An investigation into how neuro-linguistic programming can be a source of positive psychology interventions to increase self-esteem and subjective well-being in psychologically healthy populations

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Key words

POSITIVE PSYCHOLOGY, NEURO-LINGUISTIC PROGRAMMING, SELF-ESTEEM, SUBJECTIVE WELL-BEING, OPTIMISM

Abstract

The purpose of this study was to expand the number of positive psychology interventions available for normal populations that have empirical evidence of effectiveness. The researcher introduced techniques used in neuro-linguistic programming (NLP) into a one-day development workshop aimed at enhancing participants' self-esteem and subjective well-being. Three hypotheses were examined: NLP interventions have a positive effect on self-esteem; NLP interventions have a positive effect on subjective well-being; and the level of trait optimism predicts who will respond positively to the interventions. A mixed methods sequential approach was adopted. A quantitative method (scaled questionnaires) was applied first, followed by a qualitative thematic analysis (content analysis of written responses to short questions) of individual reflections collected after the intervention and then again at the final measure point. Specifically, a 2 × 3 split plot design with Group (experimental versus control) as the between-participants factor and Time (pre-intervention, post-intervention, six week follow-up) as the repeated measures factor was used. The results indicated that whilst self-esteem and well-being increased across time in the experimental group, no such beneficial effect was observed in the control group. Trait optimism was not found to predict who would respond positively to the interventions. Findings offer support to the effectiveness of NLP interventions for increasing self-esteem and well-being in a normal population, and may indicate the suitability of NLP as an approach within positive psychology.

Introduction

> **'Positive psychology is a scientific study of optimal human functioning [that] aims to discover and promote the factors that allow individuals and communities to thrive' (Seligman, 1999).**

The purpose of this study was to expand the number of positive psychology interventions available that have empirical evidence of effectiveness. This involved introducing techniques used in neuro-linguistic programming (NLP) and investigating how such techniques could be used to enhance both self-esteem and subjective well-being (SWB).

NLP is a future focused methodology, in that most interventions are designed to change thinking processes rather than explore negative memories (Tosey and Mathison, 2003). The approach aims to improve positive affect, which implies a good fit with positive psychology. This could be described as a study of the 'good life' and how to enhance it (Peterson, 2006).

NLP borrows from many other disciplines in constructing a framework of interventions. The earliest work in NLP was based on modelling Fritz Perls, Virginia Satir, Milton Erikson and Gregory Bateson. The eclectic nature of NLP is very clear as noted by Tosey and Mathison (2003, p. 375):

> **'...within NLP one can detect influences from Gestalt therapy (Perls, 1969), person-centred counselling (Rogers, 1961), transformational grammar (Grinder and Elgin, 1973), behavioural psychology and cybernetics (Ashby, 1965), the Palo Alto school of brief therapy (Watzlawick et al., 1967), Ericksonian hypnotherapy (Bandler and Grinder, 1975; Grinder et al., 1977) and most importantly the cybernetic epistemology of Gregory Bateson (Bateson, 1972).'**

One of the fundamental assumptions of NLP is that people are whole and have all the resources they need (Koziey and McLeod, 1987), and these assumptions can be traced back to Erickson, Rossi and Rossi (1976 in Koziey and McLeod, 1987) and Satir (1972 in Koziey and McLeod, 1987). This assumption suggests that problems do not arise from any lack of personal resources or scarcity in the external world but rather from problems in accessing available internal resources (Koziey and McLeod, 1987). While it could be argued that this position is merely a variation on Rogers (1951) 'positive regard', the idea of 'holding a positive internal representation' (Overdurf and Silverthorn, 1994) of the client goes one step further. By believing in the client's ability to change, the coach projects a positive attitude and provides an environment supportive of change. It is suggested that the expectancy of the coach has an impact on the amount of change the client experiences (Overdurf and Silverthorn, 1994).

While this assumption lacks empirical evidence, support could be drawn from the 'Pygmalion phenomenon' (Rosenthal and Jacobson,1992), whereby teachers' expectations of certain pupils, although based on false information stating that certain students had above average IQ, were reflected in the performance of the students who all became high achievers one year later. This suggested that the expectations of the teachers were responsible for the increase in performance.

NLP has long proposed that a timeline can be used as a metaphor in guided processes (e.g. James and Woodsmall, 1988). A recent study found evidence for a spatial mental representation of time (from left to right) with spatial-temporal *response coded* to the organisation of events in time (Ishihara et al., 2008). A number of NLP interventions use timeline in which the client makes changes to their internal representations. This is done in such a way that they either release limiting states, or increase positive states, in both a past and future orientation (e.g. Overdurf and Silverthorn, 2000). Evidence for these techniques is anecdotal and difficult to measure as results rely almost entirely on self-report of subjective experiences. The only external measure is also subjective relying on the practitioner's ability to 'calibrate' a shift in physiology (Overdurf and Silverthorn, 2000) by observing the client's unconscious non-verbal responses and internal responses.

In conclusion, NLP is compatible with a positive psychology orientation, what is lacking is empirical evidence of the effectiveness of NLP.

Method

Design

Epistemologically, this study adopts the pragmatic approach whereby the methods used, rather than adhering to a particular philosophical standpoint, are appropriate to the research questions under investigation (Bryman, 2006). This stance considers the terms quantitative and qualitative to refer to approaches to research (Bryman, 2006). Combining methods from these two sets can be a practical, appropriate step resulting in a single mixed methods approach although Bryman (2006) also challenges this viewpoint. An alternate opinion suggests that pragmatism does have a philosophical position, which could be described as 'the truth is what works', with roots that go back to James, Peirce and Dewey (Howe, 1988, cited in Robson, 2002). It might be more appropriate to use qualitative approaches with NLP due to its subjective nature; however the author wanted to compare results with a more objective measure. For this reason a mixed methods approach was chosen.

The research involved a practice-based experimental design in order to compare the effects of NLP interventions in two different groups of participants, a control group and an experimental group. The control group did not attend the workshop but completed the same scaled questionnaires over the same time frame as the experimental group. The control group participants were given the opportunity to attend the workshop post study. Apart from attendance at the workshop *during* the study, therefore, all other conditions were the same.

Three hypotheses were tested through the quantitative element:

1 NLP interventions have a positive effect on self-esteem

2 NLP interventions have a positive effect on subjective well-being

3 the level of trait optimism predicts who will respond positively to the interventions.

The intervention took the form of a one-day workshop using NLP interventions, including the swish pattern (Bandler, 1985), change beliefs (Bandler, 1985) and a guided timeline experience (James and Woodsmall, 1988), chosen because of their ease of use and variety. The swish pattern is a visual exercise replacing a negative image with a positive one. By contrast the change belief pattern involves a more kinaesthetic element and identifying the metaphorical location of a limiting belief and replacing it with a more empowering one. The final intervention uses the metaphor of a timeline to represent a person's life experiences; past, present and future, strengths or resources are added to either past events to change a feeling or future events to increase factors such as confidence.

There are areas of potential research bias within this study that need to be acknowledged. The researcher's social identity and background can impact the study (Robson, 2002). The author is a certified Master Trainer of NLP and has trained with many leading NLP trainers. She holds subjective opinions and beliefs about the effectiveness of NLP as an intervention. The author acknowledges a similar position to NLP as reported by Tosey and Mathison (2003, p. 373) 'while we do not claim to be neutral on the subject, neither do we consider ourselves over-identified with the world of NLP'. The author also delivered the interventions on the workshop and this could mean further potential for bias. In order to manage possible issues of over-identification the author made a point of seeking regular feedback from a university supervisor.

Participants

Non-probability sampling was used. Initially the sample was drawn from the author's existing networks via a generic email invitation. The invitation explained that to participate in a one-day workshop participants would be expected to complete a series of questionnaires. Many people passed the information on to others. This means that the final sample was based on convenience and snowball sampling (Bryman, 2001). All participants signed a consent form explaining the nature of the research and expectations for participation.

Ideally the author would have preferred to allocate participants randomly to conditions. This was not practical so participants were offered a choice of two dates and were allowed to self-select the most convenient.

The experimental group workshop was attended by 65 participants. Of these, 36 completed the quantitative measure, of whom 34 went on to complete the qualitative measure as well. The same measures were completed by 41 people from the control group.

Ethics and risk assessment

In a content analysis of nine well-known ethics codes produced by academic social research associations from the USA and the UK, 11 categories of ethical behaviour were identified (Bell and Bryman, 2007). The author addressed all 11 categories to ensure a reasonable risk assessment had been considered and that the study met with appropriate ethical standards. This included ensuring that participants gave informed consent, understood their right to withdraw and that personal confidentiality would be maintained. Ethical approval was granted by the University of East London ethics committee.

Data collection

A sequential, mixed methods approach provided richness to the data by including a mixture of subjective self-report measures and more objective statistical measures. Accordingly, both quantitative and qualitative data were collected.

Three scaled self-report questionnaires were applied first. Then, qualitative data consisting of participants' individual reflections in the form of written responses to short questions were collected after the intervention and again at the final measure point.

The questionnaires selected were well established and have been used in countless other studies. They rely on the participants' own subjective perception of their experience and could be liable to compliance effects (Lucas et al., 1996). To minimise this effect participants were reminded that their results would not be shared in any way that would reveal an individual's identity.

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) is the most widely used measure for global self-esteem and has high internal reliability (alpha 0.92) (Heatherton and Wyland, 2003). The second scale chosen for this study was the Satisfaction with Life Scale (Pavot and Diener, 1993). Moderate temporal stability and strong internal reliability have been reported with a co-efficient alpha of 0.87 and a two month test-retest coefficient of 0.82 (Diener et al., 1985). A third scale, the Life Orientation Test-Revised (Scheier et al., 1994), was applied only at the beginning in relation to and related to the third hypothesis. It has good internal consistency and is considered stable over time. All three scales are in the public domain and the authors have explicitly given permission for their use.

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) and the Satisfaction with Life Scale (Pavot and Diener, 1993) measures were collected at three intervals; before, just after and six weeks after the intervention. The Life Orientation Test-Revised (Scheier et al., 1994) was collected at the beginning of the study only and was used as part of the regression analysis.

The qualitative aspect of the study invited participants to expand on their experience and perception of the intervention. Directly after the workshop participants were asked to answer the following written questions via email.

- How do you feel/think the workshop has impacted on your self-esteem?
- How do you feel/think the workshop has impacted on your perception of your satisfaction with life?

Six weeks later the following question was presented via email.

- What changes have you noticed in your self-esteem and well-being since the workshop?

Participants were asked to email their written responses 24 hours after they received the email with the above question.

Data analysis

For the quantitative aspect of this design a 2 × 3 split-plot ANOVA was used with Time (pre-workshop versus post-workshop versus six weeks follow up) as the repeated measures factor and Group (intervention group v control group) as the between participants factor. A moderation regression analysis was also carried out in order to investigate whether the improvement in self-esteem/well-being varied as a function of trait optimism, with pre self-esteem as the predictor variable, post self-esteem as the outcome variable and optimism as the moderating variable.

An inductive approach was used to examine the qualitative data. Thus the short written narratives were analysed through a thematic content analysis (Braun and Clarke, 2006) that involved the author identifying, analysing and reporting on themes within the data, with emphasis on allowing the categories to emerge. This emergent approach is likely to mean constant movement between conceptualisation, data collection, analysis and interpretation (Bryman, 2001). It was necessary to make some assumptions in interpreting not just the manifest content but also latent themes (Bryman, 2001). Ideally this interpretation would have benefitted from validation from a co-researcher, which was unavailable at this time.

Results

Self-esteem

The self-esteem data (raw scores from the Rosenberg Self-Esteem Scale) averaged across participants are presented in Table 1 with standard deviations.

	Experimental		Control	
	Mean	**SD**	**Mean**	**SD**
Time 1	15.97	4.23	18.07	4.86
Time 2	20.41	4.30	18.07	4.91
Time 3	21.00	4.84	18.53	4.53

Table 1 Mean self-esteem responses with standard deviations in the experimental and control conditions as a function of time (Cheal, 2011)

Initially a descriptive statistics analysis was carried out. This indicated that the distribution of the data in each condition was approximately normal, the standard deviations of each condition were approximately equivalent and there were no extreme scores.

The data were then analysed with a 2 × 3 split-plot ANOVA with condition (experimental v control) and Time (Time 1 versus Time 2 versus Time 3) as factors (Mauchly's test did not achieve significance so sphericity is assumed in the following reported tests). Sphericity is the assumption that different scores of paired levels of repeated measures factors have equal population variance. The main effect for condition did not achieve significance, but a significant main effect was found for Time ($F(2,80) = 35.72$, $p<.001$). A post-hoc analysis, with the criterion value for statistical significance set at 0.016 in order to control the familywise error rate, indicated that Time 1 differed significantly from Time 2 ($t(81) = 4.79$, $p<.001$) and from Time 3 ($t(81) = 5.96$, $p<.001$). The remaining pairwise comparison between Time 2 and Time 3 did not achieve significance. In terms of the familywise error rate, when we carry out multiple tests on the same dataset we increase the probability of making

a Type I error. We compensate for this by making what is known as a Bonferroni adjustment, i.e. 0.05/number of comparisons = significance level. This keeps the significance level for all the comparisons under 0.05 (the familywise error rate is the overall significance level for all comparisons).

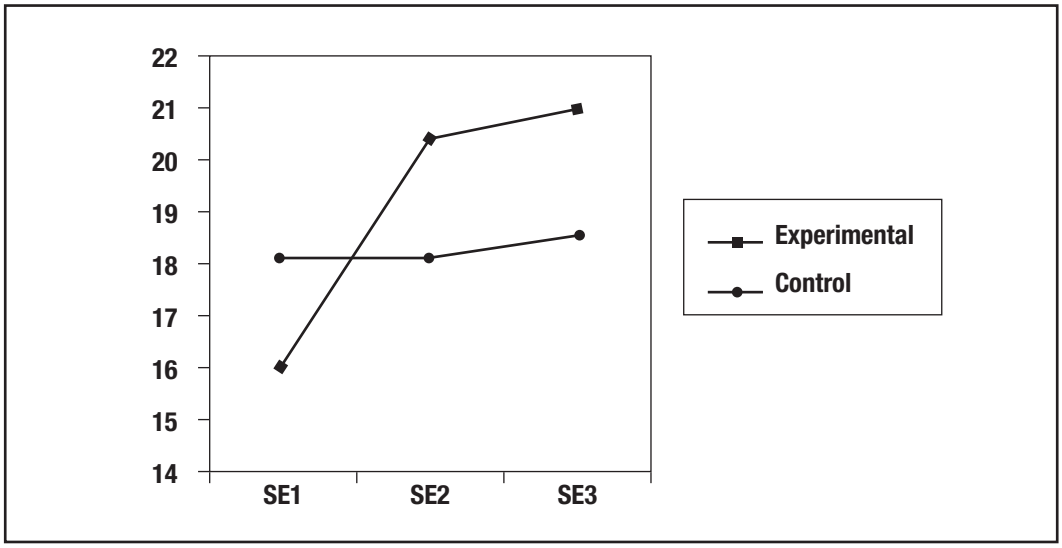

Figure 1 Graphical illustration of the significant interaction between condition and time (Cheal, 2011)

This main effect, however, was modified by a significant interaction which was obtained between Condition and Time ($F(2,80) = 28.39$, $p<.001$) (see Figure 1 for graphical illustration). The mean self-esteem scores for Time 1, Time 2 and Time 3 in the control condition were 18.07, 18.07 and 18.57 respectively, whereas in the Experimental condition they were 15.97, 20.41 and 21.00 respectively. A simple effects analysis was carried out on the interaction data, with the criterion value for significance set to 0.004 in order to control the familywise error rate. This revealed significant comparisons between Time 1 and Time 2 ($F(1,39) = 49.13$, $p<.001$) and Time 1 and Time 3 ($F(1,39) = 71.03$, $p<.001$) in the experimental group. No other comparisons achieved significance.

The results would appear to indicate that whilst self-esteem increased across time in the experimental group, no such beneficial effect was observed in the control group.

Well-being

The well-being (Life Satisfaction) data averaged across participants are presented in Table 2 with standard deviations.

	Experimental		Control	
	Mean	SD	Mean	SD
Time 1	18.59	5.06	20.00	6.57
Time 2	23.21	5.41	20.70	6.05
Time 3	23.44	6.77	20.84	5.36

Table 2 Mean well-being (Life Satisfaction) responses with standard deviations in the experimental and control conditions as a function of time (Cheal, 2011)

Initially a descriptive statistics analysis was carried out. This indicated that the distribution of the data in each condition was approximately normal, the standard deviations of each condition were approximately equivalent and there were no extreme scores.

The data were then analysed with a 2 × 3 split-plot ANOVA with condition (experimental versus control) and Time (Time 1 versus Time 2 versus Time 3) as factors. (Mauchly's test did not achieve significance so sphericity is assumed in the following reported tests). The main effect for condition did not achieve significance, but a

significant main effect was found for Time ($F(2,80) = 19.79$, $p<.001$). A post-hoc analysis, with the criterion value for statistical significance set at 0.016 in order to control the familywise error rate, indicated that Time 1 differed significantly from Time 2 ($t(81) = 4.67$, $p<.001$) and from Time 3 ($t(81) = 4.79$, $p<.001$). The remaining pairwise comparison did not achieve significance.

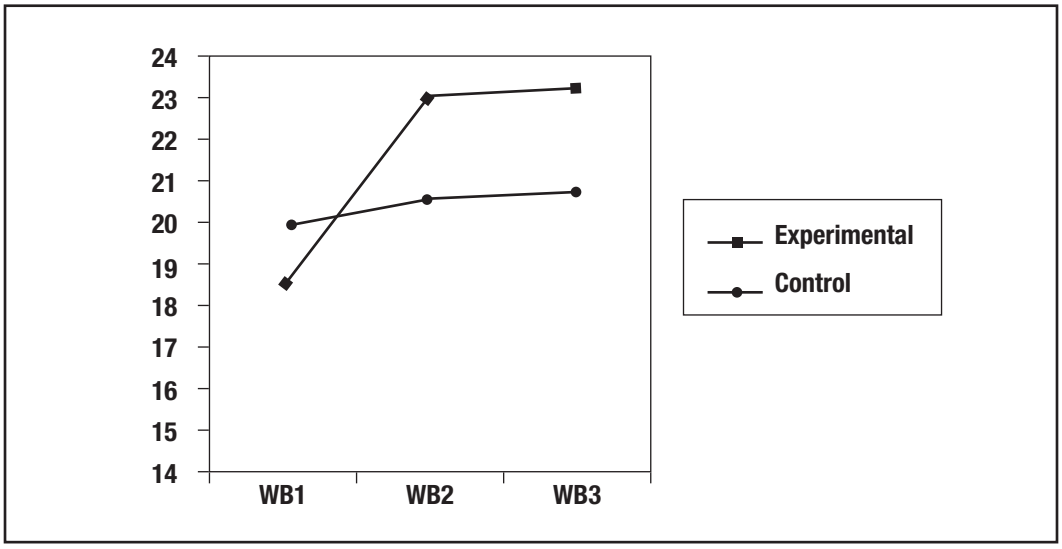

Figure 2 Graphical illustration of the significant interaction between condition and time (Cheal, 2011)

This main effect, however, was modified by a significant interaction which was obtained between Condition and Time ($F(2,80) = 10.25$, $p<.001$). (See Figure 2 for graphical illustration.) The mean well-being scores for Time 1, Time 2 and Time 3 in the control condition were 20.00, 20.70 and 20.84 respectively, whereas in the Experimental condition they were 18.59, 23.21 and 23.44 respectively. A simple effects analysis was carried out on the interaction data with the criterion value for significance set to 0.004 in order to control the familywise error rate. This revealed significant comparisons between Time 1 and Time 2 ($F(1,39) = 34.80$, $p<.001$) and Time 1 and Time 3 ($F(1,39) = 33.82$, $p<.001$) in the experimental group. No other comparisons achieved significance.

The results would appear to indicate that whilst well-being increased across time in the experimental group, no such beneficial effect was observed in the control group.

Additional analyses

A moderation regression analysis was not carried out with regard to any effects resulting from trait optimism because an initial investigation using an independent t-test did not yield a significant result so the Null hypothesis (3) is accepted.

Qualitative analysis

A thematic analysis (Braun and Clarke, 2006) was applied to the responses from the qualitative element of the study. Four main themes were identified as participants' experience of the workshop and the interventions used.

Theme 1: More control, e.g. 'I feel I have more control'

Many participants reported increased feelings of control with regard to their feelings (emotions), perception and behaviour. There were three codes for this theme: more direct control (semantic), implied increased control (latent) and more choice. A semantic theme is indicated by explicit or surface meanings in the data, e.g. the use of specific words; latent themes are implied meanings (Braun and Clarke, 2006).

1 More direct control (semantic) – *'I feel much more in control and I'm now aware that I can really challenge/ change my negative feelings.'*

2 Implied increased control (latent) – *'I'm still not where I would like to be, but I feel that it is definitely less of a problem and, perhaps more importantly, that it is entirely within my power to change.'*

3 More choice – *'It showed me I have a choice about what that perception is. Once I've made the choice to perceive it differently I can now replace it with a different perception.'*

Theme 2: Shift in perception, e.g. 'My perception of my life and experiences has shifted'

Participants noticed changes in their perception of themselves, life issues and their ability to make changes. Only one person commented on not experiencing a change in perception. There were four codes for this theme:

1 Shift in perception (semantic) – *'Although I am basically quite happy with life my perception has been altered as I now know that I can tackle the areas which have been holding me back.'*

2 Implied shift in perception (latent) – *'Once I understood that negativity came from an outdated view it really helped me move those views to the file marked "past and gone".'*

3 No change in perception – *'Life is just particularly hard going at the moment and the course could have changed my perception of that but it hasn't.'*

4 Reminded 'life is good' – *'I left the workshop knowing that I have a life that I like, where there are choices to be taken and enjoyed not feared, and where I am happy.'*

Theme 3: Well-being, e.g. 'I am more connected with feelings of well being and satisfaction with life'

Three codes were identified for this theme:

1 Improvement in well-being – *'Leading on from above response, the workshop gave me confidence and confirmation of my thought processes, therefore helping improve my satisfaction with life.'*

2 Living in the 'Now' – *'I feel the workshop has served as a timely reminder that there are many things in my life which I should be proud of and take the opportunity to enjoy in the here and now.'*

3 Increase in positive feelings such as contentment, joy and calm – *'I spend less time worrying about what "others" think as I feel more contented with just being me.'*

However, this theme may have been prompted by one of the questions posed to participants; 'How do you feel/ think the workshop impacted on your satisfaction with life?'

Theme 4: Improved self-esteem, e.g. 'I have noticed an improvement in my self-esteem'

Participants reported increases in self-esteem in both direct and indirect ways along with increased confidence, a greater understanding and acceptance of self and others. Four codes were noted for this theme:

1 Improvement in self-esteem (semantic) – *'My self esteem has rocketed since spending the day with you. I feel far more confident in all avenues of my life. As I mentioned before, the main thing I took away with me that day was "I am good enough" and I say this often if I'm feeling a little wobbly.'*

2 Implied improvement in self-esteem (latent) – *'At the workshop the thoughts that spoke most to me were that each of us has value and worth, that another person's opinion of us is subjective –not objective – and we don't have to "own it", that changing ourselves changes the world around us, and that if we challenge our self-limiting beliefs and vision new outcomes we can create them.'*

3 Feeling more confident – *'The workshop exercises gave me the opportunity to focus on the key elements where I have obstacles and enabled me to release the key issues that affect this area the most. I already feel more confident that I will be able to appropriately join in discussions with senior managers and directors, that "I am enough" and that I will let go of old emotions that no longer serve a purpose.'*

4 Feelings of acceptance – *'If there is something I do not know I no longer "emotionally beat myself up" about it and feel that I am rubbish – I just accept that I cannot know everything about everything. I am confident to be free to change my mind – if something is taking too much time or effort and the means do not justify the end – then I do not feel like I am giving up or a loser.'*

This theme may also have been prompted by the question posed; 'How do you feel/think the workshop has impacted on your self-esteem?'

The qualitative aspect of this study appears to support the quantitative – although, as acknowledged, two themes may have been prompted by the researcher's written questions at the collection point. Table 3 shows the perceived improvement (or lack thereof) for the experimental group, as drawn from the qualitative data, compared to the quantitative results.

	Perceived improvement	No perceived improvement	Perceived decline	Unsure of impact	Total no. of participants
Statistical improvement	21	3	0	2	26
Statistically stable	2	0	0	0	2
Statistical decline	0	0	1	0	1
Improved with decline that remains above initial	3	2	0	0	5
Improved with decline	0	0	0	0	0
Total no. of participants	26	5	1	2	34

Table 3 Experimental group participants' perception compared to questionnaire results (Cheal 2011)

Analysis of the qualitative data provided illustrative examples from the participants' perspectives to support the quantitative analysis. For example:

> **'With regards to the impact on my self-esteem, the main thing I learnt from the workshop, apart from the techniques which were great, was that the technique/exercise doesn't always work on its own, and that it's important to look beyond it to plan strategies for coping with the situation. My self-esteem rose during the day and has continued to do so. The most important thing I took from the day was "I AM ENOUGH".' (theme 4:1)**

The next statement reflects the NLP principle that people have all the resources they need (Koziey and McLeod, 1987). This change in perception appears to promote a sense of self-acceptance.

> **'I value what is good and constructive about me more, and this now gives me more of a sense of balance when I reflect on the things I wish I had done differently, or would like to change about myself. I am far more realistic about myself, and see myself as a more rounded and balanced person who in the main can have a positive rather than negative impact.' (theme 4:4)**

Discussion

The results appear to support the purpose of the study by providing evidence that both self-esteem and well-being were improved by the NLP interventions used.

The results did not support the suggestion that trait optimism could predict who would respond positively to the interventions. This means that change may be possible regardless of the level of optimism. This offers a potential challenge to suggestions that traits determine the level of change possible, as suggested by Sheldon and Lyubomirsky (2004).

There is also further support for the suggestion that self-esteem is a state that can be impacted upon. This supports other research (e.g. Crocker and Park, 2004), that suggest increases in self-esteem may provide a temporary boost in positive affect (Crocker et al., 2003; Crocker et al., 2002; Lewis, 1993; Mascolo and Fisher, 1995 all cited in Crocker and Park, 2004). NLP does however provide a mechanism that could safeguard against the temporary nature of the improvement; 'ecology' refers to the process of checking that changes are in the best interests not just of the individual but also those of others around them (Tosey and Mathison, 2003).

Initially Fujita and Diener (2005) took the position that SWB had a set point and was unlikely to be changed by interventions. Their own research caused them to review this position, suggesting that perhaps there was a 'soft baseline' for life satisfaction. The current study may provide further support for the position that SWB can be impacted.

While the evidence appears to support the suggestion that NLP interventions can have a positive effect on both self-esteem and well-being, caution must be exercised as a number of design issues may also have played a part. It is possible that participants experienced change based on the relationship with the trainers and their teaching style. Seligman et al. (2005) suggest that the facilitator could have a positive impact on results. While this is unhelpful from a research perspective, this effect is actively pursued in NLP training (Overdurf and Silverthorn, 1994). In a stance similar to the humanistic approach of 'positive regard', NLP trainers are encouraged to 'hold a positive internal representation' of their students (Overdurf and Silverthorn, 1994). The author and co-trainer made a point of building rapport with the group and held internal representations that all participants had the ability to change. This could be considered an integral part of all NLP interventions so if it did have an impact this was deliberate.

It is also possible that the changes were not tied to the facilitators' style because recorded improvement in self-esteem and well-being remained six weeks after the intervention.

It could be speculated that some of the participants in the experimental group who did not complete all the measures (i.e. 31 out of 65) may have felt uncomfortable writing about negative perceptions of their experience because the researcher was also the facilitator. This could be addressed in future research by ensuring that facilitators are independent of the research and data collection.

There may have been effects from being part of a supportive group; for example, positive affect can be improved by feelings of acceptance. However, the improvement recorded for the 34 participants who completed all the measures was maintained six weeks after the workshop. This longer term improvement suggests that it was unlikely to be just a result of group participation.

The sample consisted mainly of white females (31 women and 5 men in the experimental group) and lacked ethnic diversity. The unrepresentative nature of the sample and the potential positive report bias from numbers who completed all data sets means that any generalisations must be made with caution.

The self-selecting method of sampling may have attracted only people already interested in NLP, which in turn may have created a bias. Participants may have been more committed to interpreting a positive outcome as a result, and expectations of change may have been high (Frank, 1973 in Seligman et al., 2005). This speculation can be challenged by the lack of improvement in the control group.

Additionally, some participants may have deduced which group they were in. The possible impact is that if someone knows they are in the experimental group they may respond to expectation factors. Both groups were given a preparation task consisting of a written goal setting exercise. For the experimental group this task was intended as preparation for the workshop. The control group received this as a placebo task although on reflection a more structured placebo would have been appropriate (this would have allowed the author to monitor

the impact of the placebo task). They were given the same instructions as the experimental group. Unlike the Seligman et al. (2005) study, the control group in this instance did not improve as well.

A number of experimental participants reported practising the techniques used in the workshop. This had not been anticipated and it is unknown how many people continued to use the techniques and how much this impacted on the final results. It is also possible that some people may have joined NLP practice groups post workshop. It is possible that the sustained results were at least in part affected by this practice effect.

Several learning points were noted from the qualitative aspect of the design. Firstly, the author did not request qualitative information from participants prior to the workshop. It is possible that useful information was lost as a result. For example, what were participants expectations, how committed to change were they and how did they currently perceive their self-esteem and well-being? This third point was answered retrospectively by some participants. The retrospective nature of these remarks may mean that they were coloured by more recent experience so may not have been valid.

Secondly, all information was collected by email and the level of detail provided while substantial, was inconsistent, word count per participant ranging from 107 words to 1091 words. Guidance to participants about the depth of answer required may have resulted in more even responses.

Thirdly, the questions may have primed participants to focus on self-esteem and well-being when answering. As a result both emerged as major themes. This focus must be acknowledged when considering the validity of the findings; it may also mean that that useful information was lost, and the priming effect may have hindered participants' expression.

Future research will need to address the design issues identified. Without evidence from longitudinal studies carried out over a longer time span than six weeks, confidence in the success of NLP interventions will need to remain cautious. A more structured and detailed method of collecting qualitative input will also need to be developed. To avoid possible bias or influence, future workshops will need to be delivered by independent facilitators with the appropriate NLP skill level.

The desire participants demonstrated to continue practising the techniques could also be included in future designs.

In conclusion, this practice-based study has provided evidence that NLP interventions can have a positive impact on both self-esteem and well-being. The purpose of this study, to contribute evidence that could expand the available number of positive psychology interventions, has been met.

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