Strachan, J., Halliday, G. and Caldwell, E. (2023) Understanding complexity in psychological services: A modified Delphi study. *Journal of Evaluation in Clinical Practice*, 29(4), pp. 682-689. (doi: 10.1111/jep.13716)

Understanding complexity in psychological services: a modified Delphi study

Complexity in psychology: a Delphi study

Strachan, Jenny *D. Clin. Psy*. [1]
Halliday, Greg *MSc.*[2]
Caldwell, Ellie *D. Clin. Psy*.[3]

Corresponding author:

Jenny Strachan, jenny.strachan@nhslothian.scot.nhs.uk, 07972 250 607. West Lothian Psychological Therapies Service, St John's Hospital, Livingston, EH54 6PP.

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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[1] West Lothian Psychological Therapies Service, NHS Lothian, Edinburgh UK.
[2] University of Glasgow Clinical Psychology Training Programme, Glasgow, UK.
[3] Department of Clinical Health Psychology, NHS Lothian, Edinburgh, UK.

Abstract

Rationale, aims and objectives

The concept of patient or case complexity is relevant – and widely used – at all levels and stages of mental health service provision, but there have been few methodologically robust attempts to define this term. This study aimed to establish a consensus on factors contributing to patient complexity in adult psychological services using Delphi Methodology.

Method

Applied psychologists in a single urban/suburban UK National Health Service setting took part in a three-round modified Delphi study. Twenty-eight respondents in round one gave qualitative data on factors they considered when assessing complexity, which was subject to thematic analysis. Twenty-five respondents in round two rated how central/peripheral each theme was to their judgement using Likert scales. In a third round, twenty respondents addressed discrepancies and possible utilities of the emerging framework.

Results

Thirteen factors contributing to patient/case complexity (Active Severe/Enduring Mental Health, Current Coping/Functioning, Engagement, Forensic History, Iatrogenic Factors, Interpersonal Functioning, Neuro-Cognitive Functioning, Physical Health, Problematic Substance Use, Risk, Severity/Chronicity of Presenting Problems, Systemic and Socio-Economic Factors and Trauma) were identified with a high degree of consensus. All were rated as central to complexity.

Conclusions

We conclude that applied psychologists do have a shared understanding of complexity and make recommendations for further research validating, developing and applying this empirically derived framework.

Keywords: psychological, complexity, definition, operationalising, framework development, clinical judgement

Introduction

> You keep using that word. I do not think it means what you think it means.
>
> *Reiner 1987, The Princess Bride* [1]

The concept of patient or case complexity is relevant – and widely used – at all levels and stages of mental health service provision. Service planners must have a sense of approximately what proportions of their population will have more and less complex needs to optimally distribute resources. Triaging teams must have a sense of which services or clinicians are best suited to meet the needs of patients with specific degrees or features of complexity. Clinicians must have a sense of the unique complexities of each patient's formulation to be able to select the focus, mode and intensity of intervention. Yet the absence of a robust and widely-shared method of defining and measuring complexity means that these decisions are typically taken on the basis of sense alone – often called 'clinical judgement' - without the benefit of supporting data.[2]

This absence has an impact in the research context also, with some authors suggesting that untested beliefs among those in clinical practice that their patients are 'more complex' than those included in clinical trials fuels unwarranted scepticism about the applicability of research findings.[3]

Attempts have been made to apply formal methods to defining complexity in other fields. For example, Manning and Gagnon [4] used concept clarification to track the evolving meaning of complexity in medical settings, while Thomas et al [5] used Group Concept Mapping to develop a matrix for scoring patient complexity in district nursing.

Within psychology and mental health there are many articles *about* complexity, some specifically referencing the absence of a shared definition, [6] but few attempting to provide one. Those few authors have typically taken a 'top down' approach to defining complexity, reporting a list of factors perceived to be salient, derived from professional experience, stakeholder survey or caseload review without fully reporting any methodology. [2, 3, 7] The number, breadth and specificity of factors offered varies significantly – see Appendix 1 – and the output is typically presented as a 'preliminary heuristic tool' or similar [3] rather than as a testable model, with numerous caveats about generalisability across individuals, patient populations and service settings.[7]

Delgadillo et al [8] adopted a rare, bottom up or data-driven approach to classification of patient complexity. Analysing data from 1512 patients of an NHS trust's Psychological Therapies service, they identified a series of clinical (baseline scores on the PHQ-9[9], GAD-7[10], WSAS[11]), personality (scores on five items of the Standardised Assessment of Personality – Abbreviated Scale[12]) and demographic (age group, gender, ethnicity, employment status) indicators which cumulatively predicted reliable and clinically significant improvement in measures of depression and anxiety following low or high intensity psychological therapy.

Having empirically derived categorical definitions for each indicator, the authors characterised those patients with a positive score on all indicators - 28.6% of the sample - as ‘complex’ and found that complex patients attained better outcomes if they were initially assigned to higher intensity therapy. The authors proposed that application of this model could be used to improve service outcomes by more robustly identifying complex patients and matching them to higher intensity interventions. However, the proportion of variance explained by the model (up to 15%) was low, the indicators examined appeared to be based on availability of data rather than on *a priori* determined theoretical relevance, and other authors[4] have cautioned against conflating ‘difficult to treat’ with ‘complex‘. This can lead to problematic retrospective and circular reasoning: How do you know a person is complex? Because they are difficult to treat. Why are they difficult to treat? Because they are complex.

Across the UK, government and local health service policies are, rightly, highlighting the need for increased access to appropriate and effective mental health interventions.[13] To achieve this, mental health services need effective collaboration and utilisation of resources. This in turn requires comprehensive information about the patients they seek to serve, as well as a fuller understanding of what constitutes greater and lesser complexity. This study seeks to take an early step towards meeting those needs by developing a clinician-informed shared framework for understanding patient complexity within psychology services.

The Delphi method – that of convening a panel of experts to participate in a series of rounds of data collection and feedback, progressing iteratively towards a consensus – can effectively integrate the top-down and bottom-up approaches previously described. It retains the value of professional expertise and experience whilst managing the risk of omission or overvaluation of specific factors which may arise from reliance on a single expert or focus group.[14] It also avoids the over-inclusion of factors which have been tested because data is readily available, rather than because they are hypothesised to be relevant. The method has previously been used in psychology, for example to establish future directions for research, training and clinical practice.[15]

Aims

This study aimed to develop a consensus on the factors contributing to patient or case complexity in adult psychological services in an urban/suburban UK, National Health Service setting using Delphi methodology. By disseminating this consensus, the intention is to invite other researchers to address such questions as whether the factors are replicable in other settings or whether and how such factors predict patient outcomes, and in doing so to establish the foundations of a robust and useful shared framework.

Ethical Review

The study was approved by NHS Lothian's Research and Development Office as a service improvement project which did not require formal ethical review.

Method and Analysis

Panellists

In keeping with the early exploratory nature of the study, a convenience sample of experienced clinicians rather than a purposively recruited, acclaimed expert panel was surveyed. To preserve anonymity within a small population, panellists were not asked to provide detailed demographic information, but did provide information relating to their clinical experience and current area of practice (see Table 1.). Eligibility criteria were:

i) Trained to accredited doctoral level or higher in applied psychology (e.g. Clinical, Counselling or Health Psychology).
ii) Employed by NHS Lothian in a service providing psychological assessment and intervention to adults (e.g. Adult Mental Health Services – including specialties such as Trauma, Clinical Health Psychology, Forensic Services, Learning Disability Services, Neuropsychology and Older Peoples' Psychology Services).
iii) With access to email/internet, and able to engage with the survey process within the relevant timeframe.

Fifty-nine initial invitations were sent by email, providing information about the proposed study, a consent form, and a link to the survey materials. Thirty-one responded to the initial invitation, of whom three were ineligible for inclusion, providing an initial response rate of 47.5%. Twenty-eight respondents to Round 1 were invited to participate in Round 2, and 25 did so (89.3%). Of these, 20 (80.0%) completed the 3rd Round survey, giving a retention rate of 71.4% from the first to final rounds.

Whilst a lack of specific guidance regarding the minimum panellists required to undertake a Delphi study is an acknowledged criticism,[16, 17] this panel fell well within the general parameters of acceptability cited by methodologists with respect to both panel size (e.g. Linstone and Turoff,[18] N = 10-50) and retention (e.g. Sumsion,[19] >70%).

Delphi procedure

Round one: Data Collection

Following review of the project information and provision of consent, participants were asked two questions:

- "What factors do you take into account when making a judgement about patient/case complexity? (Please comment on as many or as few factors as you think appropriate)"
- "Do you have any other thoughts/comments regarding patient complexity?"

Responses were fully free-text, with no limit on words/characters. They were typically in the form of a list with brief notes for context and were collated using Excel for analysis.

Analysis

Thematic Analysis is a process of discovering and defining patterns of meaning in a body of data. Described as a 'foundational method'[19] Thematic Analysis is not driven by a theoretical approach to data. The process of defining initial codes may be deductive; codes are derived from existing literature and test the data's concordance with prior findings or theories. Alternatively, it may be inductive; original codes are suggested by review of the data itself. The latter approach is particularly useful in relatively new areas of research where appropriate theoretical frameworks are not yet established.[21] Thematic Analysis was selected for the present study for this reason.

An initial review of data was carried out independently by the first and second authors (JS and GH), generating 30 and 31 codes respectively, which they further organised into 22 and 23 themes, see Figure 1. Comparison of the emergent themes indicated a high level of convergence between the two authors' analyses - 56 of 61 codes (91.80%) were allocated to a synonymously titled theme - and a consensus that the number of themes could be further reduced. The third author (EC) facilitated a session in which minor discrepancies in language were resolved and some themes combined into broader factors. One code (suitability for a trainee/assistant) was excluded as this was deemed to be a consequence of judgement of complexity, rather than a contributory factor. The final output included 13 factors, presented in Table 2.

Ten panellists responded to the second question. There were two generic positive comments on the nature of the study. Three panellists used this space to elaborate on or highlight the relative importance of aspects of their first response, a further three referenced sources of information e.g. "previous notes/letters". One panellist noted the working context in which judgements are made:

> "Decisions about the level of complexity services take on is often skewed by the (un)availability of alternative, more appropriate services."

Round Two: Data Collection

Respondents to the first round were sent an invitation by email to participate in a second round. They were asked to review a summary of the results from Round One, then presented with a 7-point Likert scale – ranging from 1 "central" to 7 "peripheral" – and asked, for each of the 13 factors:

- How central are these factors to your judgement of complexity?

Participants were then asked a further two open questions. Again, responses were fully free-text, with no limit on words/characters:

- Do you have any additional thoughts/comments relating to patient complexity since the last round of questioning?
- Do you have any significant disagreement with the current factors identified in this proposed framework? If so, please provide as much detail as possible.

In total, 25 participants – 89.3% of possible participants - completed this round of data collection.

Analysis

Likert ratings were analysed in two ways. Firstly, for each factor a count of the number of panellists assigning each rating was made, allowing for calculation of a consensus score. *A priori*, consensus was defined as >70% of panellists rating the factor as *either* ‘central’ (i.e. a rating of 1, 2 or 3; below the ‘neutral’ score 4) *or* ‘peripheral’ (i.e. a rating of 5, 6 or 7; above the ‘neutral’ score 4). Secondly, for each factor a mean of panellists’ ratings was calculated, allowing for comparison between factors of their perceived centrality (with a lower average rating indicating a more central factor). Results are presented in Table 3.

Twelve of the 13 proposed factors attained the *a priori* definition of consensus at this first rating, most by a significant margin. All were judged to be central rather than peripheral to judging complexity. Mean ratings for the 12 factors attaining consensus ranged from 1.48 (active severe/enduring mental health) to 2.92 (iatrogenic factors).

Seventeen of 25 respondents made no response to the request for additional comments or explicitly stated they had no further comment. Five respondents commented on relationships/connections between some or all of the factors (others cited this as a challenge to rating factors), while three made a case for the relative importance of one or more factors compared with others e.g.

> “I’m aware of how engagement and interpersonal functioning are impacted by many of the other factors listed. From a complexity perspective, many of the other issues are “workable with” if the client is engaged and can form an effective therapeutic relationship”

A ‘quirk’ result:

As per the typical delphi process[17], the intention had been to use a third round to share the collated ratings of the panel and ask panellists to reconsider their ratings in light of the group response. Unexpectedly, 12 of 13 factors had already attained consensus following round 2. The exception was “Socio-Cultural”, which was rated least central (mean of 3.24) *and* had the lowest consensus score (56% central). This was surprising given that in the Thematic Analysis (see Table 2) this factor encapsulated not only the greatest number of themes offered by panellists, but also those most frequently cited.

Examination of qualitative responses provided some insight:

> "… will also likely influence/shape my view of complexity, as will level of social isolation (assuming that this fits under "socio-cultural"). Also assuming that systemic factors (e.g. family/framily) fit in here."

> "Please highlight poverty/deprivation as a factor. If you're including it in "socio-cultural", please make this clear."

Discussion among the authors generated the hypothesis that the label "Socio-cultural" was not adequately representing the themes it was intended to, leading panellists to under-rate the factor. Accordingly, "Socio-Cultural" was re-titled "Systemic and socio-economic factors" (no change was made to the thematic content) and panellists were asked to re-rate this factor in the final round of data collection.

Round three: Data Collection

Participants were asked to review a collective summary of round two responses prior to being asked to rate the re-titled 13th factor *only,* on a 7-point Likert scale as previously. For illustration, participants were shown a prototype of a simple tool to measure complexity based on the analysis so far (see Appendix 2).

Participants were then asked two final open-ended questions:

- "Do you have any significant disagreement with the current conceptualisation of this framework? If so, please provide as much detail as possible."
- "What do you see as the purpose for this framework/What utilities do you feel it may have?"

20 participants completed this round of data collection, giving a response rate of 71.4% for this final Delphi round.

Analysis

Re-titled, "Systemic and Socio-Economic Factors" attained a consensus score of 95% and a mean centrality rating of 1.95 (s.d. 1.00), see Table 4. All 13 factors now exceeded 70% agreement on centrality/periphery, indicating consensus for all factors in the proposed framework.

Of the 20 retained panellists, 15 either made no response to the first qualitative question, or explicitly commented that they had no disagreement with the framework as presented. Three participants commented on specific factors within the framework, including the most recently re-rated factor:

> "socio-economic factors is perhaps the widest and therefore least well-defined part of this framework".

Two participants commented on potential challenges in applying the framework or prototype tool in a service setting, and/or adaptations which may be needed:

> “wondering how I would make the decision between mild/moderate/severe impact for all of the factors, and how this would be consistent/reliable between users”

> “‘engagement’ or ‘physical health’ doesn’t make sense – they need to be reworded as negative issues for the scale to make sense e.g. ‘poor engagement’”

Only one participant made no response to the final qualitative question. Responding panellists identified a range of potential applications for the framework. In order of frequency these were: supporting MDT discussions (N=8), triaging within teams (N=8), supporting formulations (N=6), audit (N=3), triage between services (N=2) and service planning (N=1). Four panellists commented on the value of operationalising complexity in this way:

> “I see this tool as quantifying some of the decisions we make intuitively, so removing ambiguity and unhelpful variation about the way we make decisions.”

Final feedback:

A narrative summary of the Delphi process and graphic representation of the emergent framework (see Figure 2) were returned to all panellists with the authors’ grateful thanks for their participation.

Discussion

With a remarkable degree of consensus reached remarkably quickly, it seems that ‘complexity’ *does* in fact mean what we think it means. Is there, therefore, any value in this project, or have we simply stated the obvious?

In as much as the aim was to provide a methodologically robust basis for further study, we believe this has been achieved. An established protocol has been followed and reported. The high consensus ratings demonstrate that the 13 factors have face validity. That the factors ‘map’ well onto existing studies also suggests concurrent validity – six of the factors have a corresponding factor in every other framework mapped, while none has no corresponding factor (see Appendix 1). One criticism of the Delphi method is that it ‘votes out’ valid but unpopular items.[5] This was not the case in this study, only one first round code was not included in analysis, and the factors are therefore also comprehensive. Given these considerations we propose that the framework is robust enough to warrant further exploration.

One limitation of the present study concerns the range of panellists. As such, a first step should be to try to replicate or otherwise validate these findings, either with an acclaimed expert panel and/or with clinicians working in different contexts (for example in a rural setting, in a developing economy or with a CAMHS population). In doing so, attention should be paid to the question of diversity among respondents. It has previously been noted that applied psychology professions do not well reflect the diversity of the populations they serve[22] and though not explicitly recorded, the respondent population in this study is not an exception. Systemic and Socio-Economic Factors was highlighted as the theme which required most development, and it may be that a more diverse population of respondents would have considered differently issues around race, gender, gender identity, sexuality, etc which it incorporates. Given that many mental health teams are now multidisciplinary, it would be instructive also to compare and contrast this conceptualisation of complexity with that of colleagues in psychiatry, nursing, physiotherapy, occupational therapy and social work with whom our patients are also likely to come into contact.

If the factors are replicated, next steps – as highlighted by panellists - may be to operationalise the factors. For example, how might one define or measure mild/moderate/severe impact of Neuro-Cognitive Functioning and would a formal diagnosis be required – in which case of what and by whom? - or could one rely on patient self-report? Establishing this for all thirteen factors is a substantial undertaking. Alternatively, though clarity and consistency may be required for the research context, sharing the framework at its current level of broad descriptors would leave local services free to define variables (e.g. severity of clinical symptoms) using whichever methods best fit their service context.

Future researchers may also wish to further explore the factors. In the present study, close mean scores between factors do not support a hierarchical model i.e. the hypothesis that any factor or group of factors is more important than the others. Real world data however may suggest otherwise. It is worth noting, as one panellist did, that research findings and service priorities may not perfectly correspond in this regard. For example, a mental health service may have to give most ‘weight’ to the presence of Risk whether or not this factor accounts for most variance in a statistical model.

Linked to the question of the relevant weight of different factors is that of how many of these factors need be present and to what degree for a person to be defined as complex, and is a linear (the greater the number of factors the more complex the case) or threshold (more/fewer than X factors places a person in category Y) model most appropriate? Barton et al[7] said “the number of biopsychosocial factors is not a sensitive measure of complexity”. The reasoning given is plausible but to our knowledge has not yet actually been tested. Of those papers previously defining aspects of complexity [2,3,7], only one [2] specified a number of features – “two or more” - by which they would define a person as complex. Bennet et al [23] commented that “clinicians consider a large proportion of their caseload to be complex” and by this inclusive definition they are probably correct. A higher, and evidence based, threshold would more helpfully discriminate between groups. Though, again, tension is likely to exist between finding a generally applicable definition and allowing individual services to adapt definitions in accordance with their specific populations. It may also be important to consider whether separate protective factors exist, or whether the absence of a complexity factor is itself protective.

Most importantly, research is needed to establish the actual clinical utility of approaching complexity in this way. Delgadillo et al[8] offered early evidence that more complex patients have improved treatment outcomes when initially assigned to higher intensity therapy. Other authors[24] have proposed that even the most complex patients can benefit from simple interventions where there is a sound formulation. By embedding this framework in small scale quality improvement projects within working services – for example by explicitly requesting information on these factors at time of referral, or by explicitly recording complexity as part of service data sets - we can begin to better understand the relationships between complexity and treatment needs. In doing so to facilitate patient choice and improve their experience of the treatment journey as well as therapeutic outcomes.

Conclusion

Reassuringly, the present study suggests that when applied psychologists talk about complexity, we are mainly talking about the same thing, and therefore that a clear, shared and evidence-based understanding of the concept of complexity is not inconceivable. Given the regularity (in the authors' anecdotal experience) with which this term is used in discussions about triage, assessment, formulation, treatment and outcomes for patients, we propose that this study represents an important early step in clarifying and operationalising this term to aid clinical practice and so provide the most efficient and effective services to our patients.

References

1. Reiner R. *The Princess Bride* [DVD]. United States: Twentieth Century Fox; 1987.
2. All Party Parliamentary Group. Factsheet 1: Complex Needs and Dual Diagnosis. https://www.turning-point.co.uk/_cache_7739/content/appg_factsheet_1_-_june_2014-5090910000019640.pdf/. Updated June 2014. Accessed August 4, 2020.
3. Ruscio AM, Holohan DR. Applying Empirically Supported Treatments to Complex Cases: Ethical, Empirical and Practical Considerations. Clinical Psychology: Science and Practice 2006;13:146-162. doi:10.1111/j.1468-2850.2006.00017.x
4. Manning E, Gagnon M. The complex patient: A concept clarification. Nursing and Health Sciences 2017;19:13-21. doi:10.1111/nhs.12320
5. Thomas S, Wallace C, Jarvis P, Davis R. Mixed-methods study to develop a patient complexity assessment instrument for district nurses. Nurse Researcher 2016;23:9-13. doi:10.7748/nr.23.4.9.s3
6. Lomax C, Barton S. Editorial for Special Issue: Complexity within Cognitive Behaviour Therapy. The Cognitive Behaviour Therapist 2017;10:1-2. doi:10.1017/S1754470X17000137
7. Barton S, Armstrong P, Wicks L, Freeman E, Meyer T. Treating Complex Depressions with Cognitive Behavioural Therapy. The Cognitive Behaviour Therapist 2017;10:1-15. doi:10.1017/S1754470X17000149
8. Delgadillo J, Huey D, Bennett H, McMillan D. Case complexity as a guide for psychological treatment selection. *Journal of Consulting and Clinical Psychology 2017;85*:835-853. doi:10.1037/ccp0000231
9. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: Validity of a Brief Depression Severity Measure. Journal of General Internal Medicine 2001;16:606–613. doi:10.1046%2Fj.1525-1497.2001.016009606.x
10. Spitzer RL, Kroenke K, Williams JB, Lowe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. Archives of internal medicine 2006;166:1092- 1097. doi:10.1001/archinte.166.10.1092
11. Mundt JC, Marks IM, Shear MK, Greist JM. The Work and Social Adjustment Scale: A simple measure of impairment in functioning. *The British Journal of Psychiatry 2002;180*:461–464. doi:10.1192/bjp.180.5.461
12. Moran P, Leese M, Lee T, Walters P, Thornicroft G, Mann A. Standardised Assessment of Personality – Abbreviated Scale (SAPAS): Preliminary validation of a brief screen for personality disorder. British Journal of Psychiatry 2003;183:228-232. doi:10.1192/bjp.183.3.228
13. Scottish Government. Mental Health Strategy: 2017-2027. https://www.gov.scot/publications/mental-health-strategy-2017-2027/. Updated March 2017. Accessed August 4, 2020.

14. Clayton MJ. Delphi: a technique to harness expert opinion for critical decision-making tasks in education. Educational Psychology 1997;17:373-386. doi:10.1080/0144341970170401
15. James RL, Roberts MC. (2009), Future directions in clinical child and adolescent psychology: a delphi survey. Journal of Clinical Psychology 2009;65:1009-1020. doi:10.1002/jclp.20604
16. de Villiers MR, de Villiers PJT, Kent AP. The Delphi technique in health sciences education research. *Medical Teacher* 2005;**27**:639-643. doi:10.1080/13611260500069947
17. Iqbal S, Pipon-Young L. The Delphi Method. The Psychologist 2009;22:598-600.
18. Linstone HA, Turoff M. The Delphi Method: Technisques and Applications. Reading, Mass: Addison-Wesley, Advanced Book Program; 1975. Updated October 2002. Accessed March 12, 2021 at https://web.njit.edu/~turoff/pubs/delphibook/index.html
19. Sumsion T. The Delphi Technique. British Journal of Occupational Therapy 1998;61:153-156. doi:10.1177%2F030802269806100403
20. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology 2006;3:*77–101. doi:10.1191/1478088706qp063oa
21. Joffe, H. and Yardley, L. Content and Thematic Analysis. In: Marks, D.F. and Yardley, L. (eds) *Research Methods for Clinical and Health Psychology*. London: Sage; 2004: 56-68.
22. Turpin G. Coleman G. Clinical Psychology and Diversity: Progress and Continuing Challenges. *Psychology Learning and Teaching* 2010;9:17–27. doi:10.2304/plat.2010.9.2.17
23. Bennett SD, Heyman I, Varadkar S, Coughtrey AE, Shafran R. Simple or complex? A case study of physical and mental health co-morbidity. *The Cognitive Behaviour Therapist*. 2017;10:e18. doi:10.1017/S1754470X1700006X
24. Mountford VA, Tatham M, Turner H Waller G. Complexity in eating disorders: a case for simple or complex formulation and treatment? *The Cognitive Behaviour Therapist*. 2017;10:e14. doi:10.1017/S1754470X17000162

Acknowledgements

The authors wish to thank Dr Chris Hewitt, Professional Lead for Clinical Health Psychology, and Dr Belinda Hacking, Director of Psychology NHS Lothian for their support in the completion of this project.

Conflict of Interest Statement

The authors declare that there is no conflict of interest.

Tables

Table 1: Characteristics of panellists (N=28).

Current area of practice	AMH	Clinical Health	Older Adults	Forensic	Trauma	Eating disorder	Veterans	Not given
Percentage of Sample	11%	46%	7%	7%	3.5%	3.5%	3.5%	18%

Experience (post doctoral qualification)	< 5 years	5-10 years	>10 years
Percentage of sample	39%	29%	32%

Table 2: Factors arising from round 1 analysis, showing each authors' included codes.

Factors	Codes independently identified by Author 1 (bold) and Author 2 (*italics*)
Active Severe/Enduring Mental Health	**mental health (SEMI) [sic],** *mental health diagnosis*, **comorbidity (mental)**, *comorbidity,* **multi-service needs,** *current receipt/need of input from other services*, *need for a multi-modal/integrated approach, psychotic phenomena*, *eating disorder*
Current Coping/ Functioning	**coping strategies,** *existing coping strategies/current functioning*, **distress tolerance**, *past/present dissociation*
Engagement	**psychological mindedness**, *patient's understanding of their own difficulties*, **challenging engagement,** *past/present motivation/engagement***, expectations,** *patient expectations*, **prior treatment outcomes**
Forensic History	**forensic history,** *forensic history*
Iatrogenic Factors	**medications (and side effects)**
Interpersonal Functioning	**interpersonal style,** *interpersonal issues, personality factors, attachment-based difficulties, relationship with NHS/healthcare professionals*
Neuro-Cognitive Functioning	**cognitive capacity,** *intellectual ability/capacity,* **perceptive/expressive impairments & ASD,** *neuro-cognitive issues*
Physical Health	**comorbidity - physical,** *physical health issues*
Problematic Substance Use	**substance misuse,** *substance misuse/dependence*
Risk	**risk status**, *risk to self/others*
Severity/Chronicity of Presenting Problems	**duration/chronicity**, **severity,** *chronicity + severity of presenting problem, high scores in screening measures, mental health history (including response to previous interventions)*
Socio-Cultural	**age**, *age*, **socio-economic status,** *socio-economic factors*, **support network,** *presence/absence of social support*, **carer responsibilities**, *do they have responsibilities as a carer?* **cultural factors,** *cultural factors*, **language issues**, **psycho-social instability**, **secondary gain**, **access issues**
Trauma	**ACES**, **trauma history,** *trauma history*

Table 3: Round 2 - Panellists' ratings of factors.

	Individual Item Centrality Ratings (%, N)								
	(more central)					(more peripheral)		**Mean (std dev)**	**Consensus score**
Factor	**1**	**2**	**3**	**4**	**5**	**6**	**7**		
Active Severe/Enduring Mental Health	68%	20%	8%	4%	0%	0%	0%	1.48	96%
	17	5	2	1	0	0	0	(0.82)	central
Risk	60%	24%	12%	0%	4%	0%	0%	1.64	96%
	15	6	3	0	1	0	0	(0.99)	central
Trauma	48 %	40%	12%	0%	0%	0%	0%	1.64	100%
	12	10	3	0	0	0	0	(0.70)	central
Severity/Chronicity of Presenting Problems	52%	32%	12%	4%	0%	0%	0%	1.68	96%
	13	8	3	1	0	0	0	(0.85)	central
Problematic Substance Use	56%	24%	16%	4%	0%	0%	0%	1.68	96%
	14	6	4	1	0	0	0	(0.90)	central
Interpersonal Functioning	60%	20%	12%	4%	4%	0%	0%	1.72	92%
	15	5	3	1	1	0	0	(1.10)	central
Neuro-Cognitive Functioning	44%	40%	16%	0%	0%	0%	0%	1.72	100%
	11	10	4	0	0	0	0	(0.74)	central
Current Coping/functioning	36%	28%	28%	4%	0%	4%	0%	2.16	92%
	9	7	7	1	0	1	0	(1.21)	central
Engagement	36%	32%	16%	4%	8%	4%	0%	2.28	84%
	9	8	4	1	2	1	0	(1.43)	central
Forensic History	24%	40%	20%	8%	4%	4%	0%	2.4	84%
	6	10	5	2	1	1	0	(1.29)	central
Physical Health	24%	32%	16%	24%	4%	0%	0%	2.52	72%
	6	8	4	6	1	0	0	(1.23)	central
Iatrogenic Factors	8%	40%	24%	16%	4%	8%	0%	2.92	72%
	2	10	6	4	1	2	0	(1.37)	central
Socio-Cultural	*16%*	*28%*	*12%*	*16%*	*16%*	*8%*	*4%*	*3.28*	*56%*
	4	*7*	*2*	*4*	*4*	*2*	*1*	*(1.72)*	*central*

Table 4: Round 3 - Panellists' re-rating of revised factor.

	Individual Item Centrality Ratings (%, N)								
	(more central)				(more peripheral)				
Factor	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Mean (std dev)**	**Consensus score**
Systemic and socio-economic factors	*35%* *7*	*45%* *9*	*15%* *3*	*0%* *0*	*5%* *1*	*0%* *0*	*0%* *0*	*1.95* *(1.00)*	*95%* *central*

Figure Legends

Fig. 1: Process of Thematic Coding of round one qualitative data

Fig. 2: Graphic representation of factors.