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Research paper

An audit of emotional logic for mental health self-care improving social connection

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ABSTRACT

Introduction: Emotional Logic is a practical contribution to self-care for mental health and adaptability, teaching how unpleasant loss emotions have useful purposes that enable healthy adjustments to changing circumstances. Measurable personal capacity outcomes result from SMART action plans that recover named personal values. New understanding about emotions cascades informally through families and communities at low cost. This proof of concept paper presents audits that define the theory of change for a prospective study of Emotional Logic for self-care in compassionate networked communities.

Methods: Comparative audits of mental health and resilience outcomes with two learning cohorts were conducted using GAD-7, PHQ-9, and ELDP questionnaires. Long-term outcome audits also asked if learners' had shared their new understanding with others. Emotional Logic coaches categorised ELDP statements into those identifying change of individual or relational capacities.

Results: Cohen's *d* shows improved resilience on guided self-help learning with effect size 1.13 ($p < 0.001$) for anxiety and depression, and 0.91 for youth personality disorder. 31 % of improvement for mental illness measured by the ELDP is hypothesised to follow improved relational capacities measured by 13/34 (38 %) of its Likert scaled statements.

Conclusions: Teaching people the useful purposes of their unpleasant loss emotions improves the quality of their social connections and their mental health. Developing this personal understanding empowers self-care in new challenging situations that might otherwise have led to professional or other dependencies. Outcomes measurement of truly values-based action plans enables a prospective study to be conducted in networked communities, achievable through social prescribing.

1. Introduction

An innovation in self-care for mental health, developed over the last fifteen years in primary healthcare in the UK, is now increasingly taught in schools, family coaching, youth casework, and business leadership in the UK (Griffiths, 2013) [1] and abroad (Langsford & Griffiths, 2015) [2]. It uses a lifelong learning method to prevent problems, not therapy for problems, although secondary prevention (damage limitation to

Abbreviations: SMART objectives, Specific, Measurable, Achievable, Relevant, Time-framed; GAD-7, General Anxiety Disorder screening questionnaire with 7 symptom questions; PHQ-9, Patient Health Questionnaire screening for depression with 9 symptom questions; ELDP, Emotional Logic Development Profile 34-statement Likert scaled outcome measure; CORE-OM, CORE Outcome Measure – 34-item symptom scales for anxiety and depression; SD, Standard Deviation; EL, Emotional Logic; GP, General Medical Practitioner; EIS, Early Intervention Service for young people 16-22 years with personality disorder; DBT, Dialectical Behavioural Therapy for mental health problems; ICD-10, International Classification of Disease, version 10; RQ, Relationships Questionnaire

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minimise the impact of a problem) and tertiary prevention (of recurrences of a problem) [3], means that therapists can include this psychoeducation cascading systemic method in their range of skills for therapeutic benefit.

'Emotional Logic' teaches a positive psychology [4] of how unpleasant loss emotions have genetically in-built useful purposes that energise potentially constructive adjustments to the personal losses (and shared group losses) that are hidden within setbacks and disappointments. The Logic is the adjustment process to a perceived loss (recognise, prevent, recover, let go of a named loss). Loss emotions are the associated physiological preparations at each step, affecting posture, biochemistry, neural and immune system organisation, and the social messages that embed the adjustment process in a social and environmental setting (facial expressions, body language, tone of voice, pheromone chemicals). This 'social physiology' context to make sense of unpleasant emotions also explains how accumulating mental stress can harmfully affect physical illness processes, healing from wounds, and relationship stability [5].

The social physiology view of loss emotions challenges the prevalent cognitive-behavioural view in psychology, that emotion is a side-effect of cognition and needs regulation in children and adults. Dysregulated emotion is seen as a cause of psychopathology that requires therapeutic intervention [6]. However, babies and infants before they have acquired symbolic language can grieve, and can establish habits of grieving that may epigenetically affect their health and wellbeing for a lifetime. Following Felliti and Anda's ground-breaking study of Adverse Childhood Experiences, [7] the concept of post-traumatic stress, which is fundamentally complex grieving, has been recognised to be widely prevalent in society. Less noticed has been the significant observation of a parallel notion of post-traumatic growth accompanying that stress. Helgeson's review of 77 papers on post-traumatic growth [8] affirmed that during the eighteen months after traumatising incidents, a parallel recognition of benefits may grow in prosocial, philosophical, religious, political, and other areas of life. Joseph [9] estimates that 30–70 % of trauma survivors experience some personal growth.

This proof of concept paper presents evidence that learning to activate one's inbuilt Emotional Logic for constructive adjustment can measurably accelerate 'coming through stronger' out of challenging situations. Emotional Logic explains how adaptability in social settings leads from a stress cycle to a growth cycle. This concept is fundamental to promoting sustainable self-care in challenging social situations while minimising relational dependency.

The measurable impact of this method [10] enables new research into the positive role of unpleasant loss emotions in mental health. Poor mental health carries an increasing economic and social cost of £105 billion a year in England [11]. The mental health of young people and workforces is deteriorating despite improved access to cognitive behavioural therapies, and prevalent psychoeducation for early recognition of symptoms in a diagnostic disease model of mental illness. Emotional Logic is transdiagnostic, however, and it overcomes two problems of mindfulness-based cognitive behavioural therapy (CBT). Firstly, the behaviourist approach claims that inner mental states are unknowable by others, and only people's behavioural responses to them can be measured and regulated [12]. Emotional Logic provides two 'mapping tools' to identify externally the inner patterns of emotional states that have been shown to deterministically affect behaviour. People thus can understand themselves and each other directly, and the patterns can be constructively influenced by feedback learning.

Secondly, although the mindful CBT approach of Acceptance and Commitment Therapy (ACT) adds personal values as a target to motivate behavioural change, its practitioners lack methods to identify these inner values, and indeed have to describe personal values in behaviourist terms to be consistent with the model. Emotional Logic, however, validates unpleasant loss emotions as the drive to preserve valued sensory and memorised aspects of inner experience that promote survival and thriving. Damasio calls them 'somatic markers' [13]. Emotional Logic's Loss Reaction Worksheet enables people to externally display this values system by naming their multiple hidden losses in a changing situation, mapping their emotional states onto this list, and then acknowledging that this list of hidden losses is in fact a list of their personal values. You only know what you value when you see a risk that you might lose it. Loss emotions are thus not 'negative emotions'. They are vital information about the personal values that motivate behaviour. Loss emotions are like a car's dashboard warning lights, enabling risk-assessment and practical self-care decisions to be made before problems arise [14].

We developed our unique outcome measurement tool for learning Emotional Logic by grounded theory [15], categorising comments of change made by previous learners diagnosed with severe and enduring anxiety and depression. The core question was, "As a result of understanding your emotions differently, what can you now do differently?" The Emotional Logic Development Profile (ELDP) has 34 Likert scaled statements that cover the wide range of outcome benefits described. It was validated in primary healthcare study [10] of new referrals made for psychological therapies against standard NHS screening questionnaires for anxiety and depression, GAD-7 [16] and PHQ-9 [17] respectively. Of 53 patients who learnt Emotional Logic while on the waiting list for psychological services, only 3 went on to take up the therapies offered. Changes in ELDP scores on learning Emotional Logic correlated well with changes in GAD-7 and PHQ-9, however an additional factor other than that measured by the mental illness screening questionnaires was indicated by regression analysis to account for 31 % of the improved ELDP scores. This paper presents extra audit information that provides proof of concept that the mystery factor gained from emotional understanding is 'social connection'. This prepares the way for the ELDP to be used in a prospective trial of Emotional Logic for self-care in the community networking settings that are currently being politically supported to bring health and social care into a unitary service, triangulated then with socially relevant measures.

This paper defines four features of Emotional Logic's psychoeducation programme that are vital to preserve in future self-care research if its measurable health impact is to be properly assessed. The method generates SMART action plans (specific, measurable, achievable, relevant, time-framed) that are fine-tuned to an individual's needs, because they target specifically identified and named personal values. This opens the door to truly *values-based health and social care* in networked communities, [18,19] achievable through social prescribing for self-care.

2. Method of testing the psychoeducation hypothesis

Our hypothesis is that the extra construct measured by the ELDP over GAD-7 and PHQ-9 for recovery from anxiety and depression is *relational connection.* In this paper, the 34 ELDP statements are re-evaluated to identify if they measure the hypothesised relational connection. We conducted three audits and ran a focus group to test if improved communication can be identified in outcomes, enquiring if former learners of Emotional Logic had been able to share their new understanding with others.

Four general statements about the psychoeducation method follow (a–d, see below), after which their specific application in the method of this project is described (points 1–3 below).

a) Emotional Logic's inner emotion mapping tools (laying emotion card patterns, and loss reaction worksheets) use a kinaesthetic learning method to engage pre-verbally with emotional patterns. From this we can see that emotional adjustment in changing situations is a complex, non-linear, dynamic process of systemic adaptation. This contrasts with the linear processing model of the widely known Change Curve based on the work of Kübler-Ross [20]. The kinaesthetic method is uniquely able to identify learned habits of emotional processing, some of which are maladaptive.

Fig. 1 shows an example of a maladaptive loss emotion card pattern

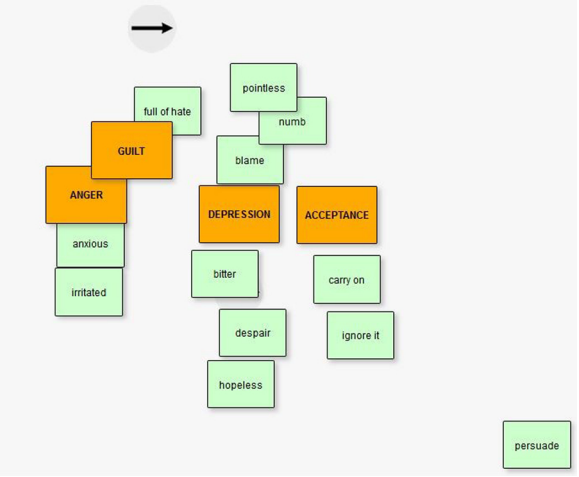

Fig. 1. A loss card pattern showing an Anger-Guilt whirlpool associated with self-harming.

associated with compulsive behaviour and self-harming. The learner had been asked to place these emotion cards (orange) and feelings cards (green) intuitively when thinking about a stressing situation. Emotional Logic coaches interpret how various patterns can generate a sense of stuckness in life, and then agree a personalised learning plan to collapse this 'emotional chaos' into focused action to recover just one personal value (equivalent to laminar flow of personal energy), thus restoring purposeful and responsive movement to life.

b) A counter-intuitive but empowering feature of the Emotional Logic method is to recognise personal values by first naming them as potential losses. Emotional Logic coaches explain how there are no negative emotions, only unpleasant ones that have useful purposes when understood. There are negative thoughts and beliefs, but emotions are physiological preparations for survival or thriving. This operationalises Damasio's work [13] defining emotions as somatic markers that bring survival values into consciousness in a way that can weight options for rational decisions about action. Effective self-care decisions have been shown to improve when people stop criticising themselves and others for having loss emotions.

c) Emotional Logic is not a therapy. It does not require training as a coach to share this understanding of emotions with friends, family, and colleagues to prevent problems and promote health and social well-being. Benefits thus cascade as relational capacities and confidence also improve. People who feel stuck with distress or illness, however, may benefit when a qualified Emotional Logic coach uses Vygotsky's exploratory principles of lifelong learning, sometimes called scaffolding, to guide their self-help discovery process [21,22]. This work can be applied in a range of settings for individuals, couples, family coaching, workshops, and weekly small group learning clubs.

d) Outcomes from personal learning are recorded by Emotional Logic coaches using the ELDP, and they track the learning process using a standardised Learner Contact Record (LCR). These are research quality records that enable uniquely personalised learning conversation to be triangulated with any other outcome measures for a study population.

The specific methods of this audit follow.

(1) A systemically-trained youth caseworker who is an experienced Emotional Logic coach had developed a small group learning model to teach Emotional Logic to 16–22-year old's entering the Early Intervention Service for personality disorder, aiming to reduce waiting lists. The course was presented as 'Emotional Awareness using the Emotional Logic method'. He gave ELDP and CORE questionnaires [23] at outset and in the final session two months later.

(2a) The primary care medical practice that had hosted the ELDP validation study had continued referring their patients to the EL coaches because of its demonstrable effectiveness and safety. The lead GP sent a postal questionnaire (with one reminder) enquiring about the long term outcomes for their patients in the study and for those referred subsequently. One of the eight questions was: 'Have you been able to help anyone else using what you learned?' This was followed by a free text space to explain to whom and for what purpose.

(2b) A JotForm survey [24] was emailed or texted to people who had attended Emotional Logic training workshops and personal learning appointments in the UK in the previous two years. Two of the eight questions were: 'Have you shared the EL method with others?' 'Have you used the EL method within your family?' Responses were received electronically directly into a spreadsheet for analysis.

(3) An email request was sent to 34 trained Emotional Logic coaches, asking them to rank each of the 34 ELDP statements on the scale: 0 = clearly individual; 1 = borderline; 2 = clearly relational. Email replies were collated onto a spreadsheet. The mode for each statement was used to assign that statement to one of the three categories.

3. Results

3.1. Youth Early Intervention Service for personality disorder outcomes

A sample of 32 of the young people aged 16–22 entering the Early Intervention Service for personality disorder (EIS) during one year were assigned to six small groups that ran sequentially, two months apart. 23 were female, 5 male, and four had no gender recorded. All spoke English as a first language. Every participant completed an ELDP and CORE questionnaire, but a technical fault in the unit's scoring of the CORE questionnaires means these results are not available.

Fig. 2 below is a scatterplot showing the change of the young people's ELDP scores on learning Emotional Logic. To interpret this, it is necessary to know that the validation study of the ELDP showed that the *normative population's* mean ELDP score is 50 %, with a normative 2 Standard Deviation (SD) range of percentile scores from 37 to 63.

Each dot in this scatterplot represents young person, numbered to show membership of the six small groups. Initial ELDP scores are along the X-axis, showing that on entry all the clients were below the 50th percentile. Fourteen of the 32 (44 %) started below the normative populations lower 2SD range for emotional resilience. The height of the dot along the Y-axis shows the final outcome ELDP score, showing that at exit 14/32 were above the 50th percentile, with 6 young people above the 2 SD upper range. The middle of the three diagonal lines represents no change of ELDP score (y = x). The outer two diagonal lines represent the boundaries of statistically reliable change. There are no dots below the lower line, so nobody showed reliable deterioration as a result of learning Emotional Logic, suggesting it is a safe intervention. The average upward drift of all the dots above the no change line measures the effect size, calculated as Cohen's $d = 0.91$ (small effect = 0.2. medium = 0.5, large = 0.8, very large = 1.2). The method can therefore be considered safe and effective in a population with an

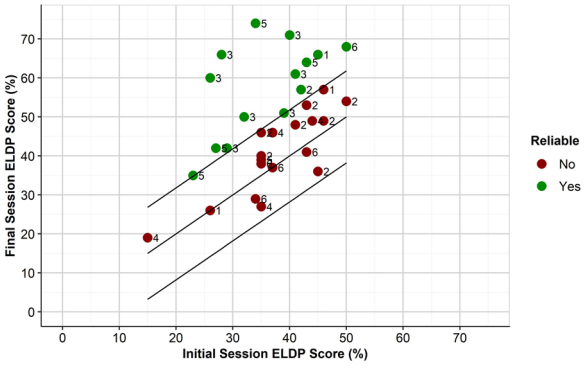

Fig. 2. Early Intervention Service scatterplot of ELDP scores.

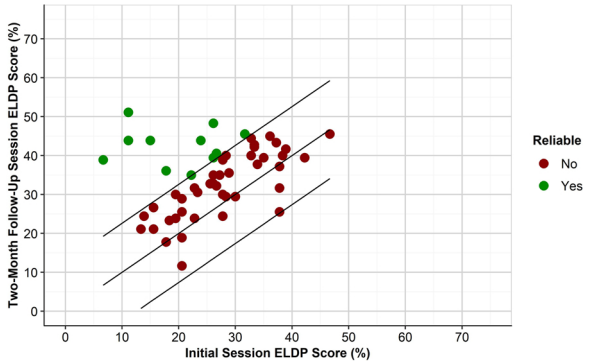

Fig. 3. ELDP score change for a diagnosed anxiety and depression study group.

early diagnosis of personality disorder.

Fig. 3 is included to enable comparison of this cohort with the ELDP score distribution found during the validation study in the Primary Care patient cohort diagnosed with anxiety and depression.

On referral, all the anxiety and depression sample had been on or well below the normative population's emotional resilience, with a mean entry ELDP of 25 %, compared with 40 % for the personality disorder cohort. Of the mental illness patients, 23/53 (43 %) improved into the normative population's range. There was a close correlation of ELDP with PHQ-9 and GAD-7 scores for depression and anxiety respectively ($p < 0.001$). The Cohen's *d* effect size is 1.13. No dots are recorded below the lower limit of confidence, so again Emotional Logic is safe and effective for both cohorts.

The similar effect size for both diverse cohorts, despite very different entry ELDPs, suggests that learning Emotional Logic has a constructive effect on people's lives by some method other than treating diagnosable mental illness. The small group facilitators noticed that the three groups out of the six that had higher mean ELDP improvements were conversationally much more interactive in their learning than in the three with lower mean changes.

3.2. Surveys confirming the hypothesised effect factor measured by the ELDP

3.2.1. Primary Care long term follow-up questionnaire

147 patients over two years received Emotional Logic training on referral from GPs. Of these, 88 (60 %) remained registered with the medical practice when the questionnaire was sent out four years after the last of these patients had been referred. After two mailings, 39 completed questionnaires were returned, giving a 43 % response rate. The gender distribution of people sent questionnaires (male 28 %, female 72 %) is similar to respondents (male 23 %, female 77 %)

Age distribution of patients sent questionnaires and respondents (Fig. 4) is similar, although those aged 20–30 years in the population

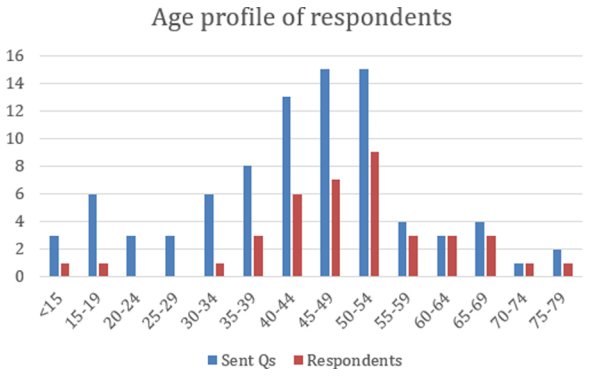

Fig. 4. Age profile of target population and respondents.

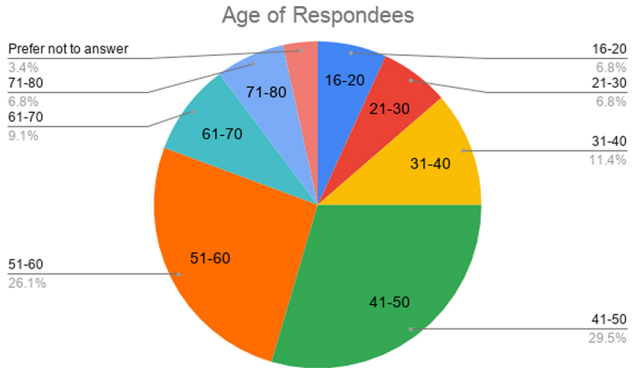

Fig. 5. Age distribution of Jotform responses.

are under-represented in the respondent group.

Of the respondents, Emotional Logic was remembered 4–6 years later as being helpful in the short term by most respondents (71 %). 55 % of respondents reported continuing benefit after 4–6 years, and 14 of these (37 % of responders) said they had used their new knowledge to help others. This is the key audit finding for the hypothesis of a relational connection factor in recovery. The transferability of Emotional Logic learning to others was reported in 12 free text comments that showed beneficial effects in all five of Goleman's domains of emotional intelligence [25]. Examples are: 'It helped me to help my daughter get through marriage break up and help her work it out'; 'A close friend suffering from depression'. Family members, friends and work colleagues were mentioned. A professional cited that he had used his knowledge in dealing with distressed people in his work.

3.2.2. JotForm impact survey

88 responses were received with the age distribution shown in Fig. 5. 72 % were female, 25 % male, and 3% preferred not to say.

Of respondents, 85 % had shared the Emotional Logic method with others (Fig. 6), and 70 % of respondents had shared Emotional Logic with their family.

3.3. Focus group assessment of relational statements in the ELDP

Email responses were received from 19 of the 34 coaches. These were collated onto an Excel spreadsheet, and the mode score for each statement was used to assign that statement to an 'individual, borderline or relational' category, as shown in Fig. 7.

Of the 34 statements, 13 (38 %) are categorised as relational, 5 borderline and 16 as individual. When designing the questionnaire, a randomised selection of statements had been 'reversed'. Of the relational statements, the reversed ones are 7, 14, 28 and 33.

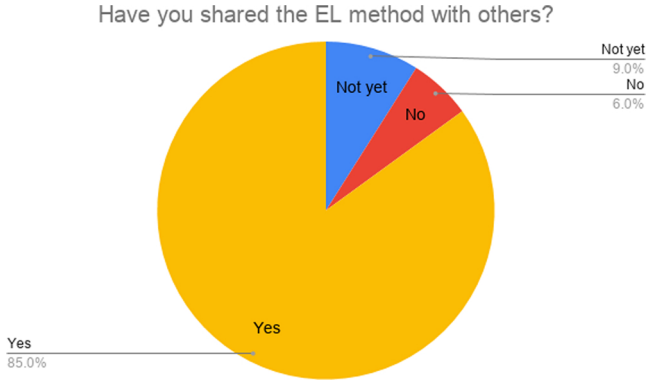

Fig. 6. Jotform respondents sharing Emotional Logic with others.

0 = clearly individual; 1 = borderline; 2 = clearly relational

ELDP statement		0	1	2
1.	I feel confident in myself.	**17**	2	0
2.	I am able to recognise my limits	**14**	5	0
3.	I get angry for no very obvious reason.	**11**	6	2
4.	**I can talk about my feelings.**	4	6	**9**
5.	I find it difficult to concentrate.	**18**	1	0
6.	I am able to handle my emotions well.	8	**10**	1
7.	**I feel responsible for other people's problems.**	0	7	**12**
8.	**I find it easy to talk to people.**	0	3	**16**
9.	I get upset or frustrated by little things.	**11**	7	1
10.	**I like going out and meeting new people.**	0	2	**17**
11.	I can see that I have choices.	**13**	6	0
12.	I find it difficult to make decisions.	**16**	3	0
13.	I am able to deal with situations.	3	**14**	2
14.	**I get upset or angry if someone criticises me.**	0	1	**18**
15.	**I can assert myself when I need to.**	0	8	**11**
16.	**I feel I have the language to help someone who is upset or angry.**	0	1	**18**
17.	I can bounce back when faced with difficulties.	**11**	8	0
18.	**I feel in tune with other people.**	0	1	**18**
19.	I do not have words to talk about my feelings.	6	**8**	5
20.	I tend to go over and over problems in my mind	**16**	3	0
21.	I can take responsibility for myself.	**12**	7	0
22.	**I feel I am approachable.**	0	5	**14**
23.	I am able to say, "No."	1	**10**	8
24.	My emotions feel chaotic.	**16**	2	2
25.	I take time off for myself / to relax / to have fun.	**13**	5	1
26.	I am able to recognise my emotions.	**14**	3	2
27.	I need medication or counselling to help me get through situations.	6	**11**	2
28.	**I tend to blame others easily.**	1	6	**13**
29.	I feel positive about life.	**14**	4	1
30.	**I feel able to manage difficult relationships.**	0	2	**17**
31.	I feel there is a purpose in life.	**14**	7	0
32.	I can think clearly.	**19**	0	0
33.	**I let myself take my anger out on others.**	0	5	**14**
34.	**I feel I understand why people get distressed.**	1	3	**15**
		16	***5***	***13***

Fig. 7. Relational category statements in the ELDP.

4. Discussion

Analysis of the ELDP statements, in the light of the two long-term follow-up surveys and the feedback from 19 Emotional Logic coaches, suggests that 38 % (13/34) of the statements scored by Likert scales measure the impact on relational connection that follows learning Emotional Logic. A further 5 statements (15 %) are ambivalent depending on interpretation, while 47 % clearly measure the benefits of learning as an individual. This is consistent with the informal observation that on learning Emotional Logic, people's self-respect and empathy may improve simultaneously and rapidly, and with that their capacity to make constructive decisions. This latter point is consistent with Damasio's somatic marker theory [13] that emotions convey information to consciousness about core personal values for survival or thriving that help to weight decisions.

A prospective study is justified by these audit results. It will require larger numbers to ensure statistical power in the evaluation of health outcomes, with a non-diagnostic formulation of the social environment of participators alongside medical diagnostic categories justifying the need for self-care. However, the tools now exist to measure the impact of emotional learning on relational connection, enabling 360 degree assessments to validate change. These audits have shown the benefits of learning Emotional Logic to be independent of mental illness diagnosis, by the similar effect sizes in the two very different population samples. Prospective research would need to confirm if a balance of relational 'locus of power' can be achieved between care provider and care recipient when all concerned understand the useful purposes of unpleasant emotions to energise healthy adjustments. This would get to the heart of self-care, which would not mean living in isolation connected only by information technology to a remote medicalised treatment monitoring system. Self-care would mean effectively managing the social connections that are the substance of personal fulfilment

within whatever limitations of functioning or symptoms an individual may have to live with.

Benefit for the mental health of communities would produce economic savings for the nation, but the long-term gain for society would be even greater if family and work relationships can be stabilised when facing setbacks and disappointments. This could impact the health of future generations by improving the quality of relational attachments among peers and across the generations. These considerations are significant for the method of prospective research that could follow. Our theory of change needs the relevant construct to be measured that both motivates exploration, and seeds action after learning Emotional Logic. Four factors need including to define that construct.

Firstly, learning Emotional Logic is not a therapy. It activates or seeds a personal development process at any age, which has a protective effect against stress and illness, and a health promotional effect by empowering exploration of new opportunities in life. This has a therapeutic side effect, so learning Emotional Logic could be included in recovery programmes, but it is best seen not as a therapy intervention in acute illnesses or social crises. Therefore, entry criteria for any study have to be drawn much more widely than for most randomised double-blind controlled research trials.

Secondly, the kinaesthetic and conversational nature of learning engages immediately with emotional turmoil, and seeds potential growth of order within it. There is therefore no separation of assessment from intervention programmes. The intervention is immediate upon engaging in a compassionate conversation that respects the emotional experience of people who may be socially difficult to respond to. It is impossible to make judgements about a person's unreasonableness of response until a conversation has provided insights into the person's values, which the Emotional Logic method achieves via enquiry about 'What do you miss in life?' or 'What have you lost that's important to you?' The solution-focused action plan that follows is then uniquely tuned to recovering or preserving a single named 'personal value'. This can seed a reasonable attitude of self-respect regardless of how unreasonable the person's behaviour may have seemed initially. Most commonly, a significant loss behind difficult behaviour and feelings is simply 'loss of being heard'! The Emotional Logic method then intrinsically converts the associated loss emotion energy into a rationally explicable course of action that builds measurable relational connection.

Thirdly, the exploratory learning method uses pre-verbal, kinaesthetic card-sorting to map patterns of emotional complexity when remembering situations. It is based in chaos theory and adaptive dynamic systems principles of emergent order by feedback learning [26,27]. By contrast, brief intervention therapies *simplify* problems and solutions, by targeting ICD-10 (International Classification of Disease version 10) diagnostic *categories of symptoms* with interventions that improve a narrowly identified range of behavioural functioning. The Cynefin framework [28] (Fig. 8) shows the relations of these different types of relational system.

Solutions to problems in a simple system require categorisation (protocols), while those in complex systems require probing (exploration), and those in chaotic systems require action (seeding order). Emotional Logic has tools to map the complex and chaotic nature of emotionally living relational systems, responding to problems with feedback learning to empower exploration, and seeding activity for personal growth. The physiology of our emotions is driven mostly by our relationships. It is only secondarily activated by our memories of relational situations. Emotions are social physiology. They are information about personal values in a healthy, complex adaptive social system, in which individuals develop their inner stability over time to explore their own solutions to problems. The Founder of Emotional Logic is developing 'Emotional Chaos Theory' [29], which includes social physiology as a foundational concept to account for the Butterfly Effect [30] improvements of personal identity that some people experience. These people are represented by those upper 'spots' on the scatterplot Y-axis in both audit populations.

Fig. 8. The Cynefin model.

And finally, both the cascading nature of learning among families and communities, and the public accessibility of this learning through the Internet, mean that separating a research population from a control population will always be difficult.

A research and development method that could be effective is a cross-over study. To research a particular diagnostic category, this study design compares the outcomes of a control and intervention group. The groups then swap to the opposite protocol for a period of time, and the relative benefits of each intervention can be statistically calculated. A similar approach could work for an open access community service, evaluating the service development for sequentially randomised starters in the service.

With regard to more appropriate measures of social interaction to compare with the relational connection factor measured by the ELDP, the Relationships Questionnaire (RQ) [31] measures different attachment styles, and is validated to correlate these with long-term impact on health outcomes. The RQ would make an ideal measure to triangulate with the ELDP for the effect of an Emotional Logic learning intervention on health as part of self-care and recovery.

An ideal setting to evaluate service development would be compassionate networked communities [18], where social prescribing and personalised budgets make the integration of health and social care a reality.

5. Limitations of this study

The follow-up audits over 2–6 years of psychoeducation impact are uncontrolled, and have a high or even unknown attrition rate, which means they cannot be used to impute the success or otherwise on a statistical scale of the learning intervention to help people manage their lives or reduce symptoms. The point of reporting them is, however, that the conversational skill gained by understanding Emotional Logic goes beyond an individualised concept of wellness, to establishing that it empowers a subset of people to also influence their social environment constructively. This provides proof of concept that we can measure the relational capacity to develop personal identity in a social constructionist view, which we believe is vital for de-medicalising the focus of self-care in community settings. The number of learning clients audited was not large enough to power a construct re-analysis of the ELDP, so this will need to be taken into consideration in scaling the follow-up comparative research. People engaging with learning resources and events were not pre-screened for diagnostic groups, age, sex or

diversity. Follow-up of outcomes was undertaken as a quality standard of an open access psychoeducation service delivery, not as a research process, so no funding was needed or sought. The South West Medical Research Ethics Committee approval 14/LO/0295 covered the original validation study in General Medical Practice. The aim of the audits was to prepare the way for prospective comparative research, defining the questions and parameters that would need to be controlled or assessed.

6. Conclusion

Self-care to promote mental health and wellbeing can be enhanced by a lifelong learning programme that enables people to turn their unpleasant loss emotions following disappointments and setbacks into an improved ability to manage life and connect socially while making adjustments. This adds resilience into people's approach to new and challenging situations, reducing dependency on professional or other community support systems. Effective measurement of the outcomes and social impact of learning about emotions has been demonstrated. A research and development method that could allow for the flexibilities of unpredictable outcomes from lifelong learning of a core transferable life skill is a cross-over study. To research a particular diagnostic category, this study design first compares the outcomes of a control and intervention group. Then the groups then swap to the opposite protocol for a period of time, and the relative benefits of each intervention can be statistically calculated. A similar approach could work for an open access community service, evaluating the service development for sequentially randomised starters in the service. This enables a prospective study to be conducted of the development of a truly values-based health and social care system in compassionate community networks that support self-care.

Financial statement

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Data availability

The ELDP score changes for the six small learning groups at the Early Intervention Service is supplied in a supplementary file.

CRediT authorship contribution statement

Abigail Turton: Data curation, Investigation, Validation. **Marian Langsford:** Investigation, Project administration. **David Di Lorenzo:** Investigation. **Daniel Zahra:** Formal analysis. **Julie Henshelwood:** Writing - review & editing. **Trevor Griffiths:** Conceptualisation, Methodology, Writing - original draft, Writing - review & editing.

Declaration of Competing Interests

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.eujim.2020.101167.

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