems; in other words, the psychological mechanism has to provide a logical, comprehensive, and parsimonious explanation for the behaviour. Second, the formulation should easily be able to accommodate and be congruent with the client's self-report. The formulation, as an explanation, should also generate specific hypotheses which can be tested in order to support or refute the explanation. Third, the outcome or success of any treatment based upon the formulation can be viewed as hypothesis testing and a test of the formulation itself (a correct formulation should result in effective treatment). Lastly, Persons considers the reaction of the client to the formulation to be the final test; if the formulation makes sense to the client then it should be considered to have validity. For Tarrier (2006), a robust formulation will necessarily be able to survive the rigours of each of these tests.

To return to the case of Jane then, this approach suggests that Mary should examine whether – and how well – her formulation accounts for Jane's presenting difficulties. It should follow logically that Jane would be experiencing distress over her parents arguments, that she may feel scared, confused, and unheard, and that her behaviour allows her to express her emotions in a way she feels safe to. Mary should also then consider whether any conversations she has had with Jane regarding her parents aligns with this formulation or contradicts it – in which case Mary should seek further information and possibly revise her formulation. In terms of hypotheses, Mary's formulation should generate testable predictions – for example, that Jane will answer or react in a particular way to questions during sessions, or will obtain certain results on psychometric tools.

In many contemporary case formulations, information is often organised in accordance with what is referred to as the "5Ps" model, which involves describing the "Presenting problem", "Predisposing/vulnerability factors", "Precipitating factors" (short-term variables that trigger a change in risk or "switch" risk on), "Perpetuating/maintenance factors" (risk-relevant factors that are not likely to change without intervention), and "Protective factors" (Logan, 2014). This approach has many benefits: for example, the concept of protective factors is helpful in informing efforts to rehabilitate rather than to punish, and encourages practitioners to consider and build upon existing safeguards.

An alternative is the “3Ds” model, with the D’s referring to “Drivers”, “Destabilisers”, and “Disinhibitors” (see Johnstone, 2013; Hart and Logan, 2011), although there is considerable overlap between both models. For example destabilisers are similar to precipitating factors and disinhibitors are similar to predisposing factors. One particular benefit of the 3D approach, however, is that it specifically addresses driver/motivators, and so the clinician is able to directly consider the client’s psychological needs (i.e. “what the client expects to achieve”). This approach is illustrated with reference to another brief case study (see Case Study B, below).

Case Study B: John

John is a 39 year-old male who has been convicted of the sexual assault and attempted rape of an intellectually disabled 20 year-old woman. Bill – an experienced forensic psychologist – has been retained by John’s solicitor to perform an assessment and write a report to assist the court when sentencing John.

Bill undertakes a clinical interview with John in order to gain an understanding of his personal history (including his history of offending behaviour and substance use), and administers a number of psychometric tools, including personality and risk assessments. Once Bill has collated this information, he begins to formulate John’s offending using the “5Ps” model. He identifies that John has a predisposition to develop substance use and mental health issues (which John did), and that the upbringing John had (including suffering abuse and extreme instability during his schooling years) led to poorly developed social and interpersonal skills. In addition, John experienced several sexual rejections from females shortly before his offending, which were identified as a precipitating factor. Factors that were thought to have perpetuated John’s offending behaviour included alcohol abuse, lack of social support, mental health issues, and negative attitudes towards women. Two protective factors – John’s positive relationship with several pro-social peers, and a history of stable, full-time employment – were also identified.

Bill then decides to utilise the “3Ds” model in order to conceptualise John’s offending in an alternative framework that considers relevant drivers, destabilisers, and disinhibitors. According to the revised formulation, John was motivated to offend against the young woman as a means to achieve a sense of closeness and connection. However, it also allowed him to express the anger he felt towards women and the long-standing abuse and rejection that he had experienced at the hands of his mother and other females (i.e. displaced revenge was hypothesised to be a significant driver for John). John’s negative attitudes towards women also meant that he felt entitled to “take what he wanted” from them.

As the above case study demonstrates, the “3Ds” approach can be particularly beneficial in understanding the motivations underlying behaviour. This then allows the practitioner to directly consider the client’s psychological needs (i.e. “what he or she expects to achieve”), and translate these into potential treatment needs. By utilising the “5Ps” and “3Ds” model together, Bill was able to identify a range of treatment needs for John, including drug and alcohol counselling, treatment for long-standing depression, social skills development, and anger and attitudes towards women.

Persons (1989) also makes the useful distinction between “overt difficulties”, which are the client’s “real life” difficulties (e.g. observable problematic behaviours), and the underlying psychological mechanisms that underpin these overt difficulties. As outlined by Tarrier (2006), overt difficulties can be described at both the macro and micro levels, where the macro level – or overall explanation – will involve the client’s description and explanation of his or her problem (e.g. I am feeling depressed or anxious), and the micro – or detailed – level which will include a breakdown of the presenting problem into cognitive, behavioural, and emotional components. This will include an analysis of the positive or negative association between these three factors

and their interdependence, where a change in one component will bring about a change in the others. As Tarrier (2006) states, the clinician's subjective interpretation forms these micro details, and, as such, "to be effective the process of case formulation should be collaborative and not imposed, and it needs to take into account and accommodate the patient's views and beliefs about their problem" (pp. 4-5).

In the forensic arena, the "overt difficulty" that a client is facing is often – but is not always – conceptualised in relation to his or her offending behaviour, and the task is accordingly to identify the cognitive, behaviour, and emotional components of the offending. The forensic approach to case formulation has typically been derived from functional analysis methods (outlined above) where the aim here is to establish the purpose of certain behaviour, to specify the variables that maintain the behaviour, as well as to identify more pro-social behaviours that fulfil the same purpose (Daffern *et al.*, 2010). The presenting problem is then contextualised by information about the client's formative experiences, and how these have shaped subsequent beliefs, emotions and behaviour.

A variation of this approach is the criminogenic needs assessment (Casey *et al.*, 2012), the aim of which is to identify those needs that are the most connected with the particular's individual's offending behaviour (i.e. substance use, antisocial/pro-criminal cognitions, antisocial associates). The events leading up to the specific offence are explored, as is the earlier developmental history of the offender, with the aim of arriving at an explanation of both the onset and maintenance of offending.

Using the case of John (above), it is apparent how using the "5Ps" and "3Ds" models can enhance these approaches by drawing attention to the purpose (or drivers) of the offending behaviour and those variables that maintain (perpetuate) it. They may also help to identify more pro-social behaviours that fulfil the same purpose. For John these might include developing pro-social interpersonal connections and perhaps forming an intimate relationship. His presenting problems – his offending, mental health issues, substance abuse, and attitudes towards women, can then be contextualised with information about his formative experiences (such as suffering abuse, and constant social rejection). These, in turn, can help to identify John's criminogenic needs, including the desire for interpersonal connection and, conversely, the need to avenge perceived wrongdoings against him by women.

There are surprisingly few practical guides to help the forensic psychologist develop skills in functional analysis, with the Sturmey and McMurran (2011) book providing the most comprehensive set of readings. Day (2016) also suggests that the forensic practitioner begins an assessment by assessing risk of re-offending (if applicable) utilising appropriate psychometric tools, and then considers psychological functioning and needs (both at the time of assessment and at the time of the offence) which is supplemented and contextualised with information obtained from a clinical interview. This approach has a simplicity about it, as the formulation is always guided by the referral questions and thus has a clear focus and purpose. Day also recommends considering broader theories of crime to explain why the individual may have acted as he or she did and to highlight relevant causal factors. The use of theories of crime advocated here is reminiscent of what Bieling and Kuyken (2003) call a "top-down" approach to case formulation (drawing upon well-validated constructs or theories). It is important, however, that this is carefully integrated with "bottom-up" criteria relating to the reliable, valid, and functional mapping of the formulation onto a client's presenting problems.

Ethical, theoretical and practical issues

Case formulation often appeals to practitioners because it is flexible, idiographic, and applicable across different orientations (Persons, 2006). However, in forensic settings, case formulation is rarely straightforward. The practitioner often has to organise complex, sometimes contradictory, information into a comprehensive formulation that will ideally lead to effective intervention and reduced risk (Gresswell and Dawson, 2010). In addition, any professional working as an expert in a legal context has to be accountable for any opinion as well as have the requisite knowledge and experience (that lie outside the understanding of a layperson)

to do so. Accordingly it is very important to document the evidence that underlies the development of any formulation.

The typical case formulation approach, in practice, relies heavily on the clinical interview. This presents unique challenges that are rarely experienced by those working in non-forensic settings (Logan, 2014). For example, clinicians are expected to gather relevant information from clients who are often reluctant to talk in detail about the reasons for their referral (e.g. risk-taking behaviour, offending behaviour, fantasies) and who may be ambivalent or even openly hostile. The quality of any information obtained from the clinical interview will depend, in part, on the level of insight that the client has, as well as his or her cognitive capacity. It is also important (although not always easy), therefore, to corroborate self-reported data with other sources of information, such as that from schools, employers, and family members. In short, a high degree of participation and collaboration is required for a good case formulation to be developed, and this may not always be possible.

Clinical interviewing skills are important here, although it has been noted that they only form a small component of most practitioner training courses; particularly forensic training programmes (Logan, 2014). Consequently, strong case formulation skills can only be developed by forensic practitioners through work experience or quality supervision by more experienced practitioners. A key issue though is to make every effort to ensure that the forensic case formulation has an empirical foundation, is based on data from assessment tools that have demonstrable scientific merit and validity, and can be defended in a legal setting. There is, in short, little place for personal views or speculations that cannot be substantiated.

It has been argued that the treatment utility of a case formulation is the cornerstone of its value (Hayes *et al.*, 1987). Although it has been suggested that case formulation can help predict and understand treatment failure (Tompkins, 1999), there is almost no evidence to link the use of case formulation with improved treatment outcomes. Indeed, attempts to link formulation with improved outcomes has produced mixed results (e.g. Bieling and Kuyken, 2003; Godoy and Hayes, 2011; Davies *et al.*, 2013). Although, there have been suggestions that the use of case formulation in a mental health context can lower emotional and distress and encourage functional behaviour (Horowitz, 1997; Persons and Tompkins, 1997), as well as increase understanding of problems (Butler, 1998; Persons, 1989; Ryle, 1990), motivation to change, instil hopefulness, and strengthen therapeutic alliance (Horowitz, 1997; Needleman, 1999; Pain, Chadwick and Abba, 2008), Evans and Parry (1996) found no evidence that case formulation increased the perceived helpfulness of sessions, therapeutic alliance, or decreased specific problems. Chadwick *et al.* (2003), in their study of case formulation as part of cognitive behaviour therapy in the treatment of psychosis, concluded that although the formulation strengthened the therapeutic alliance as perceived by the therapist it did not have the same effect from the patient's viewpoint. This is clearly an area that requires further research, specifically in relation to the forensic case formulation.

Finally, a crucial component of the forensic case formulation is how well the formulation can be communicated to the intended audience. Given that formulations are often written for multiple audiences, one of the specific challenges faced by forensic practitioners is expressing their formulation in a way that is relevant and understood by all parties who read it. It has been consistently stated that formulations should be expressed simply, coherently (Hart *et al.*, 2011; Logan, 2014), be clearly written and unambiguous (Day, 2016).

Concluding remarks

This paper provides a narrative review of contemporary thinking about the use of case formulation in the forensic assessment process. The aim is to draw together a body of work in such a way as to encourage reflection and discussion among those who provide assessment services in forensic settings. We suggest that the case formulation approach allows a flexible and individualised understanding of an offender's problems. It is a collaborative process that takes into account the client's beliefs and expectations, formal research, epidemiological information on vulnerability and risk, and broader environmental and social factors. Formulations can also result

in individualised intervention strategies that are specific to the treatment needs of that particular individual. However, this review also suggests that the process of case formulation is often not straightforward, particularly in the forensic area where practical and ethical issues routinely arise that present unique challenges.

Given the current lack of evidence linking case formulation with improved treatment outcomes, it is premature at present to make specific recommendations in relation to practice and potential guidelines when undertaking formulation. However, there is a clear need to standardise practice in formulation before such evaluation can proceed, and this paper represents a starting point for future research and dialogue. For similar reasons, the conclusions that have been drawn throughout this paper are limited in scope. Much of the literature that has been cited reflects practice wisdom from experienced practitioners, but, without any clear evidence base, it cannot be assumed that their suggested approaches will work well across all contexts, or, indeed, across all forensic contexts.

An ongoing challenge for forensic practice is to develop an evidence base to support the use of individualised formulations in case planning. Given this, a clear area for future research is to establish whether forensic practitioners who base their interventions on clear working formulations achieve better treatment outcomes than those who do not. Future research might also examine the quality of different case formulations, as well as the impact that they have on subsequent treatment and management. Checklists, such as those developed by McMurran *et al.* (2012), can provide a more objective way of demonstrating formulation quality and increasing inter-rater reliability. However, and as Davies *et al.* (2013) have noted, the question of how useful or applicable a formulation is may be more important than the question of “how to do formulation”. They argue that case formulation is not a single event, but is a reciprocal and ongoing process between clinician and client, and different approaches and interpretations may be equally valid and, indeed, expected.

More generally, the subjectivity involved in case formulation and the potential for bias is, to some extent, unavoidable. The role that clinical judgement and decision making does and should play here needs to be better understood. Like any hypotheses, formulations can (and should) be subjected to review, modification or rejection in light of new information or consideration of alternative perspectives and yet there is also a responsibility to conduct assessments that are responsible and defensible.

Implications for practice

- Integrate a number of different definitions and approaches to case formulation.
- Identify relevant ethical and practical issues that can arise for practitioners when undertaking case formulation.
- Identify a number of potential solutions and suggestions for future practice and research.

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