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Determining What is Important in a Good Formulation

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Abstract. Research suggests that there is low inter-rater reliability between therapists when asked to formulate the same case and that there may be discrepancies in what is considered an essential part of a formulation. The present study aimed to explore the diversity of therapists' viewpoints regarding the purpose and essential features of a cognitive-behavioural therapy (CBT) case formulation of depression. A Q-sort methodology was used in order to render these beliefs operational. Seven experienced CBT therapists participated in the construction of 86 statements, capturing concepts considered relevant to a CBT formulation of depression. This Q-sort was then administered to 23 therapists, who rated these statements in terms of their importance using a Q-sort procedure. Three factors emerged, suggesting three dominant opinions as to the importance of features of a formulation. A "state" CBT factor, focusing on the "here and now", accounted for most variance; followed by a second factor emphasizing "function and process" and a third factor emphasizing "trait" components. Whilst there was some agreement between what was considered to be least important in a formulation, the emergence of three distinct viewpoints suggests a lack of complete consensus amongst the therapists.

Keywords: Formulation, conceptualization, depression, guidelines, CBT.

Introduction

At present, there is a lack of consensus over what should be included in a good formulation (Eells, Kendjelic and Lucas, 1998; Bieling and Kuyken, 2003). Henry and Williams (1997) highlight the need for appropriate guidelines in relation to teaching the skill of formulating. Butler's (1998) framework has to date offered one of the most comprehensive guides. She defines what a formulation should look like, particularly at a situation-specific level. Butler also describes the key purposes of a case formulation, for example clarifying hypotheses and prioritizing problems. However, empirical evidence from Persons, Mooney and Padesky (1995) found low inter-rater reliability between therapists when asked to formulate the same case. The latter work suggests that therapists may hold different views on what a formulation

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should achieve, and what features it should contain. The present study examines both of these features, using a Q-methodology. This methodology was considered appropriate as it provides a means of studying subjectivity, and thus renders "beliefs" operational (Brown, 1997). The Q-sort procedure essentially entails a participant ranking a set of statements, a Q-set, according to an instruction, e.g. sort according to most important to least important. The Q-set is derived from a concourse, which is the total sum of statements on a particular area surrounding a topic (Brown, 1993). The Q-set should therefore, as far as possible, represent all the possible statements that could be generated about a particular topic. Participants judge the value of statements from their own understandings via reflection.

Methodology

Design

The Q-methodological approach consisted of two main phases. The first was the development of the Q-set (i.e. items that capture beliefs about important aspects of a formulation) on the basis of a literature search and discussions with health professionals in the area. The second phase was the administration of the Q-set to a group of professionals who use CBT.

Phase 1: Development of the Q set

Participants. Seven experienced CBT therapists with extensive supervisory experience were included in this stage. Out of the seven therapists, three were identified as "Beckian" in their approach. The remaining therapists were identified as having constructivist, behavioural, interpersonal and cognitive analytic biases.

Procedure. A literature search was conducted in order to obtain a list of statements that captured concepts, or features, of a case formulation. The aim of this was to sample items that were representative of the larger body of literature, thus sampling the diversity of beliefs about the essential features of a case formulation. Defining features were generated and consultation took place with seven experienced CBT therapists, in order to remove items. Items were removed if they were considered duplicated, or did not accurately represent an essential aspect of a formulation. This process resulted in a total of 86 items, which is hereon referred to as the Q-set.

Phase 2: The Q-sort

Participants. Within Q-methodology it is not necessary to have a large number of participants, as the breadth and diversity is more important than the quantity (Brown, 1996). Twenty-three CBT therapists agreed to participate in the Q-sort phase of the study. These did not include the initial 7 involved in the development of the Q-set. Fifty percent were male, 56% were psychologists, 35% nurses and 9% psychiatrists. All of the therapists were either supervising others in the practice of CBT or had completed a diploma in CBT.

Procedure. Each participant was given a case vignette, which gave a brief outline of a depressed gentleman. The instructions given to the therapists were as follows:

"You have decided to treat this gentleman using cognitive-behavioural therapy. When beginning to put together a formulation for him, what features would you consider most essential to include, and which would you consider least essential? You will be given cards specifying the various features considered relevant to a CBT formulation of depression. Please place all of these on the scale provided to indicate, in your opinion, which features are most and least essential".

Participants were then asked to read through and become familiar with the items, before placing them in three piles representing statements that they felt to be most essential, least essential and neutral statements. They were then asked to select three items from the "most essential" pile, which they felt were the most important to place under +5 section on the grid (an example of a completed grid is represented in Figure 1). Following this, they were asked to select three items from the "least essential" pile, which they felt to be least important, under the −5. They were then asked to return to the "most essential" pile and place the next five items, which they felt to be most essential in the +4 section of the grid, and from the "least essential" pile five items under the −4 section of the grid. They were instructed to continue this process, alternating between positive and negative piles, working towards the centre, using the numbers at the top of the grid as a guide as to how many items should be in each section of the grid. They were advised that as they approached the centre they would have to start using items from the "neutral" pile. Participants could move items around the grid until they were happy with their placement. The final completed grid indicated the extent to which each feature was of importance in a formulation.

Results

The Q-set

The 86 statements generated by the seven CBT therapists are presented in Table 1, with items ranked in terms of highest mean scores.

The Q-sort

Following the completion of the Q-sorts, each was entered individually into the PQMethod statistical program (Stricklin, 1992). The analysis was then conducted, which involved each of the sorts being correlated with each other producing a 23×23 correlation matrix. Three factors emerged with eigenvalues above 1.00, and accounting for 49% of the variance in total (Factor A 24%; Factor B 18%; Factor C 7%). These factors were rotated using a varimax criterion. This allowed for maximization of the differences between factors, and produced a three-factor solution (representing three distinct viewpoints of what is of most importance in a formulation, which were considered meaningful in terms of interpretation of the factors). The factor loadings were converted into standardized scores, then whole numbers representing the locations on the scale used (i.e. −5 to +5). Items that were most, and least, characteristic of each factor were examined in order to build a "profile" of the views of factor A, B and C participants.

Also examined, were items that differentiated between the three factors, referred to as "distinguishing factors". These were characterized by those statements that were placed at

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Table 1. An abbreviated Q-set with those items defined as consensus or distinguishing statements across all three factors indicated

↓ = distinguishing statement, with significance at $p < .01$[1]

↖ = consensus statement, with non-significance at $p > .05$

Please note that the prefix provided was: "The most important aspect of a formulation is. . ..".

	Q-item	Factor 1	Factor 2	Factor 3	Mean
46	It explains how problems are maintained	5	5	↓ 2	2.87
66	It is acceptable to the client and others				2.65
54	It helps to make sense of the apparently senseless	4	4	↓ 1	2.52
59	It informs on possible ways to intervene (the how rather than the where)				2.52
1	It identifies typical negative automatic thoughts relating to the self	4	3	↓ −1	2.09
51	It instils hope and optimism	3	4	↓ 0	1.91
53	It acts to facilitate the therapeutic alliance	1	↓ 4	1	1.91
57	It explains depression at an individual level	↓ 5	1	1	1.91
42	It socialises the client into therapy ↖	2	4	3	1.78
2	It identifies typical negative automatic thoughts relating to the world	4	2	↓ −3	1.74
21	It identifies compensatory strategies ↖	2	2	3	1.70
4	It identifies typical negative automatic thoughts relating to hopelessness				1.65
20	It identifies assumptions	↓ 3	2	0	1.61
15	It identifies safety behaviours	↓ 4	↓ 2	↓ −1	1.57
79	It reflects an evolving process				1.57
62	It is informed by cognitive theory	↓ 3	↓ 1	↓ −2	1.48
63	It demonstrates a matching of thoughts, emotions etc	↓ 5	0	0	1.43
9	It identifies specific depressive emotions	↓ 4	↓ 1	↓ −2	1.39
41	It specifies treatment goals				1.35
13	It identifies reactive behaviours	↓ 3	1	−1	1.30
14	It identifies avoidant behaviours				1.30
24	It identifies precipitating events				1.22
5	It identifies negative reasoning biases	2	1	↓ −3	1.17
19	It identifies rules				1.13
3	It identifies typical negative automatic thoughts relating to future pessimism				1.09
22	It identifies core beliefs developed in childhood	1	↓ −1	↓ 4	1.09
23	It identifies core beliefs developed since childhood	↓ 1	↓ 0	↓ 5	1.09
65	It shows a logical consistency	↓ 2	↓ 0	↓ 5	1.00
18	It identifies early experiences	↓ 1	↓ −1	↓ 5	0.96
47	It helps inform relapse prevention				0.96
64	It fits with historical evidence	0	0	↓ 3	0.96
83	It identifies interpersonal schemas ↖	1	0	2	0.83
45	It identifies any obstacles to success				0.78
25	It identifies attachment issues				0.74
17	It identifies recurring triggers				0.70
43	It predicts potential reactions to interventions	↓ 0	2	4	0.70

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Table 1. Contd.

	Q-item	Factor 1	Factor 2	Factor 3	Mean
75	It shifts the individual's experience of their situation ↖	1	1	−1	0.65
44	It prioritises primary/secondary goals	−1	↓ 3	−1	0.52
33	It identifies interpersonal style	0	0	↓ 4	0.48
82	It can be adapted in its presentation				0.48
48	It clarifies the links between distal and proximal features	1	↓ -1	2	0.43
6	It identifies secondary appraisals of the negative automatic thoughts				0.39
12	It identifies physiological reactions	↓ 2	0	−2	0.39
37	It identifies beliefs about the client's own capacity to change	0	↓ 2	−1	0.22
38	It identifies beliefs about depression that the client holds	↓ 1	−1	−1	0.22
80	It indicates where gaps might be	↓ 0	2	3	0.13
77	It indicates when to intervene	↓ −2	3	2	0.04
10	It identifies specific anxious emotions	↓ 1	−1	−2	0
40	It indicates suitability of treatment				−0.04
56	It helps explain co-morbidity				−0.17
16	It identifies a problem list	0	↓ 1	↓ −4	−0.35
78	It acts as a containing event	↓ −2	↓ 0	↓ 3	−0.35
8	It identifies appraisal of autobiographical memories (recurring rumination)				−0.39
58	It offers a psychological understanding to the referrer and others				−0.43
76	It normalises diagnosis	0	↓ −3	1	−0.43
34	It identifies sources of pleasure ↖	−1	−1	1	−0.57
67	It indicates the construct system the patient uses	−2	−2	↓ 1	−0.70
81	It avoids the inclusion of irrelevant information ↖	−1	0	0	−0.70
86	It identifies recent relationship changes	0	↓ −2	1	−0.70
31	It identifies social support	−2	−1	↓ 2	−0.87
36	It identifies life transitions				−1.04
11	It identifies a list of typical symptoms				−1.09
7	It identifies appraisal of autobiographical memories (negative evaluation)	−1	−1	↓ −5	−1.13
61	It serves to enhance the therapist's supervision				−1.17
85	It indicates ways to intervene interpersonally	−2	−2	↓ 3	−1.17
55	It helps identify what to evaluate pre-and post				−1.22
60	It helps to reduce negative appraisals in family, carers and staff				−1.22
84	It identifies the patient's interpersonal style in therapy	−2	−2	↓ 2	−1.22
72	It identifies the patient's ability to self-reflect				−1.26
73	It identifies the patient's learning style	↓ −4	0	0	−1.35
26	It identifies physical health issues	−1	↓ −4	−1	−1.39
50	It is clear and accessible to other therapists				−1.48
29	It identifies living conditions ↖	−1	−2	−1	−1.61

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Table 1. Contd.

	Q-item	Factor 1	Factor 2	Factor 3	Mean
74	It indicates the time-scale of the patient's difficulties				−1.74
39	It identifies beliefs about the therapist that the client holds ↖	−3	−3	−2	−1.87
32	It identifies social roles ↖	−2	−4	−3	−1.87
69	It indicates the ego strength of the individual	↓ −5	↓ −2	↓ 3	−1.96
30	It identifies family background ↖	−3	−3	−2	−2.09
52	It validates the therapy model ↖	−3	−3	−4	−2.22
35	It identifies personality type ↖	−4	−3	−3	−2.43
71	It indicates how much therapy is needed				−2.48
27	It identifies financial factors				−2.78
49	It clarifies diagnosis				−2.83
28	It identifies educational and work history				−2.91
70	It identifies experiences of past therapy ↖	−5	−5	−4	−3.65
68	It tells us who has given the label of depression	−5	−5	↓ −3	−4.30

[1]Items that score highly across all factors are referred to as consensus items. Consensus items are defined as statements whose position on the scale all therapists across the factors agree upon. Other items are referred to as distinguishing items. These are defined as those statements that score highly in one factor and significantly lower in another.

extreme ends of the scale (most and least essential). The further apart the items were placed, the greater the importance when defining the factors.

Despite the emergence of three distinct factors, 13 of the items were considered to be consensus items (items that produced agreement between therapists and had similar placement on the grid for factor A, B and C participants). This is particularly evident at the "least essential" end of the grid, where two groups of items appear to dominate. One group represents those statements describing the stable characteristics of the individual's life (e.g. items 28, 29 and 30). The second group relates to the medical model of diagnosis and case formulation (e.g. items 49 and 70). Consensus and distinguishing items can be seen in Table 1.

Interpretation of factors

Using the information gathered from the rotated factor matrix, the consensus items, the distinguishing items, and the items most and least characteristic of Factors A, B and C, profiles can be built of the views of participants within each group.

Factor A-the CBT state factor. This factor accounted for almost a quarter of the variance (24%) and was defined by the greatest number of sorts (11 participants). A composite profile has been developed to give an example of a Q-sort representing factor A (see Figure 1).

This group of individuals emphasized the state or "here and now" aspects of a CBT formulation as being most essential, represented by items such as: 46. Explains how problems are maintained (+5); 63. Demonstrates a matching of thoughts, emotions etc (+5); 57. Explains depression at an individual level (+5); 1. Identifies NATs relating to self (+4); 15. Identifies safety behaviours (+4); 9. Identifies depressive emotions (+4). This group of

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					86					
					80					
				82	76	53				
				81	64	83				
				61	56	75				
			85	55	45	48	79			
			84	44	43	47	65			
		74	78	36	40	41	59	66		
		72	77	34	37	38	42	62		
	73	52	67	29	33	23	24	51	54	
	71	50	60	26	16	22	21	20	15	
70	49	39	58	25	8	18	19	14	9	63
69	35	30	32	11	6	17	12	13	2	57
68	28	27	31	7	3	10	5	4	1	46
-5 (3)	-4 (5)	-3 (7)	-2 (9)	-1 (12)	0 (14)	+1 (12)	+2 (9)	+3 (7)	+4 (5)	+5 (3)

Least essential Most essential

Figure 1. A composite profile for Factor A, showing the pyramid of Q-items

participants viewed the main purpose of the case formulation as the provision of explanatory power at a situational level. This is expressed through content items one might see in a "hot-cross bun" formulation, with the aim of explaining the client's difficulties in specific situations. Participants did not, however, prioritize items capturing factual information concerning the client's history. Nor did they prioritize items referring to the client's previous relationship with health services; these were classed as least essential. For example, item 70. Identifies experiences of past therapy (−5); 68. Indicates who has given the label of depression (-5); 69. Indicates the ego strength of the individual (−5).

Factor B-process and function factor. This factor explained 18% of the variance and was defined by 6 sorts (participants). In contrast to the other two factors, therapists in this group expressed a shift away from the expression of content-based statements as the most essential features of a formulation. Instead, they emphasized the functional and process aspects. For example, item 59. Informs on possible ways to intervene (how not where) (+5); 66. Is acceptable to the client (+5); 46. It explains how problems are maintained (+5). Thus, this group of therapists place greater importance on the nature of carrying out a formulation and the function it serves, rather than on content features.

Factor C-the trait factor. The third factor accounts for 7% of the variance and is defined by two sorts. However, it represents a significant and distinct set of views as to the purpose and features of a case formulation, with an emphasis on trait or historical aspects surrounding the depression. For example, item 65. Shows a logical consistency (+5), 23. Identifies core beliefs since childhood (+5); 18. Identifies early experiences (+5). These statements suggest the presence of therapists who see formulation as capturing a more longitudinal picture of the individual's situation, beyond the present.

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Despite not being a regular method of presentation within a Q-sort approach, the items in Table 1 are ranked according to their mean rating scores. Those items with the highest values are at the top of the table, while those items rated as being "least essential" are positioned at the bottom. In general, the rankings bear out the findings outlined above, particularly in terms of those items viewed as being least essential (e.g. items 27, 49, 28, 70, 68).

Discussion

This result suggests there are three distinct view points: one group (Factor A) believes that the most essential features of a formulation are explanatory power at a state, or situation-specific, level; a second group (Factor B) place greater emphasis on the function/utility of the formulation; a third group of therapists (Factor C) regard trait features to be the most important. However, despite the emergence of three distinct viewpoints, there was a degree of consensus with respect to what was viewed as the least essential features of a formulation. This category is dominated by factual, demographic and medically-focused information, perhaps stressing the distinction between psychological and medical formulations.

These results highlight the multitude of reasons why a therapist might construct a formulation, and the wealth of information he/she might draw on to explain a client's difficulties. The diversity of view points offer an explanation as to why inter-rater reliability of formulations between therapists may be low (Persons et al., 1995), as it suggests therapists may differ on the aspects of a formulation that are considered to be the most essential. This finding highlights the need for a systematic approach to case formulation, and the requirement of guidelines regarding the key elements of formulations. Such guidelines would clearly have relevance to the supervision and training of CBT therapists. In the present context, one might use the profiles generated to construct a checklist. This could be used to assess whether key features had been included in case presentations. This would be particularly useful in making judgements about case studies submitted on either training courses or for publication. To some extent, the ranking procedure outlined in Table 1 may be the first step in developing such a checklist. However, clearly the items presented in this table would need to be examined in terms of clarity and degree of overlap.

There are a number of limitations with respect to the present study. First, the outcome is limited by the selection of participants carrying out the Q-sorts. Twenty-three therapists were recruited for the sorting stage and whilst this sample did capture experienced clinicians, more participants would have provided greater diversity.

It is also noteworthy that the results are specific to CBT case formulations for depression. Indeed, had therapists been asked to think about formulation in terms of other disorders (e.g. anxiety or trauma), both the Q-set and the configurations may have been different. This is particularly pertinent as the results of a Q-methodological study are dependent upon the quality of the Q-set. In the present case, it is believed Q-set was robust because, in addition to conducting a literature search, health professionals were consulted to ensure the sample was representative of the body of knowledge regarding formulation. Finally, it is common in Q-methodological research for participants to be contacted post-experimentally in order to provide feedback on how their beliefs fitted into the profile descriptions of Factors A, B and C. Due to time limitations, this was not conducted, though this would have served to increase the validity of the factor descriptions.

The study highlights an important issue surrounding variability between what is considered most important in a formulation by therapists who use CBT, and offers an insight into why there may be low inter-rater reliability between formulations. This work clearly suggests the need for a set of guidelines that outline the aspects of a formulation that are most essential. Such guidelines may lead to a higher standard of reliability across therapists. To conclude, this study is exploratory and further research is needed in order to address issues surrounding what influences a therapist's formulation (e.g. culture, training, level of experience) and the importance of inter-rater reliability across formulations. Future research could also utilize this Q-sample, but with clients who have attended therapy, in order to determine what aspects they see as most essential when conceptualizing their problems.

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