

The Teaching of Case Formulation in Canada*

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Prompted by the Council on Education and Professional Liaison of the Canadian Psychiatric Association, the authors surveyed the program directors and senior residents of departments of psychiatry on the teaching of case formulation skills in Canada. The results showed that case formulation is taught formally in most departments and that students are expected to demonstrate these skills throughout their training. However, less than one-half of the teaching programs provide guidelines for case formulation. The residents, who expected case formulation skills to be assessed in the oral examinations of the Royal College, were unanimous in their view that the process should be standardized and that guidelines be provided. Both the program directors and the residents favoured a biopsychosocial format for recording case formulation, but they did not agree on the content of an ideal formulation.

Formulating case material is considered a core clinical skill of everyday psychiatric practice. However, unanimity on the content and emphasis of formulation is lacking. Guidance from standard textbooks is often cursory and, if any reference is made to formulation at all, the opinions are not uniform (1). A number of journal articles on formulation were recently published (2-4), re-emphasizing the central importance of the case formulation in clinical work yet failing to provide a clear definition of the term or providing a consensus on how to complete the task.

Although several models or formats of case formulation are presented in the literature (2-11), five of which originated in Canadian medical schools (5-7,10,11), they differ in their content and emphasis. For example, some include a treatment plan (11) or emphasize psychodynamics, whereas others do not (2,8,11). The variety of available models has been a mixed blessing — educators and students have a number of formats

to choose from but this diversity leads to confusion about terminology, the essential content and the appropriate emphasis of an ideal case formulation. For example, the terms “formulation”, “case formulation”, “diagnostic formulation”, “psychodynamic formulation” and “dynamic formulation” are considered by some to be synonymous and by others to be separate and distinct.

Suspecting that confusion about case formulation was widespread, the Council on Education and Professional Liaison of the Canadian Psychiatric Association decided to study the teaching of case formulation in Canada. During preliminary discussions, it was noted that only four published studies had obtained the opinion of educators, practitioners or students on the nature, content and format of formulations (5,11-13) and that the last survey of Canadian opinion, by Ross and Leichner (13), was reported in 1986. Building on these previous studies, the council defined four objectives for this study: to obtain up-to-date information on the quantity and nature of teaching case formulation skills at Canadian medical schools; to assess educators' and students' opinions on the content of an ideal case formulation; to determine whether or not there was a perceived need for standardized guidelines for case formulation by both educators and students; and, if so, to develop a position on a definition and content description which could command a broad consensus among educators and students. This paper reports on the first three objectives.

Method

A questionnaire was prepared to assess a variety of aspects concerning case formulation including: the amount, type and timing of formal instruction in case formulation provided to residents; the expectations of when and where residents should prepare a case formulation (for example, inpatient care, psychotherapy patients); and the views of the program directors and the residents on what a case formulation should contain.

Most questions were concerned with the respondent's assessment of the content of an ideal case formulation. The questionnaire was made up of stem statements from the available literature on formulation formats. Forty-three different statements were listed, and the respondent was asked to presume that the report concerned a case for which there was sufficient clinical information to report on all of the 43 items. Respondents were asked to indicate whether the item was “essential in all circumstances,” “important but not essential,” “essential in specific circumstances” or “can be excluded” and were encouraged to answer as representatives of their school rather than providing personal opinions.

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Table I
Formal Teaching of Case Formulation Skills

	Program Directors (n = 13)		Residents (n = 13)	
	n	%	n	%
Schools providing formal instruction in case formulation	10.0	77	9.0	69
Mean hours of formal instruction on case formulation	8.3	range = 1 to 40	7.5	range = 1.5 to 40.0
Schools providing a guide to case formulation	6.0	46	4.0	31
Schools providing instruction in case formulation in preparation for the Royal College oral examinations	7.0	54	10.0	77
Mean hours of formal instruction on case formulation in preparation for the Royal College oral examination	8.2	range = 2 to 20	1.9	range = 0.75 to 5.0

In addition to the 43 stem statements, respondents could suggest up to three additional items that should be included in an ideal formulation. Finally, they were asked to indicate the ideal length of a written and spoken formulation and whether or not they agreed that there was a need for uniform, comprehensive guidelines for use in post-graduate training programs throughout Canada.

A draft of the questionnaire was reviewed by the Council on Education and Professional Liaison and subsequently revised. It was sent to two program directors from Eastern schools and one from a western school for their comments; a second revision was made and approved by the council. The final version was mailed to the directors of all programs in Canada. Unfortunately, it was not possible to translate the questionnaire into french, and despite several attempts to elicit responses from francophone schools, only one was received. Thus, this report is based on a 100% (n = 13) response rate from program directors or acting program directors at the anglophone universities. A similar version of the questionnaire was mailed to the senior resident, who was identified by the program director, with a 100% response rate.

Results

Teaching of Case Formulation

As might be expected, there was a disagreement between the program directors and the residents about whether or not formal instruction in case formulation was given at a specific

school (see Table I). According to the program directors, ten of the 13 programs (77%) provided formal instruction in case formulation and the mean number of hours devoted to this topic was 8.3 (range = one to 40 hours). According to the residents, only nine of the schools (69%) provided formal instruction, for a mean of 7.5 hours (range = 1.5 to 40 hours). At three schools, there was a disagreement between the program director's and the resident's perception of whether or not there was formal instruction in case formulation. Two program directors stated that such instruction was given, but the residents from those programs stated it was not. At one school, the program director said there was no formal instruction, but the resident stated that two hours of instruction were given in both the first and second years of training.

Six of the program directors indicated that they provided their residents with guidelines for case formulation and, at two of these six schools, the guidelines had been approved by the school's post-graduate education committee. Only four of the residents indicated that their school provided guidelines for case formulation, two of which had been approved by the postgraduate education committee. One resident, whose school did not provide guidelines, noted: "A guide is absolutely necessary. Everyone disagrees and the residents are left very confused."

Ten of the program directors indicated that their schools provided preparatory interviewing courses for the Royal College oral examinations and, in seven of these schools, case formulation was taught specifically. Two did not know the amount of time allocated to instruction in case formulation, and the remaining five program directors indicated that a mean of 8.2 hours (range = two to 20 hours) was devoted to specific instruction in case formulation. Ten of the residents stated that their schools had preparatory interviewing courses and that case formulation was taught specifically. Three residents did not know the time allocated to instruction in case formulation during these courses; for the remaining respondents, the mean number of teaching hours was 1.9 (range = 0.75 to five hours).

Disagreement between the program directors and residents occurred when they were asked to identify the year (or years) in which instruction in case formulation was given (see Table II). Generally, the program directors indicated that formal instruction was given during the earlier years of

Table II
Years in Which Training in Case Formulation Skills was Offered

	Program Directors (n = 10)*	Residents (n = 9)*
First year only	5	2
First and second year only	1	3
Second year only	0	1
All but second year	0	1
First and last years	2	1
All four years	2	1

*Only program directors and residents from those schools who provided formal instruction in case formulation answered this question.

Table III
Expectations that a Case Formulation is Needed (by Setting)

	Program Directors (n = 13)		Residents (n = 13)	
	n	%	n	%
Formulations required on the charts of all inpatients	7	54	2	15
Formulations required on the charts of all outpatients	7	54	3	23
Formulations required on the charts of all psychotherapy patients	9	69	7	54

training, whereas the residents stated that instruction was given in all four years of training.

Expectations of Residents

Since the practice of a skill may be influenced by the expectations of the supervisors of that skill, we asked the program directors and the residents about their school's expectations concerning the formulation of case material in different settings. Two directors indicated that a case formulation was always expected when a case was presented at grand rounds; three expected it 75% of the time, five expected it 50% to 74% of the time, and three expected it less than one-half of the time. Of the residents, one noted that a formulation was always provided at grand rounds, four noted that it was provided more than one-half of the time, and eight noted that it was provided less than one-half of the time.

Policy concerning clinical records and their supervision may also influence the teaching of formulation skills. We therefore asked the program directors and residents whether or not a case formulation was required for three specific types of patients: inpatients, outpatients and those undergoing psychotherapy (see Table III). Seven of the program directors (54%) stated that a case formulation was required on all inpatient and outpatient charts, and nine of the schools (69%) required a case formulation on the charts of all psychotherapy patients. This level of requirement was higher than that perceived by the residents. Two residents (15%) stated that a formulation was expected on the charts of inpatients, three

(23%) on the charts of outpatients, and seven (54%) on the charts of psychotherapy patients.

Whether or not these formulations, once they had been prepared, were checked and corrected depended on the setting (see Table IV). The program directors indicated that 71% of formulations on inpatients were supervised more than one-half of the time. Only two residents indicated that their school expected a formulation on an inpatient chart; one indicated that it was checked more than one-half of the time, and the other that it was never checked.

Twenty-nine percent of the program directors who expected a case formulation on outpatients indicated that it was supervised more than one-half of the time, and 71% indicated that it was supervised less than one-half of the time. Only three residents stated that they were required to provide a formulation for outpatients; all three indicated that these were supervised more than one-half of the time.

For psychotherapy patients, nine schools expected a case formulation on the chart. In seven of those schools, the formulation was supervised more than one-half of the time; one school graded these formulations less than one-half of the time; and the remaining school had just introduced the requirement that a case formulation be on the chart of psychotherapy patients but had no data on the frequency of supervision. The residents stated that seven of the schools required a case formulation on psychotherapy patients; at five of these schools, the formulation was checked more than one-half of the time. At one school the formulation was checked less than one-half of the time. The resident from the

Table IV
Supervision of Formulations

	Program Directors		Residents	
	n	%	n	%
Formulations on inpatients	n = 7*		n = 2*	
• supervised more than one-half of the time	5	(71%)	1	(50%)
• supervised less than one-half of the time	2	(29%)	0	
• never graded	0		1	(50%)
Formulations on outpatients	n = 7*		n = 3*	
• supervised more than one-half of the time	2	(29%)	3	(100%)
• supervised less than one-half of the time	5	(71%)	0	
Formulations on psychotherapy patients	n = 9*		n = 7*	
• supervised more than one-half of the time	7	(78%)	5	(72%)
• supervised less than one-half of the time	1	(11%)	1	(14%)
• no answer	1	(11%)	1	(14%)

*Only those program directors and residents who indicated that a case formulation was expected in these three types of record answered this question concerning supervision.

Table V
Statements Endorsed by More than One-Half
of the Program Directors as Being
"Essential in all Circumstances"

An introductory statement briefly describing the patient, the presenting problem and why the patient presents at this time
A DSM-III-R Axis I diagnosis
A DSM-III-R Axis III diagnosis
A differential of the DSM-III-R Axis I diagnosis
Biological predisposing factors for this illness episode
Biological precipitating factors for this illness episode
Biological perpetuating factors for this illness episode
Biological protecting factors for this illness episode
Psychological predisposing factors for this illness episode
Psychological precipitating factors for this illness episode
Psychological perpetuating factors for this illness episode
Psychological protecting factors for this illness episode
Sociocultural predisposing factors for this illness episode
Sociocultural precipitating factors for this illness episode
Sociocultural perpetuating factors for this illness episode
Sociocultural protecting factors for this illness episode
An attempt to link the phenomenology of the illness with biological, psychodynamic or social factors
The biological intervention plan (for example, amitriptyline 25 mg hs)
The psychological intervention plan (for example, supportive psychotherapy)
The mental status examination
A statement concerning the etiology of this illness episode
A statement of the patient's short term prognosis
A statement of the patient's long term prognosis

school that had just introduced the requirement did not answer this question.

Content of a Case Formulation

From the 43 stem statements taken from the literature, the program directors chose a mean of 22 items ($SD = 10.92$; range = seven to 43) and the residents chose a mean of 15 items ($SD = 5.84$; range = six to 24) as being "essential in all circumstances" in a case formulation. To approximate a consensus, we identified the number of statements that were endorsed by more than one-half of the program directors or the residents as being "essential in all circumstances." Of the original 43 statements, 23 (53.5%) were identified by more than one-half of the program directors as being "essential in all circumstances" (see Table V). More than one-half of the residents identified 17 of the 43 stem statements (39.5%) as being "essential in all circumstances" (see Table VI).

Length of the Case Formulation, Need for a Standard and the Residents' Expectations of the Oral Examination and Eventual Practice

Both the program directors and the residents were asked to identify the length of an average case formulation given orally or in written form. The mean length of a written formulation was one page and eight minutes for an oral presentation. This opinion was shared by the residents and the program directors.

Ten of the program directors agreed that there was a need for standardized guidelines for case formulation, whereas all of the residents stated that there was a need for standardized guidelines for case formulation (ten "strongly agreed," and three "agreed somewhat"). One resident noted: "Formulation is a major weakness in our program. Everyone disagrees about what a formulation is and what it should contain. It is absolutely necessary to have a guide. If there is no agreement the validity of the exercise is in question."

The following two questions were asked only to the residents: 1. What proportion of the mark in the Royal College oral examinations do you think is allocated to formulating the interviewed case? and 2. When you and your colleagues are in practice, in what percentage of cases will you include a formulation of the type you have described? Three of the residents thought that more than 20% of the total oral examination mark was assigned to formulating the case; six thought it was approximately 20%, and four thought that ten percent or less was allocated in this way. In eventual practice, the majority of the residents (54%) thought they would write a formulation in less than one-quarter of their cases, three thought they would do so in more than one-quarter but less than one-half of their cases, and three thought that they would do so in over three-quarters of their cases.

Discussion

Compared with the results of a previous survey of case formulation instruction in Canada (11), our data indicate that case formulation skills are being taught more often to residents in psychiatry and that the teaching has become more formalized. Ben-Aron and McCormick (11) noted that 80% of Canadian respondents believed that the topic was important but inadequately stressed in training; 35% of their 57 respondents reported that the teaching of case formulation was left to individual clinical teachers. Our data show that ten (nine according to the residents) of 13 Canadian schools provide formal lecture or seminar instruction in case formulation, for a mean of 8.3 hours (7.5 hours, according to the residents) throughout the residency program and a mean of 8.2 hours (1.9 hours, according to the ten residents who answered this question) during refresher courses for the Royal College examinations, which are offered by 77% of the schools.

The program directors expected the residents to record a formulation, especially for psychotherapy patients. Supervision of the residents' case formulations varied according to setting; the highest rates were reported according to both the

Table VI**Statement Endorsed by More Than One-Half of the Residents as Being "Essential in all Circumstances"**

An introductory statement briefly describing the patient, the presenting problem and why the patient presents at this time
A DSM-III-R Axis I diagnosis
A differential of the DSM-III-R Axis I diagnosis
Biological predisposing factors for this illness episode
Biological precipitating factors for this illness episode
Biological perpetuating factors for this illness episode
Psychological predisposing factors for this illness episode
Psychological precipitating factors for this illness episode
Psychological perpetuating factors for this illness episode
Psychological protecting factors for this illness episode
Sociocultural predisposing factors for this illness episode
Sociocultural precipitating factors for this illness episode
Sociocultural perpetuating factors for this illness episode
Sociocultural protecting factors for this illness episode
An attempt to link the phenomenology of the illness with biological, psychodynamic or social factors
The mental status examination
A statement concerning the etiology of this illness episode

program directors and the residents for psychotherapy patients. These observations support a common misconception that case formulations are indicated only for those patients in expressive or psychodynamic psychotherapy (2) and that understanding the patient's personality, psychodynamics and resistances has little place in the management of patients requiring treatment with a biological emphasis. Conversely, it could be argued that treating inpatients is an ideal opportunity to learn formulation skills. Large amounts of data are commonly collected on such patients and need to be summarized into a meaningful synopsis. In addition, hypotheses stated in the formulation can be tested against the available data or by obtaining additional subjective and collateral information from available sources. Furthermore, by failing to expect and supervise formulations on inpatients, supervisors indicate to trainees that biological assessment and management takes precedence over understanding and working with psychosocial factors affecting the individual.

In 1980, Ben-Aron and McCormick (11) noted that only 30% of Canadian centres provided guidelines for case formulation. According to the program directors that we surveyed, 46% of schools now provide guidelines, but only 31% of the residents stated that guidelines were provided by their school. Unfortunately, we did not ask why guidelines for case formulation were not provided. It would be useful to know if this was because a consensus on the appropriate content and emphasis could not be reached at a given site, or if it was because of other reasons.

In a specialty where the use of inclusion and exclusion criteria for making a diagnosis is becoming increasingly

common, it seems rational to extend this approach to case formulation. This was done at one Canadian school, where case formulation skills were taught in a two-hour session using an operationalized guide and method for marking the formulation (10). A preliminary study of interrater reliability of the marking scheme showed a high degree of reliability for its overall score ($r = 0.85$, $p < 0.01$) and most of the subitems, indicating that a standardized approach to formulating a case is possible and can be evaluated reliably.

The views of the program directors and the residents — if these can be considered representative of current Canadian opinion — indicate an emphasis on a hybrid of the British model of case formulation (8) and Kline and Cameron's (5) biopsychosocial model. According to our survey, a primary and differential diagnosis should be included, as well as biological, psychological and social predisposing, precipitating, perpetuating and protecting factors. Biopsychosocial formulations of this type have been criticized for "lacking detailed guidance in the specific area of psychodynamic formulation" and for failing to be truly integrative (3). Our results show that both the program directors and the residents felt that an ideal formulation should contain a statement on the etiology of the illness episode as well as an attempt to link the phenomenology of the illness with biological, psychodynamic or social factors. Their comments suggest that psychodynamics and integration are desired qualities of formulations.

More than one-half of the program directors indicated that the biological and psychological intervention plan and a statement on the prognosis should be included in the case formulation; however, the residents did not share this view. Both groups indicated that the mental status examination should be included in the formulation, a view shared by the British model of case formulation (8) and Kline and Cameron (5) but not by other authors (2).

Given the amount of information which the program directors and the residents expect in a formulation, it was surprising that they agreed that the ideal length for a written formulation was one page and, for a spoken formulation, eight minutes. Perry et al (2) suggest a length of 500 to 750 words, and the examples provided by Cameron et al (12) approximate this length.

Three of the program directors did not believe that there was a need for standardized guidelines for case formulation, whereas all the residents perceived such a need. We did not ask them why they believed standardized guidelines were unnecessary but one program director noted the following on the questionnaire: "Different schools emphasize different aspects of the formulation and utilize different conceptual models for assessing and integrating clinical material." Three residents lamented the lack of agreement on what a case formulation should contain, and one noted that case formulation appeared to have different meanings to different supervisors working in the same program.

Formulating case material emphasizes the art of psychiatry rather than the science. Cleghorn et al (6) note: "The

formulation organizes clinical data and suggests hypotheses that may be overlooked in multiaxial diagnoses." As the unique features of a patient which are considered in a formulation often refer to data for which we have little scientific information (4,6) it is not surprising that there is little agreement on the content of a formulation. Perhaps the best we can do is to ensure that the biopsychosocial predisposing, precipitating, perpetuating and protecting factors for each patient are assessed in a creative and flexible fashion.

The residents expected their skills in case formulation to be tested in the oral examinations of the Royal College of Physicians and Surgeons, and the majority thought that 20% or more of the total mark of this examination would be allocated to formulating the clinical case. Given their expectations, it is not surprising that the residents would like standardized guidelines, approved by the college, to assist them.

Interestingly, the majority of the residents did not believe that they would use case formulation skills frequently once they had passed the Royal College examinations and were in practice. This raises the possibility that learning case formulation skills is driven by expectations of the examination rather than for the value of the task itself. A more optimistic view would be that once the process of case formulation has been assimilated it may not need to be used in a formal sense but remains as an automatic component of comprehensive patient assessment and management.

Our survey noted some convergence of opinion on the content of a case formulation. What is remarkable is that the process of formulating case material, widely recognized as being a core clinical skill, remains ill-defined and without agreement as to its content. This vagueness may explain the discrepancies between the views of the program directors and the residents surveyed — if a subject is poorly defined then it is unlikely that an agreement can be reached about whether or not it was taught in a specific course. We believe that the variability in when, where and how formulation skills should be used reflects underlying confusion about the very purpose of formulating case material, which is to take into account those features of the patient that are not explained by a diagnostic label but which must be considered in any comprehensive treatment plan.

Existing work on teaching case formulation and the reliability of evaluating formulations shows promise (10). The high rate of response to this survey, the agreement that a common usage should be determined and the continuing emphasis by the Royal College Examining Board in Psychiatry on formulating case material indicate that achieving some standard or consensus, endorsed by the Royal College, is a worthwhile endeavor. This will constitute the next task of the Council on Education and Professional Liaison of the Canadian Psychiatric Association and will be reported in a subsequent paper.

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Résumé

À la demande du Conseil de l'éducation et des relations professionnelles de l'Association des psychiatres du Canada, les auteurs ont mené un sondage parmi les directeurs de programme et les résidents supérieurs des départements de psychiatrie au sujet de la formation en élaboration des cas au Canada. Les résultats indiquent que l'élaboration des cas est enseignée officiellement dans la plupart des départements et que l'on s'attend à ce que les étudiants manifestent ce genre d'aptitude tout au long de leur formation. Toutefois, moins de la moitié des programmes d'enseignement comportent des guides de l'élaboration des cas; de plus, les résidents, qui s'attendaient à ce que les capacités d'élaboration de cas soient évaluées durant les examens oraux du Collège Royal, ont affirmé à l'unanimité que le processus devrait être uniformisé et qu'un guide devrait être disponible. Les directeurs de programme aussi bien que les résidents ont favorisé un modèle biopsychosocial pour une telle élaboration, mais ils n'étaient pas d'accord quant au contenu idéal d'une élaboration.