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KYLA EVANS BA Hons

**EXPLORING AND STRENGTHENING THE ROLE
OF POSITIVE AFFECT IN THE LIVES OF
PEOPLE LIVING WITH HIV**

**Section A: The impact and role of positive affect in the lives of people
living with HIV**

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people living with HIV**

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SUMMARY OF MAJOR RESEARCH PROJECT

Part A comprises of a systematic review aiming to describe, synthesise and critique the published research literature exploring the impact and role of positive affect in the lives of people living with HIV. In-keeping with theories regarding coping and positive emotions, the reviewed literature suggests that positive affect may have a health-protective role for this population, through mechanisms such as behaviour, cognitive strategies and social connectedness. The evidence further suggests that positive affect plays a role in continuing active coping methods. Methodological issues emerging from the reviewed literature are considered, and research, clinical and social implications are explored.

Part B evaluates a group multicomponent positive affect intervention for individuals living with HIV, which included a number of skills which have previously been found to improve positive affect. Outcomes were measured using quantitative scales of affect and mindfulness, and qualitative follow-up interviews. Following the intervention, positive affect and mindfulness significantly increased, and a variety of other subjective changes were also reported, although more sessions or booster sessions may have maintained these changes more effectively. These findings are in-keeping with previous research exploring the impact of multicomponent interventions with chronically ill populations.

Part C includes appendices and supporting information.

CONTENTS

SECTION A: THE IMPACT AND ROLE OF POSITIVE AFFECT IN THE LIVES OF PEOPLE LIVING WITH HIV	1
ABSTRACT.....	2
1. Introduction	3
1.1. Positive affect.....	3
1.2. Positive affect and health	4
1.2.1. Stress and coping theory.....	4
1.2.2. Broaden-and-build theory.....	5
1.2.3. People living with HIV.....	7
1.3. Summary and rationale.....	8
1.4. Aims and scope	8
2. Method.....	9
2.1. Database search strategy and inclusion criteria.....	9
2.2. Study selection	10
2.3. Data extraction and quality assessment.....	12
3. Literature Review	12
3.1. Health	12
3.1.1. Clinically measured health and mortality.....	12
3.1.2. Self-reported health	14
3.1.3. Summary of health findings	16
3.2. Behaviour	16
3.2.1. Therapeutic adherence.....	16
3.2.2. Sexual risk taking	17
3.2.3. Substance-related risk.....	17
3.2.4. Summary of behaviour findings	18
3.3. Coping	18
3.3.1. Coping with HIV	18
3.3.2. Other positive constructs	20
3.3.3. Summary of coping findings.....	21
3.4. Social.....	21
3.4.1. Summary of social findings.....	23

POSITIVE AFFECT AND HIV

4. Discussion.....	23
4.1. Stress and coping theory	23
4.2. Broaden-and-build theory	26
4.3. General methodological considerations	28
4.3.1. Correlational studies	28
4.3.2. Timescale of PA	28
4.3.3. Alternative explanations for associations between PA and health	28
4.3.4. Diversity of sampling	29
4.4. Implications.....	30
4.4.1. Social implications.....	31
5. Conclusion.....	32
6. References	33

**SECTION B: EVALUATION OF A GROUP POSITIVE AFFECT INTERVENTION
FOR PEOPLE LIVING WITH HIV.....**

ABSTRACT.....	43
1. Introduction	44
1.1. Positive affect and human immunodeficiency virus (HIV)	44
1.2. Positive affect interventions	46
1.3. Rationale.....	47
1.4. Aims	49
2. Method.....	49
2.1. Design.....	49
2.2. Participants	49
2.3. Procedures and ethical considerations.....	50
2.4. Measures and interviews	51
2.4.1. Questionnaires	51
2.4.2. Interviews	51
2.5. Data analysis	52
3. Results	53
3.1. Demographics.....	53
3.2. Was the intervention beneficial?.....	53
3.2.1. Changes in positive affect and mindfulness scores.....	53
3.2.2. Subjective changes reported from change interview	54

POSITIVE AFFECT AND HIV

3.3.	What were the beneficial elements and why?	57
3.3.1.	Ranking of skills and sessions	57
3.3.2.	Subjective benefits of skills	59
3.3.3.	Other subjective beneficial elements	62
3.4.	Who was the intervention beneficial for and why?	64
3.4.1.	Case Study 1	64
3.4.2.	Case Study 2	65
3.4.3.	Case Study 3	66
3.4.4.	Case Study 4	67
4.	Discussion	68
4.1.	Changes in affect	68
4.2.	Changes in mindfulness	69
4.3.	Subjective changes	69
4.4.	Multicomponent interventions	71
4.5.	Other factors influencing change	71
4.6.	Strengths and limitations	73
4.7.	Implications	73
5.	Conclusion	74
6.	References	76

TABLES AND FIGURES

Figure 1:	Flow chart depicting systematic literature search	11
Table 1.	Mean positive affect, negative affect, and mindfulness scores at pre-intervention and follow-ups	54
Table 2.	Changes reported from the change interview at 1 week follow-up and 2 month follow-up	55
Table 3.	No. of changes reported and average ratings of changes	57
Table 4.	No. of participants choosing each session as their most helpful and second most helpful (n=7)	58
Table 5.	Skills most expected to be practised and least expected to be practised, and skills later continued to be practised and not continued to be practised	59

APPENDICES

Appendix A: List of reviewed papers	85
Appendix B: CASP Cohort Study Checklist	96
Appendix C: Recruitment presentation.....	97
Appendix D: Recruitment flyer	104
Appendix E: Screening interview	105
Appendix F: Consent form.....	106
Appendix G: Intervention information sheet	107
Appendix H: Research information sheet	108
Appendix I: Intervention session-by-session overview	110
Appendix J: Ethics Panel approval letter	118
Appendix K: Modified Differential Emotions Scale (mDES).....	119
Appendix L: Five Factor Mindfulness Scale (FFMQ).....	120
Appendix M: Follow-up interview schedule	121
Appendix N: Example Wilcoxon matched pairs signed ranks tests	124
Appendix O: Example coded transcript	125
Appendix P: Theme development.....	126
Appendix Q: Final theming frame	128
Appendix R: End of study report for participants.....	132
Appendix S: End of study report for Ethics Panel.....	133
Appendix T: Abridged research diary.....	134
Appendix U: Author guideline notes for British Journal of Health Psychology	138

MAJOR RESEARCH PROJECT

**SECTION A: THE IMPACT AND ROLE OF
POSITIVE AFFECT IN THE LIVES OF PEOPLE
LIVING WITH HIV**

WORD COUNT

7,824 (8,152)

ABSTRACT

Positive affect has been found to improve coping and health outcomes for individuals living with chronic ill-health. This systematic review aims to describe, synthesise and critique the published research literature exploring the impact and role of positive affect in the lives of people living with HIV. A number of electronic databases were systematically searched using key search terms. Studies were eligible if they explored the role of naturally occurring positive affect in the lives of adults living with HIV, measured using a validated positive affect scale. 21 quantitative studies were identified, and quality was assessed using the CASP cohort study assessment tool. In-keeping with theories regarding coping and positive emotions, the reviewed literature suggests that positive affect may have a health-protective role in the lives of people living with HIV, through mechanisms such as behaviour, cognitive strategies and social connectedness. The evidence further suggests that positive affect plays a role in continuing active coping methods. Methodological issues emerging from the reviewed literature are considered, and research, clinical and social implications are explored.

Key words: Positive affect, HIV, coping

1. Introduction

Chronic stress research has shifted from a focus on negative influences (e.g. depression, anxiety) to the impact of positive influences. The positive psychology movement (Seligman & Csikszentmihalyi, 2000) has encouraged a developing body of theory and research arguing that positive emotions play a crucial role in maintaining well-being.

This review explores the literature investigating the impact and roles of positive affect in the lives of people living with human immunodeficiency virus (HIV). The introduction defines positive affect, describes how it has previously been explored in chronic illness, and considers relevant theory. The specific challenges facing people living with HIV are then discussed, providing a rationale and context for the review. Following this, the papers identified regarding positive affect and HIV are synthesised and critiqued. The discussion examines how these studies compare to previous research and theory, highlights general methodological issues, and considers relevant implications.

1.1. **Positive affect**

Positive affect (PA) is defined as “the range of pleasant emotions and moods that people experience on the pleasant end of the affect spectrum” (Pressman & Bowlin, 2014 p.184). It describes positive feelings lasting anywhere from momentary to over several months, or the PA experience generally, referring to dispositional or trait positive mood.

PA is typically assessed by self-reports of frequency, duration or intensity of positive feelings. Measures range from single-item scales which ask individuals to identify their mood on a scale from “not too happy” to “very happy” (Bradburn, 1969) to large checklists of adjectives including excitement, calmness and gratitude (Watson, Clark & Tellegen, 1988). Due to the possible differentiation between state and trait PA, it can be difficult to determine factors such as whether PA should be assessed at a single time point or across several, and

POSITIVE AFFECT AND HIV

which period individuals should report on (i.e. the last 24 hours, the last week, month, or longer).

Another issue which arises when distinguishing the effects of ‘trait PA’ from ‘state PA’ is that of personality. Personality traits have consistently been found to be a predicting factor of PA (Lucas & Baird, 2004; Smillie, Cooper, Wilt, & Revelle, 2012); for example Rusting and Larsen (1997) found that increases in PA following the induction of a pleasant mood in participants were positively related to extraversion. There are also a number of other constructs strongly correlated with PA, such as optimism and self-esteem. Few studies compare these constructs against each other or test the relationship between them and PA (Shogren, Lopez, Wehmeyer, Little & Pressgrove, 2006; Ironson & Hayward, 2008).

Age has also been found to be an important factor related to PA. Pinquart (2001) conducted a meta-analysis of 125 studies exploring the relationship between PA and age, and found an aging-associated decline of high arousal positive feelings (e.g., excitement), and an aging-associated increase of low-arousal positive feelings (e.g., relaxation). Overall, a small aging-associated decline of PA was found.

There is some debate within the literature about whether PA and negative affect (NA) are opposite ends of the same spectrum (Russell & Carroll, 1999) or independent (Watson & Clark, 1997), with evidence arguably for both.

1.2. Positive affect and health

Positive affect has been shown to both protect general health (see Pressman & Cohen, 2005, for a review) and improve outcomes for those who have serious ill-health, such as chronic heart failure (Brouwers et al., 2013) or diabetes (Moskowitz, Epel & Acree, 2008).

1.2.1. Stress and coping theory

In people with chronic health conditions, positive affect has also been linked to improved subjective quality of life (Eaton, Bradley & Morrissey, 2014), better coping and

POSITIVE AFFECT AND HIV

functioning (Hansdottir, Malcarne, Furst, Weisman & Clements, 2004; Hu & Gruber, 2008) and improved resilience (Fortinsky, Tennen & Steffens, 2013).

These findings are consistent with the stress and coping theory postulated by Lazarus & Folkman (1984). This well-established and often utilised framework specifically aims to understand coping mechanisms employed at times of severe stress, such as chronic illness. It describes different ways of coping with stress, which can be adaptive or maladaptive depending on the difficulties encountered and the consequences of employing certain coping strategies. The eight types of coping proposed, most commonly identified by Folkman and Lazarus's (1988) Ways of Coping Questionnaire are: 'seeking social support', 'escape/avoidance', 'planful problem-solving', 'confrontive', 'self-controlling', 'self-blame', 'distancing', and 'positive reappraisal'. Researchers often group the subscales into higher-order factors, including Cognitive/Behavioural (Billings & Moos, 1981), Problem-Focused/Emotion-Focused (Folkman & Lazarus, 1980), Active/Passive (Mercado, Carroll, Cassidy & Cote, 2000), and Approach/Avoidance (Roth & Cohen, 1986).

Folkman (1997) proposed that PA has a reciprocal role in the coping process, suggesting that when chronic stress motivates certain types of coping (including positive reappraisal and planful problem-solving), these processes facilitate PA, which in turn has important coping functions. Folkman (1997) suggests that PA allows a psychological 'time-out' from distress and motivates ongoing coping efforts.

1.2.2. Broaden-and-build theory

Evidence regarding possible mechanisms whereby PA improves health outcomes in chronic illness also concurs with the broaden-and-built theory (Fredrickson, 2013); a prominent and extensively researched theory regarding the evolved function of positive emotions.

POSITIVE AFFECT AND HIV

Theories and evidence regarding the evolved function of negative emotions have been extensively detailed in the literature. Evidence suggests that many anxieties relate to historical sources of damage such as heights, dangerous animals, injury and social evaluation or exclusion (Ohman & Mineka, 2001; Seligman, 1971). Fessler, Pillsworth, and Flansburg (2004) propose that anger occurs in response to the experience of a transgression, and motivates attempts to prevent it, whereas disgust is experienced when in contact with a potential contaminant to encourage distance from it. There are various theories regarding the evolved function of sadness. These include the 'psychic pain hypothesis' which pertains that, like physical pain, sadness communicates that damage is occurring in order to encourage withdrawal from the cause of damage and avoidance of similar situations in the future (Hagen & Barrett, 2007). Alternatively, Wolpert (2008) puts sadness in the context of attachment, and argues that as sadness is generally caused by some kind of loss, from a family member to expensive possessions, it is adaptive particularly regarding the mother-child bond, as it motivates the recovery of this loss.

Fredrickson (2013) suggests that whereas negative emotions encourage narrow, immediate survival-oriented behaviours, positive emotions broaden awareness and facilitate novel and varied thoughts and actions. Positive emotions do not have any immediate survival value, because they distract from acute needs and stressors, but over time the skills and resources built by broadened coping improve survival (Gable, Gonzaga & Strachman, 2006; Waugh & Fredrickson, 2006). The types of coping developed include physiological (e.g. vagal tone, which helps return the body to normal after a physiological reaction to stress), behavioural (e.g. proactive behaviours), cognitive (e.g. positive reappraisal of difficulties) and social (e.g. accessing support). Fredrickson (2013) describes a reciprocal upward spiral in which positive emotions predict increases over time in broadened coping, and broadened coping predicts increases over time in positive emotions.

POSITIVE AFFECT AND HIV

Research regarding mechanisms whereby PA may improve health supports these hypotheses. Physiologically, it is associated with lowered blood pressure (Ostir, Berges, Markides & Ottenbacher, 2006) and improved immune response (Stone, Cox, Valdimarsdottir & Jandorf, 1987). Behaviourally, mediators including healthy eating, exercise, and medication adherence may facilitate the association (Connell, 1990). Furthermore, health-protective psychosocial characteristics such as social connectedness and seeking support appear to be facilitated by positive affect (Steptoe, Dockray & Wardle, 2009).

1.2.3. People living with HIV

This review focusses on the impact and roles of positive affect in the lives of people living with HIV (PLWH). Though many of the stressors associated with other chronic illnesses are comparable, HIV presents a unique set of challenges, encompassing physical, psychological and social stressors (Guerra, 1998). Aside from symptoms associated with disease progression, individuals face a complex medical system, permanent self-care to avoid opportunistic infections, and the need to incorporate a new identity as someone with a chronic illness. Individuals may have to reconsider several aspects of their lives, such as future orientation, social identity, interpersonal relationships and quality of life (Barrosco, 1997).

Although antiretroviral medications are recognised as a promising development in the treatment of HIV, near-perfect medication adherence of up to 25 pills per day is required to achieve maximum benefit and avoid treatment failure (Rabkin & Chesney 1999). ‘Pill-burden’ and side effects are major factors preventing optimal adherence (Chen, Hoy & Lewin, 2007), and given the life expectancy that these newer drug therapies offer, people are likely to experience these factors over a long period.

POSITIVE AFFECT AND HIV

Issues of risk behaviour are also paramount in HIV. For example, risky sexual practices and lifestyle-related medical issues such as Hepatitis C are often associated with the use of drugs and alcohol in men living with HIV (Kennedy et al., 1993).

Unsurprisingly given the variation of issues facing PLWH, the impact of psychological and social factors on disease progression and quality of life has been demonstrated (Moskowitz, Hult, Bussolari & Acree, 2009; Ironson & Haywood, 2008). The impact and role of positive emotions in living with HIV has been explored in an emerging evidence base, though this has not yet been collated and reviewed in terms of how the evidence fits with current theories and research.

1.3. Summary and rationale

Evidence suggests that PA has a significant impact on people with chronic health conditions, in-keeping with current theories of positive emotion and coping. Given the multitude of challenges facing PLWH, positive affect may have important roles in quality of life, coping and disease progression. Previous reviews have focussed on the role of PA both in general health and in chronic health conditions (Pressman & Cohen, 2005; Pressman & Bowlin, 2014), and considered the impact of psychosocial factors (Ironson & Haywood, 2008) and types of coping (Moskowitz et al., 2009) in HIV. Despite its relevance to health outcomes and interventions with PLWH, the specific impact and role of positive affect for this population has not yet been explored.

1.4. Aims and scope

This review aims to describe, synthesise and critique the published research literature exploring the impact and role of positive affect in the lives of PLWH. The impacts and roles considered are wide-ranging, and studies are included which deem PA to be either the dependent or independent variable, or those which simply explore associations. As this review aims to explore the naturally occurring role of PA, studies reporting the impact of

interventions aiming to improve PA are not reviewed. The evidence is considered in relation to current research and theory, and relevant implications are suggested.

2. Method

A systematic review was conducted in accordance with the PRISMA statement (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009). Studies were identified using a systematic search of electronic databases and additional hand-searching of relevant references listed on published papers (Fig. 1). Due to the limited number of studies emerging from the literature search and the variability of outcomes measured, it was not appropriate to conduct a meta-analysis.

2.1. Database search strategy and inclusion criteria

Searches were conducted in the following databases: Psychinfo, Medline, Applied Social Sciences Index and Abstracts (ASSIA) and Cochrane Library. Peer-reviewed literature published or available in English language was searched from inception to January 2016. The following search terms were used: [positive AND (affect* OR mood* OR emotion* OR feeling*)] AND [hiv OR aids].

The identified studies were excluded if they did not meet all of the following inclusion criteria:

1. Studies concerning positive emotion or mood referred to conceptually as 'positive affect'. Related constructs such as optimism were not included, nor were broader concepts such as 'positive states of mind', which is defined as also including one's ability to accomplish and appreciate positive experiences related to general well-being.
2. Studies which measured positive affect with validated scales, namely checklists of adjectives describing positive emotions (e.g. excitement, calmness, contentedness).
3. Studies sampling adults living with HIV at any point from diagnosis onwards.

As this review aimed to explore the naturally occurring role of PA, studies reporting the impact of interventions aiming to improve PA were excluded.

2.2. Study selection

Figure 1 depicts a flow diagram of the systematic literature search conducted. Initial searches produced 243 results, including 20 duplicates. 58 papers were excluded after title review due to studies being patently irrelevant. 21 further articles were obtained from hand-searching reference lists of included papers, with titles reviewed for possible relevance and included if appropriate. In total 186 abstracts were reviewed; 55 were relevant and full texts of these studies were acquired. Of these, 34 did not meet the inclusion criteria following full text review. The remaining 21 were retained and form the basis of this review. These were exclusively quantitative studies; no qualitative or mixed methods studies emerged from the literature search.

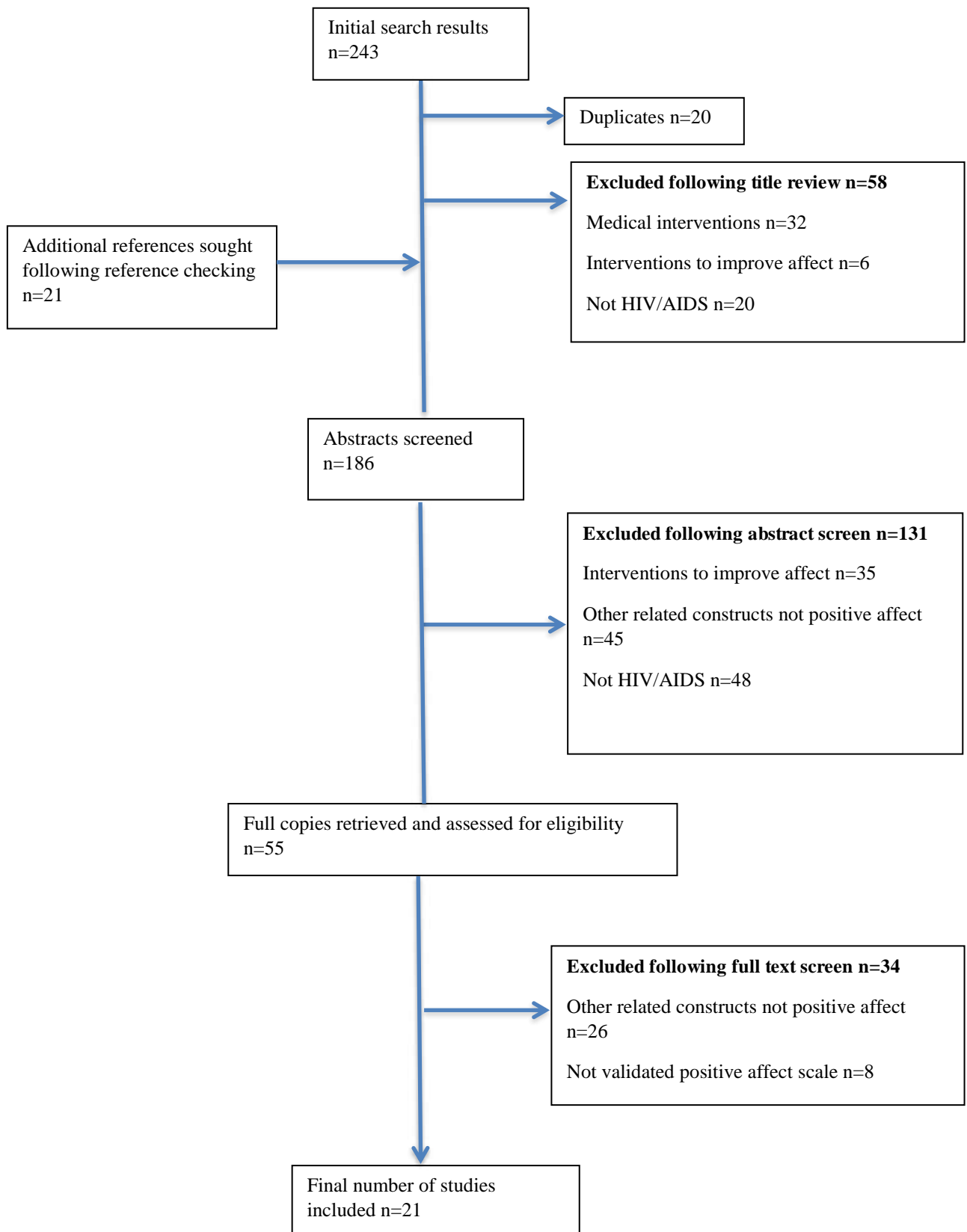


Figure 1: Flow chart depicting systematic literature search

2.3. Data extraction and quality assessment

The following data were extracted from each study (appendix A):

1. Source (author, publication year)
2. Participants (number, demographics, recruitment, inclusion criteria, location)
3. Measurements (scale of positive affect, measurement of other variables)
4. Study design (study type, time frames of follow-ups if longitudinal)
5. Relevant findings (associations between positive affect and other variables)
6. Quality assessment (study design, generalisability, sample size, objectiveness and validity of measures used, controls for potentially confounding variables)

Quality assessment was in line with the Critical Appraisal Skills Programme (CASP) Cohort Study Checklist (2013) for quantitative research. CASP checklists originate from workshops delivered by the Oxford Regional Health Authority to develop skills in healthcare professionals in appraising Evidence Based Medicine, and have been developed by experts and extensively piloted and surveyed. See appendix B for a summary of the CASP checklist used.

3. Literature Review

For clarity this review is split into different sections. Firstly the possible impact of positive affect on the health of PLWH is considered, and then its associations with health-related behaviours. Associations with coping styles and other personal attributes are then considered, and the possible impact and role of PA on social support and functioning is explored.

3.1. Health

3.1.1. Clinically measured health and mortality

Three longitudinal studies conducted in the US present evidence that PA has a protective impact on the health of PLWH. Moskowitz (2003) followed up 407 men living

POSITIVE AFFECT AND HIV

with HIV every 6 months for up to 7.5 years, and found that higher PA significantly correlated with lower risk of AIDS mortality when markers of illness progression, antiretroviral use and negative affect (NA) were controlled for. Higher PA remained significantly predictive of lower mortality when lagged by 12 months, and marginally predictive when lagged by 24 months. Carrico and Moskowitz (2014) studied 153 adults recently diagnosed with HIV, and found that higher baseline PA predicted lower HIV viral load (the number of HIV virus particles per ml of blood) over the 18 month follow-up period when education, disease markers and NA were controlled for. Ickovics et al. (2006) measured baseline psychological resources (PA, positive expectancy regarding health outcomes and finding meaning in challenging circumstances) and charted the health of 773 women living with HIV over 5 years. They found that more psychological resources at baseline predicted lower HIV-related mortality and immune decline when clinical status, sociodemographic characteristics and depression were controlled for.

A weakness of this evidence is the varying scorings of PA used. For example, Ickovics et al. (2006) scored PA not on an increasing scale but as a binary measure depending on scores being at/above the median, and did not report the isolated effects of PA but grouped it with other concepts comprising 'psychological resources'. Nonetheless these longitudinal studies with objective measures of health, large numbers of participants and potentially confounding variables controlled for lend confidence to the hypothesis that PA has a protective impact on the health of PLWH.

However when health is clinically measured and categorised by stage of illness, a different pattern has been observed. Reis, Guerra and Lencastre's (2013) cross-sectional study of 197 men living with HIV in Portugal found that 'asymptomatic' participants reported more PA than 'symptomatic' or 'AIDS stage' participants, but 'AIDS stage' participants reported more PA than 'symptomatic' HIV participants. Assuming that health

POSITIVE AFFECT AND HIV

impacts on PA (and not the opposite causality, as assumed by the studies described above), the authors suggest that doubts regarding the progression of the disease or specific symptoms during the ‘symptomatic’ HIV stage may impact on affect. They argue that although AIDS is a further stage of illness, it can be more stable than the ‘symptomatic’ HIV stage, and is also no longer synonymous with death due to antiretroviral medication.

There may be several reasons for the difference in Reis et al.’s (2013) findings to the longitudinal studies described above. The categorisation of health into ‘asymptomatic’, ‘symptomatic’ and ‘AIDS stage’ is not a particularly sensitive cut off, and no potentially confounding variables were controlled for. Furthermore, as a cross-sectional design was used, the study may be reflecting a different interaction of health and PA than that described by studies measuring baseline or lagged associations between PA and progressive health, perhaps presenting a ‘snap-shot’ picture of the PA experienced by individuals at different stages of HIV, rather than the longitudinal impact of PA on disease progression.

3.1.2. Self-reported health

Several cross-sectional studies also demonstrate an association between PA and self-reported health in PLWH. Chesney, Chambas, Taylor and Johnson (2003) found that perceived health functioning was significantly associated with PA in 199 homosexual men living with HIV in the US. Although no ‘AIDS stage’ participants were included, de Faria and Seidl (2006) concurred with Reis et al. (2013) with the finding that ‘asymptomatic’ participants reported higher PA than ‘symptomatic’ participants (categorised according to a self-report measure of health). Similarly, Siegel and Schrimshaw (2007) report that for 138 women living with HIV, more self-reported HIV-related physical symptoms (either due to HIV or side-effects of treatment) were correlated with less PA when controlling for demographics and locus of control. Reis et al. (2013) found that participants reporting treatment side-effects reported less PA than those not reporting side-effects.

POSITIVE AFFECT AND HIV

The studies which use validated measures of self-report health and control for potentially confounding variables (Chesney et al., 2003; de Faria & Seidl, 2006) provide evidence that higher PA predicts better self-reported health. There is also evidence that higher PA is associated with less side-effects (Siegel & Schrimshaw, 2007; Reis et al., 2013), however the measures in these studies are unvalidated, and potentially confounding variables were only controlled for in Siegel and Schrimshaw's (2007) analysis. The difficulty with cross-sectional designs is the 'snap-shot' nature of their evidence, as previously discussed, and difficulty in establishing causality. It cannot be assumed that PA is influencing self-reported health in these studies, and it may be that the symptoms an individual is experiencing on a particular day influences their mood.

One longitudinal study which followed-up 86 men living with HIV bimonthly for 2 years (Billings, Folkman, Acree & Moskowitz, 2000) found no influence of PA on self-reported general physical symptoms or HIV-relevant symptoms. This may reflect the absence of causality in the direction of PA influencing self-reported health. However the measure of self-reported health used was unvalidated, and a very specific population was sampled of homosexual men living with HIV undergoing AIDS-related caregiving for cohabiting partners, so these findings may not be generalisable.

Although findings regarding self-reported health are arguably more representative of the lived experience of PLWH than clinical measures of health, some caution should be taken regarding such scales. It is possible that associations between mood and self-reported health reflect a tendency to judge physical health as worse when experiencing a negative mood (Salovey & Birnbaum, 1989). Alternatively, according to cognitive priming (Bower, 1981), participants in a positive mood may have been primed to recall fewer physical symptoms than those experiencing a negative mood.

POSITIVE AFFECT AND HIV

3.1.3. Summary of health findings

Longitudinal studies provide some evidence that PA may have a health-protective impact for PLWH. Cross-sectional studies also suggest an association between higher PA and better self-reported health.

3.2. Behaviour

3.2.1. Therapeutic adherence

Findings from Carrico and Moskowitz (2014) begin to explore possible mechanisms of this potential health-protective effect of PA. Their longitudinal study found that the association between higher baseline PA and lower HIV viral load was mediated by antiretroviral adherence, and that baseline PA also positively predicted linkage to HIV care at 3 months post diagnosis. The longitudinal design strengthens their claims of causality, and objective measures of health were used with potentially confounding variables controlled for, although the sample of individuals diagnosed with HIV in the last 8 weeks may not be generalisable to individuals in later stages of HIV.

However cross-sectional studies add weight to this evidence. Reis et al. (2013) found that PA was significantly positively associated with therapeutic adherence. Similarly, Carrico, Johnson, Colfax and Moskowitz (2010) found that higher PA was significantly associated with increased likelihood of reporting perfect antiretroviral adherence when controlling for demographic characteristics in a cross-sectional study of 122 homosexual men and transgendered individuals living with HIV.

Although similar biases may impact on self-reported therapeutic adherence as on self-reported health, both Reis et al. (2013) and Carrico et al. (2010) used validated measures which had previously been found to correlate with unannounced pill counts and HIV viral load, and Carrico et al. (2010) also adjusted scores for over-reporting estimates. Though cross-sectional data cannot be relied on alone, the wider sampling in these two studies

POSITIVE AFFECT AND HIV

combined with the longitudinal data presented by Carrico and Moskowitz (2014) indicates that PA may predict medication adherence, in turn influencing health.

3.2.2. Sexual risk taking

The association between PA and sexual risk taking has also been explored in PLWH. Two studies conducted in the US used daily diary methodologies to chart PA and sexual risk taking in this population. Barta, Kiene, Tennen, Abu-Hasaballah and Ferrer (2007) monitored 21 individuals reporting unsafe sex and high alcohol use for 3 weeks, and found that day-to-day within-person increases in PA were associated with higher daily levels of self-efficacy to use condoms. Interestingly, daily changes in PA had a greater impact on self-efficacy amongst individuals with higher mean levels of PA. Mustanski (2007) followed up 155 homosexual men living with HIV over 30 days and similarly found that on days with higher than average levels of PA, less sexual risk behaviour occurred.

These studies present interesting data suggesting that daily within-person fluctuations in PA are associated with sexual risk behaviour, with these fluctuations having a greater influence on behaviour in individuals with higher average levels of PA. Longitudinal designs increase the data points and allow for analysis of within-person patterns. However the composite measures of sexual risk used relied on self-reported risk and partly unvalidated scales, and the population samples were selected for reported high sexual risk taking, so may be less generalisable to a larger population of PLWH. Furthermore potentially confounding variables, such as daily levels of social contact and alcohol use were not controlled for.

3.2.3. Substance-related risk

Illicit drug use has also been explored in relation to PA and HIV in two cross-sectional studies conducted in the US. Korthuis et al. (2008) reported that PA was significantly inversely correlated with use of illicit substances and drug use severity in 951 PLWH. Similarly, Carrico et al. (2010) found that PA was significantly inversely associated

POSITIVE AFFECT AND HIV

with reported injection drug use in 122 homosexual men and transgendered individuals living with HIV when controlling for demographic characteristics.

Korthuis et al. (2008) sampled a large and diverse population, but relied on an unvalidated self-report measure of substance use. Carrico et al. (2010) used a smaller sample specifically selected for high reported substance use, but corroborated self-reported substance use with urine screens. Both of these studies controlled for potentially confounding variables but used a cross-sectional design; the direction of causality between PA and substance use could be either way or bi-directional.

3.2.4. Summary of behaviour findings

Building on evidence that PA has a potential health-protective impact in PLWH, research has indicated that higher PA predicts better therapeutic adherence and linkage to HIV care. Furthermore, sexual risk taking and substance use may also be inversely associated with PA, though direction of causality cannot be assumed. The evidence regarding sexual risk taking also suggests that daily fluctuations in individuals' PA are associated with their behaviour, with these fluctuations having a greater impact in people with higher average levels of PA, suggesting that within-person changes in PA may be moderated by general level of PA in associations with behaviour.

3.3. Coping

Evidence that PA is associated with health-related behaviours is further supported by the literature exploring coping styles in individuals living with HIV.

3.3.1. Coping with HIV

A number of cross-sectional studies provide evidence for an association between higher PA and coping actively with HIV. A study of 110 individuals living with HIV in Brazil (de Faria & Seidl, 2006) found that PA was significantly positively associated with problem-focused HIV-related coping. Pernas et al. (2001) report that for 105 individuals

POSITIVE AFFECT AND HIV

living with HIV in Spain, active illness-related coping (both behavioural and cognitive), was significantly positively associated with PA. Deichert, Fekete, Boarts, Druley and Delahanty (2008) found that PA was significantly positively associated with ability to actively cope with stressors associated with HIV for 109 men in the US. Domanico and Crawford (2000) found that PA was not specifically associated with coping styles in a cross-sectional study of 100 men living with HIV, however lower general mood disturbance (of which PA was a component) was associated with active coping rather than passive-avoidant coping styles.

The evidence that higher PA, or at least lower mood disturbance, is associated with active illness-related coping in PLWH corresponds with the evidence indicating that higher PA predicts health-related behaviours. Furthermore the evidence suggests that higher PA is associated with not only active behavioural coping but also active cognitive coping regarding HIV (Pernas et al., 2001). This has also been evidenced for specific cognitive strategies. Positive reappraisal is the adjusting of perspective regarding a stressful event to gain positive meaning from it. Siegel, Schrimshaw and Pretter (2005) found that PA was significantly correlated with illness-related positive reappraisal in a cross-sectional study of 138 women living with HIV in the US. In the same population, Siegel and Schrimshaw (2007) found that 'illness-related benefit finding', a closely related concept measuring the extent to which individuals find benefits in their illness experiences, was positively correlated with PA when controlling for demographics and locus of control. Lee, Nezu and Nezu (2014) reported that the positive association they found between PA and religious coping in 198 individuals living with HIV in the US was fully mediated by 'illness-related benefit finding'.

As coping is a well-established psychological construct frequently studied in individuals with chronic ill-health, two strengths of the coping-related studies described are the use of validated measures of coping and wide inclusion criteria enabling diverse samples. The researchers also control for potentially confounding variables such as sociodemographic

POSITIVE AFFECT AND HIV

factors and health. However the use of cross-sectional designs means that causation cannot be assumed. Higher PA may lead to individuals coping with HIV more actively, perhaps by engaging in health-protective behaviours such as therapeutic adherence. Perhaps reframing the experience of illness through positive reappraisal or benefit finding is more likely when one is feeling positive. However it is also possible that actively coping with HIV either behaviourally or cognitively increases PA. Alternatively a reciprocal relationship may occur.

3.3.2. Other positive constructs

Evidence of associations between PA and other positive psychological constructs in people living with HIV highlights the possibility that PA may appear to impact on factors such as behaviour and coping due to the relationship between PA and other variables. Siegel et al. (2005) found that PA significantly correlated with perceived control over health and self-esteem in 138 women living with HIV in the US. Furthermore, in longitudinal analyses of 124 individuals living with HIV in the US who were interviewed twice 2 months apart, Mukolo and Wallston (2012) found that changes in PA were predicted by perceived competence. Individuals may take more active steps to protect and improve their health if they deem it to be under their control and view themselves as capable agents. Of the studies described so far, only Siegel and Schrimshaw (2007) controlled for locus of control in their analyses.

The two studies reporting associations between PA and other positive constructs used validated measures and controlled for potentially confounding variables such as sociodemographic factors and health. However they both used specific population samples which limits the generalisability of their findings; Siegel, Schrimshaw and Pretter (2005) women with low substance-use risk and Mukolo and Wallston (2012) literate individuals with no psychiatric history enrolled in an expressive writing intervention. Furthermore the cross-sectional design utilised by Schrimshaw and Pretter (2005) means that causality cannot be

POSITIVE AFFECT AND HIV

assumed, and although Mukolo and Wallston (2012) employed a longitudinal design, measurements were only taken at 2 time points, limiting the strength of their findings.

3.3.3. Summary of coping findings

Causality is hard to establish in the literature exploring the relationship between coping and PA in people living with HIV, however increased PA has been linked to active behavioural and cognitive illness-related coping. Further questions are raised by evidence that constructs such as perceived control over health and self-esteem are related to PA in people living with HIV, presenting the possibility that PA may appear to impact on factors such as behaviour and coping due to its correlation with such variables.

3.4. Social

PA may influence the health of PLWH, or simply improve their lives, by its association with social support. Several cross-sectional studies conducted in the US report a positive association between PA and social support or social functioning. Namir, Alumbaugh, Fawzy and Wolcott (1989) found that PA was significantly positively associated with the properties of social support networks of 50 homosexual men living with HIV. Chesney et al. (2003) found that overall social support was significantly positively associated with PA in 199 homosexual men living with HIV. Mavandadi, Zanjani, Ten Have and Oslin (2009) studied 109 individuals living with HIV and reported that greater subjective support and social interaction was significantly associated with greater PA. Siegel et al. (2005) studied 138 women living with HIV, and found that PA positively correlated with emotional and practical support. Conducting a different analysis on the same sample, Siegel and Schrimshaw (2007) found that higher levels of social conflict were correlated with less PA and higher levels of social support were correlated with greater PA when controlling for demographics and locus of control.

POSITIVE AFFECT AND HIV

These correlation studies cannot imply causality, and two studies exploring direction of causality appear to contradict each other. Deichert, et al. (2008) found that for 109 men living with HIV, “emotional support was indirectly related to men’s ability to actively engage in managing their illness through increases in PA” (p.143), suggesting that social support increases PA which in turn improves active coping. However Moskowitz, Shmueli-Blumberg, Acree and Folkman (2012) used a longitudinal design to explore social functioning in 127 individuals who had received a HIV diagnosis within 8 weeks of entering the study, conducting seven follow-ups over 18 months. They found that changes in PA over the follow-up period were significant predictors of role functioning at 18 months after diagnosis, suggesting that it is PA which influences social functioning. However when the measures in these studies are compared, Deichert et al. (2008) used a scale measuring the emotional support that participants were receiving, and Moskowitz et al. (2012) explored actions of the participants themselves regarding their functioning in relationships. Reciprocal relationships may exist between PA, social support and social functioning, such that increased PA maintains social functioning, which facilitates social support and in turn contributes to PA.

Comparatively to the coping literature, all of the studies related to social support used well-established validated measures of social support, with the exception of Moskowitz et al. (2012) who used a specifically created measure of role functioning based on validated scales. All of the studies controlled for potentially confounding variables except for Namir et al. (1989). Most sampled a specific population, for example Chesney et al. (2003) homosexual men enrolled in a coping skills-building intervention, and Moskowitz et al. (2012) a newly diagnosed sample. Given that the studies have similar findings in diverse samples, when taken together this strengthens the generalisability of findings regarding social functioning and positive affect in PLWH.

3.4.1. Summary of social findings

The literature is fairly consistent in reporting an association between PA and variables including social support, social interaction and role functioning. Again the direction of causality is hard to establish. However a cautious hypothesis can be drawn of a reciprocal relationship; increased PA may maintain social functioning, which facilitates social support and further contributes to PA, which in turn improves illness-related coping efforts.

4. Discussion

This review aimed to describe, synthesise and critique the published literature that has explored the impact and role of positive affect in the lives of PLWH. The findings regarding both clinically measured and self-reported health suggest that PA may have a health-protective role. In-keeping with this evidence, higher PA has been suggested to predict better therapeutic adherence and linkage to HIV care, as well as correlate with other health-related behaviours such as decreased substance use and reductions in sexual risk taking. Increased PA has also been found to relate to active coping and better social support and functioning, as well as other positive constructs such as self-esteem and perceived control over health. The evidence is now discussed in regards to current research and theory concerning PA and chronic health. General methodological considerations and possible implications are then considered.

4.1. **Stress and coping theory**

Causality is hard to establish in the literature exploring the relationship between coping and PA in people living with HIV, however this may fit with the reciprocal role for PA that Folkman (1997) proposed in the coping process. Folkman (1997) suggested that when chronic stress motivates certain types of coping such as planful problem-solving and positive reappraisal, these processes facilitate positive affect, which in turn has important

POSITIVE AFFECT AND HIV

coping functions. Folkman (1997) suggests that positive affect allows a psychological ‘time-out’ from distress and motivates ongoing coping efforts.

The evidence detailed in this review describes consistent associations found between PA and active behavioural and cognitive coping, namely problem-focused actions and positive reappraisal or benefit finding. PA is also found to predict improved medication adherence, linkage to HIV care and social functioning, as well as correlate with additional health-related behaviours and other positive constructs such as self-esteem and perceived competence. This evidence could be considered as in-keeping with Folkman’s theory. Active coping such as health-related behaviours and positive reappraisal may increase PA, which may provide psychological alleviation of distress through positive emotions such as self-esteem and feelings of competence, and also facilitate ongoing coping efforts such as medication adherence and social functioning. In a qualitative study exploring the best and worst days of women living with HIV, van Servelle, Sarna and Jablonski (1998) found that reports of PA were highly consistent across respondents’ descriptions of ‘best days’, and PA was also frequently related to ability to function occupationally and socially.

A cross-sectional study of 44 individuals living with HIV in the US may illuminate the process whereby coping strategies, PA and health-related behaviours interact. Bogart, Gray-Bernhardt, Catz, Hartmann and Otto-Salaj (2002) explored qualitative experiences of participants and associations to medication adherence. They found that comparisons to worse-off others resulting in PA were associated with greater medication adherence. These ‘worse-off others’ could either be other people living with HIV whose health was worse (social comparison), or themselves at an earlier stage of treatment (temporal comparisons). When comparing their current selves to an earlier ‘worse-off’ version of themselves, people considered how they had been able to control or improve their health since then. Consequent feelings of self-agency associated with PA made them more likely to consider therapeutic

POSITIVE AFFECT AND HIV

adherence an effective strategy in continuing to control their health. When comparing themselves to other people living with HIV whose health was worse, people also felt a sense of self-agency in that they had been able to maintain their health more successfully than others. Again this appeared to facilitate PA associated with a feeling of being in control of their health, and made participants more likely to value and adhere to medication. This study demonstrates how active cognitive coping can further maintain active behavioural coping through PA and other positive psychological states. Studies utilising similar qualitative methods could further explore associations between coping, PA and health in people living with HIV.

In their review of coping in PLWH, Moskowitz et al. (2009) describe the different types of active coping which may be beneficial at different stages of HIV. Upon diagnosis, individuals face several challenges which may be best addressed with active coping, such as engaging with healthcare services, considering commencement of antiretroviral medication, establishing strategies for adherence, and fostering new self-care behaviours. These early stages may be best met with active behavioural coping, producing PA which may provide psychological respite from these stressors and enable continued behavioural coping efforts. However, as individuals enter the long-term phase of HIV, the types of challenges presented may be better dealt with using active cognitive coping. For example, adapting to a new identity as someone with HIV (Baumgartner, 2007; Schwartzberg, 1996), often occurs later in the process of adjustment, and finding meaning in experiences of illness through positive reappraisal and benefit finding may aid this adjustment and provide necessary PA to motivate and sustain ongoing coping. Studies comparing the association between PA and coping in different stage of HIV may add weight to these hypotheses.

4.2. Broaden-and-build theory

The broaden-and-build theory (Fredrickson, 2013) suggests that positive emotions broaden awareness and facilitate novel and varied thoughts and actions. Over time the skills and resources built by broadened behaviour improve survival (Gable et al., 2006; Waugh & Fredrickson, 2006). Fredrickson (2013) describes this as a reciprocal upward spiral, in that positive emotions predict increases over time in broadened coping, and broadened coping predicts increases over time in positive emotions. The types of coping developed include physiological, behavioural, cognitive and social. The studies explored in this review lend support to this theory, with evidence that PA has a health-protective impact for individuals living with HIV, and that it is associated with better self-reported health.

Furthermore, the evidence supporting possible mechanisms whereby PA improves health outcomes and resources in HIV largely concurs with the mechanisms posited by Fredrickson (2013). Behaviourally, research has indicated that higher PA predicts better health outcomes through therapeutic adherence and linkage to HIV care, and PA has also been associated with other health-related behaviours such as reduced substance use and decreases in sexual risk-taking, as well as active behavioural coping. This also fits with evidence regarding other chronic health conditions (Connell, 1990). Furthermore, in a qualitative study conducted by Fredericksen et al. (2015), individuals living with HIV reported that they believed it necessary to address mood domains first to have an impact on behavioural domains, particularly alcohol and substance use.

The possibility of physiological mediation between PA and health has not been explored in PLWH. Though the physiological effects of PA have been evidenced in both healthy controls and chronic diseases other than HIV (Pressman & Cohen, 2005), given the profound impact of medication adherence on HIV outcomes, it is possible that for PLWH, it

POSITIVE AFFECT AND HIV

is linkage with healthcare and medication adherence which is the most important mediator of PA and health rather than physiological mechanisms.

As described above, cognitive resources associated with PA such as positive reappraisal and benefit finding may be reciprocally related such that PA both facilitates active cognitive coping and is maintained by it.

The literature is also fairly consistent in reporting an association between PA and variables including social support, social interaction and role functioning. Again a reciprocal relationship seems likely, such that increased PA maintains social ties, which facilitate social support and further contribute to PA, which in turn improves HIV-related coping efforts. This hypothesis is supported by evidence that social support improves survival in people with serious ill-health (Berkman, 1995; Seeman, 1996), and that individuals who report more PA socialise more and retain a higher quantity and quality of social ties (Diener & Seligman, 2002; Watson, Clark, McIntyre & Hamaker, 1992).

The evidence regarding the roles and influence of PA in individuals living with HIV certainly seems to support the 'build' aspect of the broaden-and-build hypothesis, increasing social, cognitive, and behavioural responses which feedback to subsequently increase positive emotion in an upward spiral. However whether this occurs through a 'broadening' of awareness, thoughts and actions has not been explored. The research on which the 'broaden-and-build' theory was based evidences that people experiencing positive emotions have a broadened scope of attention (Basso, Scheff, Ris & Dember, 1996; Derryberry & Tucker, 1992), show patterns of thought which are flexible and creative (Isen & Daubman, 1984; Isen, Daubman, & Nowicki, 1987) and display openness to a wider variety of behavioural options (Kahn & Isen, 1993). It would be valuable to research these processes in association with PA in people with HIV, to explore any role of 'broadening' in terms of building resources to cope with the complex stressors encountered.

4.3. General methodological considerations

4.3.1. Correlational studies

Many of the studies included in the review were cross-sectional, so the direction of effect is unknown. As described above, PA could be reciprocally related to variables such as coping and social interaction in PLWH, and this may in fact fit with existing theories of positive emotion. However it would add weight to these hypotheses to conduct longitudinal studies charting the predictive impact of PA and other variables across the coping process.

4.3.2. Timescale of PA

The majority of studies reviewed used measures of PA which required participants to indicate levels of PA over the last week, with a minority assessing the last month or last six months. It is difficult to ascertain which time period can be considered ‘state PA’ as opposed to ‘trait PA’. Furthermore, the assessment of affect in the majority of reviewed literature relied on single assessment points, which may be influenced by current mood rather than representing a summary judgements (Fredrickson & Kahneman, 1993). Sampling mood over multiple time points may allow better estimates of affect experience.

Assessing across several time points also provides the opportunity to differentiate the effects of mean (‘trait PA’) and deviations from this mean (‘state PA’). For example Barta et al. (2007) found that daily fluctuations in individuals’ PA are associated with sexual risk behaviour, with these fluctuations having a greater impact in people with higher average levels of PA, suggesting that within-person changes in PA are moderated by general level of PA in associations with behaviour.

4.3.3. Alternative explanations for associations between PA and health

A number of the reviewed studies do not address the possibility that the reported associations between PA and other variables may be due to negative affect, neglecting to use analyses or outcome measures which account for the potential relationship between NA and

POSITIVE AFFECT AND HIV

PA. However the interdependence of PA and NA is different according to time period; the greatest negative correlation is reported when immediate affect responses are observed, with the correlation decreasing as the time period widens (Diener & Emmons, 1984). The studies reviewed almost exclusively assessed PA in terms of how individuals felt for at least a week or longer. Therefore although several studies do not control for NA, because NA and PA are relatively independent of each other over longer periods, NA is less likely to be accountable for the associations reported. Accordingly, none of the reviewed studies which controlled for NA noted that this reduced correlations between PA and the variables of interest.

There are several psychological constructs closely related to PA which may be accountable for the relationships reported between PA and other variables. For example Siegel et al. (2005) found that PA significantly correlated with perceived control over health and self-esteem, and Mukolo and Wallston (2012) found that changes in PA were predicted by perceived competence. Previous research has detailed associations between PA and personality traits such as extraversion (Rusting & Larsen, 1997), as well as between PA and age (Pinquart, 2001).

It may be valuable to include validated scales measuring these related factors in research regarding PA and HIV, and use analyses which examine the independence of positive affect. However, it is possible that some of these alternative constructs are inherently confounded with positive affect, and it may be difficult to truly separate their effects. They may also play a key role in the coping processes which include PA, as hypothesised above.

4.3.4. Diversity of sampling

The reviewed studies were mainly conducted in the US, with a minority in other countries, however a strength of the literature is that overall a diverse range of populations were studied. Samples were diverse in age and race, and people at different stages of HIV were sampled, including those newly diagnosed and individuals in later stages of the disease,

POSITIVE AFFECT AND HIV

as well as those undergoing additional stressors such as AIDS-related caregiving. The majority of studies reviewed sampled male populations, and even those sampling both genders consistently included more men. Given that men and women have been found to experience and cope with stress differently (Matud, 2004), the findings may be over-representative of male coping patterns.

4.4. Implications

Though this review focussed on research using validated scales of PA, it may be valuable to explore the qualitative experiences of PLWH to further explore associations between coping, PA and health in HIV. Studies comparing the association between PA and coping in different stages of HIV, and research regarding any role of PA in ‘broadening’ in terms of building resources to cope with the condition would also be of value.

Methodologically, it would be beneficial to conduct longitudinal studies charting the predictive impact of PA and other variables across the coping process. Sampling mood at several assessment points over longer time periods may provide more accurate estimates of general levels of PA and the impact of fluctuations. Statistical analyses and outcome measures which account for possible interdependence between PA and other psychological constructs may improve research design.

Given that PA has been found to have a health-protective role for PLWH, and its associations with illness-related behaviours and coping, it may present a valuable basis from which to form psychosocial interventions for this population. Furthermore, PA has been linked to increased satisfaction with life in individuals living with HIV (Reis et al., 2013), is ranked as an important domain of clinical presentation by this population (Fredericksen et al., 2015), and is consistently quoted as a common feature in the ‘best days’ of women living with HIV (van Servelle et al., 1998).

POSITIVE AFFECT AND HIV

Positive affect interventions to reduce stress have been designed and implemented with people living with chronic health conditions including HIV, as well as groups such as those undergoing substance addiction treatment and caregivers (see Saslow, Cohn & Moskowitz, 2014, for a review). Moskowitz et al. (2011) developed a one-to-one intervention designed to increase PA in people newly diagnosed with HIV, including skills which have been associated with increased PA and psychological wellbeing in the coping and adjustment process of chronic health conditions. This pilot proof-of-concept study demonstrated good rates of retention, adherence to home practise, and significant increases in PA and decreases in NA. Ultimately, measuring the longitudinal impact of manipulating PA as an independent variable may substantiate some of the claims of the literature in this review. However research first needs to establish the feasibility and benefits of such interventions, perhaps utilising quantitative measurement of PA and qualitative explorations of the impact of any changes in PA on the lives of people living with HIV.

4.4.1. Social implications

It is tempting when evidence exists of the impact of individual factors such as positive affect to ignore the wider context around populations such as those living with HIV. The idea that positive mood can be manipulated to improve health and other outcomes for PLWH encourages a perspective on the individual rather than the possibly more significant impact of socio-economic factors. Although many of the reviewed studies control for sociodemographic factors, it cannot be ignored that several of these papers report associations between PA and race, education and socio-economic status, as well as between these sociodemographic factors and variables such as HIV viral load, linkage to HIV care and substance-use (for example Carrico & Moskowitz, 2014; Ickovics et al., 2006; Carrico et al.; 2010). The profound impact of social context on the experience of coping with HIV

highlights the importance of continued efforts to alleviate social inequality to improve the lives and health outcomes of this population.

5. Conclusion

Positive affect has been found to have a range of impacts and roles in the lives of people living with HIV. It may have a health-protective role through mechanisms such as behaviour, cognitive strategies and social connectedness. Studies suggests that it also plays a role in continuing active coping methods. Further research is required to strengthen the claims made by the existing literature and to develop positive affect interventions for people living with HIV.

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MAJOR RESEARCH PROJECT

**SECTION B: EVALUATION OF A GROUP
POSITIVE AFFECT INTERVENTION FOR
PEOPLE LIVING WITH HIV**

WORD COUNT

7,927 (7,929)

ABSTRACT

A group multicomponent positive affect intervention for individuals with HIV was conducted with seven participants accessing an inner-city charity providing support for this population. The intervention ran over eight weeks and included a number of skills which have previously been found to improve positive affect. Outcomes were measured using quantitative scales of affect and mindfulness, and qualitative follow-up interviews. Following the intervention, positive affect and mindfulness significantly increased, and a variety of other subjective changes were also reported, although more sessions or booster sessions may have maintained these changes more effectively. These findings are in-keeping with previous studies exploring the impact of multicomponent interventions with chronically ill populations. The limitations of these findings are discussed, and suggestions are made for future research, including having a larger number of participants and more carefully controlled studies.

1. Introduction

Positive affect (PA) is defined as “the range of pleasant emotions and moods that people experience on the pleasant end of the affect spectrum” (Pressman & Bowlin, 2014 p.184). It is used to describe positive feelings lasting anywhere from momentary to over several months, or the PA experience generally, referring to dispositional or trait positive mood.

1.1. **Positive affect and human immunodeficiency virus (HIV)**

Positive affect has been shown to be protective of general health (see Pressman & Cohen, 2005, for a review), and also improve coping (Hansdottir, Malcarne, Furst, Weisman & Clements, 2004; Hu & Gruber, 2008) and specific outcomes in chronic illnesses, for example chronic heart failure (Brouwers et al., 2013) and diabetes (Moskowitz, Epel & Acree, 2008).

For individuals living with HIV, the findings regarding both clinically measured (Moskowitz, 2003; Ickovics et al., 2006; Carrico & Moskowitz, 2014) and self-reported health (Chesney, Chabmas, Taylor & Johnson, 2003; de Faria & Seidl, 2006; Siegel & Schrimshaw, 2007) suggest that PA may have a health-protective role in this population.

Evidence supporting possible mechanisms whereby PA improves health outcomes in HIV concurs with the idea that PA facilitates improved coping as posited by the broaden-and-build theory (Fredrickson, 2013), a prominent and extensively researched theory regarding the evolved function of positive emotions. This suggests a reciprocal upward spiral whereby positive emotions predict increases over time in broadened coping, and broadened coping predicts increases over time in positive emotions. The types of coping developed include behavioural (proactive behaviours), cognitive (e.g. positive reappraisal of difficulties) and social (e.g. accessing support).

POSITIVE AFFECT AND HIV

In-keeping with broaden-and-build theory, evidence suggests that higher PA predicts better antiretroviral medication adherence (Reis, Guerra & Lencastre, 2013; Carrico, Johnson, Colfax & Moskowitz, 2010), increased engagement with HIV care (Carrico & Moskowitz, 2014), and other health-related behaviours such as lower substance use (Korthuis et al., 2008; Carrico et al., 2010) and lower sexual risk taking (Barta, Kiene, Tennen, Abu-Hasaballah & Ferrer, 2007; Mustanski, 2007) in people living with HIV. Social support (Namir, Alumbaugh, Fawzy & Wolcott, 1989; Mavandadi, Zanjani, Ten Have & Oslin, 2009) and functioning (Moscowitz, Shmueli-Blumberg, Acree & Folkman, 2012), have also been found to improve with higher PA in people living with HIV. PA has further been found to positively correlate with active HIV-related coping, both behavioural (Pernas et al., 2001; Deichert, Fekete, Boarts, Druley & Delahanty, 2008) and cognitive (Siegel, Schrimshaw & Pretter, 2005; Lee, Nezu & Nezu, 2014).

Specifically in terms of coping, this evidence also supports hypotheses from Lazarus and Folkman's (1984) stress and coping theory; a well-established and often utilised framework which specifically aims to understand the coping mechanisms employed in times of severe stress, such as dealing with chronic illness. Similar to Fredrickson's (2013) broaden-and-build theory, Folkman (1997) proposes that PA has a reciprocal role in the coping process, suggesting that when chronic stress motivates certain types of coping, these processes facilitate PA, which in turn has important coping functions. Folkman (1997) suggests that PA allows a psychological 'time-out' from distress and motivates ongoing coping efforts.

Evidence for this process in individuals living with HIV is supported by studies exploring coping in this population (e.g. de Faria & Seidl, 2006; Lee et al. 2014). Furthermore, reported relationships between PA and other positive constructs such as self-esteem and perceived competence (Siegel et al., 2005; Mukolo & Wallston, 2012) may

represent the psychological 'time-out' and continued motivation to cope associated with PA as hypothesised by Folkman (1997).

1.2. Positive affect interventions

Supported by these theories and research regarding positive emotion, the positive psychology movement (Seligman & Csikszentmihalyi, 2000) has encouraged the development of interventions which aim to create and enhance positive emotions as a path for improving psychological and physical health, rather than reducing negative emotions.

Single component interventions, such as those aiming to increase acts of kindness (Dunn, Aknin & Norton, 2008), gratitude (Lyubomirsky, Sheldon & Schkade, 2005) or loving-kindness meditation (Fredrickson, Cohn, Coffey, Pek & Finkel, 2008), have demonstrated beneficial psychological and physical health outcomes.

The range of techniques found to improve PA has led to the development of multicomponent interventions, which teach several skills from different lines of research. Teaching a range of skills is suggested to be useful to the greatest variety of people; reviewing mechanisms underlying successful positive emotion interventions, Layous and Lyubomirsky (2014) concluded that allowing participants to choose components that they find concordant with their skills and interests lead to greater benefits. In their review of multicomponent PA interventions to reduce stress, Saslow, Cohn and Moskowitz (2014) conclude that some skills may have significant overlap and serve to reinforce each other (e.g. recognising personal strengths alongside identifying the values which are important to you), whereas others may have synergistic benefits (e.g. practising gratitude may increase acts of kindness and vice versa).

Multicomponent interventions have been found to improve PA and health-related behaviours in people with chronic health conditions. Zautra et al. (2008) designed a group intervention for people with rheumatoid arthritis including skills such mindfulness,

POSITIVE AFFECT AND HIV

scheduling and enjoying positive events, and improving and enjoying social relationships, and found that PA significantly increased following participation. Individuals with acute coronary syndrome or heart failure who took part in a tele-intervention including gratitude, acts of kindness and consideration of participants' 'best possible self' demonstrated significantly increased PA (Huffman et al., 2011). Another tele-intervention in which participants were given health-related information alongside positive affect induction, including encouragement to focus on aspects of their daily lives which made them feel positive, was found to improve adherence to hypertension medication in hypertensive individuals (Ogedegbe et al., 2012) and increase exercise following heart surgery (Peterson et al., 2012).

Moskovitz et al. (2010; 2011) developed a one-to-one multicomponent intervention aiming to increase PA explicitly based on stress and coping theory (Lazarus & Folkman, 1984) and broaden-and-build theory (Fredrickson, 2013). The intervention included eight skills which have been associated with increased positive affect and psychological wellbeing in the coping and adjustment process of chronic health conditions: noting daily positive events, capitalising on positive events, gratitude, mindfulness, positive reappraisal, focusing on personal strengths, setting and working towards attainable goals and acts of kindness. This was a pilot 'proof-of-concept' study which demonstrated good rates of retention and significant increases in PA and decreases in negative affect in participants with Type 2 Diabetes and those newly diagnosed with HIV.

1.3. Rationale

This study aimed to contribute to the literature regarding PA interventions with chronic illness populations, specifically individuals living with HIV, using an adapted version of the intervention developed by Moskowitz et al. (2011). Although these researchers demonstrated the benefits of a multicomponent PA intervention with people newly diagnosed

POSITIVE AFFECT AND HIV

with HIV, the beneficial elements of the intervention were not fully explored. The literature regarding PA and HIV, both in terms of interventions and in regards to impacts and roles of PA in the lives of people living with HIV, is generally lacking a qualitative aspect. The current study aimed to build on the theoretical strength of existing research by exploring possible mechanisms of change from participants' view point.

As Moskowitz et al. (2011) suggested to further their findings, the intervention in this study was delivered in a group. The possibility of this format as a mechanism for improved positive affect is considered; Branscombe, Schmitt and Harvey (1999) highlight the positive impact on wellbeing that is mediated by group identification. Furthermore, as group multicomponent PA interventions have been demonstrated to be effective (Zautra et al., 2008), this may be a more efficient delivery method.

The study further builds on the suggestions of the original research by adapting the intervention to include a stronger mindfulness aspect. Mindfulness has been linked to increased PA (Grossman, Tiefenthaler-Gilmer, Raysz & Kesper, 2007; Shapiro, Brown & Biegel, 2007) and improved mental health in people with chronic health conditions (Bohlmeijer, Prenger, Taal & Cuijpers, 2010), and the original intervention study queried whether the mindfulness aspect was adequately strong. The mechanisms by which mindfulness improves PA have been explored, and include the improvement of affect regulatory tendencies (Brown & Ryan, 2003), increased positive reappraisal (Hanley & Garland, 2014), and "increased experience of momentary positive emotions as well as greater appreciation of, and enhanced responsiveness to pleasant daily-life activities" (Geschwind, Peeters, Drukker, van Os & Wichers, 2011 p.618).

1.4. Aims

The main aim of the investigation was to explore from participants' perceptions the possible mechanisms of change in a PA group intervention with people living with HIV, with the following specific research questions:

1. Following the group intervention, does PA improve for individual cases, and across the sample?
2. Following the group intervention, does self-reported mindfulness improve for individual cases, and across the sample?
3. What other subjective changes occur following the group intervention?
4. For individual participants, what were the most and least helpful elements of the intervention, and how are they perceived to be helpful/unhelpful?
5. What does comparing and contrasting individual case studies tell us about who the group intervention works for and why?

2. Method

2.1. Design

This was a small pilot study which investigated possible mechanisms of change in a new application of a multicomponent PA intervention teaching a variety of skills, taking both a group and exploratory case study approach.

2.2. Participants

Participants were recruited via fliers and a presentation (appendices C-D) at an inner-city charity which provides psychosocial support and education for people living with HIV.

To be included in the study, participants had to have a diagnosis of HIV, be over 18, speak English and be accessing the charity. Participants were excluded if there was evidence of severe cognitive impairment or active psychosis, as reported by the operations manager of the charity who had known the participants well over a substantial period of time. A final

POSITIVE AFFECT AND HIV

exclusion criteria was if participants were currently accessing a similar intervention. A screening interview provided information about the group, explored people's expectations for the group and enquired about group or individual therapy that was currently being accessed (appendix E).

2.3. Procedures and ethical considerations

Informed consent was acquired (appendix F) and information was given to the participants about the group intervention (appendix G), and the nature and aims of the research (appendix H), including how outcomes and recommendations would be shared. Whether or not participants agreed to take part in the research did not affect whether they could receive the group intervention.

The intervention, named "Feeling Good Workshop" ran for eight weeks during the once-a-week evening activity time at the charity. The intervention was based on that delivered by Moskowitz et al. (2011), with adaptations as already described. A detailed session-by-session plan is included in appendix I. It was a closed group with seven fixed members, and was facilitated by a Clinical Psychologist and a volunteer at the charity.

All procedures were approved by a University Ethics Panel (appendix J), and the BPS Code of Human Research Ethics (2010) was adhered to. Although the skills in the intervention have been demonstrated to improve wellbeing, there was a possibility that participants may have found some of the sessions distressing. However the management of this was considered adequate as the intervention was co-facilitated by a Clinical Psychologist and within the context of a charity which has its own safeguards around risk and distress. The participants were offered a £10 incentive to take part in each of the follow-up interviews.

2.4. Measures and interviews

2.4.1. Questionnaires

Positive and negative affect and mindfulness were assessed 1-2 weeks before the intervention, 1-2 weeks after the intervention, and 7-9 weeks after the intervention.

The Differential Emotions Scale (DES) modified by Fredrickson, Tugade, Waugh and Larkin (2003) measured positive and negative affect (appendix K). Participants rated how frequently they had experienced 20 particular affects in the past week from 0 (never) to 5 (extremely). Questions included “what is the most amused, fun-loving or silly you felt?” and “What is the most stressed, nervous, or overwhelmed you felt?” Reliabilities for both positive and negative affect have been shown as acceptable ($\alpha = .89$ for positive and $\alpha = .78$ for negative). Validity has been demonstrated in terms of agreement with other affect measures and change in response to intervention (Fredrickson et al., 2008).

Mindfulness was measured by the five Factor Mindfulness Scale (FFMQ; Baer, Smith, Hopkins, Krietemeyer & Toney, 2006; appendix L). Participants rated 39 items such as “I do jobs or tasks automatically without being aware of what I’m doing” and “I watch my feelings without getting lost in them” on a scale of 0 (never or very rarely true) to 5 (very often or always true). Reliability of the scale has been shown as $\alpha = .86$, and construct validity as acceptable (Baer et al., 2008).

2.4.2. Interviews

Follow-up interviews conducted at 1-2 weeks after the intervention, and 7-9 weeks after the intervention explored the experiences of participants and subjective impacts of the intervention (appendix M). These interviews consisted of two parts. The first part was based on the Change Interview as developed by Elliott (2012), which enables practitioner researchers to minimise bias. Participants were firstly asked about their general experience of taking part in the intervention. They were then requested to describe any changes they had

POSITIVE AFFECT AND HIV

observed since taking part, and asked to rate these changes on three aspects: how much they expected them prior to starting the workshop between 1 (did not expect at all) and 5 (completely expected); how much they felt they were due to the workshop between 1 (not at all due to the workshop) and 5 (completely due to the workshop); and how valuable they were to them, between 1 (not at all valuable) and 5 (extremely valuable). Following this, participants were asked what they attributed these changes to in general. In order to consider and explore possible alternative explanations for change, participants were then asked what personal or contextual resources or limitations may have helped or hindered the intervention being beneficial. Open questions were then asked regarding helpful and unhelpful aspects of the intervention.

The second half of the interview aimed to explore participants' experiences regarding specific intervention sessions and the individual skills taught. Participants were asked to rank the skills and sessions in terms of how much they were helpful/unhelpful, and explain why they had ranked them in this way. 1-2 weeks after the intervention, participants were asked which skills they thought they were most and least likely to continue practising and why, and 7-9 weeks after the intervention participants were asked which skills they had continued to practise and why, and explained any discrepancy between this and their previous predictions.

2.5. Data analysis

Questionnaire data were evaluated quantitatively using Wilcoxon matched pairs signed ranks tests to measure changes in positive and negative affect and mindfulness. Non-parametric statistics were used due to a small sample size. Descriptive statistics including demographics and ranking of skills and sessions were calculated.

Interview data were qualitatively analysed on a group level using thematic analysis. This methodology is flexible in that it can be utilised within both essentialist and constructionist paradigms and is independent of epistemology and theory (Braun & Clarke,

2006). Large amounts of qualitative data can be summarised by identifying and analysing themes or patterns of meaning. Due to the nature of the research questions in this study, a focused and top-down approach was taken to thematic analysis, with particular focus on data relevant to the research questions. The data were repeatedly read through to allow patterns to emerge; themes were then established from a list of codes generated from this process. After reviewing, the themes were defined and named. A 25% reliability check was undertaken with an independent researcher; the minor differences in coding were discussed and reviewed.

The Change Interview format (Elliott, 2012) also allowed for a case-study approach, in that participants' responses regarding what they attributed changes to were compared and contrasted in terms of who the intervention may work for and why.

3. Results

3.1. Demographics

Seven of the ten eligible people screened chose to participate in the group and the research. Four were male and three were female. Age ranged from 34 to 54 (mean = 41). Ethnicity was varied, with four people who identified as black African, one person who identified as mixed race, one as white European and one as white British. All participants had been diagnosed with HIV at least five years ago, and some up to 25 years previously. All seven participants were followed up 1 week post-intervention, and five participants were followed up 2 months post-intervention; the remaining two were not able to take part in the second follow-up due to health reasons.

3.2. Was the intervention beneficial?

3.2.1. Changes in positive affect and mindfulness scores

Table 1 shows the changes in affect and mindfulness scores pre and post-intervention (see appendix N for example Wilcoxon matched pairs signed ranks tests). There were statistically significant increases in positive affect and decreases in negative affect from pre

POSITIVE AFFECT AND HIV

intervention to 1 week post-intervention. Positive affect increased and negative affect decreased from pre intervention to 2 months post-intervention but not statistically significantly; the increase in positive affect was approaching significance ($p=0.068$).

There were statistically significant increases in overall mindfulness scores and three factors of mindfulness (observing, awareness and describing) from pre intervention to 1 week post -intervention. Overall mindfulness and two factors of mindfulness (observing and awareness) increased statistically significantly from pre intervention to 2 months post-intervention.

Table 1.

Mean positive affect, negative affect, and mindfulness scores at pre-intervention and follow-ups

Outcome scale	Pre-intervention mean (SD) n = 7	1 week post- intervention mean (SD) n = 7	2 months post- intervention mean (SD) n = 5
Positive affect	2.47 (0.80)	3.44 (1.14)*	3.00 (0.84)
Negative affect	3.5 (0.82)	2.27 (0.89)*	2.90 (1.29)
Overall mindfulness	93.9 (13.87)	119 (14.57)*	124 (19.54)*
Mindfulness (observing)	20.6 (4.54)	25 (4.28)*	26.6 (2.30)*
Mindfulness (awareness)	16.2 (5.30)	25.9 (4.41)*	28.2 (7.22)*
Mindfulness (describing)	18.7 (2.36)	24.6 (5.74)*	25.4 (7.27)
Mindfulness (nonjudging)	18.1 (3.18)	20.3 (1.50)	18 (2.12)
Mindfulness (nonreacting)	17 (7.12)	19.9 (3.63)	21.2 (6.06)

* $p < .05$, compared to pre-intervention based on Wilcoxon matched pairs signed ranks tests

There were no statistically significant changes in mindfulness or affect scores from 1 week post-intervention to 2 months post-intervention.

3.2.2. Subjective changes reported from change interview

The change interview (Elliott, 2012) was used to explore changes which participants felt had occurred for them since taking part in the workshop, how much they expected these changes, how much they considered these changes to be because of the workshop, and how

POSITIVE AFFECT AND HIV

valuable these changes were for them. The change interview was included in the 1 week and 2 month follow-up interviews. Table 2 shows the changes that participants reported.

Table 2.

Changes reported from the change interview at 1 week follow-up and 2 month follow-up

Participant no.	Changes at 1 week post-intervention n = 7	Changes at 2 months post-intervention n = 5
1	More conscious of what I'm doing Being kind to people	Not interviewed
2	Can concentrate and remember things better Being more kind so dwelling on own problems less Setting goals with confidence they will be attained Seeing the positive side of things/silver lining General change to life including how I deal with things, my health, being a better person	Concentrate better Helping others, for example volunteering, which takes focus off own problems Thinking about the future and making time plan for goals Less depressed because accepting things and letting them pass Sleeping better as thinking less Being more active and social due to improved mood
3	Being kind more, and consciously to feel good Mood has improved in general	Looking for opportunities to be kind and noticing the positive effect on my mood Paying attention to the present moment Increase in appreciation, for example for where I live, family
4	Learning how to stop and focus using breathing exercises	Not interviewed

POSITIVE AFFECT AND HIV

	Noticing positives	
5	Using meditation to control stress and think before acting	Using breathing exercise to control emotions, anxiety and worries
	Pain management	Responding differently to pain, which brings relief and makes me feel better
	Paying attention to everyday activities makes me feel more alive and life more sugary	Paying attention makes life more light
	Improved memory	
6	Awareness and control of emotions	No maintained or new changes reported
	Have become more calm	
	Less cataplexy attacks	
7	More aware of noticing positives and that it's good for me and others	No maintained or new changes reported

As can be seen from table 2, of the five participants interviewed at both 1 week and 2 months post-intervention, about half the changes experienced after 1 week were continuing to be experienced after 2 months. Five further changes were experienced overall after 2 months.

Participants were asked to rate the changes in terms of how much they expected them prior to starting the workshop, how much they felt they were due to the workshop, and how valuable they were to them. Table 3 summarises how many changes were reported and how participants rated these changes.

Table 3.

No. of changes reported and average ratings of changes

Change quality	Changes at 1 week post-intervention n = 7	Changes at 2 months post-intervention n = 5	Overall changes
No. of changes experienced (average per participant)	19 (2.7)	12 (2.4)	19 (2.5)
On average, how expected changes were prior to starting the intervention; from 1 (did not expect at all) to 5 (completely expected)	1.4 out of 5 (range 1-4)	1.5 out of 5 (range 1- 4.5)	1.4 out of 5 (range 1-4.5)
On average, how much changes were due to intervention; from 1 (not at all due to the workshop) to 5 (completely due to the workshop)	4.8 out of 5 (range 3-5)	4.5 out of 5 (range 4- 5)	4.7 out of 5 (range 3-5)
On average, how valuable changes were; between 1 (not at all valuable) and 5 (extremely valuable)	4.9 out of 5 (range 4-5)	4.9 out of 5 (range 4- 5)	4.9 out of 5 (range 4-5)

3.3. What were the beneficial elements and why?

3.3.1. Ranking of skills and sessions

At 1 week post-intervention, participants were asked which two sessions they found most helpful and which two sessions they found least helpful. All the sessions (excluding the introduction and closing sessions) were chosen by at least one participant within their two most helpful sessions. All but one participant said that they could not state any lowest ranking sessions as all were helpful. The numbers of participants choosing each session as their most helpful and second most helpful are shown in table 4.

Table 4.

No. of participants choosing each session as their most helpful and second most helpful (n = 7)

Session	Chosen by no. participants as most helpful session	Chosen by no. of participants as second most helpful session
Week 2: Noticing and capitalising on positive events; gratitude	1	1
Week 3: Informal mindfulness (turning off auto-pilot)	0	2
Week 4: Positive reappraisal (finding the silver lining)	5	0
Week 5: Personal strengths; letter writing	0	2
Week 6: Attainable goals	0	1
Week 7: Acts of kindness	1	1

At 1 week post-intervention and 2 months post-intervention participants were also asked which skills they were expecting to continue practising the most and which they were expecting to continue practising the least. (table 5) All the skills excluding 'gratitude' were named by at least one person as skills they expected to keep practising. Despite not being named as one of the skills participants expected to keep practising at 1 week follow-up, 'gratitude' was the third most practised skill at 2 months follow-up. All other skills were named by at least one person as still being practised at 2 months follow-up.

Table 5.

Skills most expected to be practised and least expected to be practised, and skills later continued to be practised and not continued to be practised

Skill	1 week post-intervention n = 7		2 months post-intervention n = 5	
	No. of participants expecting to keep practising	No. of participants not expecting to keep practising	No. of participants still practicing	No. of participants no longer practising
Noticing and capitalizing on positive events	2	0	1	0
Gratitude	0	0	2	0
Informal mindfulness	1	1	2	1
Formal mindfulness	1	0	1	1
Positive reappraisal	4	0	3	0
Personal strengths	4	1	1	2
Attainable goals	1	1	1	2
Acts of kindness	4	1	4	0

3.3.2. Subjective benefits of skills

Participants had a great deal to say about why they found particular skills beneficial. Several said that positive reappraisal, or ‘seeing the silver lining’ had provided a change of perspective. One participant said:

Before I joined the group things would come, good bad thing they go together then I’m confused, but now uh it helps me to notice this is good, and yea I try to, to feel good,

POSITIVE AFFECT AND HIV

not just to focus on the bad things only, but look onto that...silver lining, yea... it keeps your day bright. You have, however bad things is, there is something good about it.

Informal mindfulness, or 'turning off autopilot' was often reported to improve both concentration and memory, for example:

I can concentrate better now. Like before if I locked my door, I would go back like 10 times to check... I applied what they taught us, I said OK, now I'm locking the door, I realise, you know, I concentrate on what I'm doing and look to the motions of my hands, 'oh the door is locked'. Then it stays in my memory.

Another participant commented that informal mindfulness had made them more engaged with life and feel more pleasure in day-to-day activities:

I started practising, doing and then I realised it made me feel like I'm alive, I'm a human being...I'm enjoying, feeling like pleasure, and I feel like being back in the warmth. Because when people live in high level of stress, you don't realise you're brushing your teeth, you don't realise it, like you have a good cup of tea, you don't realise...But when you stop and just try to do things and then focus, and have a joyful, enjoy to do it, and they become more, the life become more sugary.

Several participants commented that practising acts of kindness made them more socially interactive. For example:

Like um for example, in the [charity] there is this new people who just join us, and we who have been there for a while, like a year or two, we already have friends we talk to...You don't go and sit with the others, you know, and they find out like they are lonely... So, me I [now] normally go and sit with them, chat with them, oh where do you come from, du du du, stuff like that. And you see a smile on their face, like oh wow, at least I've got someone who can talk to me. So the acts of kindness, yea.

POSITIVE AFFECT AND HIV

One participant in particular had effected change in their life by practising attainable goals:

And I try to focus on my future...I want to go back to school, so I've been, I've planned that at the end of December I should do something for myself. Probably go for my Masters. So I've got a timeframe to do that. I've been on the lookout. So the Feeling Good group is a fantastic something.

Participants reported that the combination of skills was important:

I think all of them are vital. Because noticing positive events in your life, once you *start appreciating and noticing what is positive in your life it means you're strengthening yourself, you're giving yourself strengths...And being grateful for what you have learnt, or what you are going through, being positive and being grateful, it makes you then sort of feel better about yourself. And once you start appreciating yourself you start appreciating others. And you start looking at life generally in a different aspect, in a positive aspect.*

Participants commented that certain skills complemented each other, for example 'turning off auto-pilot' (informal mindfulness) helped individuals to notice things to be grateful for and positive events:

I learnt to identify the small things such as looking at the stars, or having a simple meal, or whatever. So I try to pay attention to those simple things and amplifying those things. And I try and be grateful that I can see the trees, I pay quite a lot of attention *to those small...there are many different skills [that I learnt].*

Another commented that informal mindfulness helped them to notice the impact on their mood of acts of kindness:

I'm more conscious of using it. Whereas before perhaps I was using it and I was not conscious of it, now I'm more conscious so therefore I'm able to use it more when I'm

POSITIVE AFFECT AND HIV

not feeling [good], *to use it with a purpose...* I found that being kind and friendly with people I will feel much much better.

3.3.3. Other subjective beneficial elements

Further subjective beneficial elements were drawn out from thematic analysis of interviews. The following themes emerged from interview data following identification of initial codes (appendices O-Q).

Several people commented that being in a group was both a positive experience and increased the benefits they gained from the intervention. For example:

I think maybe the group of people you got together were good as well, I know whether, because we were all very different. They were all kind of very individual, where they came from, so it kind of made it very interesting too, *what people were saying...* Every week each person was positive in a completely different way...I think because of the group of people it seemed to be more effective, you know I became more aware.

Participants also frequently commented that the style of facilitation enabled the group to be beneficial; the facilitators were reported to be encouraging but not overbearing, getting the most out of participants whilst letting the group function organically. For example:

...they were trying to give everyone a chance to do something. You know like focusing on one person...Only if you don't have it they don't force you, but you feel challenged, always I don't have anything to say so next time you eager to hear properly, you listen properly and so when you have something to say, when you say something good, they say oh wow, yea, so that even makes you, you know, encouraging, you doing it.

Participants mainly felt that having homework as part of the intervention was helpful, making them feel as though they were effecting change in their lives and giving them a purpose during the week. One participant said:

POSITIVE AFFECT AND HIV

...by studying I feel like I'm changing, changed the way I live. And I have to practise, I have to focus, to do my homework for next week like for my teacher, that's the way I felt. And it helped me a lot because for my mind on something...doing this for my own good has made me feel well. I have to do them because it's my own, like achieving something, achieving my change.

Not everyone felt that they could engage with the homework, one reporting:

*Yea, I think all the paperwork and all the homework and anything like that uh, I'm just I dunno I'm just too old *laughs*. It's like, I find anything, I mean what I enjoyed was the one-to-one, the face-to-face and the experiences. I couldn't really get on with the paperwork.*

Participants commented that the mindful meditation at start of each session helped them to feel positive and benefit from the skills being taught:

The meditation before...is like having to do first from my point of view to cleanse, to cleanse, the person inside me, the negativity, and let this positivity go through...it purifies the body and your heart. And you let the secret inside this box or inside our heart come out.

Participants also reported that reading mindfulness poems at end of each session was helpful. Several commented on one poem in particular, Guest House by Rumi:

The first one change completely the situation...our life is like the guest house. Things come in, and deal with, and carry on.

There were mixed reports regarding the length of the workshop. Some said that the length was beneficial as learning occurred over time:

when it went for 8 weeks, everything started sinking in. It's not just a one-off group. It's a group for a certain length of time.

POSITIVE AFFECT AND HIV

Other participants thought that the group should have been longer or have follow-up sessions:

I'd like to have another session. Because the time we were doing therapy, you feel more motivated to carry on with our lives. And then suddenly the therapy's finished, it's quite difficult to move on, it's quite difficult to do every day different tasks.

3.4. Who was the intervention beneficial for and why?

Case studies of two participants who benefitted the least from the intervention and two participants who benefitted the most from the intervention are now compared and contrasted to explore what kind of individuals and difficulties the intervention may be beneficial for, and why this may be the case.

3.4.1. Case Study 1

The first case study explored is a white British male in his 50s who said he had no current mental health concerns and wanted to take part in the group to learn skills in keeping positive. He reported just one change 1 week post-intervention and no changes 2 months post-intervention. He showed some of the smallest increases in mindfulness and positive affect and the smallest decrease in negative affect from pre to post-intervention.

In the follow-up interviews, this participant said he had low expectations regarding the impact of the group, and felt he did not learn anything new as he already knew all of the skills taught:

Most of the things like uh, like uh the meditation the, stuff, I'm kind of aware of all those things anyway over the years you know you pick all of it up. But uh, what am I trying to say uh, so there was nothing new that I was being told.

He also said that he was not very motivated to try and effect change in his life, and that found the homework very challenging to complete:

POSITIVE AFFECT AND HIV

I didn't really expect anything...And like when its paperwork I just don't have any motivation to, you know.

3.4.2. Case Study 2

A second participant reported two changes at 1 week post-intervention and three changes 2 months post-intervention, but was amongst the lowest increases in mindfulness and positive affect, and amongst the lowest decreases in negative affect. She also reported difficulty with several of the skills, as explored below. This was a 42 year old white European woman who was also in counselling and taking anti-depressants at the time of the intervention, and had been through chemotherapy and radiotherapy for cancer in the last year. In the follow-up interviews, she spoke about pre-existing experiences and characteristics which made it more difficult for her to access the skills which were taught. For example, she described how guilt made it difficult for her to practice gratitude as she felt she was to blame for difficulties in her life, so it made it difficult for her to appreciate the positives:

For example with gratitude, guilt would be an issue. Because that would be an obstacle to improve. Guilt for example about my HIV infection, because its a sexually transmitted disease... and you know cancer is another sexual, because of the HPV, so its another... things I could have avoided easily, and I made the mistake. So that guilt, is still... so you know looking at the bottle half full half empty, I still you know that will be an obstacle.

She also described how low self-esteem since childhood made it difficult for her to engage in the 'personal strengths' skill:

the strengths I still struggle, in my family my father never said anything positive about any of the children. He was very authoritarian, that kind of thing makes you feel like *you don't have strengths and it's difficult to find them.*

POSITIVE AFFECT AND HIV

When asked about factors which made it more difficult to find the intervention helpful, this participant spoke about immediate life stressors which she was facing at the time, including the uncertainty of waiting for results regarding the cancer she was going through, and losing a close friend.

3.4.3. Case Study 3

The participant who showed the biggest increase in mindfulness and positive affect, and the biggest decrease in negative affect also reported the most changes; five at 1 week post-intervention and six at 2 months post-intervention. This participant was a 41 year old black African female, who had no previous experience of therapy but reported feeling low in mood before the intervention, and took part in order to feel calmer and increase her acceptance of living with HIV.

Comparatively to the second participant described, in follow-up interviews she reported pre-existing characteristics which impacted on how helpful she found the intervention. She said that she felt as though the intervention helped her re-discover resources which she had prior to developing HIV:

Naturally, before I became very ill, I used to practise all those things. I'm a very strong person naturally. So my illness got to me, and I lost hope totally, that was it.

For example:

you know before I very, I'm kind, it's not as if, I'm a very kind person. But even encourages me more.

She spoke about how the intervention had helped to alleviate the chronic health-related stress she was experiencing, in contrast to the acute stress that the second participant described was facing:

It starts really chipping my life, I feel a lot better about myself, I don't think a lot of anything, of HIV, I just let it pass. Upstairs they're always talking about taking drugs,

POSITIVE AFFECT AND HIV

'oh I'm so tired of taking drugs'. You just take your drugs, and that's it...Before I used to be very very depressed...But the group has really helped me how to cope with that.

In contrast to the first participant described, she said that she had high expectations that the intervention would make a difference to her life:

I expected that, because due to the name of the group, Feeling Good.

3.4.4. Case Study 4

Another participant who showed amongst the biggest increases in mindfulness and positive affect, and amongst the biggest decrease in negative affect, described similar factors in follow-up interviews. This participant was a 34 year old black African woman who was currently in counselling, and said that she wanted to take part in the intervention to reinforce her own skills in keeping positive. She reported four changes 1 week post-intervention and three changes 2 months post-intervention.

She also spoke about pre-existing characteristics which impacted on how helpful she found the workshop:

I be kind all my life anyway. Because people tell me *you're so kind you're so helpful.*

She also reported that the intervention had been helpful in regards to the chronic health-related stress she was experiencing:

you know this workshop is a good opportunity to help other people living a very difficult and distressed life...when people are living in a lot of stress and anxiety, they don't have the time to see the good side of the problem, or to carry on the problem in a different way, that stress, get angry, be crying in the stress and the pressure...I've found the silver lining. Or when I do relaxation, that's the time I see the silver lining.

In contrast to the first participant described, this participant spoke about being motivated to effect change in her life, and how this encouraged her to practise skills and complete the homework. For example, in regard to practising informal mindfulness:

POSITIVE AFFECT AND HIV

It's like homework, school homework but it's quite different... it's difficult, but real life in my life I had to do it because I want something to change, I need to change the way I saw this world or the way I hear from this world... This is why I have to do this.

Also in contrast to the first participant described, this participant reported having no previous experience of the skills in the intervention:

The experience of the workshop was helpful, really helpful 'cause I never has this kind of workshop before. And had the experience to manage my feeling, my stress, my worries, my fears too.

4. Discussion

4.1. **Changes in affect**

This study found that a group multicomponent positive affect intervention significantly increased positive affect and significantly decreased negative affect in people living with HIV, when pre-intervention scores were compared to scores 1 week post-intervention. This is concurrent with the findings of Moskowitz et al. (2011) with people living with HIV, and other researchers who have demonstrated increased PA in populations living with serious ill-health following multicomponent interventions (Zautra et al., 2008; Huffman et al., 2011; Moskowitz, 2010).

Although there were no statistically significant changes in affect scores across follow-ups (1 week to 2 months post-intervention), when compared to pre-intervention affect scores, those at 2 months post-intervention were not significantly different, although the increase in positive affect was approaching significance. This is also concurrent with the findings of Moskowitz et al. (2011), who found that differences in affect scores pre-intervention and at a second follow-up (5 weeks post-intervention) were not significant. This suggests that although the intervention in the current study was longer (8 weeks compared to 5 weeks) than

that delivered by Moskowitz et al. (2011), more sessions or perhaps booster sessions may be necessary to maintain changes. Participants also suggest that this may be beneficial.

This is also supported by the subjective changes reported. Of those reported 1 week post-intervention, about half continued to be experienced 2 months post-intervention. Despite this, five further changes were experienced at 2 months post-intervention, which suggests that though the impact of the intervention may decrease over time, some changes may occur later on, perhaps in response to consolidation or further practise of skills.

4.2. Changes in mindfulness

The current study found that increases in mindfulness scores from pre-intervention were significant both at 1 week and 2 months post-intervention. This is in contrast to Moskowitz et al. (2011), who found that changes in mindfulness scores were not significant. This perhaps indicates the success of incorporating a stronger mindfulness aspect, including mindful meditation at the beginning of each session and mindfulness-themed poems at the end of each session, which were both described as helpful by participants.

4.3. Subjective changes

Some participants subjectively reported improved mood or increased mindfulness, and there were also several other subjective changes reported following the intervention, contributing to the evidence regarding the impact of this intervention. Changes were rated as highly important to participants, and were consistently attributed to taking part in the intervention.

Furthermore, some of the subjective changes reported have previously been associated with increased PA in people living with HIV and other chronically ill populations, and can be considered as in-keeping with theories of positive emotions such as broaden-and-build theory (Fredrickson, 2013) and stress and coping theory (Lazarus & Folkman, 1984; Folkman, 1997). The reciprocal relationship between positive emotions and improved coping

POSITIVE AFFECT AND HIV

hypothesised by these theories is supported across several of the changes participants describe.

In-keeping with broaden-and-build theory, broadened cognitive awareness (e.g. 'More conscious of what I'm doing', being more aware of small aspects of day-to-day life) was reported to make life more enjoyable and improve participants' mood. It was also reported that increased awareness and control of emotions strengthened individuals' abilities in noticing what improved their mood, and enabled them to engage more in these activities, highlighting a possible relationship between broadened emotional awareness, affect and coping. These changes may further confirm the success of incorporating a strong mindfulness aspect in the intervention, as they echo evidence regarding mechanisms whereby mindfulness improves PA, including the improvement of affect regulatory tendencies (Brown & Ryan, 2003), increased appreciation of "momentary positive emotions" and "enhanced responsiveness to pleasant daily-life activities" (Geschwind et al., 2011 p.618).

Consistent with broaden-and-build theory, stress and coping theory and existing research (Pernas et al., 2001), participants linked increases in positive emotion with improved cognitive coping. This included positive reappraisal, ('seeing the positive side of things/silver lining'), and improved capacity to 'concentrate and remember things better'. Although participants reported using and benefitting from general positive reappraisal, illness-specific positive reappraisal, which has been associated with increased PA in people living with HIV (Siegel et al., 2005) was not reported. However participants did report being more accepting of their illness and letting difficult illness-related thoughts pass, again perhaps drawing on the mindfulness aspect of the intervention.

Further supporting both of these theories and also existing research (de Faria & Seidl, 2006; Deichert et al., 2008), the improved behavioural coping which was described following the intervention was reported to increase positive emotions. General behavioural changes

POSITIVE AFFECT AND HIV

included 'setting goals with confidence they will be attained' and 'looking for opportunities to be kind and noticing the positive effect on my mood'. Illness-related behavioural changes included 'responding differently to pain, which brings relief and makes me feel better' and 'general change to life including how I deal with my health'.

Lastly, the social changes described by participants in response to the group are consistent with broaden-and-build theory, stress and coping theory and existing research (Deichert et al., 2008; Moscovitz et al. 2012). Participants said that social interaction encouraged by acts of kindness increased their positive emotions, and also reported that feeling more positive in general meant that they were more likely to socialise.

4.4. Multicomponent interventions

The variability regarding which parts of the intervention participants found helpful supports evidence that multicomponent interventions are useful to the greatest variety of people (Layous & Lyubomirsky, 2014). In both the ranking of skills and sessions and subjective reports of which aspects participants valued, all of the skills taught were represented and associated with different benefits. Furthermore, participants described various ways in which different skills combined to increase the positive impact of the intervention, also supported by previous research (Saslow et al., 2014).

The findings concur with evidence that multicomponent positive affect interventions are effective when delivered in a group (Zautra et al., 2008). Participants identified being in a group as one of the beneficial elements of the intervention, saying that it provided them with different perspectives, improved their mood and encouraged them to engage.

4.5. Other factors influencing change

Consistent with therapeutic change process research, several other factors were identified as contributing towards how much individuals benefitted from the intervention. Hubble, Duncan and Miller (2006) describe how, aside from the model-specific aspects of an

POSITIVE AFFECT AND HIV

intervention (in this case the skills taught), three other factors significantly contribute to the success of an intervention. These are the therapeutic relationship, hope/expectancy and placebo effect, and client or extra-therapeutic factors.

The impact of the therapeutic relationship is highlighted in participants' reports of how the facilitators created an optimal environment, engaging all the members of the group and encouraging and validating their input, but not becoming controlling or overbearing.

In terms of hope and expectancy, the case studies provide comparisons between participants who differ in their expectations of the intervention and in their hopes regarding effecting change in their lives, and how this impacted on engagement with the intervention and homework tasks. Furthermore, participants reference the beneficial impact of simply engaging in a process in which they are aiming to change their lives, perhaps representing the placebo effect.

The case studies also offer examples of the client or extra-therapeutic factors which may impact on how individually beneficial the intervention is. Pre-existing characteristics such as kindness were reported as improving the impact of the intervention, whereas those such as low self-esteem or guilt were seen as limiting the benefits. Being new to the skills taught rather than having been previously aware of them was also reported as being more useful.

The types of difficulties that this intervention may be useful for are also suggested by the exploration of case studies. For individuals who are experiencing acute stressors or immediate life events such as very recent bereavement or health uncertainty, the intervention may be less helpful. However for those who are experiencing chronic health-related stress, which is the population these kinds of multicomponent positive affect interventions were designed for, this intervention appears to be beneficial.

4.6. Strengths and limitations

The participants in this study represented a range of ages and ethnicities, increasing the generalisability of the findings; however the small number of participants limits the strength of the group-based results.

Utilising the Change Interview (Elliott, 2012) reduced bias and enabled consideration of possible alternative explanations of change. Bias was also limited by the researcher not conducting the intervention, and a reliability check being included in thematic analysis.

A major limitation of this study was not having a control group or measuring outcomes over a longer time period at pre-intervention to assess the additional impact of the intervention in comparison with accessing the charity in general. There are also inherent problems with measuring affect using scales such as the DES which rely on summary judgements and may be influenced by current mood (Fredrickson & Kahneman, 1993).

Participants were a self-selecting sample and those who took part in the intervention may have been particularly likely to benefit from the skills taught. Furthermore some participants were undergoing other mental health interventions whilst partaking in the current study, possibly confounding findings of change. However participants reported that changes were subjectively due to the intervention and described specific intervention-related benefits in follow-up interviews.

4.7. Implications

The limitations of this study could be addressed in further research, for example running similar interventions with larger numbers of participants and with control groups. Outcome measures could also be monitored over a longer time period pre-intervention to better assess the impact of the intervention.

The qualitative aspect of this study has provided some insight into the interaction between PA and coping in people living with HIV, and how the intervention may stimulate

POSITIVE AFFECT AND HIV

this process. As qualitative research is uncommon in the literature regarding positive affect and HIV, it may be useful to further qualitatively explore the roles and impacts of positive emotions in this population.

This study contributes to the evidence that multicomponent interventions are effective in increasing PA in people with chronic health conditions, and demonstrates that a group intervention is a feasible method of delivery for people living with HIV. The results suggest that these interventions may be most useful for individuals undergoing chronic illness-related stress rather than acute life stressors, and also that certain pre-existing characteristics may increase the likelihood that participants can engage and benefit from the intervention. Factors such as hope and expectancy regarding the intervention and willingness to engage in homework exercises may also increase the benefits provided. This may improve pre-screening for such interventions in order for it to be targeted towards individuals who may benefit the most. In terms of how the intervention could be further improved, more sessions or booster sessions may maintain benefits provided by the intervention.

Given the changes that the intervention can provide, and the impact and roles of PA supported by previous research, this intervention may have far-reaching effects including mood, social interaction and health-related behaviours.

5. Conclusion

This research has found that following a group multicomponent positive affect intervention for individuals living with HIV, positive affect and mindfulness significantly increased, and a variety of other subjective changes were also reported. More sessions or booster sessions may have maintained these changes more effectively. These findings are in-keeping with previous studies exploring the impact of multicomponent interventions with chronically ill populations. Having a larger number of participants and more carefully controlled studies may be helpful in future research.

POSITIVE AFFECT AND HIV

Qualitative results are consistent with theories regarding positive emotion, specifically broaden-and-build theory (Fredrickson, 2013) and stress and coping theory (Lazarus & Folkman, 1984; Folkman, 1997), and are also consistent with previous research regarding associations between coping and positive affect in individuals living with HIV. Further qualitative research in this area may be valuable.

Several other factors consistent with change process research (Hubble, Duncan & Miller, 2006) were found to impact on how beneficial participants found the intervention, including relationship factors and extra-therapeutic factors. It was found that the intervention was more beneficial for individuals experiencing chronic health-related stress rather than acute stressful life events. It may be possible to specifically target future interventions towards individuals who may find them most useful.

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MAJOR RESEARCH PROJECT

**SECTION C: APPENDICES AND SUPPORTING
MATERIAL**

Appendix A: List of reviewed papers

Source	Participants	PA measure	Other measures	Study design	Relevant findings	Quality assessment
Health						
Moskowitz (2003)	<p>N = 407</p> <p>Men aged 25 to 53 in San Francisco (other demographics not reported)</p> <p>Recruitment: Census</p> <p>Inclusion: male, HIV+ at baseline</p>	<p>Self-reported occurrence of 4 positive emotions in the past week. Positive affect subscale on the Centre for Epidemiological Studies Depression Scale (CES-D)</p>	<p>CD4+ count</p> <p>Mortality</p>	<p>Longitudinal, with follow-ups every 6 months for up to 7.5 years</p> <p>Quantitative</p>	<p>Positive affect was significantly associated with lower risk of AIDS mortality when markers of illness progression, antiretroviral use and other subscales of the CES-D (negative affect, somatic and interpersonal) were controlled for.</p> <p>Positive affect remained significantly predictive of a lower risk of death when lagged by 12 months, and marginally predictive when lagged by 24 months</p>	<p>Strengths:</p> <p>From census data – cross-population recruitment; generalizable</p> <p>Large number of participants</p> <p>Potentially confounding factors controlled for</p> <p>Objective dependent measures</p> <p>Longitudinal design strengthens claims of causality</p> <p>Weaknesses:</p> <p>Male only sample</p>
Ickovics, Milan, Boland, Schoenbaum, Schuman & Vlahov (2006)	<p>N = 773</p> <p>Women aged 19-55 (mean 35.5), 60% Black, 20% Latina, 20% White or other, in the US</p> <p>Recruitment: Advertisements to participants and healthcare providers</p> <p>Inclusion: Women 16-55 years, reporting one or more HIV-related risk behaviour (drug or sexual)</p>	<p>Self-reported frequency of 6 positive emotions in the past 6 months, adapted from Profile of Mood States</p>	<p>CD4+ cell count</p> <p>Mortality</p>	<p>Longitudinal, with follow-ups every 6 months for up to 5 years</p> <p>Quantitative</p>	<p>Psychological resources at baseline (PA, positive expectancy regarding health outcomes, finding meaning in challenging circumstances) predicted lower HIV-related mortality and immune decline when clinical status, sociodemographic characteristics and depression were controlled for.</p> <p>Dose-response affect – as number of psychological resources increased from 0 to 3, protective effects increased (participants received ‘1’</p>	<p>Strengths:</p> <p>Large number of participants</p> <p>Potentially confounding factors controlled for</p> <p>Objective dependent measures</p> <p>Longitudinal design strengthens claims of causality</p> <p>Weaknesses:</p>

POSITIVE AFFECT AND HIV

	Exclusion: contraction by transfusion or perinatally; having AIDS or opportunistic infections				each time they scored at/above median for each resource)	Population chosen for reported risk factors and female only; less generalisable Specific effects of PA not isolated
Carrico & Moskowitz (2014)	N = 153 89% male, mean age 38, 47% Caucasian, 27% African American, 12% Hispanic/Latino, 5% Asian or Pacific Islander, living in San Francisco, mean time since HIV+ diagnosis 6.5 weeks Recruitment: through local HIV testing sites and clinics Inclusion: diagnosed with HIV in last 8 weeks	Self-reported frequency of 9 positive emotions in the past week using modified Differential Emotions Scale (mDES)	CD4+ count HIV viral load Self-reported linkage to HIV care and ART adherence	Longitudinal, with 2, 3, 6, 9, 12 and 18 month follow-ups Quantitative	Higher baseline PA predicted increased linkage to HIV care at 3 months post diagnosis and HIV viral load via antiretroviral adherence over the 18 month follow-up period when education, disease markers and negative affect were controlled for.	Strengths: Potentially confounding factors controlled for Objective dependent measures Longitudinal design strengthens claims of causality Weaknesses: Newly diagnosed sample; less generalisable
Behaviour						
Reis, Guerra & Lencastre (2013)	N = 197 69.5% men, aged 19-81 years (mean 40.3) in Portugal Recruitment: outpatient hospital departments Inclusion: HIV+, 18 years and above, antiretroviral for at least 3 months	Self-reported frequency of 10 positive emotions in the past few days using Portuguese version of PANAS (Galinha & Pais-Ribeiro, 2005b)	CD4+ cell count HIV viral load Validated self-report measure of adherence Self-reported side effects	Cross-sectional Quantitative	Positive affect was significantly associated with therapeutic adherence and satisfaction with life Asymptomatic participants reported more PA than symptomatic or AIDS stage participants. AIDS stage participants reported more PA than symptomatic participants. Participants reporting treatment side-effects reported less PA than those not.	Strengths: Wide recruitment; generalisable Objective dependent measures of health and validated measure of adherence Weaknesses: Cross-sectional design; direction of causality cannot be assumed No potentially confounding factors controlled for Health categorised into asymptomatic, symptomatic and AIDS stage; less sensitive cut offs

POSITIVE AFFECT AND HIV

						Self-report measures of adherence and side-effects, unvalidated measure of side-effects
Barta, Kiene, Tennen, Abu-Hasaballah & Ferrer (2007)	<p>N = 21</p> <p>52% men, mean age 43, 56% African American, 32% Latino, 12% White, average time since HIV+ diagnosis 11 years, In the US</p> <p>Recruitment: advertisements at HIV community agency</p> <p>Inclusion: HIV+, sexually active, engaging in unsafe sex at any point in the last six months, regular alcohol use</p>	<p>Self-reported incidence of 4 positive emotions 'right now' using Diener & Larsen's (1984) adjective checklist</p>	<p>Daily reports of retrospective (last 24 hours) and prospective (expected in next 24 hours) sexual risk behavior using a combination of validated scales and specifically designed additional questions for further information</p>	<p>Longitudinal, daily follow-ups over 3 weeks</p> <p>Quantitative</p>	<p>Day-to-day within-persons increases in PA were associated with greater daily levels of self-efficacy to use condoms. Effect of daily changes in PA on self-efficacy displayed a steeper slope among individuals with higher mean levels of PA compared to those with lower mean levels of PA.</p>	<p>Strengths:</p> <p>Longitudinal design increases data points and allowed for analysis of within-persons patterns</p> <p>Validated scales partly used to assess sexual risk behavior</p> <p>Weaknesses:</p> <p>Population chosen for reported risk factors; less generalisable</p> <p>Correlational design; direction of causality cannot be inferred</p> <p>Some parts of sexual risk questionnaire not validated and used self-reported risk</p> <p>Small number of participants</p> <p>Potentially confounding variables not controlled for.</p>
Mustanski (2007)	<p>N= 155</p> <p>MSM, mean age 28.7, 86% White, 4.7% Black, 2.7% Hispanic, 6.6% other, in the US</p> <p>Recruitment: internet advertisements aiming to recruit a high-risk sample of MSM who regularly use the internet</p>	<p>Trait PA measured by self-reported general/average incidence of 10 positive emotions using Positive and Negative Affect Scale (PANAS)</p> <p>State PA measured by self-reported incidence</p>	<p>Daily retrospective (in last 24 hours) sexual risk taking questionnaire using a combination of risk factors identified by the Centre for Disease Control and Prevention,</p>	<p>Longitudinal, with daily follow-ups over 30 days</p> <p>Quantitative</p>	<p>State PA was significantly negatively associated with engagement in sexual risk behaviours; on days with higher than average levels of PA, less sexual risk behavior was likely to occur.</p>	<p>Strengths:</p> <p>Longitudinal design increases data points and allowed for analysis of within-persons patterns and causality to be inferred regarding trait PA</p> <p>Sexual risk questionnaire partly created from acceptable sources</p> <p>Weaknesses:</p> <p>Population chosen for reported risk factors; less generalisable</p>

POSITIVE AFFECT AND HIV

	Inclusion: HIV+ MSM	during current day of 10 positive emotions using the PANAS	items decided on after a consensus meeting with sexual health researchers, and specifically designed additional questions for further information			Correlational design of state PA aspect; direction of causality cannot be inferred Sexual risk questionnaire not validated and used self-reported risk Potentially confounding variables not controlled for.
Korthuis, Zephyrin, Fleishman, Saha, Josephs, McGrath, Hellinger & Gebo (2008)	N = 951 68% male, age 20-85 (mean 45), 51% Black, 31% White, 14% Hispanic, 4% other, in the US Recruitment: from HIV healthcare sites across the US Inclusion: HIV+ adults	Self-reported frequency of 2 positive emotions in the past 4 weeks, using a health-related quality of life interview (Hays, Cunningham, Sherbourne at al., 2000)	Questionnaire asking about current and past drug, with an increasing scale of polysubstance use	Cross-sectional Quantitative	Positive affect was significantly negatively associated with use of several illicit substances and higher polysubstance use. Sociodemographic variables, CD4+ count, use of HAART and site of care controlled for.	Strengths Wide recruitment; generalisable Large number of participants Potentially confounding variables controlled for Weaknesses: Cross-sectional design; direction of causality cannot be assumed Drug use questionnaire not validated and used self-reported risk
Carrico, Johnson, Colfax & Moskowitz (2010)	N = 122 MSM or transgendered, age 26-51 (mean 44), 41% Caucasian, 32% African American, 14% Hispanic/Latino, 9% multi-cultural, 2% Asian/Pacific Islander, 2% Native American, mean time since HIV+ diagnosis 14 years, in the US	Self-reported frequency of 10 positive emotions in the past week using PANAS	Questionnaire asking about recent stimulant and injection drug use Urine screens for recent drug use Validated scale of self-reported ART adherence	Cross-sectional Quantitative	Positive affect was significantly associated with decreased likelihood of reported injection drug use and increased likelihood of reporting perfect antiretroviral adherence, when controlling for demographic characteristics.	Strengths: Varied recruitment contexts; diverse sample Potentially confounding factors controlled for Objective measure of drug use and validated scale of ART adherence with adjustment for self-reporting Weaknesses:

POSITIVE AFFECT AND HIV

	<p>Recruitment: advertisements in healthcare centres, pharmacies, community organisations, other studies, bars/clubs and street outreach</p> <p>Inclusion: 18 years or older, MSM or transgendered, on ART for at least 1 month, methamphetamine use in past 30 days</p>		adjusted for over-reporting estimates			<p>Population chosen for reported risk factors; less generalisable</p> <p>Cross-sectional design; direction of causality cannot be assumed</p>
Coping						
Deichert, Fekete, Boarts, Druley & Delahanty (2008)	<p>N = 109</p> <p>Men, mean age 39.2, 48.6% African American, 37.1% Caucasian, 12.4% Hispanic, 1% Asian, 1% Indian, in the US</p> <p>Recruitment: referral by local social services agencies</p> <p>Inclusion: HIV+ men over the age of 18, had a primary support provider</p>	Self-reported frequency of 10 positive emotions in the past week using PANAS	Validated measures of emotional support, health behaviours and coping with HIV/AIDS	Cross-sectional Quantitative	<p>PA was significantly associated with men's ability to actively cope with stressors associated with HIV</p> <p>Emotional support was indirectly related to men's ability to actively engage in managing their illness through increases in PA</p> <p>Sociodemographic variables and health controlled for</p>	<p>Strengths:</p> <p>Wide inclusion criteria</p> <p>Validated measures used</p> <p>Potentially confounding variables controlled for</p> <p>Weaknesses:</p> <p>Men only sample</p> <p>Self-report measures of behaviours used</p> <p>Cross-sectional design; direction of causality cannot be assumed</p>
Domanico & Crawford (2000)	<p>N = 100</p> <p>Men aged 22-58 (mean 36.8), 69% African-American, 12% Latino, 15% Caucasian in the US</p> <p>Recruitment: advertisements in healthcare clinics</p> <p>Inclusion: HIV+ adult men</p>	Self-reported frequency of 8 positive emotions in the past week using Profile of Mood States (POMS)	Validated scale of coping with HIV/AIDS	Cross-sectional Quantitative	<p>PA was not specifically associated with different coping styles</p>	<p>Strengths:</p> <p>Wide inclusion criteria</p> <p>Validated measures used</p> <p>Potentially confounding variables measured for impact on dependent measures</p> <p>Weaknesses:</p> <p>Men only sample</p>

POSITIVE AFFECT AND HIV

						Cross-sectional design; direction of causality cannot be assumed
Pernas, Iraurgi, Bermejo, Basabe, Carou, Paez, Cabarcos (2001)	N = 105 80% male, mean age 29.9, in Spain Recruitment: drug-users through substance treatment centre, non drug-users volunteering to attend stress management intervention at HIV treatment centre Inclusion: HIV+ adults	Self-reported frequency of 10 positive emotions in the past week using PANAS	Validated measure of coping with illness	Cross-sectional Quantitative	Active coping, behavioural and cognitive, was significantly associated with higher positive affect	Strengths: Wide inclusion criteria Validated measures used Potentially confounding variables measured for impact on dependent measures Weaknesses: Cross-sectional design; direction of causality cannot be assumed
de Faria & Seidl (2006)	N = 110 68.2% male, aged 21-60, in Brazil Recruitment: from from HIV/AIDS healthcare services Inclusion: HIV+ adults Exclusion: diagnosis within the last 2 months, currently hospitalised	Self-reported frequency of 10 positive emotions in the past week using Portuguese version of PANAS (Giacomoni & Hutz, 1997)	Validated scale of coping with HIV/AIDS Validated scale of HIV/AIDS-related self-reported health, categorised as symptomatic or asymptomatic	Cross-sectional Quantitative	Emotion-focused coping was the strongest (negative) predictor, of PA, followed by problem-focused coping, when controlling for health Asymptomatic participants reported higher PA than symptomatic participants	Strengths: Wide inclusion criteria Validated measures used Potentially confounding variables controlled for Weaknesses: Self-reported measure of health Cross-sectional design; direction of causality cannot be assumed
Billings, Folkman, Acree & Moskowitz (2000)	N = 86 MSM, mean age 36.6, over 90% White, in San Francisco Recruitment: Advertisements to participants and healthcare providers	Self-reported frequency of 8 positive emotions in the past week using Bradburn Balance Affect Scale (Bradburn, 1969)	Self-reported general (8) and HIV-relevant health symptoms (12) severity of each item was rated over the previous 2 months on a 5-	Longitudinal, with bimonthly follow-ups for 2 years Quantitative	PA did not influence general physical symptoms or HIV-relevant symptoms in HIV+ men	Strengths: Validated measure of caregiving coping used Analysis allowed for potentially confounding variables to be controlled for and assessed several models of mediation and causality

POSITIVE AFFECT AND HIV

	<p>Inclusion: HIV+, MSM living with AIDS+ partner of whom they were caregivers</p> <p>Exclusion: more than 2 symptoms of HIV, injection drug users</p>		<p>point scale. Symptoms were scored by summing severity ratings</p> <p>Validated scale of coping with caregiving</p>			<p>Longitudinal design increases data points and allowed for analysis of within-persons patterns</p> <p>Weaknesses: Specific sample of MSM caregivers with few HIV symptoms and low drug risk: less generalisable</p> <p>Health measured by self-report and unvalidated measure</p>
Siegel, Schrimshaw & Pretter (2005)	<p>N = 138</p> <p>Women aged 22-48 (mean 37.6), 38% African American, 34% Puerto Rican, 28% White, in New York City</p> <p>Recruitment: advertisements in community organisations</p> <p>Inclusion: HIV+, women, lived in NYC metropolitan area, age 20-50, completed 8th grade education</p> <p>Exclusion: Injection drug use in last 8 months</p>	<p>Self-reported occurrence of 4 positive emotions in the past week. Positive affect subscale on the (CES-D)</p>	<p>Self-report of 27 symptoms due to HIV or side-effects of treatment in past 6 months for period of 2 weeks or more. Count of number of symptoms was computed</p> <p>Validated measures of HIV-related positive reappraisal coping, self-esteem, perceived control over health, perceived social support</p>	<p>Cross-sectional</p> <p>Quantitative</p>	<p>PA significantly correlated with positive reappraisal coping regarding illness stressors, number of HIV symptoms, self-esteem, control over health, emotional support and practical support. When controlling for sociodemographic variables.</p> <p>(PA significantly correlated with stress-related growth; this association was no longer significant when positive reappraisal coping, emotional support and depressive affect were controlled for.)</p>	<p>Strengths: Validated measures of psychological constructs used</p> <p>Potentially confounding variables controlled for.</p> <p>Weaknesses: Specific sample of women with low drug use risk</p> <p>Cross-sectional design; direction of causality cannot be assumed</p> <p>Self-report, unvalidated measure of health used</p>
Lee, Nezu & Nezu (2014)	<p>N = 198</p>	<p>Self-reported occurrence of 4 positive emotions</p>	<p>Validated measure of benefit finding</p>	<p>Cross-sectional</p> <p>Quantitative</p>	<p>Positive affect was significantly associated with positive religious coping, fully mediated by benefit</p>	<p>Strengths: Wide inclusion criteria</p>

POSITIVE AFFECT AND HIV

	<p>Aged 20-73 (mean 44.89), 60.5% male. 74% Black, 15.1% White, 9.4% Hispanic, 1.5% other, in Philadelphia</p> <p>Recruitment: Approached at HIV treatment services</p> <p>Inclusion: HIV+, 18 years or older, literate in English</p>	<p>in the past week. Positive affect subscale on the (CES-D)</p>	<p>adapted for use with HIV+ populations</p>		<p>finding, when education, mental treatment, CD4+ count, HIV viral load and time since diagnosis were controlled for</p>	<p>Validated measures used</p> <p>Potentially confounding variables controlled for</p> <p>Weaknesses: Cross-sectional design; direction of causality cannot be assumed</p>
<p>Mukolo & Wallston (2012)</p>	<p>N = 124</p> <p>73.4% male, aged 20-75 (mean 41.9), 73.4% Black/Africa American, 38.7% White/Caucasian, 0.8% Native American, mean time since HIV+ diagnosis 8.3 years, in the US</p> <p>Recruitment: Enrolled in expressive writing intervention via advertisements in HIV healthcare services and community organisations</p> <p>Inclusion: at least 18 years, can read and write in English, ambulatory, able to sit and write for 20 min</p> <p>Exclusion: history of suicide attempts or ideation, previous diagnosis of posttraumatic stress disorder (PTSD), current or past hospitalization due to</p>	<p>Self-reported frequency of 10 positive emotions in the past week using PANAS</p>	<p>Validated measures of perceived competence and dispositional optimism</p>	<p>Longitudinal, with 2 interviews 2 months apart</p> <p>Quantitative</p>	<p>In longitudinal analyses, changes in PA were predicted by perceived competence and dispositional optimism, when controlling for age, sex, race, years since diagnosis of HIV, and whether HIV had progressed to AIDS Mukolo and Wallston (2012)</p>	<p>Strengths: Validated measures used</p> <p>Longitudinal design</p> <p>Potentially confounding variables controlled for</p> <p>Longitudinal design strengthens claims of causality</p> <p>Weaknesses: Limited to 2 time points</p> <p>Specific sample; less generalisable</p>

POSITIVE AFFECT AND HIV

	psychotic disorder					
Social						
Siegel & Schrimshaw (2007)	<p>N = 138</p> <p>Women aged 22-48 (mean 37.6), 38% African American, 34% Puerto Rican, 28% White, in New York City</p> <p>Recruitment: advertisements in community organisations</p> <p>Inclusion: HIV+, women, lived in NYC metropolitan area, age 20-50, completed 8th grade education</p> <p>Exclusion: Injection drug use in last 8 months</p>	<p>Self-report of 10 items assessing frequency of positive emotions over the past thirty days using the positive affect subscale the Mental Health Inventory (MHI; Viet & Ware, 1983)</p>	<p>Self-report of 27 HIV-related symptoms due either to HIV or side-effects of treatment in the past 6 months for a period of 2 weeks or more. Count of number of symptoms computed</p> <p>Validated scales of social conflict, social support and illness-related benefit finding</p>	<p>Cross-sectional</p> <p>Quantitative</p>	<p>Higher levels of social conflict and more HIV-related physical symptoms were correlated with less positive affect. Higher levels of social support and illness-related benefit finding were correlated with greater positive affect.</p> <p>Demographics and locus of control controlled for.</p>	<p>Strengths:</p> <p>Validated measures of psychological and social constructs used</p> <p>Potentially confounding variables controlled for</p> <p>Weaknesses:</p> <p>Specific sample of women with low drug use risk</p> <p>Cross-sectional design; direction of causality cannot be assumed</p> <p>Self-report, unvalidated measure of health used</p>
Namir Alumbaugh, Fawzy & Wolcott (1989)	<p>N = 50</p> <p>MSM in AIDS stage aged 26-57 (mean 36), 94% Caucasian, 4% Hispanic, 2% Afro-American, in LA</p> <p>Recruitment: recruited from AIDS treatment services</p> <p>Inclusion: MSM in AIDS stage</p>	<p>Self-reported frequency of 8 positive emotions in the past week using Profile of Mood States (POMS)</p>	<p>Validated measures of properties of social support networks</p>	<p>Cross-sectional</p> <p>Quantitative</p>	<p>PA was significantly associated with properties of social support networks (people in network, instrumental support, satisfaction with support and emotional support)</p>	<p>Strengths:</p> <p>Validated measures used</p> <p>Weaknesses:</p> <p>Specific sample of MSM in AIDS stage; less generalisable</p> <p>Cross-sectional design; direction of causality cannot be assumed</p> <p>No potentially confounding variables controlled for</p>
Mavandadi, Zanjani, Ten Have & Oslin (2009)	<p>N = 109</p> <p>55% male, aged 21-88 (mean 49.42), 63.9% African</p>	<p>Self-reported frequency of 6 positive emotions in the past week</p>	<p>Validated scales of social support and interaction</p>	<p>Cross-sectional</p> <p>Quantitative</p>	<p>Greater subjective support was significantly associated with greater PA and a lower odds of having seen a behavioural health specialist. Greater</p>	<p>Strengths:</p> <p>Wide recruitment and diverse sample; generalisable</p>

POSITIVE AFFECT AND HIV

	<p>American, 32.4% Caucasian, 3.7% other, mean time since HIV+ diagnosis 9.87 years, in the US</p> <p>Recruitment: random sampling from individuals consenting to be contacted for research participation, and advertisements in healthcare services</p> <p>Inclusion: HIV+, 18 years or above, English-speaking, cognitively intact</p>	<p>using a shortened version of Profile of Mood States (POMS SF; Curran, Andrykowski & Studts, 1995)</p>			<p>social interaction was related to greater PA. When controlling for socio-demographics, physical and mental health</p>	<p>Validated measures used</p> <p>Potentially confounding variables controlled for</p> <p>Weaknesses: Cross-sectional design; direction of causality cannot be assumed</p>
<p>Chesney, Chambas, Taylor & Johnson (2003)</p>	<p>N = 199</p> <p>MSM, aged 26-69 (mean 41.6), 77% White, in San Francisco</p> <p>Recruitment: advertisements to participants and healthcare providers</p> <p>Inclusion: HIV+ MSM enrolled in an RCT of coping skills-building intervention. 21 years or older, CD4+ over 50/mL</p> <p>Exclusion: psychiatric disorder, history of alcohol/drug use, illiterate</p>	<p>Self-reported frequency of 8 positive emotions in the past week using Bradburn Balance Affect Scale</p>	<p>Validated self-report measure of HIV-related symptoms: 18 item symptom severity scale – summed on overall measure of severity</p> <p>Validated measure of social support modified for gay men</p>	<p>Cross-sectional</p> <p>Quantitative</p>	<p>Measures of health functioning and overall social support were significantly associated with PA when controlling for sociodemographic variables and medical background</p>	<p>Strengths: Validated measures used</p> <p>Potentially confounding variables controlled for</p> <p>Weaknesses: Sample of MSM volunteering to take part in intervention study; less generalisable</p> <p>Cross-sectional design; direction of causality cannot be assumed</p> <p>Self-report measure of health used</p>
<p>Moskowitz Shmueli-Blumberg, Acree & Folkman (2012)</p>	<p>N = 127</p> <p>89% men, mean age 37.8 years, 49% Caucasian, 27% African American, 9.3%</p>	<p>Self-reported frequency of 9 positive emotions in the past week using modified</p>	<p>Self-report measure of role functioning developed from other role</p>	<p>Cross-sectional and longitudinal, with interviews at 1, 2, 3, 6, 9, 12 and 18</p>	<p>Role functioning significantly correlated with PA 2 months and 18 months after diagnosis, when NA was controlled for. Changes in PA were significant predictors of role</p>	<p>Strengths: Longitudinal design strengthens claims of causality</p>

POSITIVE AFFECT AND HIV

	<p>Hispanic, 4.3% Asian or Pacific Islander, 2.9% other in the US</p> <p>Recruitment: through local HIV testing sites and clinics</p> <p>Inclusion: diagnosed with HIV in the last 8 weeks</p>	<p>Differential Emotions Scale (mDES)</p>	<p>functioning measures</p>	<p>after HIV+ diagnosis</p> <p>Quantitative</p>	<p>functioning at 18 months after diagnosis.</p>	<p>Potentially confounding variables controlled for</p> <p>Weaknesses: Newly diagnosed sample; less generalisable</p> <p>Unvalidated measure of role functioning used</p>
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Appendix B: CASP Cohort Study Checklist

11 questions to help you make sense of cohort study (Critical Appraisal Skills Programme, 2013)
1. Did the study address a clearly focused issue?
2. Was the cohort recruited in an acceptable way?
3. Was the exposure accurately measured to minimise bias?
4. Was the outcome accurately measured to minimise bias?
5. (a) Have the authors identified all important confounding factors? (b) Have they taken account of the confounding factors in the design and/or analysis?
6. (a) Was the follow up of subjects complete enough? (b) Was the follow up of subjects long enough?
7. What are the results of this study?
8. How precise are the results?
9. Do you believe the results?
10. Can the results be applied to the local population?
11. Do the results of this study fit with other available evidence?
12. What are the implications of this study for practice?

Appendix C: Recruitment presentation



***FEELING GOOD
WORKSHOP*** | Stuart Gibson
Laura Westwick
Kyla Evans

FEELING GOOD WORKSHOP

Give you some information about the group

Give you a taster of some of the skills you can learn

FEELING GOOD WORKSHOP

The group is based on research which shows that the better you feel, the healthier you are!

This is also true for people with health conditions such as HIV, and studies have shown that good emotions can actually improve treatment outcomes.

HOW IS THIS POSSIBLE?

The hormones associated with good emotions have an effect on the body.

These can do things like lower blood pressure and improve your immune system.



HOW IS THIS POSSIBLE?

When you are feeling good you are more likely to do things like eating a healthy diet, exercise, and taking medication – all which improve your health!



HOW IS THIS POSSIBLE?

When you are feeling good you are better at taking in and remembering information.

This can help for example when you are listening to medical staff who are advising you on how to be as well as possible.



HOW IS THIS POSSIBLE?

Feeling good makes us more likely to be socially connected and ask for emotional and practical help.

These things can help us to stay healthy, especially when managing a condition like HIV.



GOOD EMOTIONS ALSO HELP IMPROVE...

How good you feel your life is

Coping at times of stress

Everyday functioning – getting things done in your day-to-day life!

SO HOW DO WE GET THESE BENEFITS? BY FEELING GOOD!

This workshop is designed to teach skills which have been found to increase good emotions in people, and have the benefits that we spoke about.

It has been run in America with really good results, and we'd like to run it at [name of charity].

WHAT WILL HAPPEN IN THE GROUP?

The group will take place at the normal activity time after dinner at [name of charity]. The group needs to have from 8 to 10 people in regular attendance.

You will work with Stuart and Laura for 8 weekly sessions which will teach you 8 different skills which have been found to improve positive emotion.

These include things like learning how to direct your attention to the good things happening in your life, breathing exercises to help you calm and soothe yourself, and setting realistic goals.

You will be asked to practise the skills between the groups and keep a track of how much you are practising.

THE GROUP WILL HELP RESEARCH

You'll be asked to fill out some short questionnaires at the beginning and end of the 8 weeks.

To find out what you thought of the group, which parts you found most and least helpful, and why.

Kyla would like to meet with you 1 week after the group ends, and again 1 month after the group ends.

As well as helping to develop treatments which help others, you will be given £20 as a thank-you for taking part in these meetings after the group.

ANY QUESTIONS SO FAR?

GRATITUDE

A feeling of thankfulness and appreciation for something.

Helps you notice things you can be thankful for and appreciate them even more because of it.

Examples of things to be grateful for include: having friends and family; a pet; a sunny day; chocolate.

EXERCISE

Get into groups of 2 or 3

One person start - thinking over the past couple of days, identify something in your life that you are grateful for and tell the other people in your group about it.

Move onto the next person and do the same. Keep going and try to generate a small list together.

(Examples.....having friends and family; a pet; a sunny day; chocolate)

FEEDBACK

What was that like?

In what ways was it difficult?

It what ways was it easy?

In the workshop, we would ask you to think about at least one thing you're thankful for over a week and to come back the week after to talk about how that was.

ACTS OF KINDNESS

Being nice to others can help you feel better by taking the focus off your own problems and letting you know that you can make a difference.

Examples of small acts of kindness include...

giving your seat on the bus to someone who might need it, taking a friend out for coffee, smiling at a stranger and holding the door open for them, or cooking dinner for a friend.

EXERCISE

Get into groups of 2 or 3

Think of a time that you did something nice for someone else. What did you do? Was it for someone you know or a stranger? How did the person respond? How did you feel? What about it made you feel that way?

Make sure everyone in the group has a turn.

FEEDBACK

What was that like?

In what ways was it difficult?

In what ways was it easy?

In the workshop, we would ask you to practise small acts of kindness and notice what they do to your positive emotions.



SO WHAT'S NEXT?

For more information, please talk to Rosie.

And take a handout!

THANK YOU

Appendix D: Recruitment flyer



FEELING GOOD WORKSHOP

8 week workshop designed to teach skills which have been found to increase good emotions in people, which have benefits for your health and happiness!

The workshop will take place at the normal activity time after dinner at [name of charity].



You will learn 8 different skills which have been found to improve positive emotions. These include things like meditation, noticing when good things happen and setting realistic goals.

You will be asked to practise the skills between the groups and keep a track of how much you are practising.

As this is a new group, to help research you can also fill in some questionnaires at the beginning and the end of the 8 weeks, and have two meetings afterwards to talk about what the group was like for you – you will be given £20 as a thank-you for taking part in these meetings.

Because it is a set workshop, we ask that people sign up only if they know they can definitely be there all 8 weeks (apart from unpredictable things of course!).

Please sign up if you want to take part.

Appendix E: Screening interview

Screening interview for feeling good workshop

Exclusion criteria

- Psychiatric or personality issue that would be not appropriate for large mixed group setting (eg., active psychotic symptoms ,complex PTSD, difficult relationship with help seeking)
- Currently accessing similar intervention

Information about the course

- 8 weeks of 1.25 hr sessions
- Each session to involve some education about the role of positive states of mind and emotions
- Mindfulness or meditative exercises in each session
- Skills building and home practice essential with a reflective log book
- Group is a supportive environment but emphasis is not on sharing stories but on reflecting on exercises in the group and on home practice. Not group therapy.
- Rules of conduct, including confidentiality are maintained in the group as well as respectful and dignified attitude and behaviour towards others.
- If we have concern about your wellbeing or safety then may need to contact Rosie or other professional as appropriate. (Check we have GP and document consent).

Screening interview (15 min face to face or telephone)

Current mood

Previous mental health

Previous engagement in mental health, psychology services

Previous experience of CBT (skills building home practice with keeping a logbook)

Do you have any previous knowledge experience around mindfulness/meditation.

What brings you here?

Hopes in attending?

Do you have any worries or concerns?

How might the course be helpful to you?

If unsure about mindfulness, reassure person that it teaches you to:

Be aware of the workings of your mind.

Recognise patterns in thinking and see thoughts as temporary and not facts.

Learn to stand back and reflect on your thoughts and recognise your emotions.

Teach you to be able to respond wisely to thoughts and feelings rather than reacting.

Learn to take a kinder and more gentle attitude to yourself.

Appendix F: Consent form

Participant Identification Number for this study:

Consent Form**Title of Project: Evaluation of a group positive affect intervention for people living with HIV**

Name of Researcher: Kyla Evans

Please initial box

1. I confirm that I have read and understand the information sheet dated 08/01/15 (version 4) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw from the study at any time without giving any reason, without my legal rights or participation in the group being affected.
3. I consent that feedback information I provide and, if it is created, information within a Facebook group for people taking part in the 'feeling good workshop' can be used for the research project.
4. I consent to the one-to-one meetings after the group finishes to be audio recorded.
5. I agree that anonymous quotes from my interview may be used in published reports of the study findings.
6. I agree to take part in the above study.

Name of Participant _____ Date _____

Signature _____

Name of Person taking consent _____ Date _____

Signature _____

Appendix G: Intervention information sheet**Feeling good workshop**

This is an 8 week workshop running from the 20th January – 10th March 2015. The workshop will take place at the normal activity time on Tuesdays after dinner at [name of charity].

The workshop is designed to teach skills which have been found to increase good emotions in people, which have benefits for your health and happiness!

You will learn 8 different skills which have been found to improve positive emotions. These include things like meditation, noticing when good things happen and setting realistic goals.

You will be asked to practise the skills between the groups and keep a track of how much you are practising.

Are there any risks to me?

- Some of the material may be emotional, however the facilitators and usual [name of charity] staff will be on-hand to talk to at any time.
- Please let us know if you would like to withdraw from the group at any time.

This is a new group, and we are conducting a research project about whether it is helpful and how people think the group helps them. If you would like to take part in this research, you will be taken through the information sheet titled 'feeling good research project'. Whether you take part in the research or not does not affect whether you can take part in the group or not.

I have read and understood the above information (please tick)

I consent to take part in the group (please tick)

Name of Participant _____ Date _____

Signature _____

Name of Person taking consent _____ Date _____

Signature _____

Appendix H: Research information sheet

08/01/15

Version 4

Feeling good research project

Hello. My name is Kyla Evans and I am a trainee clinical psychologist at Canterbury Christ Church University. I would like to invite you to take part in a research study. Before you decide it is important that you understand why the research is being done and what it would involve for you.

Why have I been asked to take part in this project?

You have been asked to take part in the project because you have shown interest in the ‘feeling good workshop’.

Whether you take part in the project or not does not affect whether you can take part in the group or not.

Why are you conducting this research project?

This is a new group, and we want to find out whether it is helpful and how people think the group helps them.

What will I have to do to take part?

One week before the intervention begins, you will be asked to complete two short questionnaires and give some information about yourself.

At the beginning of each week you will be asked for feedback about the previous week’s session and practising the skills. You will also be given a log to complete a record of home practise of the different skills from the beginning of the intervention up until a month later.

One week after completion of the intervention, I will conduct the first follow-up interviews and repeat the two short questionnaires for a second time. Four weeks after completion, I will conduct the second follow-up interviews and repeat the two short questionnaire for a third time. The interviews will include questions about what you thought of the group, which parts you found most and least helpful, and why.

What’s in it for me?

As well as helping to develop treatments which may improve people’s quality of life, you will be given £10 as a thank-you for the each of the one-to-one meetings following the group (£20 in total).

What will happen if I don’t want to carry on with the study?

You can withdraw from the group or the research study at any point whilst it is being conducted, and your data will be destroyed.

What if there is a problem?

If you are worried about the intervention or the research, you can contact:

POSITIVE AFFECT AND HIV

Rosie or Siobhan [name and phone number of charity]

Dr Stuart Gibson, Clinical Psychologist supervising this project [phone number]

Will my taking part in this study be kept confidential?

All information which is collected about you during the course of the research will be kept strictly confidential. All participants will be given a unique data number used to identify their data. On one database your general demographic data including age, gender, ethnicity and social background will be collected, along with the questionnaire data. On another database, your name and contact details will be stored to arrange the interviews for the research. Only myself and Dr Stuart Gibson will have access to your personal data, which will be destroyed once the final follow-up interviews have been conducted. Pseudonyms will be used when writing up the results for publication.

What will happen to the results of the research study?

You will not be identified in any report or presentation of the results.

You will be provided with a written summary of the results if you would like.

The research also will be written up and submitted as part of a doctoral course in Clinical Psychology with an aim to publish the results in a peer-reviewed journal.

Who is organising and funding the research?

The research is organised and funded by Canterbury Christ Church University, CASCAID within South London and Maudsley NHS Foundation Trust, and [name of charity].

Who has reviewed the study?

This research has been looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and approved by Salomons Centre for Applied Psychology Ethics Panel (within Canterbury Christ Church University).

Further information and contact details

If you would like to speak to me and find out more about the study or have questions about it answered, please speak to either Rosie, Stuart or Siobhan and leave a contact number so that I can get back to you.

Appendix I: Intervention session-by-session overview

Session 1: Introduction

1. WELCOME

Get into pairs - introduce your partner to group - break into new dyads, introduce and discuss ‘how do YOU know when you’re feeling good?’ - feedback with group discussion

2. Course outline

Provide rationale for focussing on positive psychological states

Give out resource packs

3. Ground rules

Confidentiality - regular attendance – respectful contributions – participating as much or little as you want

4. 3 minute mindful breathing exercise

5. Poem: Let Love Grow - Kelly Athena

Session 2: Noticing positive events, capitalising and gratitude

1. WELCOME

2. 3 minute mindful breathing exercise

3. Check-in

Last week’s session and practise over week

4. Share session outline

5. Sharing some of the theory behind the skills – share the research paper

6. Skills sharing and instruction

a. Noticing positive events: It’s important to recognize and acknowledge positive events that happen each day. Even small events can have a positive impact on mood and the ability to handle stress.

As a group list some “simple pleasures” or positive events. Examples of small positive events to notice include: getting a phone call from a friend; watching a funny movie; enjoying a good cup of coffee.

b. Amplifying/capitalizing: After identifying a positive event, it is possible to expand on it by thinking back on it, reliving it, continuing to focus on it. Amplifying positive events is associated with feeling more positive emotion and may improve coping.

Examples of the ways that people can amplify positive events include: stopping to think about it and

POSITIVE AFFECT AND HIV

savor it, writing about it, talking about it with a friend, posting about it on Facebook.

7. Skill practice: Positive event and amplifying/capitalizing with participant

Work in pairs...

a. Noticing a positive event. Identify a positive event that happened in the past week. Discuss the event, the emotions felt at time and what their current reaction is to discussing the event. Repeat, going over one to three different events.

Come back and share

Work in different pairs...

b. Amplifying/capitalizing. Walk through previous examples. Explore what was done in response to events, explore amplification of events.

How did you amplify the positive event/experience. Did you tell a friend about it? Did you write it down? (maybe you didn't amplify it).

How could you amplify such an experience?

SHARE

8. Skills sharing and instruction: Gratitude

Gratitude is a feeling of thankfulness and appreciation for something. It's also a way of thinking that can help you notice things you can be thankful or and appreciate them even more because of it. Gratitude is another way to savor a positive event. It's important to think about things that you're genuinely grateful for and not things that you think you should be grateful for.

Examples of things to be grateful for include: having friends and family; a pet; a sunny day; chocolate.

9. Skills practice: Gratitude

Work in pairs

Thinking over the past week, identify something in your life that you are grateful for. Repeat, try to generate a small list.

10. Home practice

a. Positive event: Every evening, write down one or more positive things that happened that day. For each event, note feelings, thoughts and physical sensations that you felt at the time. What did you do in response to the event? Did you amplify it?

b. Gratitude journal: Think about at least one thing you are grateful for each day. It doesn't have to be new each day and can be very small. Reflect on things in your life that you have to be grateful for.

c. Emotion checklist: At the end of each day, complete the emotion checklist form that asks how much of each emotion you felt that day.

11. Poem: All that is glorious around us - Barbara Crooker

Session 3: Mindfulness, 'turning off autopilot'**1. WELCOME****2. 3 minute mindful breathing exercise****3. Check-in**

Last week's session and daily gratitude checklist practise over week

4. Share session outline**5. Introducing informal mindfulness: turning off autopilot**

Mindfulness is a particular way of paying attention: on purpose, in the present moment, with a non-judgmental and accepting attitude. Mindfulness can help increase positive emotions because it can make bad things seem less overwhelming; it helps you notice little things that you might have overlooked and it allows you to put more energy into dealing with things rather than worrying about them.

Two kinds of mindfulness practice include 'formal' and 'informal' practice. Formal mindfulness is paying attention to the breath as in the breathing exercises. Informal mindfulness involves being present with the activities of daily life. It means slowing down and focusing on the details of the moment rather than rushing through it. It is the opposite of zoning out or going on 'autopilot'. An example of practicing informal mindfulness would be paying attention when you are walking (at work, at home, to and from your car, walking to the bus, etc.). Be with your posture, the feel of your legs as they move, the feel of your feet as they contact the ground, the sensations of your breathing, the sights and sounds around you. You might notice something beautiful (a sunset, a tree) that you would have otherwise missed.

6. Exercise in pairs

Think about a positive event you had last week. By paying attention to positive events you already have practice in being present. Now think about the opposite, being on autopilot. Describe a time in the past week when you were on autopilot or rushing through an activity of daily life. What happened? How did this experience differ from the experience of the positive event? Feedback to the group.

7. Practising being in the now: raisin exercise

The home practise this week will be to mindfully engage in an activity every day. One example is eating which we can practise now.

Raisin exercise: Give out raisins to group.

Holding: First, take a raisin and hold it in the palm of your hand or between your finger and thumb. Focusing on it, imagine that you've just dropped in from Mars and have never seen an object like this before in your life.

Seeing: Take time to really see it; gaze at the raisin with care and full attention. Let your eyes explore every part of it, examining the highlights where the light shines, the darker hollows, the folds and ridges, and any asymmetries or unique features.

POSITIVE AFFECT AND HIV

Touching: Turn the raisin over between your fingers, exploring its texture, maybe with your eyes closed if that enhances your sense of touch.

Smelling: Holding the raisin beneath your nose, with each inhalation drink in any smell, aroma, or fragrance that may arise, noticing as you do this anything interesting that may be happening in your mouth or stomach.

Placing: Now slowly bring the raisin up to your lips, noticing how your hand and arm know exactly how and where to position it. Gently place the object in the mouth, without chewing, noticing how it gets into the mouth in the first place. Spend a few moments exploring the sensations of having it in your mouth, exploring it with your tongue.

Tasting: When you are ready, prepare to chew the raisin, noticing how and where it needs to be for chewing. Then, very consciously, take one or two bites into it and notice what happens in the aftermath, experiencing any waves of taste that emanate from it as you continue chewing. Without swallowing yet, notice the bare sensations of taste and texture in the mouth and how these may change over time, moment by moment, as well as any changes in the object itself.

Swallowing: When you feel ready to swallow the raisin, see if you can first detect the intention to swallow as it comes up, so that even this is experienced consciously before you actually swallow the raisin.

Following: Finally, see if you can feel what is left of the raisin moving down into your stomach, and sense how the body as a whole is feeling after completing this exercise in mindful eating.

Feedback to group about what exercise was like.

8. Home practice: being present in daily life.

Each day, think of an activity of daily life that you typically do on autopilot. Focus on doing that task more mindfully. You can select a task on your own or from the list (give out worksheets)

Continue doing daily gratitude checklist.

9. Poem: Awakening Now - Danna Faulds

Session 4: Positive reappraisal, ‘finding the silver lining’

1. WELCOME

2. 3 minute mindful breathing exercise

3. Check in

Discuss formal and informal mindful home practice and daily gratitude and emotion checklist.

4. Share session outline

5. Skill sharing and instruction: Positive reappraisal

Question – what do we mean when we say “every cloud has a silver lining?”

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Handout 1 – overview and example...

Explain....

A person's interpretation of a situation or event determines whether the event is experienced as stressful. Since our appraisals determine how we react emotionally, if we can change our appraisals (that is, how we perceive, view or interpret an event), we can change how we feel. It is even possible sometimes to find something in a bad experience that is actually good. This is sometimes referred to as 'seeing the glass as half full rather than half empty' or 'finding the silver lining'.

Finding the silver lining doesn't mean that you're glad the bad thing happened, it means you managed to do something good with the hand you were dealt.

Reappraisal is about acknowledging that we can control how we think about a situation.

An example of two different appraisals of the same situation is a bus arriving late, being full and driving past two people at a bus stop. One person may interpret the situation as horrible, the bus driver refused to stop for her and she has to waste an hour waiting for another. The other person may think that the bus must have been very full for the driver not to even stop. Seeing it as no one's fault, she is less upset. The silver lining may be that the woman had time to call a friend she'd been meaning to catch up with and use the time she had productively.

3. Skill practice

Handout/worksheet 2

Practice reappraisal by thinking back over the past week to a time when you felt stressed. Talk about what happened and how you felt when it happened. What did you feel? What made you feel that way? What did you do in response to the event?

Work with facilitator to reappraise the event. List some ways that maybe it wasn't as bad as it could have been. Did any good things come from it?

Remember to start small. Positive reappraisal is a skill to be developed and you should start with small events.

4. Home practice

a. Positive reappraisal: Each day think of one negative or stressful thing that happened to you. Then practice positive reappraisal of that event. Practice noting your thoughts and feelings without reacting right away. Record these thoughts on your home practice sheet.

5. Poem: The Guest House - Rumi

Session 5: Personal strengths, letter writing exercise

1. WELCOME

2. 3 minute mindful breathing exercise

3. Check in

POSITIVE AFFECT AND HIV

Discuss positive reappraisal home practice

4. Share session outline

5. Skill sharing and instruction: Personal strengths

Everyone has a unique set of strengths, talents, skills and positive qualities. Recognizing your own strengths can help you better cope with stressful things in your life.

Examples of personal strengths include having a great sense of humour, being punctual, creative, or responsible.

6. Skill practice

Make a list of your strengths, talents, skills and positive characteristics. Look at the list of adjectives and see which relate to you. What are the strengths that have gotten you through hard times?

For each of the strengths you've listed, talk through a time that the person demonstrated or used that strength.

For example, a person who is responsible would show this by showing up for an appointment on time. A compassionate person may offer their seat on the bus to a pregnant woman.

7. Letter writing exercise

Pretend you are writing a letter to someone really close to you (maybe your child, best friend, sister or brother). Maybe they are having a hard time and they lost sight on their incredible talents and skills that you value so much in them. You have decided that you want to remind them of what their strengths are.....But the person you are writing to is yourself.

8. Home practice

a. Personal strengths: Each day, list one of your strengths or positive characteristics and how you used it that day. It may be related to your attainable goal.

9. Poem: Special Lady - Martin Dejnicky

Session 6: Attainable goals

1. WELCOME

2. 3 minute mindful breathing exercise

3. Check in

Discuss how it went in identifying 'personal strengths' on a daily basis

4. Share session outline

5. Skill sharing and instruction: Attainable goals

POSITIVE AFFECT AND HIV

Personal strengths not only help you cope with stress, they also help you achieve your goals. People often experience positive emotions when they achieve a goal. Attainable goals are short-term, modest goals and are the ones that are likely to help us experience positive emotion on a daily basis.

Attainable goals have four characteristics:

- a. Realistic: can be completed within a reasonable time frame.
- b. Clear: easily identified steps to complete it.
- c. Not too easy: should be somewhat challenging.
- d. Clear end point: to know when it has been successfully achieved.

An example of attainable goals may be to take a walk twice this week (rather than go to the gym every day for a month) or clean your closet this week (rather than clean the house and make it more appealing).

Group exercise: break into smaller groups to help set attainable goals for each other

6. Skill sharing and instruction: Identifying personal values

Setting goals that are personally relevant and valuable are more likely to boost self esteem, self efficacy and positive emotions. But sometimes, people lose touch and lack awareness of what is personally relevant and important to them.

The ‘values compass’ worksheet can help someone re-connect with the things that are most important to them.

Group exercise: break into smaller groups to discuss which points of the compass appear more relevant or important to oneself

7. Home practice

- a. Attainable goals: Brainstorm one or more attainable goals for the next week. Make sure they are realistic, clear, not too easy, and have a clear end point.
- b. Values Compass Worksheet – setting 2 to 3 attainable goals from what is generated on the worksheet

8. Poem: Allow yourself - Catherine Pulsifer

Session 7: Acts of kindness

1. WELCOME

2. 3 minute mindful breathing exercise

3. Check in

Discuss how setting attainable goals on a daily basis went.

POSITIVE AFFECT AND HIV

4. Share session outline

5. Skill sharing and instruction: Acts of kindness

Doing kind things for others is associated with better physical health. Being nice to others can help you feel better by taking the focus off your own problems, give you a sense of control, and give you a sense of accomplishment. The idea is that doing small kindnesses for someone, or ‘paying it forward’, will increase your positive emotion.

Examples of small acts of kindness include giving your seat on the bus to someone who might need it, taking a friend out for coffee, smiling at a stranger and holding the door open for them, or cooking dinner for a friend. Look at the examples of acts of kindness for ideas – what other ones can you come up with?

Discuss in groups:

- a. Can you remember a time when someone was kind to you? What did they do? Was it someone you knew or a stranger? How did they respond? How did you feel? What made you feel that way?
- b. Think of a time that you did something nice for someone else. What did you do? Was it for someone you know or a stranger? How did the person respond? How did you feel? What about it made you feel that way?

6. Home practice

Generate some ideas of small acts of kindness that you could do in the coming week.

7. Poem: A compassionate heart - Joseph T. Renaldi

Session 8: Review

1. WELCOME

2. 3 minute mindful breathing exercise

3. Check in

Discuss how small acts of kindness went

4. Share session outline – review session

5. Review of skills from previous sessions

6. Goodbye poem: If I had my life to live over - Nadine Stair

Appendix J: Ethics Panel approval letter

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Appendix K: Modified Differential Emotions Scale (mDES)

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Appendix L: Five Factor Mindfulness Scale (FFMQ)

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Appendix M: Follow-up interview schedule

1 Week follow-up interview schedule

There are two parts to the interview – the first part is about your experiences of the workshop in general, and in the second part we go into the specific skills that you learnt in the workshop. There's no right or wrong answers to anything I just want to get an honest view of how you found being in the workshop.

Part 1: Change interview

1. General experience of the workshop. What has the workshop been like for you?
2. Changes. What changes, if any, have you noticed in yourself since the workshop started?
3. Change ratings (5 point rating scales).

Expectedness: Thinking back to before you started the workshop when you knew some information about what it was about, how much did you expect this change?

Likelihood without the workshop: Do you think this change was due to the workshop?

Importance of each change: how valuable is this change to you?

4. Attributions. In general, what do you attribute these various changes to – what do you think caused them?
6. Resources: What personal strengths or aspects of your current life situation have helped you find the workshop useful?
7. Limitations: What things about you or your life situation have made it harder for you to find the workshop helpful?
8. Helpful aspects. What have been the most helpful things about the workshop? I'm not talking about the individual skills but any other things about the workshop that you found helpful.
9. Problematic aspects. What kinds of things about the workshop have been unhelpful, negative or disappointing for you? Was there anything that was difficult or missing from the workshop?
10. Would you recommend this workshop to other people you know who have HIV?

Part 2: Skills

1. Here is an outline of the sessions and the skills taught in each session. Can you have a look and rank for me the 2 most helpful sessions and 2 least helpful sessions.

POSITIVE AFFECT AND HIV

2. Talk me through why you ranked them in this way – what did you find helpful/unhelpful about each sessions and the skills taught in them?
3. Looking at the skills, which 2 skills do you think you are most likely to keep practising in the future?
4. Which 2 skills do you think you are least likely to keep practising in the future?

Do you have any other comments you'd like to make?

2 Month follow-up interview schedule

There are two parts to the interview – the first part is about your experiences of the workshop in general, and in the second part we go into the specific skills that you learnt in the workshop. There's no right or wrong answers to anything I just want to get an honest view of how you found being in the workshop.

Part 1: Change interview

1. General experience of the workshop. Thinking back, what was the workshop like for you?
2. Changes. What changes, if any, have you noticed in yourself since you took part in the workshop?
3. Change ratings (5 point rating scales).

Expectedness: Thinking back to before you started the workshop when you knew some information about what it was about, how much did you expect this change?

Likelihood without the workshop: Do you think this change was due to the workshop?

Importance of each change: how valuable is this change to you?

4. Attributions. In general, what do you attribute these various changes to – what do you think caused them?
6. Resources: What personal strengths or aspects of your current life situation have helped you find the workshop useful?
7. Limitations: What things about you or your life situation have made it harder for you to find the workshop helpful?
8. Helpful aspects. What were the most helpful things about the workshop? I'm not talking about the individual skills but any other things about the workshop that you found helpful.
9. Problematic aspects. What kinds of things about the workshop were unhelpful, negative or disappointing for you? Was there anything that was difficult or missing from the workshop?

POSITIVE AFFECT AND HIV

Part 2: Skills

1. Do you feel you learnt any new skills?

Prompts: Can you describe them briefly?

2. Which skills have you continued practising since the group?

Prompts: Why do you think you have continued practising these skills in particular?

Why do you think you haven't continued practising other skills?

This is different from the skills you said you would continue/not continue practising, why do you think that is?

Do you have any other comments you'd like to make?

Appendix N: Example Wilcoxon matched pairs signed ranks tests**Hypothesis Test Summary**

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between T1PA and T2PA equals 0.	Related-Samples Wilcoxon Signed Rank Test	.028	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between T1NA and T2NA equals 0.	Related-Samples Wilcoxon Signed Rank Test	.046	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between T15FMOverall and T35FMOverall equals 0.	Related-Samples Wilcoxon Signed Rank Test	.043	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between T1PA and T3PA equals 0.	Related-Samples Wilcoxon Signed Rank Test	.068	Retain the null hypothesis.

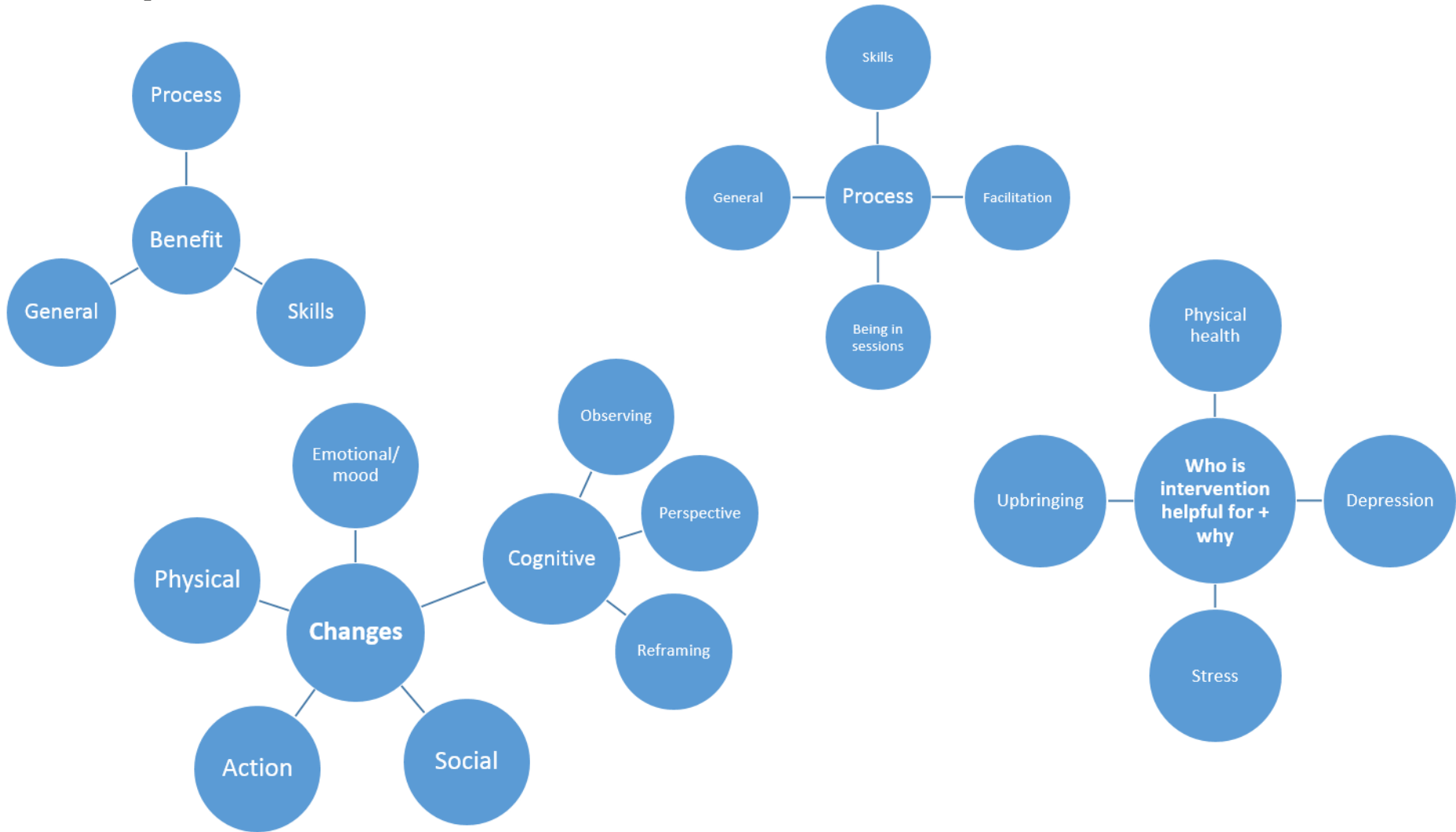
Asymptotic significances are displayed. The significance level is .05.

Appendix O: Example coded transcript

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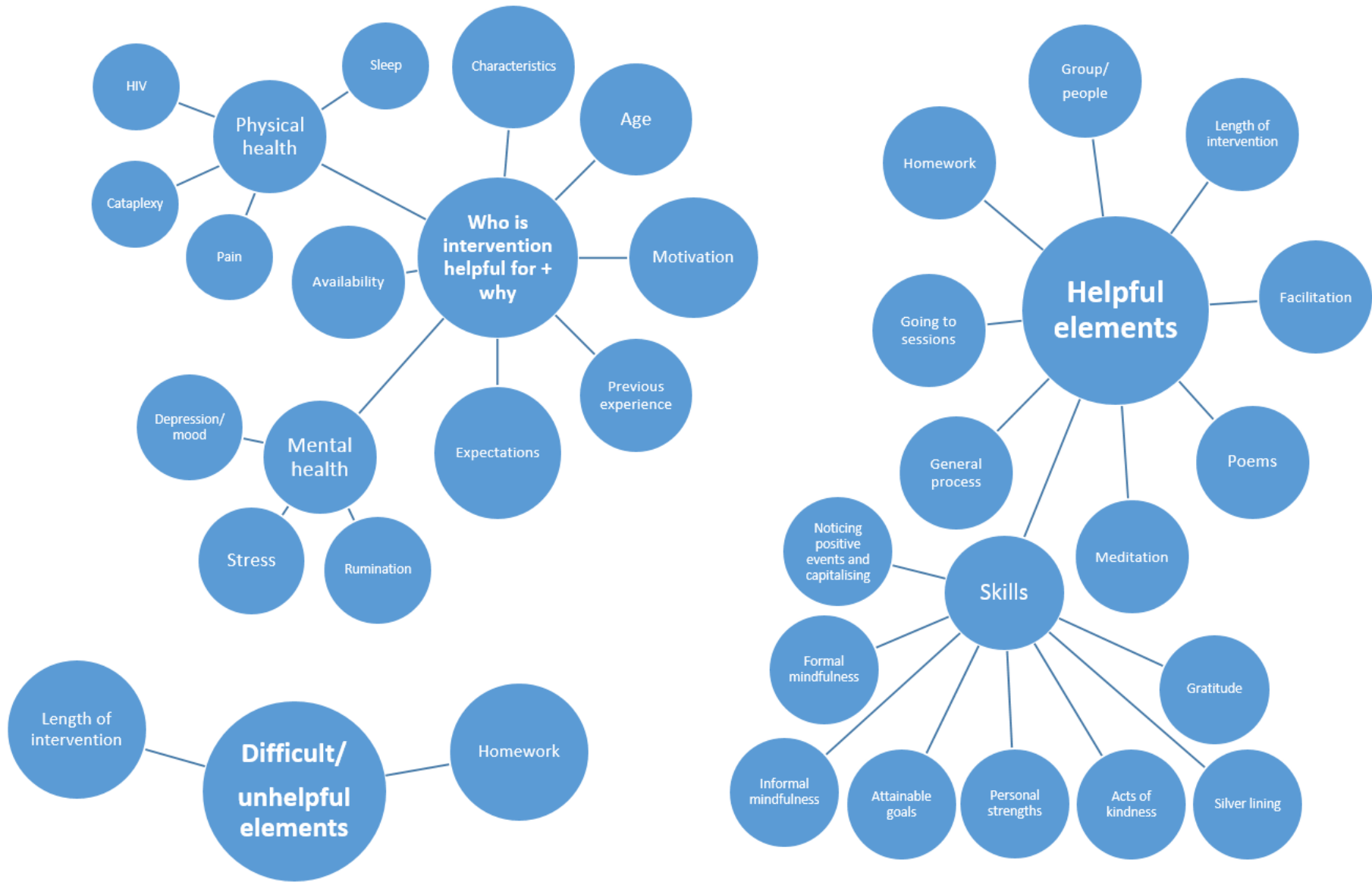
Appendix P: Theme development

Theme Development 1



POSITIVE AFFECT AND HIV

Theme development 2



Appendix Q: Final theming frame

Research Question	Themes and Sub-themes	Example Quotations
Who does the intervention work for and why?	Characteristics	<p>For example with gratitude, guilt would be an issue. Because that would be an obstacle to improve. Guilt for example about my HIV infection, because its a sexually transmitted disease... and you know cancer is another sexual, because of the HPV, so its another... things I could have avoided easily, and I made the mistake. So that guilt, is still... so you know looking at the bottle half full half empty, I still you know that will be an obstacle.</p> <p>the strengths I still struggle, in my family my father never said anything positive about any of the <i>children. He was very authoritarian, that kind of thing makes you feel like you don't have strengths</i> and it's difficult to find them</p> <p>Naturally, before I became very <i>ill, I used to practise all those things. I'm a very strong person</i> naturally. So my illness got to me, and I lost hope totally, that was it.</p> <p><i>you know before I very, I'm kind, it's not as if, I'm a very kind person. But even encourages me more.</i></p> <p><i>I be kind all my life anyway. Because people tell me you're so kind you're so helpful, you're so this you're so that.</i></p>
	Chronic health-related stress	<p>you know this workshop is a good opportunity to help other people living a very difficult and distressed <i>life...when people are living in a lot of stress and anxiety, they don't have the time to see</i> the good side of the problem, or to carry on the problem in a different way, that stress, get angry, <i>be crying in the stress and the pressure...I've found the silver lining.</i> Or when I do relaxation, <i>that's the time I see the silver lining.</i></p> <p><i>It starts really chipping my life, I feel a lot better about myself, I don't think a lot of anything, of HIV, I just let it pass. Upstairs they're always talking about taking drugs, 'oh I'm so tired of taking drugs'. You just take your drugs, and that's it...Before I used to be very very depressed...But the group has really helped me how to cope with that.</i></p>
	Motivation	<i>And like when its paperwork I just don't have any motivation to, you know</i>

POSITIVE AFFECT AND HIV

		<i>It's like homework, school homework but it's quite different... it's difficult, but real life in my life I had to do it because I want something to change, I need to change the way I saw this world or the way I hear from this world... This is why I have to do this.</i>
	Previous experience	<i>Most of the things like uh, like uh the meditation the, stuff, I'm kind of aware of all those things anyway over the years you know you pick all of it up. But uh, what am I trying to say uh, so there was nothing new that I was being told</i> <i>The experience of the workshop was helpful, really helpful cuz I never has this kind of workshop before. And had the experience to manage my feeling, my stress, my worries, my fears too.</i>
	Expectations	<i>I didn't really expect anything...</i> <i>I expected that, because due to the name of the group, Feeling Good.</i>
Helpful elements	Being with other people	<i>It think maybe the group of people you got together were good as well, I know whether, because we were all very different. They were all kind of very individual, where they came from, so it kind of made it very interesting too, what people were saying... Every week each person was positive in a completely different way...I think because of the group of people it seemed to be more effective, you know I became more aware.</i>
	Facilitation	<i>...they were trying to give everyone a chance to do something. You know like focusing on one person... Only if you don't have it they don't force you, but you feel challenged, always I don't have anything to say so next time you eager to hear properly, you listen properly and so when you have something to say, when you say something good, they say oh wow, yea, so that even makes you, you know, encouraging, you doing it.</i>
	Homework	<i>...by studying I feel like I'm changing, changed the way I live. And I have to practise, I have to focus, to do my homework for next week like for my teacher, that's the way I felt. And it helped me a lot because for my mind on something...doing this for my own good has made me feel well. I have to do them because it's my own, like achieving something, achieving my change.</i>
	Meditation	<i>The meditation before...is like having to do first from my point of view to cleanse, to cleanse, the person inside me, the negativity, and let this positivity go through...it purifies the body and your heart. And you let the secret inside this box or inside our heart come out.</i>

POSITIVE AFFECT AND HIV

	Poems	<i>The first one change completely the situation...our life is like the guest house. Things come in, and deal with, and carry on</i>
	Length of intervention	<i>when it went for 8 weeks, everything started sinking in. It's not just a one-off group. It's a group for a certain length of time</i>
Skills	Noticing positive events and capitalising	I learnt to identify the small things such as looking at the stars, or having a simple meal, or whatever. So I try to pay attention to those simple things and amplifying those things.
	Gratitude	<i>...being grateful for what you have learnt, or what you are going through, being positive and being grateful, it makes you then sort of feel better about yourself. And once you start appreciating yourself you start appreciating others. And you start looking at life generally in a different aspect, in a positive aspect.</i>
	Silver lining	<i>Before I joined the group things would come, good bad thing they go together then I'm confused, but now uh it helps me to notice this is good, and yea I try to, to feel good, not just to focus on the bad things only, but look onto that...silver lining, yea... it keeps your day bright. You have, however bad things is, there is something good about it.</i>
	Acts of kindness	<i>Like um for example, in the [main charity] there is this new people who just join us, and we who have been there for a while, like a year or two, we already have friends we talk to... You don't go and sit with the others, you know, and they find out like they are lonely... So, me I [now] normally go and sit with them, chat with them, oh where do you come from, du du du, stuff like that. And you see a smile on their face, like oh wow, at least I've got someone who can talk to me. So the acts of kindness, yea.</i> <i>I'm more conscious of using it. Whereas before perhaps I was using it and I was not conscious of it, now I'm more conscious so therefore I'm able to use it more when I'm not feeling that more, to use it with a purpose... I found that being kind and friendly with people I will feel much much better.</i>
	Personal strengths	<i>... noticing positive events in your life, once you start appreciating and noticing what is positive in your life it means you're strengthening yourself, you're giving yourself strengths.</i>
	Attainable goals	<i>And I try to focus on my future...I want to go back to school, so I've been, I've planned that at the end of December I should do something for myself. Probably go for my Masters. So I've got a timeframe to do that. I've been on the lookout. So the Feeling Good group is a fantastic something."</i>

POSITIVE AFFECT AND HIV

		Informal mindfulness	<p>I can concentrate better now. Like before if I locked my door, I would go back like 10 times to check... I applied what they taught us, I said OK, now I'm locking the door, I realise, you know, I concentrate on what I'm doing and look to the motions of my hands, 'oh the door is locked'. Then it stays in my memory.</p> <p>I started practising, doing and then I realised it made me feel like I'm alive, I'm a human being...I'm enjoying, feeling like pleasure, and I feel like being back in the warmth. Because when people live in high level of stress, you don't realise you're brushing your teeth, you don't realise it, like you have a good cup of tea, you don't realise...But when you stop and just try to do things and then focus, and have a joyful, enjoy to do it, and they become more, the life become more sugary.</p>
Unhelpful/difficult elements	Homework		Yea, I think all the paperwork and all the homework and anything like that uh, I'm just I dunno I'm just too old *laughs*. It's like, I find anything, I mean what I enjoyed was the one-to-one, the face-to-face and the experiences. I couldn't really get on with the paperwork.
	Length of intervention		I'd like to have another session. Because the time we were doing therapy, you feel more motivated to carry on with our lives. And then suddenly the therapy's finished, it's quite difficult to move on, it's quite difficult to do every day different tasks.

Appendix R: End of study report for participants

Dear participant,

Many thanks for taking part in the 'Feeling Good Research Project' between January and May 2015. It was a pleasure to involve you in the project. I would like to report the findings of the research.

Following the 'Feeling Good Workshop' which you took part in, we found that the following changed for the seven participants who took part:

- Positive emotions significantly increased and negative emotions significantly decreased
- Paying attention to the present moment (mindfulness) significantly increased
- Several other changes were reported by those who took part, including improved sleep, better responses to pain, and increased social interaction.
- Overall, responses to the workshop were very positive, and people who took part enjoyed the group and felt that they gained from it.

We also found that:

- Although some of these changes were maintained across follow-ups, more sessions or booster sessions may have maintained these changes better.
- The findings from this project are in-keeping with previous research exploring the impact of similar interventions with individuals who have other long-term health conditions.
- Future research projects may benefit from having a larger number of participants and conducting more carefully controlled studies.

This research project has now been submitted as part of a Clinical Psychology doctorate, and I hope to seek publication in the future. If you have any questions, please feel free to contact me.

Yours sincerely,

Kyla Evans
Trainee Clinical Psychologist
Salomons Centre for Applied Psychology
Canterbury Christ Church University

Appendix S: End of study report for Ethics Panel

Salomons Ethics Panel
Salomons Centre for Applied Psychology
Canterbury Christ Church University

12th April 2016

Dear Ethics Panel,

Following your ethical approval, a group multicomponent positive affect intervention for individuals living with HIV was conducted with seven participants accessing an inner-city charity providing support for this population.

Informed consent was acquired and information was given to the participants about the group intervention, and the nature and aims of the research (appendix H), including how outcomes and recommendations would be shared. Whether or not participants agreed to take part in the research did not affect whether they could receive the group intervention.

The intervention, named “Feeling Good Workshop” ran for eight weeks during the once-a-week evening activity time at the charity. It was a closed group which took part at the same time each week and was facilitated by a Clinical Psychologist and a volunteer at the charity. Outcomes were measured using quantitative scales of affect and mindfulness, and qualitative follow-up interviews. The participants were offered a £10 incentive to take part in each of the follow-up interviews.

Following the intervention, positive affect and mindfulness significantly increased, negative affect significantly decreased, and a variety of other subjective changes were also reported, including improved sleep, more adaptive responses to pain, and increased social interaction. Overall participants’ responses were very positive, and they reported that they enjoyed and felt that they gained from the group.

Though some of these changes were maintained across follow-ups, more sessions or booster sessions may have maintained these changes more effectively. The findings are in-keeping with previous studies exploring the impact of multicomponent interventions with chronically ill populations. Future research projects may benefit from having a larger number of participants and conducting more carefully controlled studies. Participants have been provided with a summary of these findings.

Yours sincerely,

Kyla Evans
Trainee Clinical Psychologist
Salomons Centre for Applied Psychology
Canterbury Christ Church University

Appendix T: Abridged research diary

January 2014

Following the research fair, I contact Dr Stuart Gibson, who submitted an idea regarding a positive affect intervention with people living with HIV. Despite not working with this population or type of intervention previously, my interest is sparked following reading the research by Judith Moskowitz theories about positive emotions. Stuart said that there are 8 different charities he knows of offering programmes for people living with HIV which we could possibly work with. We discuss various possibilities of what the research could cover, including delivering the intervention with one or more of the charities.

February 2014

I meet with Professor Jan Burns who agrees to act as my internal supervisor. I think further about the possibilities for my research, and come up with the following possibilities:

In terms of an intervention project:

- I could translate Judith Moskowitz's intervention to a British context in a small, controlled way
- A case study approach of monitoring individuals could be taken in a group, with 20 participants ideally
- The outcomes and process could be evaluated – what is the magic ingredient in the intervention
- I cannot be involved in running the intervention, so I would have to work with Stuart and the charity to ensure that people are able to deliver the intervention (would they need training?), and that it was completed in time.

March-April 2014

Following several conversations with Stuart and Jan, I decide that the most fruitful idea may be a group intervention project. Stuart is able to liaise with the charities he mentions and one is particularly keen to host my research. We decided that Stuart and an experienced volunteer from the charity will run the intervention.

May-June 2014

I work on my research proposal, and become more interesting in positive psychology interventions and positive affect as I do the background reading. I begin to wonder what the intervention will look like, and how effective it will be in the context of HIV. At the proposal review, the reviewers express interest and suggest that I think carefully how I will objectively

POSITIVE AFFECT AND HIV

measure change. I do some reading about change research and decide to use Elliot's change interview as part of my interview schedule, which aims to minimise bias.

July-August 2014

My proposal is accepted with the suggested revisions, and I begin work on my ethics application. I also begin to make contact with the charity to set up an initial meeting and discuss relevant ethical issues, such as their risk protocols and what exclusion criteria may be relevant given their client base.

September 2014

My ethics application is accepted with some minor revisions. Stuart and I meet with Rosie, the operations manager at the charity. Rosie is very keen and we discuss when the intervention could run. We decide that it could begin in January 2015 as a positive start to the year. Rosie said that she will ask the volunteers at the charity who would be available to do an 8 week group then.

October-November 2014

An experienced volunteer at the charity with some training in psychological interventions and an interest in research has shown enthusiasm to facilitate the group. Over email, we plan a recruitment session at the charity in which we will do a presentation to the adult members and give out some leaflet, as well as chat to the people who attend the charity and answer any questions. We put together a presentation which explains some of the research and theory behind the intervention, explains the research project, and gives a taster of some of the skills which will be in the intervention.

December 2014

We run the recruitment session. The charity members are very welcoming, and a number seem interested in the intervention and research. The two skills that we give 'tasters' of, gratitude and acts of kindness, start a discussion about spirituality. The charity members argue that these skills are also taught in Christianity, and being a part of the religion makes them feel positive. The charity members are mainly people from black African backgrounds, and I wonder how this will impact on the way that the intervention is received; they seem very open to the idea that positive emotions play an important part in health and wellbeing, and it seems that the spiritual connection may be a powerful benefit to their understanding and engagement.

January - March 2015

Several people express an interest in taking part in the intervention and research. Stuart, Laura, Rosie and I meet to plan the group sessions and divide the planning work between

POSITIVE AFFECT AND HIV

ourselves. We build on suggestions from the original research from Judith Moskowitz by incorporating a stronger mindfulness aspect. We decide to have a 3 minute mindful meditation at the beginning of the session, and also poems related to mindfulness or positive thinking at the end of each session.

We meet with people who are interested in taking part in the intervention and research to do screening interviews. I am struck by the resilience of the charity members regarding multiple challenges individuals are dealing with – mental health difficulties, housing issues, isolation and loneliness. People are keen to ‘build a bridge to feeling good’. We recruit seven participants who fill out baseline outcome measures.

The group begins at the end of January. I keep in close contact with Stuart and Laura to get feedback and continue planning each session. The feedback is very positive – the group members are engaged with the exercises and share their experiences with each other.

I conduct my first follow-up interviews at the end of March. I am blown away by the feedback – the group was a bright spot for people each week, the skills seem to have made a real difference to them, and the changes people report are much more than I could have expected. People do talk about their mood lifting, however they also talk about socially interacting more, sleeping better and changing how they deal with pain. The ‘finding the silver lining’ skill seems to come up a lot, people talk about it like a change of perspective. I begin to think about how this fits in with broaden and build theory – people really do seem to have broadened and developed their coping.

May 2015

I conduct my second set of interviews. Again I am struck by how much people seem to have taken away from the group – for a few participants in particular it seems to have made a significant impact on their lives. One spoke about life having more flavour, and another about reaching dreams and engaging with people much more meaningfully. I think again about how relevant this is to broaden and build theory, in that these individuals seem to be engaging with more people, possibilities and experiences than before, and this seems to be having a reciprocal positive impact on their lives. There are some participants however who do not talk about the group as positively as they had before, and seem to have forgotten some of the sessions and skills, or not been able to maintain changes.

June – August 2015

Transcribing my interviews takes much longer than I thought, but I reflect on them again, and find myself feeling the same as when I conducted them – very positive and astonished at what people got from the intervention.

POSITIVE AFFECT AND HIV

October – November 2015

I analyse my data. I score up the questionnaires and am very pleased to find some significant results regarding affect and mindfulness. I begin to code my interviews with my research questions in mind, aware that it is a top-down approach but that this is what the research calls for. I begin to draw out themes under the research questions, and am pleased to find that people talk about the benefits of the individual skills, along with other beneficial or difficult factors, such as being in a group, the facilitation, homework, etc. I shape my final themes and check that my research questions have been properly addressed.

February-March 2016

After running my initial data analysis and results past Jan Burns, I return to my interviews to find some good case examples to include in my results section. I notice that participants who are experiencing acute life stressors such as bereavement seemed to have gained less from the group, whereas those experiencing chronic illness-related stress (which is what the intervention was designed for) seemed to have benefitted more. Personal characteristics also play a part, in that those who seem to have the skills which are being taught, but buried deep down under the stress of various life events, chimed well with the intervention. Those who always found the skills taught difficult seemed to have more trouble benefitting from them. Following the delving into the positive affect theory that Part A required, I understand better how my findings fit with previous research and theory, and am able to integrate them as such in my discussion section of Part B.

Appendix U: Author guideline notes for British Journal of Health Psychology

The aim of the British Journal of Health Psychology is to provide a forum for high quality research relating to health and illness. The scope of the journal includes all areas of health psychology as outlined in the Journal Overview.

The types of paper invited are:

- papers reporting original empirical investigations, using either quantitative or qualitative methods, including reports of interventions in clinical and non-clinical populations;
- theoretical papers which may be analyses or commentaries on established theories in health psychology, or presentations of theoretical innovations;
- we particularly welcome review papers, which should aim to provide systematic overviews, evaluations and interpretations of research in a given field of health psychology; and
- methodological papers dealing with methodological issues of particular relevance to health psychology.

All papers published in The British Journal of Health Psychology are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

1. Circulation

The circulation of the Journal is worldwide. Papers are invited and encouraged from authors throughout the world.

2. Length

Papers should normally be no more than 5000 words (excluding the abstract, reference list, tables and figures), although the Editor retains discretion to publish papers beyond this length in cases where the clear and concise expression of the scientific content requires greater length.

3. Editorial policy

The Journal receives a large volume of papers to review each year, and in order to make the process as efficient as possible for authors and editors alike, all papers are initially examined by the Editors to ascertain whether the article is suitable for full peer review. In order to qualify for full review, papers must meet the following criteria:

- the content of the paper falls within the scope of the Journal
- the methods and/or sample size are appropriate for the questions being addressed
- research with student populations is appropriately justified
- the word count is within the stated limit for the Journal (i.e. 5000 words)

4. Submission and reviewing

All manuscripts must be submitted via Editorial Manager. The Journal operates a policy of anonymous (double blind) peer review. We also operate a triage process in which submissions that are out of scope or otherwise inappropriate will be rejected by the editors without external peer review to avoid unnecessary delays. Before submitting, please read the terms and conditions of submission and the declaration of competing interests. You may also like to use the Submission Checklist to help you prepare your paper.

5. Manuscript requirements

- Contributions must be typed in double spacing with wide margins. All sheets must be numbered.
- Manuscripts should be preceded by a title page which includes a full list of authors and their affiliations, as well as the corresponding author's contact details.
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