Teaching and training

Formulation for beginners

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Abstract

Objective: Developing a formulation is an important method of understanding the people we treat. Writing a formulation need not be seen as burdensome or difficult. Our objective is to provide a framework for the formulation process to make it more accessible for beginners.
Conclusion: We describe a method that beginners can adopt easily and then build upon as their experience and knowledge broadens.

Keywords: formulation, training, psychiatry, assessment

A common misconception of students and psychiatry trainees is that the formulation process is difficult; that to write a formulation you must know all the psychological, biological and social theories. It's not surprising, then, that many are put off the formulation process or avoid it altogether. However, the sooner you start thinking in terms of formulation, even if not overly sophisticated to begin with, the sooner you will think like a psychiatrist. This paper is aimed at beginners to formulation, and their teachers.

Formulation need not be onerous or difficult. Essentially a formulation is a written attempt at understanding a patient. Over the decades it has adopted differing structures, styles and theoretical underpinnings, but at its core the formulation remains the author's best effort at understanding the person in their care. Or, as the Royal Australian and New Zealand College of Psychiatrists puts it: 'Why does this patient suffer from (these) problem(s) at this point in time?'.[1]

Understanding necessarily includes aetiology, so much of the formulation is about identifying *postulated* reasons/factors/causes/mediators for a patient's presentation.

The formulation provides an understanding that becomes the foundation upon which treatment is based. In addition, the formulation provides the written record for communication with others.

The common misconceptions of formulation have been well characterized by Perry et al.[2] in that a formulation:

- is useful only for psychotherapy patients
- is only for trainees and not experienced psychiatrists
- will make treatment inflexible
- doesn't need to be written
- needs to be overly inclusive, elaborate and time consuming

Another misconception is that you have to know a lot about psychodynamics to write a good formulation. You have to know enough about a couple of psychological theories – even a basic understanding is a good start. You should know some of the key ideas in psychodynamic theory; we find Gabbard[3] as well as Mitchell and Black[4] very readable. Beginners, as they progress, will also need to learn about other psychological, biological and social theories too. Dedicated texts on formulation such as The Biopsychosocial Formulation Manual,[5] Psychiatric Case Formulations,[6] and Multiperspective Case Formulation[7] can be useful for the beginner and seasoned formulator alike.

The idea of the formulation is to be broad, and to use theories that are useful in understanding the patient. Sometimes biological reasons will predominate in a formulation, in

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Table 1. Formulation matrix

	Biological	*Psychological*	*Social*
Predisposing	• Genetic • Birth trauma • Brain injury • Illness – psychiatric, physical • Medication • Drugs/alcohol • Pain	• Personality • Modelling • Defences (unconscious) • Coping strategies (conscious) • Self-esteem • Body image • Cognition	• Socio-economic status • Trauma
Precipitating	• Medication • Trauma • Drugs/alcohol • Acute illness • Pain	• Stage of life • Loss/grief • Treatment • Stressors	• Work • Finances • Connections • Relationships
Perpetuating			
Protective	• Physical Health	• Engagement • Insight • Adherence • Coping strategies • Intelligence	

(reproduced from *Psych-Lite: Psychiatry that's easy to read. Selzer and Ellen, 2010, Sydney, page 22, table 4.1* with permission from McGraw-Hill Australia).

another psychodynamic factors may have emphasis, and in another behavioural factors, and so on. Sometimes no one thing predominates and it's a mix of all. As Gabbard[3] points out, a formulation is not about *either/or*, rather *both/and*. In a similar vein, we've moved away from arguments about nature versus nurture and now think more in terms of how nature and nurture interact.

Writing the formulation

There are many ways to write a formulation; below is just one approach. It is a simplified, step-by-step method. As the user gains more experience and theoretical knowledge it can be built upon, varied (or even jettisoned in favour of a better way).

It is also worth noting the RANZCP also provides a formulation framework in their Formulation Guidelines for Candidates.[1]

Step 1. Write a summary paragraph

This introduction is a brief description contextualizing the patient and their issues. It may include relevant key mental state findings.

Step 2. Identify obvious aetiological data

The formulation uses data (from the past and present) to develop a hypothesis about the patient's current presentation. The first basic task then is to identify the relevant data. What stands out in the history? Let's call these the obvious data. You'll identify these easily. For example, drug use and non-adherence to medications are usually fairly obvious pieces of data.

Step 3. Use the formulation matrix to
a. Structure the data and
b. Prompt identification of other data/theories

Table 1 is an example of a standard 12-box formulation matrix (with some helpful prompts). The arrows indicate that factors in one matrix may be active in another. Use the formulation matrix to structure the obvious data, putting them into the appropriate matrix box.

For example, a depressed patient with cognitive impairment describes multiple head injuries and periods of unconsciousness several years back – you would note these injuries in the *predisposing biological* box next to *brain injury*.

Once you have inserted the obvious data, it's time to check through the matrix prompts to see if there is anything else you can add in any other of the boxes. The prompts act to jog your thinking. Notice that some of the prompts are data based (e.g. medication) whereas others are more theoretical (e.g. defences).

Start filling out the boxes vertically – first all the biological boxes, then all psychological boxes then the social – using the prompts in each box to stimulate your thinking. Ask yourself, 'is it possible that this [prompt] has relevance in this case?' Not all prompts will. No matter if you don't know all the prompt theories, later in your training you'll be able to see how the facts and theories relate.

For the patient example above, on glancing at the medication prompt you recall he was started on a beta blocker just prior to his presentation. This can then be noted under *precipitating biological* box next to *medication*.

If you have identified data for which there is not a prompt then just place it the box that seems like the best fit. The prompts are by no means comprehensive! We've tried to keep the table as simple as possible, so there will undoubtedly be many occasions when you'll have data that we have not included as prompts.

Mostly, figuring out which row the historical data fits into is not too difficult. A distant event is *predisposing* and a very recent one is *precipitating*. *Protective* is usually fairly obvious. Sometimes precipitating factors are ongoing and act to *perpetuate* the symptoms as well. In this case you can put it in both places, or make a choice as to which is most prominent.

If it's difficult deciding into which box data should go, ask yourself, 'What theory (think *prompt*) would make sense of this data to explain the current presentation?'.

For example, a young man has lost his job. Recent job loss might play a prominent role in the presenting picture through *precipitating psychological losses* in a man who was invested in his job as a reflection of his sense of self. But in a person who wasn't attached to the job per se, the key effect of job loss might be via financial strain. In which case *precipitating social finances* is the relevant prompt. You have to decide on the significance of the job loss to this man. Then you put job loss next to the appropriate prompt(s).

Another example: a young man presents with poly-substance abuse on a background of a father dependent on alcohol. You would have no trouble identifying that there may be a *genetic* component so you write 'father dependent on alcohol' next to the genetic prompt in the *predisposing biological* box. If the son witnessed his father drinking often (say, in response to stress) you might include 'father dependent on alcohol' under *predisposing psychological modelling* as well.

Social factors may be so pervasive that they may have a role in predisposing, precipitating, or perpetuating the presentation. Nonetheless, you can make an educated guess as to when you think they had the most impact, or you can highlight them in multiple boxes. In the case of social protective factors, these include all of the factors within the social domain that can serve to buoy and protect the individual.

In reality it doesn't matter too much if you don't put some of the data into the 'right' box or next to the right prompt. Often there is no one 'right' box or prompt. But try to note the important data and how it contributes to the presentation so it is clear in your mind. Over time and with experience you'll develop your own matrix prompts.

Step 4. Connect data to the present via the theory

In other words, describe how this data explains the *present circumstances* for this patient. A theory will connect data to presentation.

We have done some of this already in the above examples. The young man who witnessed his father's drinking – the theories that may help explain his presentation are *modelling* and *genetics*. Another example: a 29-year-old depressed man has several close, married friends, but he has not had a prolonged intimate relationship; a theory that may aid in understanding his presentation is Erikson's Developmental theory (Intimacy vs. Isolation).[8]

Not every piece of data in the table needs to be used in the written formulation – the table is used for brainstorming, the formulation is the more considered end product.

Step 5. Write out the formulation reading the matrix horizontally

Next, whilst you filled out the matrix vertically, now you write out your formulation reading from the matrix horizontally. You do this as it makes more narrative sense to move from the past (predisposing) to the present (precipitating) to the future (perpetuating) and ending on the protective. You're trying to tell a story of someone's life, namely, how they arrived at this point and what factors have been important.

Always remember a formulation is a *hypothesis* based on data to explain the present. It will change as more is learnt about the patient and their circumstances.

For example, after completing the matrix as shown in Figure 1 we can write out the formulation below:

> Jenny is a 30-year-old temp-agency worker, living with her de-facto partner in a tenuous relationship. She was admitted 12 days ago following a manic relapse on the background of a decade-long history of relapsing, severe bipolar disorder and alcohol abuse.
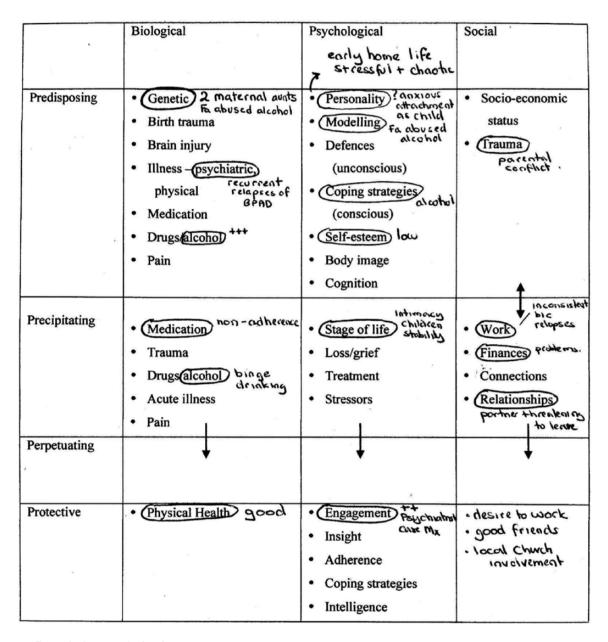
	Biological	Psychological *early home life stressful + chaotic*	Social
Predisposing	• (Genetic) *2 maternal aunts Fa abused alcohol* • Birth trauma • Brain injury • Illness – (psychiatric), physical *recurrent relapses of BPAD* • Medication • Drugs/(alcohol) *+++* • Pain	• (Personality) *? anxious attachment as child* • (Modelling) *Fa abused alcohol* • Defences (unconscious) • (Coping strategies) *alcohol* (conscious) • (Self-esteem) *low* • Body image • Cognition	• Socio-economic status • (Trauma) *parental conflict*
Precipitating	• (Medication) *non-adherence* • Trauma • Drugs (alcohol) *binge drinking* • Acute illness • Pain	• (Stage of life) *Intimacy children stability* • Loss/grief • Treatment • Stressors	• (Work) *inconsistent b/c relapses* • (Finances) *problems* • Connections • (Relationships) *partner threatening to leave*
Perpetuating	↓	↓	↓
Protective	• (Physical Health) *good*	• (Engagement) *++ Psychiatrist case Mx* • Insight • Adherence • Coping strategies • Intelligence	• desire to work • good friends • local church involvement

Figure 1. Formulation matrix for Jenny.

(original table reproduced from Psych-Lite: Psychiatry that's easy to read. Selzer and Ellen, 2010, Sydney, page 22, table 4.1 with permission from McGraw-Hill Australia).

Her symptoms on admission (e.g. believing she was a Hollywood actress) appear to have ameliorated and she is due for discharge soon.

Jenny has a genetic vulnerability to bipolar disorder, having two maternal aunts diagnosed with the condition. There may also be a genetic component to her alcohol abuse as her father was a heavy drinker. Several untreated relapses into depression and mania have further primed her for this current relapse.

The seeds of future emotional distress were sown early. She describes her father drinking excessively when under stress – perhaps modelling a coping style Jenny was to use as an adult. His drinking binges were followed by long absences from the family, perhaps contributing to Jenny's sense that relationships are unstable. Jenny describes her mother's persistent smouldering fury and distance – potentially leaving her unavailable to care for Jenny.

Jenny's current frantic efforts at maintaining unsatisfying relationships might be seen as a reflection of an anxious attachment style. Her low self-esteem and reliance on others to make decisions leave her prone to exploitation, further eroding her self-esteem or sense of mastery.

The trigger for the current relapse appears to be non-adherence with prescribed medication preceded by an alcohol binge. This occurred in the context of Jenny's partner threatening to leave her – bringing into sharp relief their tenuous relationship and absence of children, in contrast to her married peers with families.

Jenny has worked a series of different jobs, most of which were foreshortened by relapses of her bipolar disorder and subsequent hospitalizations. Financial stress is ever present, rekindling noxious childhood memories and threatening her sense of security. Binge drinking to escape her predicament compounds non-adherence to medication thereby furthering her relapses in mania, which becomes a viscous cycle.

Jenny does, however, have a series of kind, caring friends. Her desire to re-establish involvement in her local church is positive, as is her willingness to engage with her case manager and psychiatrist. She is thankfully physically well despite many years of binge drinking. Whilst not academically minded, Jenny conveys a desire to learn new skills and find meaningful work.

Conclusion

Formulation is a skill, and as such it requires practice. It is akin to cooking. One must identify the right ingredients (the data), mix them in the right amounts (the emphasis placed on the data) and then cook at the right temperature (write the explanation in a coherent, logical way).

Above we have described just one way of writing a formulation. There are many styles of cooking; so too with formulation. We hope this simple method starts beginners on a long career of thinking and writing in terms of formulation, in time developing their own style and sophistication.

Formulation should be seen as assisting good practice and the development of good habits, and not as something that is only useful in passing exams.

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