Book Chapter

Will Happiness-Trainings Make Us Happier? An Updated Research Synthesis Using an Online Findings-Archive

Ad Bergsma[1], Ivonne Buijt[1] and Ruut Veenhoven[1,2]*

[1]Erasmus Happiness Economics Research Organization, Erasmus University Rotterdam, Netherlands
[2]Optentia Research Program, North-West University, South Africa

***Corresponding Author:** Ruut Veenhoven, Erasmus Happiness Economics Research Organization, Erasmus University Rotterdam, Netherlands

Published **March 16, 2022**

This Book Chapter is an excerpt of an article published by Ruut Veenhoven, et al. at Frontiers in Psychology in November 2020. (Bergsma A, Buijt I and Veenhoven R (2020) Will Happiness-Trainings Make Us Happier? A Research Synthesis Using an Online Findings-Archive. Front. Psychol. 11:1953. doi: 10.3389/fpsyg.2020.01953)

How to cite this book chapter: Ad Bergsma, Ivonne Buijt, Ruut Veenhoven. Will Happiness-Trainings Make Us Happier? An Updated Research Synthesis Using an Online Findings-Archive. In: Paul Raj, editor. Prime Archives in Psychology: 2nd Edition. Hyderabad, India: Vide Leaf. 2022.

© The Author(s) 2022. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Conflict of interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author contributions: All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

Acknowledgement: We would like to thank three anonymous reviewers and editor Llewellyn van Zyl for significantly improving the manuscript and Miranda Aldham-Breary for improving the English.

Data Availability Statement: The datasets for this study can be found in the World Database of Happiness.

Abstract

Most people want to be happy and many look out for opportunities to achieve a more satisfying life. Following a happiness training is an option, but the effectiveness of such training is being questioned. In this research synthesis we assessed: 1) whether happiness training techniques add to the happiness of their users, 2) how much happiness training techniques add to happiness, 3) how long the effect of happiness training lasts, 4) what kinds of training techniques work best, and 5) what types of groups of people profit from taking happiness training. We took stock of the available research and found 106 reports of effect studies on training techniques, which together yielded 314 findings. These findings are available in an online 'findings archive', the World Database of Happiness. Using links to this source allows us to condense information in tabular overviews, while providing the reader with access to much detail. Happiness training techniques seem to do what they are designed to do: 96% of the studies showed a gain in happiness post intervention and at follow-up, about half of the positive results were statistically significant. Studies with cross-sectional designs and studies that used control groups showed more mixed results. The average effect of happiness training was

approximately 5% of the scale range. We conclude that taking a form of happiness training is advisable for individuals looking for a more satisfying life. Since happier workers tend to be more productive, organizations would be wise to provide such training techniques for their workforce.

Keywords

Affect Balance; Happiness; Happiness Training; Happiness Awareness; Life Skills; Life Satisfaction; Positive Psychology Interventions; Research Synthesis.

Introduction

Call for Greater Happiness

Most people want to be happy and many of them look for opportunities to achieve a more satisfying life [1]. This pursuit seems to be universal, but is particularly pronounced in modern societies [2]. One reason for the heightened interest in happiness is the greater awareness that we have considerable control over our happiness. Happiness is no longer considered a matter of fate [3], but rather a condition which can actively be pursued, developed and sustained [4] and which is a personal responsibility [5]. Lyubomirsky, Sheldon and Schkade [6] argued that 40% of one's level of happiness is a function of purposeful and intentional actions, although that may be an overestimation [7,8]. Another reason for the call for greater happiness is the rising evidence for positive effects of happiness, such as on health [9] and on civil behavior [10]. Employers are keen to raise happiness in their workforce, in particular in view of the evidence that life-satisfaction fosters productivity more than job-satisfaction [11,12].

Happiness Education

The call for greater happiness is met in two ways, by improving external living conditions and by strengthening life skills.. The latter way is central in a new field of research and practice on training and educational initiatives designed to strengthen

individuals' life skills. This field is aptly labelled 'happiness education' that is comparable to, and often intertwined with, existing 'health education'. Happiness education can be found in a growing number of advisory books, on self-help websites and at the mounting supply of (online) courses on happiness [13,14]. Next to such education, a practice of happiness coaching has developed [15,16]. Professional life-coaches offer advice on how to live a more rewarding life and they have gained a greater share of the work of psychologists and social workers [17].

These developments are inspired by the scientific fields of 'positive psychology' and 'positive education' which came into existence around the year 2000, adding scientific rigor to practices in the expanding training sector [18]. Positive psychology interventions (PPI's) have been developed with the aim of strengthening people. These interventions typically consist of combinations of teaching and exercises. The common aims of such training techniques are to get individuals to see and seek meaning in their work and lives, to know who they are, and to foster positive feelings and self-reliance [19].

Happiness Training Techniques

One kind of PPI focusses on increasing satisfaction with one's life. This kind is commonly presented as 'happiness training' [20]. These training techniques help an individual to gain insight into the sources of their happiness and to learn skills that are functional for living a happy life [21]. The focus of these training techniques is not on a specific life-domain, such as work or marriage, but on one's life-as-a-whole [12]. An advanced search in Google search on 'happiness training' yielded 69.800 hits in December 2019. Some examples are the "Happiness Training Plan" [22], the Buddhist inspired online course on "A Life of Happiness and Fulfilment" [23] and the Action for Happiness Course [24].

Doubts about Effectiveness of Happiness Trainings

The majority of the happiness training techniques focuses on individuals. Happiness training techniques applicable to

organizational contexts are still underdeveloped and not utilized often [25], since organizations focus on work related skills and engagement rather than on wider life skills [26-29]. One of the reasons for this could be existing doubts about the effectiveness of happiness training interventions [27]. These qualms root in theories of happiness and in reservations about PPI's in general and about happiness training in particular.

Qualms about Possibility of Greater Happiness

There are doubts that individual happiness can be raised, among other things because happiness is believed to depend on social comparison. In this view, people are happier if they think to be better off than others, making happiness a zero-sum game [30]. Others claim that happiness is part of a fixed genetic disposition, and therefore determined by personality traits that remain constant (e.g. Omerod [31]). A third reason is that the conscious pursuit of happiness may be self-defeating, because higher expectations of happiness will lead to frustration, if not realised (e.g. Ford & Mauss [32]), which implies that use of a happiness training technique will decrease one's happiness. A fourth reason is that the pursuit of happiness stimulates people in individualistic societies to focus on individual goals, whereas more socially engaged ways to seek happiness are deemed more effective [33]. Looking for happiness may even increase loneliness [34] and valuing happiness may give rise to depression [35]. Chasing happiness may also be self-defeating if people seek more positive affect directly, while aiming at fulfilling basic psychological needs of relatedness, autonomy and competence may yield better results [8]. Although most of these doubts have been discarded in the scientific literature [36], they still live in public opinion. The dark sides of the pursuit of happiness, the caveats and limitations, have a higher attentive value for the media than the stories with a happy ending [37].

Limited Effects of Positive Psychological Interventions (PPI) in General

Four major meta-analyses on the effectiveness of PPI's have yielded moderate effects. Sin and Lyubomirsky [19] report a

modest effect (mean r = +0.29, median r = +0.24) on 'well-being'. These numbers are difficult to interpret, because the studies included covered different notions of wellbeing, most of which belong in the life-ability quadrant of Figure 1 (see below). Bolier et al. [38] report a smaller effect (d = +0.34) on subjective well-being, that partly waned at follow-up (d = +0.22) and after the removal of outliers (d = +0.17). The authors were not very specific either about the subjective well-being measures they included. Multi-component PPI's have a small to moderate effect on subjective well-being (Hedges' g = +0.34), but again the authors were not very specific on the subjective well-being measures they included. The removal of outliers or low-quality studies lowered the effect on well-being (g = + 0.24 without outliers, g = +0.26 for high quality studies) [39]. The modest effects of the meta-analyses we described may be too high, because negative findings tend to be underreported in scientific literature. A recent re-analysis of the studies included in the first two meta-analyses mentioned above used an improved correction for small sample sizes and found an effect of 0.1 of PPIs on well-being [40]. A fourth meta-analysis assessed the effect of 393 randomized controlled PPI trials from clinical and non-clinical populations (n = 53,288) on mental wellbeing (including both subjective and psychological well-being) and found small effect sizes [41] in line with the other meta-analysis. This meta-analysis focuses on the effects of different PPI's and an average effect size is not reported

Reservations about Happiness Training Techniques in Particular

In a recent Delphi study by Buettner et al. [42], 14 leading scientists rated the effectiveness of 'Ways to greater happiness on a 5-step scale. Their effectiveness rating for 'Develop skills for greater happiness, using self-help or professional coaching' was 3.1, while their average rating for ways such as 'Invest in friends and family' and 'Get physical exercise' was about 4. The general public seems to have a mixed attitude towards happiness advice and training. There is much interest but also a lot of scepticism and grumbles about the 'tyranny of positivity [43,44]. One of the reasons may be that the term 'happiness' is

used to promote the particular trendy practices of the moment, such as meditation and veganism. This is part of the wider problem of the term ‘happiness’ being increasingly used in sales communication as a ‘feel good’ term, e.g. Coca Cola with its ’Open Happiness’ slogan. A shared definition of happiness is lacking and this is another reason to question the message of happiness coaches and trainers.

Research Questions

Are these doubts about the effectiveness of happiness training techniques justified? In this study we seek to answer the following questions:

- Do happiness training techniques add to happiness?
  - *If so, how strong is the effect?*
  - *If so, how long lasting is the effect?*
- What kind(s) of training techniques work best?
  - *What nature of training techniques works best?*
  - *What modes of training techniques work best?*
- What types of people profit most from joining a happiness training course?

Concept of Happiness

In answering these questions, we focus on happiness in the sense of ‘life-satisfaction’, which we will define in detail below. To our knowledge, the research literature on this subject has not been reviewed with that specific definition in mind.

Meanings of the Word In a broad sense, the word

happiness is used to denote a ‘good life’ and used as a synonym for ‘quality of life’ or ‘well-being’. This meaning prevails in moral philosophy where it serves as a starting point for speculations about what qualities make the best life, such as the importance of ‘wisdom’ [45]. In contemporary social sciences the term is increasingly used for one particular quality of life, that is, how satisfying one’s life is. Since this is a measurable

phenomenon, its determinants can be identified inductively using empirical research [46].

Definition of Happiness

Happiness is defined as the degree to which individuals judge the overall quality of their life-as-a-whole favourably [47]. This definition fits the utilitarian tradition and is most closely associated to Bentham's [48] view of happiness as 'the sum of pleasures and pains' [49]. This concept is central in the World Database of Happiness on which we draw for this research synthesis.

Difference with other Notions of Quality of Life and Satisfaction

We realize that some readers will associate 'happiness' with other notions of wellbeing, in particular readers with a background in positive psychology where the term 'eudaimonic happiness' is currently used for positive mental health [50]. Therefore, we expand on this difference using Veenhoven's [51] classification of four qualities of life. This classification is based on two distinctions: vertically there is a difference between opportunities and actual outcomes of life. This distinction is important, because people can fail to use the life chances offered to them. The horizontal distinction refers to external qualities of the environment and internal qualities of the individual. Together, these two dichotomies produce four qualities of life, all of which have been denoted by the word 'happiness'.

	External Life Qualities	*Internal Life Qualities*
Life Chances	**Livability of environment**	**Life skills of the person**
Life Results	**Utility of life**	**Satisfaction with life**

Figure 1: Four Qualities of Life.
Source: Veenhoven [51]

In Figure 1, our concept of happiness is positioned in the right bottom quadrant, as an inner outcome of life. Positive mental health (eudaimonic happiness) belongs in the top-right quadrant

of Figure 1, that is, as a precondition for happiness. We only included measures of happiness that belong to the right bottom quadrant. Our conceptual focus is sharper than that of earlier meta-analyses of positive psychological interventions, which included measures of well-being that also cover other quadrants of Figure 1. As such, our results are easier to interpret.

Components of Happiness

The overall evaluation of life draws on two sources of information: a) how well we feel most of the time and b) to what extent we perceive that we are getting from life what we want from it. We refer to these sub-assessments as ‘components’ of happiness, called respectively ‘hedonic level of affect' and 'contentment' [47]. Diener et al. [52] make a similar distinction between affective and cognitive appraisals of life, but do not conceptualize an overall evaluation in which these appraisals are merged. In this research synthesis we include all three variants, overall happiness and its two components.

Methods

We seek answers to the research questions mentioned above in section 1.4 by taking stock of the available research findings. For that purpose, we draw on the World Database of Happiness (Veenhoven 2019; [53-56]) This is a ‘findings archive’ that contains some 22.000 abstracts of observed correlations with happiness, presented on electronic ‘finding pages’ in a standard format and terminology. The finding pages are sorted by subject and one of the subject categories is ‘happiness training’, which contained 314 findings by February 2021. This chapter is an updated version of two earlier papers, using the same section of the database [57,58].

The World Database of Happiness restricts to findings obtained with measures of happiness that fit the above-mentioned definition of happiness, the selection of which is explained below. The use of this findings archive implies another way of gathering the available research findings than usual in review studies and provides new ways for presenting the data. The technique is described in detail in Veenhoven [56]. We call it a 'support system for research synthesis'. In section 2.5 we discuss the advantages and disadvantages of this method. In section 2.6 the differences of this research synthesis with meta-analysis are discussed.

Search Strategy

The World Database of Happiness, and hence this research synthesis, restricts to research findings on happiness as defined above. Publications on that matter are gathered on a continuous basis since 1980, in the beginning mainly with searches in abstract systems such as the Web of Science and today also tracking references in publications and using announcement services, such as New Economic Papers on Happiness (for detail Veenhoven [59]). Selected publications are entered in the Bibliography of Happiness [54] and classified for main subject addressed, one of which is 'happiness training'. We updated this latter collection with an additional literature search in Google Scholar and by tracking references in reviews of research on effects of PPIs.

Eligibility Criteria

Measurement of happiness Since happiness is defined as something we subjectively experience, it can be measured using questioning. Not all questions used for measuring happiness studies fit the above definition of happiness. The World Database of Happiness, and hence this research synthesis, restricts to findings yielded with measures of happiness that have passed a face-validity test and are listed in the 'Collection Measures of Happiness' of the World Database of Happiness [60].

Rejected Happiness Scales: Several multiple item happiness scales failed this test because they include questions on other kinds of wellbeing than happiness as defined above. This is the case for two 'happiness scales', which are often used in studies on the effect of happiness training techniques, the Satisfaction With Life Scale (SWLS) by Diener et al. [61] and the Subjective Happiness Scale (SHS) by Lyubomirksky & Lepper [62]. Both are multiple item questionnaires of which one of the questions does not fit our definition of happiness. In the case of the 5-item SWLS that is endorsement to the statement 'If I could live my life over again, I would change nothing'. Logically, one can be satisfied with life, but still be open for something else. The item is particularly inapt for measuring the effect of happiness training techniques, since users of such techniques typically seek change in their lives. In the case of the 4-item SHS, the problem is in the statement 'Compared to other people, I consider myself less happy / more happy'. Logically, one can think one might be happier than other people, but still be unhappy. Practically, we are often badly informed of how happy 'other' people are. In our view, this lack of substantive face-validity cannot be offset by mathematical 'tests' for concurrent validity or construct validity. Consequently, we excluded data yielded with these measures, sacrificing a number of findings to maintain a clear meaning of the remaining findings.

Included measures of happiness: Three types of accepted happiness measures are included in this research-synthesis. 1) Measures of overall 'life-satisfaction', 2) Measures of 'hedonic level of affect', that is Affect balance scores and answers to the question how happy one feels and 3) Mixed measures which combine questions about life-satisfaction and affect level. The full text of these measures is available behind links in Table 1. Measures of 'contentment' have not been used in any of the studies included in this research synthesis.

Happiness Training

Happiness training techniques are a kind of positive psychological interventions (PPI's). In practice, it is often difficult to see what particular training techniques precisely aim

to improve. A first problem is in the naming of interventions; use of the term 'happiness' in the appellation does not always mean that happiness as defined above is targeted, e.g. this is not the case for the Happiness Course [63] which is about strengthening religious communities. A second problem is that training techniques presented as a 'happiness training' often aim at multiple goals of which happiness is only one, and where 'happiness' is seldom clearly defined. A third problem is that there are training techniques that focus on happiness, but do not use the word happiness in their name, e.g. the 'Growth training' developed by Sheldon et al. [64]. We dealt with these problems in the following ways. First, we ignored the specific name used for a training technique. Instead, we looked at the instructions and materials to see what was actually trained. Another indication for the aim of the training was the outcome measures used in studies on its effects. This worked in most of the cases, but was not always clear. This research synthesis may therefore not be complete, but offers a pragmatic grasp of studies.

Studies Selected

At the beginning of 2021 the World Database of Happiness included 106 studies in which the effect of happiness training on happiness had been assessed using a valid measure of happiness. These 106 studies were reported in 91 publications, which had been published between 1972 and 2021. Together, these 106 studies report 314 'findings', since several studies report more than one result. A list of studies is presented in Table 1. The links in Table 1 lead to the specific happiness measures used and to the excerpts of the studies in the World Database of Happiness.

Table 1: Studies included in this research synthesis.

Target group: *Country and year*	***N***	***Happiness training***		***Type of happiness measure***[a]	***Source***[b]
		Named in WDH	*Named by author*		
PATIENTS					
Breast cancer patients, Spain, 2007-2011	87	Training for multiple mental skills	Positive Psychology Group Intervention	Affect balance	[88]
Metastatic breast cancer patients, USA, 2011-2014	19	Training for multiple mental skills	Linking affect and coping intervention	Affect balance	[89]
Patients with diabetes type 2, USA, 2010	25	Training for multiple mental skills	DAHLIA intervention (Developing Affective HeaLth to Improve Adherence	Affect balance	[90]
Depressed adults UK, 2009	26	Goal setting training	Self-help Positive Goal-focused intervention	Affect balance Life-satisfaction	[76]
Patients with chronic HIV infection, Norway, 2010	36	Training for multiple mental skills	Web-based positive psychology/cognitive therapy intervention	Affect balance	[91]
Medical patients with neuromuscular disease USA 1998	33	Gratitude training	Happiness training; gratitude exercises	Affect balance Feel happy	[92]
Poor health participants in a course of mind-body therapies, Sweden, 2000-2001	83	Meditation, mindfulness	Health self-management course	Affect balance	[93]
Patients on a waiting list for psychological treatment Australia 2012	16 16	1) Gratitude training 2) Kindness training	Gratitude and kindness interventions	Feel happy Affect balance	[94]
Cardiac patients, Iran, 2016-2017	31	Positive thinking training	Optimism training program	Affect balance	[95]
Patients newly diagnosed with HIV, USA, 2014	59	Training for multiple mental skills	Positive affect intervention	Affect balance	[73]
Patients with chronic pain, USA, 2013	39	Savouring training	Positive Psychology intervention	Affect balance	[96]
Distressed adults Netherlands 2005	30	Meditation, mindfulness	Mindfulness based stress reduction	Affect balance	[97]
Adults with mild/moderate depressive symptoms USA 2006-2007 Adults with mild/moderate depressive symptoms USA 2007-2008	307 125	Training for multiple mental skills Training for multiple mental skills	Positive psychotherapy training Positive psychotherapy training	Life-satisfaction Life-satisfaction	[72] [72]
Patients with chronic pain, Netherlands/Belgium, 2012-2013	85	Training for multiple mental skills	Internet based Positive Psychology Intervention	Feel happy	[98]
Cardiac patients, Spain, 2014	50	Positive thinking training	Program to improve well-being	Affect balance	[99]
STUDENTS					
Students high in anxiety, Canada, 2010	43 39	Kindness training Social skills training	Acts of kindness Behavioural experiment	Affect balance	[100]
Muslim students, Malaysia, 2013	60	Gratitude training	Islamic based gratitude exercise	Affect & Overall	[101]
Students employed at least 10h a week, FUSA, 2008	165	Gratitude training	Gratitude exercise	Affect balance	[102]

Psychology students USA 2002	21 22	Recall of positive events Positive thinking training	Positive reminiscence training	Feel happy	[103]
Students, New Zealand, 2010	162	Mood awareness training	Mobile Happiness Reporting	Mixed affect and overall	[104]
Students USA and South Korea 2007	109	Kindness training	Performing acts of kindness with or without autonomy support	Affect balance	[105]
Psychology students, USA 2008	64	Gratitude training	Gratitude training	Affect balance	[106]
Students. USA 1998 Students in well-being course, USA, 1998	166 192	Count blessings and curses Count blessings and curses	Count blessings, thinking about 5 hassles, social comparison Gratitude exercise	Affect balance Affect balance Feel happy	[92] [92]
University students Turkey, 2012	36	Practice retrospective sources of happiness	Increasing activities and engagement	Affect balance	[107]
Students, Brazil, 2016-2017	153	Gratitude training	Gratitude intervention	Affect balance	[108]
Students USA 1972	202	Enlightenment + exercises	Happiness training	Feel happy Average overall affect Time happy	[20]
University students USA 1980	71 98 57	Enlightenment + exercises	Program to increase personal happiness, aiming to change 14 fundamental behaviours	Feel happy Average overall affect Time happy	[109] [109] [109]
Undergraduate psychology students, USA, 2010	94 73	Gratitude training Relaxation training	Gratitude intervention Relaxation intervention	Affect balance	[110]
Psychotherapy students, Italy 2004	80	Enlightenment + exercises	Subjective wellbeing training	Feel happy	[111]
Student participants in a savouring exercise USA 2011	151	Recall of positive events	Recalling positive events in the past week	Affect balance	[112]
Students United Arab Emirates, 2015	149	Enlightenment & exercises	Positive Psychology Intervention program	Affect balance	[113]
High school students, Kuwait, 2017 University students, Kuwait, 2017	833 133	Enlightenment & exercises Enlightenment & exercises	Positive Psychology Intervention program Positive Psychology Intervention program	Affect balance Affect balance	[113] [114]
Students participating in happiness training USA, 2014	70	Lifestyle awareness	Time scarcity training	Affect balance	[115]
Students, Hong Kong, 2013	81	Best possible self exercise	Best Possible Self Activity	Affect balance	[116]
Psychology students New Zealand 1978	25	Cognitive reframing	Cognitive retraining	Affect balance	[117]
Students low in positive affect, China, 2009	16	Training for multiple mental skills	Positive Psychotherapy Protocol	Affect balance	[118]

Psychology students, Germany, 2014	192	Mood awareness training	Use of Happiness Analyser	Affect balance Feel happy Life-satisfaction	[84]
Students USA 2003	60	Life review exercise	Writing, Talking, and Thinking about positive events	Affect balance	[119]
Students and people from local education centre UK, 2005	29	Goal setting training	Goal setting and planning training	Affect balance	[120]
Psychology students Spain 2007	105	Count blessings and curses	Gratitude writing intervention	Feel happy	[121]
Students, Netherlands, 2008	27	Best possible self exercise	Best possible selves	Affect balance	[122]
University students South Korea, 2009 Psychology students USA, 2009	22 33	Live up to one's values Live up to one's values	Self-affirmation Self-affirmation	Affect balance Affect balance	[123] [123]
Students, Netherlands, 2011	20	Best possible self exercise	Best Possible Self exercise	Affect balance	[124]
Psychology students USA, 2000	42	Goal setting training	Goal training intervention, growth training	Affect balance	[64]
Students, USA, 2011	79	Novelty trying Goal setting training	Activity change intervention; Circumstance change intervention	Affect balance	[125]
Psychology students, USA, 2003	21 23	Gratitude training Best possible self exercise	Gratitude training Best possible selves	Affect balance	[126]
Female students, Netherlands, 2011	27	Self-compassion training	Self-compassion training	Affect balance	[127]
Psychology students, USA, 2011	47	Gratitude training	Gratitude 3-blessings intervention	Mixed affect and overall	[128]
SCHOOL CHILDREN					
Middle school students, Netherlands, 2009	381	Enlightenment + exercises	Lessons in happiness	Feel happy	[129]
School children aged 9 – 11 UK 2013	606	Count blessings and curses/recall of positive events	Positive psychology intervention	Feel happy	[130]
Students, aged 12-17 USA 2006	221	Count blessings and curses/ Gratitude training	Gratitude increasing intervention	Life-satisfaction	[131]
Pupils of a parochial school aged 8-19 USA	89	Gratitude training	Gratitude intervention	Affect balance	[132]
Children aged 9-12,5 Netherlands 2010	183	Training for multiple mental skills	Happiness lessons	Feel happy	[133]
School children aged 5-11, USA 2008	22 23	Gratitude training Best possible self exercise	Gratitude intervention Best possible self	Affect balance	[134]
School children aged 10-12 USA 2008	20	Positive thinking training	Wellness program	Affect balance	[135]
ELDERLY					
Elderly, Switzerland, 2010	52	Foregiveness exercises	Foregiveness training	Affect balance	[136]
Elderly migrants, Sweden, 2015	56	Self awareness training	Person-centered group intervention	Life satisfaction	[137]
Home-bound elderly	16	Life-review exercise	Life review program	Affect balance	[138]

USA 1982					
Self-selected older adults UK 2014	88	Recall of positive events	Gratitude intervention	Affect balance	[139]
Self-selected low active elderly, USA, 1996	98	Tai-Chi training	Tai-Chi exercise	Affect balance	[140]
WORKING PEOPLE					
School teachers Hong Kong 2007	89	Gratitude training/count blessings	Gratitude intervention program	Affect balance	[74]
School teachers Hong Kong 2011	40	Gratitude training	Gratitude intervention program	Affect balance	[141]
Physicians, USA, 2012	145	Training for multiple mental skills	Online intervention for wellbeing	Quality of life	[142]
Self-selected employees Germany, 2012	54	Training for multiple mental skills	Seven-Week Web-Based Happiness Training	Life-satisfaction Feel happy	[21]
Managers participating in personality development course, Germany, 2000	99	Goal setting training	Goal-setting training	Affect balance	[143]
Health care professionals, Hong Kong, 2006	77	Gratitude training	Gratitude intervention	Affect balance	[144]
Employees, multiple nations, 2014	90 85	Training for multiple mental skills Gratitude training	PERMA well-being intervention Gratitude intervention	Life Satisfaction Affect balance	[145]
Employee wellbeing trainees Australia 2009	31	Training for multiple mental skills	Wellbeing training program	Mixed affect and overall	[146]
Employees, USA, 1974	54	Relaxation training	Relaxation eliciting technique	Affect balance	[147]
Physicians, USA, 2010-2012	35	Training for multiple mental skills	Well-Being promoting intervention	Quality of life	[148]
MISCELLANEOUS					
Meditation trainees Oman, 2001	14	Meditation, mindfulness	Vipassana meditation	Feel happy	[149]
Users of the 'Happiness Indicator' self-help website, Netherlands, 2011-2015	5411	Comparison with the happiness of similar people Mood awareness training	Happiness comparer Happiness diary	Feel happy	[75]
Participants in a mindfulness meditation course USA, 2008	69	Meditation, mindfulness	Mindfulness training	Life-satisfaction combined with Affect balance	[150]
Long-term meditators Netherlands 2009 Participants in a 9-day meditation retreat, Netherlands, 2009	20 13	Meditation, mindfulness Meditation, mindfulness	Long-term meditation 9-day vipassana meditation retreat	Mixed overall and affect Mixed overall and affect Affect balance Feel happy combined with life-satisfaction	[151] [151]
Invited adults, Norway, 2010	112	Training for multiple mental skills	Online Positive Psychology Intervention	Affect balance	[152]
Young adults, Spain 201?	78	Best possible self exercise	Best possible self-Intervention	Affect balance	[153]

Healthy adults' volunteers USA, 2005	35	Meditation, mindfulness	Sacred Moments intervention	Affect balance	[154]
Users of an online training, 35 nations, 2012	122	Training for multiple mental skills	Psycho-education course on positive psychology	Affect balance	[155]
Self-selected adults, USA and Canada, 2016	133	Self-awareness training	Enduring Happiness and Continued Self-Enhancement program	Affect balance	[156]
Happiness seekers, multiple countries, 2012	57	Meditation, mindfulness	Smartphone-based mindfulness intervention	Affect balance	[157]
Participants in a gratitude training, Poland, 2013	58	Gratitude training	Gratitude exercise	Affect balance	[158]
Participants in optimism intervention, Israel, 2011	38	Meditation, mindfulness	Optimism intervention	Affect balance	[159]
Participants in happiness promoting interventions, Germany, 2015	135 150	Best possible self exercise Gratitude training	Best possible self Gratitude training	Affect balance	[160]
Participants in a savouring training, Spain, 2016	43	Savouring training	Appreciation of beauty	Affect balance	[161]
Participants in a happiness training, Australia, 2007	48 58	Character strengths Problem solving	Character strengths Problem solving	Affect balance	[162]
Users of a mood-tracking website, USA, 2010	83	Mood awareness training	Frequent use of mood-tracker	Affect balance	[163]
Dementia caregivers, USA, 2014-2016	77	Training for multiple mental skills	Positive emotion intervention	Affect balance	[164]
Participants in happiness training, Australia, 2009	25 21	Meditation, mindfulness Best possible self exercise	Three good things Best possible self	Affect balance	[165]
Participants in a happiness training, USA, 2004	16	Training for multiple mental skills	Positive psychotherapy training	Life-satisfaction	[72]
Users of on-line self-help program, multiple countries, 2007	327	Training for multiple mental skills	'Live happy' on-line self-help program	Affect balance	[14]
Participants in a 4-week psychological training Canada, 2008	65	Gratitude training	Gratitude inducing exercises	Affect balance	[166]
Participants in a happiness training. USA, 2004	113	List and practice perceived ways to happiness	Change your actions not your circumstances	Affect balance	[167]
Participants in a yoga course. Australia, 2007	44	Laughter yoga	Laughter yoga	Life-satisfaction	[168]

a: Use control+click to find the specific happiness measure used in the World Database of Happiness.
b: Use control+click to find the excerpt of the study in the World Database of Happiness.

People Investigated

The people investigated in these studies were users of happiness training techniques. Most of them participated voluntarily and were recruited via websites, flyers and using snowball sampling methods. Recruitment took place among students, patients and working people. This resulted in self-selected samples, not random samples of all users of happiness training techniques. In our definition of self-selecting, we do not strictly refer to people who truly volunteered, but also to samples of college students who participated in the research for a study credit. Several studies forced people to take part in a happiness training technique, typically in the context of an educational course or as a therapy.

Notation of Findings

Observed effects of happiness training were summarized in a standard format and terminology on electronic finding pages, together with methodological characteristics of the study. Veenhoven [65] offers a description of that process.

Analysis

Organization of the Findings

We sorted the selected happiness training techniques by the nature of the intervention. The results are presented in Table 2. Some of these techniques appear in more than one cell of the tables. This is the case for a training which fits more than one category. The full classification of different natures and modes can be seen on the WDH website [66].

Table 2: Classification of happiness trainings**.** in the World Database of Happiness, collection of Correlational Findings, subject section Health: Psychological Treatment
Sub-subjects and number of finding-pages by February 2022

Subject name	*Number of finding pages*[1]
Happiness training	
Best-possible-self exercise	8
Body focused training	
• Laughter yoga	1
• Relaxation	2
• Tai Chi	1
Character strengths	1
Life skills training	
• Social skills training	1
• Problem solving	1
• Goal setting training	6
Lifestyle awareness	
• Comparison with similar people	1
• Life review exercise	2
• Mood awareness training	5
List and practice perceived ways to happiness	1
• Practice retrospective sources of happiness	1
• Practice one's values	2
Meditation, mindfulness	11
Novelty trying	1
Positive thinking training	5
• Cognitive reframing	2
• Count blessings and curses	6
• Forgiveness exercises	1
• Gratitude training	21
• Kindness training	3
• Recall of positive events	5
• Self-compassion training	1
Savouring training	2
Self-awareness training	2
Training for multiple mental skills	21
• Enlightenment plus exercises	10

Links in the left column lead to detail in the World Database of Happiness. Use control+click

[1] A finding-**page** can report more than one separate research finding, such as obtained with different measures of happiness, different statistics and separate findings for experimental and control groups

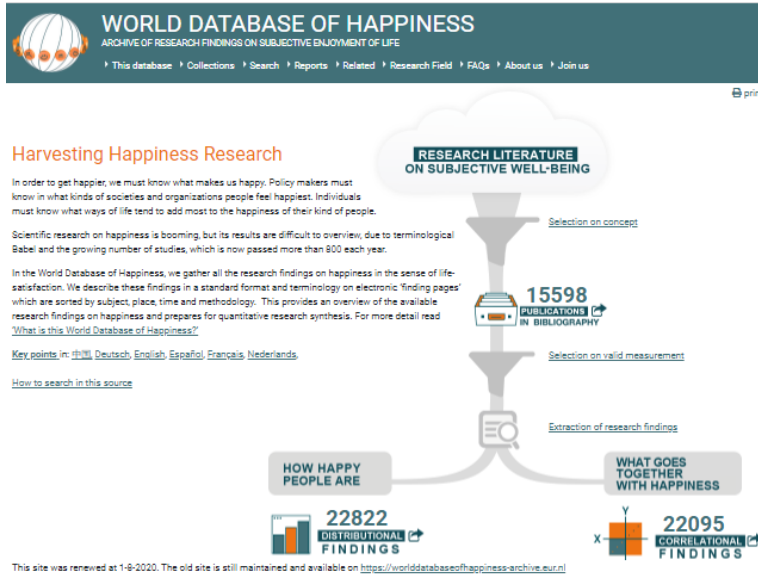


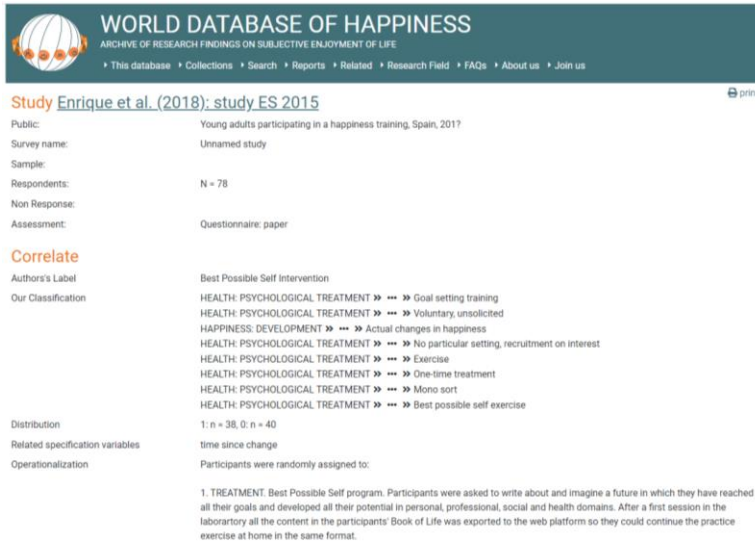
Figure 2 : Start page of the World Database of Happiness, showing the structure of this findings archive.

Presentation of the Findings

In Table 3 we summarize the observed effects of happiness training on happiness using three possible signs: + for a positive relationship, – for a negative relationship and 0 for a non-relationship. Statistical significance is indicated by printing the sign in bold ($p < 0.05$). Some of the findings are presented in a string of signs, e.g. +/+ for studies that used more than one measure of happiness, or for studies that used more than one control group. In Table 4 we present the same data quantified in effect sizes as the change in percentage of the theoretical scale range of the happiness measure used. This method allows comparison across measures with different scale ranges and is relatively easy to interpret for a general public [67]. In Tables 5-10 we summarize the same findings, sorted for different subgroups.

Links to Online Detail

As noted above, the World Database of Happiness is a collection of 'finding pages' on which results of empirical research on happiness are reported in a standard language and format. An example of a findings page is presented in Figure 3. In this paper we use links to such online finding pages. All the signs in Tables 3 to 10 link to finding pages in the World Database of Happiness, which serves as an online appendix in this article. If you click on a sign, the corresponding finding page will open, and offer details of the observed relationship, such as on the people investigated, the sampling method used, the training technique, the happiness measure and the statistical analysis. An example of such an electronic finding page is presented in Figure 3. This technique allows us to present the main trends in the findings, while keeping this paper to a controllable size and at the same time allowing the readers to check much detail.



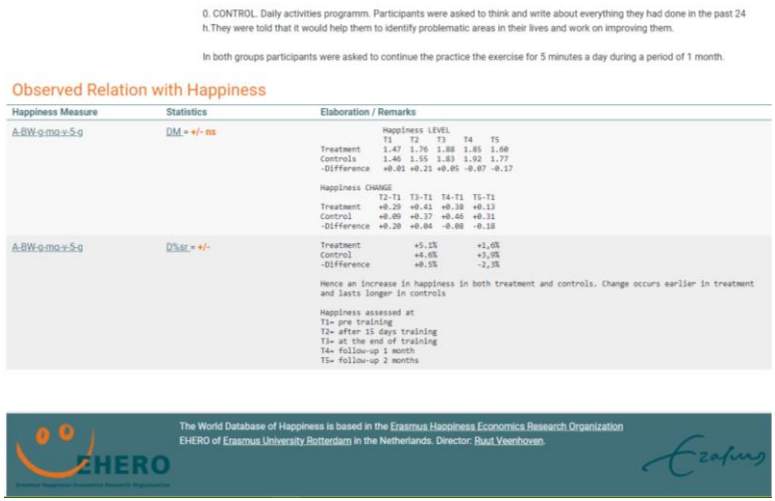


Figure 3: Example of a findings page in the World Database of Happiness**.**

Indicators of Effect

We considered three indicators of the effect of following a happiness training. A first indicator was the difference in happiness between people who have taken a happiness training course and people who have not. An evident weakness of this cross-sectional approach is that selectiveness can play us false, in particular because users of happiness training techniques are likely to be less happy in the beginning than non-users.

A better indicator of how well a happiness training technique has worked is the change in happiness observed among users of a happiness training technique, both their change in happiness pre-test to post-test and in long-term follow-up. A weakness of this longitudinal approach is that the observed effect may be due to being part of an intervention as such, rather than its content. In clinical psychology this is known as the 'placebo effect' and in industrial psychology as the 'Hawthorne effect' [68].

This problem can be solved using a control group which gets an equally credible intervention with another content, or a place on a waiting list. The change in happiness of an intervention group compared to this change in a control group was our third

indicator. It should be noted that the control groups used in the studies were heterogeneous, which makes the interpretation of the difference more complicated [69].

Advantages and disadvantages of using an Online Finding Archive

There are pros and cons to the use of a findings-archive such as the World Database of Happiness and plusses and minuses to the use of links to an online source.

Advantages

a) Efficient gathering of research on happiness. B) Sharp conceptual focus fitting a specific definition of happiness. C) Uniform description of research findings. D) Storage of findings pages in a well searchable and freely available database. E) Online availability of the database and the separate finding pages it contains. F) Presentation of the available research findings in easy to overview tables using links to online finding pages. G) The technique is useful for ongoing harvesting of research findings on a particular subject. It is easy to update review papers of this kind by entering new signs in the tables as we have done for this chapter.

Disadvantages

a) The sharp conceptual focus cannot easily be changed. b) Considerable investment is required to keep the archive up to date. c) Links to online finding pages work only for electronic texts. d) The standard information available in the excerpts is not always sufficient for judging the methodological quality and that for this purpose links to the full text of the original research reports are required. e) Using a finding archive such as the World Database of Happiness speeds up the process of finding all the relevant studies, but this comes with the cost of less control when determining the scope of the review and the questions it will address. f) The new presentation may strike some readers as unfamiliar; the technique is not yet known under a particular name and not yet described in textbooks.

Differences with Meta-Analysis

Our research synthesis lacks three practices common in statistically more sophisticated meta-analysis. 1) Given the number and heterogeneity of the available findings we did not assess statistical significance from the field taken as a whole. We restricted to mentioning the percentage of significant results in each of the columns of Table 3 separately. For the same reasons we did not quantify effects of moderator variables but presented these visually in Tables 6 to 10. 2) We did not correct for sample size, because the big numbers of the online interventions would have out crowded the small numbered face-to-face trainings. 3) We did not take variance into account when calculating the average effect size using independent findings. We used an average 'raw' percentage of the change in scale range instead. This is a consequence of the conceptual rigor in measuring the affective component of happiness.

Almost half of the studies in the analysis used an affect balance scale, such as the PANAS [70] and reported the change in average positive and negative affect and the accompanying standard deviations separately, if at all. Yet in isolation these scores do not fit our concept of hedonic level. You can experience much negative affect, but still be happy because you experience even more positive affect. Only the 'Affect Balance Scores' are used in our analysis and for that reason we computed affect balance scores ourselves, subtracting reported average negative affect from average positive affect. This gave us group averages, but no individual scores and no information on the spread of these. This left us with effect sizes that can be described as 'raw', in the sense that the dispersion around the mean is not taken into account. We sacrificed some of the statistically sophistication of common meta-analysis, to report on as much data as possible that fits our definition of happiness. The advantage is that the effect size as a simple average change on the scale range used is intuitively meaningful [67].

Next to these differences due to data-availability, this research synthesis differs from common meta-analysis in the following ways: a) The use of links to online finding pages provides the

reader with far more detail than standard reports of meta-analysis can do, while the standardized descriptions on the finding pages will also provide the analyst with a closer look at the research findings to be synthesised. b) The presentation of research finding in tabular schemes, such as in Table 3, provides the reader with a visual overview, from which the pattern of results can easily be recognized and from which differences in research methods used strike the eye. Moderators can also be visualized, using variant as of such tables in which differences in population or happiness measures are indicated using colours, as the reader will see in Tables 6 to 10. c) As such, the method applied here tells the reader more about these heterogenous and incomplete data than a common meta-analysis could have done. d) This research synthesis is conceptually more focussed than the research syntheses of the effect of PPIs on 'well-being' mentioned in section 1.4, and as such, it generates new information.

Publication Bias

We study the distribution of effect sizes and perform a p-curve analysis to detect possible selective publishing and p-hacking of empirical studies that may have influenced the gist of our results.

Results

Let us now revert to the research questions mentioned in section 1.5 and answer these one by one. Note that much of these results are tentative, due to the limited availability of data.

Do Happiness Training Techniques add to Happiness?

The answer to this question is presented in Table 3 on which + and – signs indicate whether or not the use of training had added to the average happiness of its users. In the table we see mainly plusses, 269 of 314 that is 86%. About half of these denote statistically significant effects as indicated in **bold** ($p < 0.05$). The percentage of 86% is based on all findings and not just on independent studies. 38 Findings (12%) denote a negative effect and in 7 findings there is no effect. Taking a closer look and only

counting independent studies in each of the columns in Table 3, we see that the proportion of studies with solely positive outcomes is highest among studies that compared happiness before and after training (91%) and at follow-up (87%). The proportion of positive studies that compared the change in happiness to a control group is 89% post intervention and 70% after follow-up. So far, the available findings suggest that happiness training techniques typically work. A further first impression from Table 3 is that effects do not differ very much across different kinds of happiness training.

Table 3: 314 research findings on the effect of happiness trainings on happiness derived from 106 studies in 91 publications.
Observed direction of change and statistical significance.

NATURE OF HAPPINESS TRAINING	METHOD OF INVESTIGATION				
	Cross-sectional had training vs had not	**Longitudinal** before vs after training –			
		Change in treated group only		**Difference with change in control group**	
		Post intervention	After follow-up	Post intervention	After follow-up
Single kind of training					
Best possible self exercise		+ + + + + + + +	+ - - + +	+ + + + + + + +	- + - + +
Body Focussed trainings					
• Laughter Yoga		+		+	
• Relaxation		+ +/+		+ +/+	
• Tai Chi		+		+	
Character strengths		+	+	-	+
Life skills training					
• Social skills training		+		+	
• Problem solving		-	+	-	+
• Goal setting training		+/+ + + -	+/+ + +	+/+ + 0	
Lifestyle awareness		+	+	+	+
• Comparison with similar people		+			
• Life review exercise		+		+	+/+/-
• Mood awareness training		+ +/+/+ 0	+/+/+ +/+	+/+/+	+/+/+
List and practice perceived ways to happiness		+/+			
• Practice retrospective sources of happiness		+		+	
• Live up to one's values		+ +	+	+ +	+

Meditation, mindfulness	+	+ + + + +/+/+ + + +	+ + + + +	+ – + + + +/+/+ + + +	– + + +
Novelty trying		+	+		
Positive thinking training		+ + +	+	– + + 0	– 0
• Cognitive reframing		+		+	
• Count blessings and curses	+ 0 – +	+ +	+		
• Forgiveness exercises		+	+	+	+
• Gratitude training	+ – +/+ +	+ + - + - + + + + +/+ + - + +	– + - + -	– - +/+ + + + + + +/+ + - + + +	– +/+ + + - +
• Kindness training	+/+	+/– +		+/– +	
• Recall of positive events		+ + + +	+ +	+ +	
• Self-compassion training		+		+	
Savouring training		+ +	+ +	+/+ +	–/- +
Self-awareness training		+	+ -	+	+ +
Multiple kinds combined					
Training for multiple mental skills		+ + + + + + +/+ + + - + + + + + + +/+ + + + +	+ + + + 0 +/+ + + + + + +	+ + + + +/+ + - + + + + + 0 +/+ - + +	+ + + – +/+ - + + - +
• Enlightenment + exercises		+ +/+ + + -	+ + +	+ +/+/+ +/+/+ +/+ +/+/+ + -	–

Signs link to finding page in World Database of Happiness. Use control+click to view the page.
Signs indicate observed differences
+ = positive difference, significant
+ = positive difference, not significant
0 = no difference
– = negative difference, not significant
– = negative difference, significant

How Strong is the Effect of Following Happiness Training on Later Happiness?

An answer to this question is found in Table 4, in which the sizes of the observed changes in happiness following happiness training are presented. Table 4 follows the same format as Table 3 but adds observed effect sizes to the + and – signs as far as the available data allow. We computed effect sizes as a percentage of the scale range (D%sr) and calculated means and medians for each column of Table 4. Before calculating the means, we removed two outliers with a strong negative trend in the happiness of the control group. In the table some studies appear twice, because they fitted two categories and some studies yielded more than one result, e.g. if more than one measure of happiness or more than one control group was used. Therefore, we calculated an average effect size for each individual study by averaging different happiness measures and/or control groups, and we did not count double studies twice. So, we ensured that only independent findings were used in calculating the overall mean and median effect sizes, as is recommended by Cheung [71]. We see a positive mean effect on happiness for all five indicators used, which are in the range of 5 - 6%, with the exception of for difference with controls at follow-up (+2.1%).

Happiness of People who followed a Training vs. Non-Users

Looking at the columns in Table 4 individually, we first see the results of 8 studies that compared people who had participated in happiness training with people who had not. The observed differences range between -3.3% and +14%, with an average of +5.6%. As noted above, this method is likely to underestimate the effect of participating in happiness training, since unhappy people may be more likely to take training. In this context it is worth noting that 7 of these 8 studies were among self-selected participants.

Happiness before and after the Training

The following two columns in Table 4 contain observed changes in happiness following participation in happiness training. The

first of these columns consists of the change in happiness at the start of the training (pre-test) and right after (post-test) (72 studies). The second column consists of the change in happiness between pre-test and later follow-up, typically some weeks or months later (39 studies). The average gain in happiness is a little smaller right after the training (5.7%) than at follow-up (6.1%).

Happiness of Treated and Controls

The two right hand columns in Table 4 consist of the findings of longitudinal studies that involved a control group and express the effect of following happiness training as the difference in change of happiness between users of such training techniques and non-users subjected to another form of intervention. Of the 64 studies included here, very few participants were randomly assigned to either a treatment or control condition and in all others non-probability samples were used (self-selected, chunk, purposive and accidental; a description of these sample types is found in Veenhoven [65]. Control conditions were most often passive, just filling out happiness questionnaires. Less common were writing exercises, giving information about happiness and some studies compared different approaches to happiness, such as changing circumstances and activities.

A look at the bottom row of Table 4 shows that on average the treated gained more happiness than the controls, the difference at post-test being 5.2% and at follow-up 2.1%. The follow-up gains are considerably smaller than the above-mentioned change in the treated. One of the reasons is the negative effects noted with a minus sign, where the gain in happiness was found to be higher in the control group than among the treated. A closer look at these 12 findings reveals that none of the negative effects were significant and the largest change (-10.8%) was due to an unexplained increase in the happiness of the control group. The experimental group had become slightly happier.

Table 4: 286 research findings on the effect of happiness trainings on happiness derived from 91 studies in 76 publications.
Effect sizes expressed in % change on scale range

NATURE OF HAPPINESS TRAINING	**METHOD OF INVESTIGATION**				
	Cross-sectional had training vs had not	**Longitudinal** before vs after training –			
		Change in treated group only		***Difference with change in control group***	
		Post intervention	*After follow-up*	*Post intervention*	*After follow-up*
Single kind of training					
Best possible self exercise		+5.1 +0.6 +13.1 +5.8 +10.0 +3.2 **+5.0** +7.2	+1.6 -0.7 -6.4 **+4.6** +8.8	+0.5 +2.1 +8.6 +5.4 +10.0 +3.6 **+5.4** +8.6	–2.3 +0.5 -4.0 **+5.6** +8.1
Body Focussed trainings					
• Laughter Yoga		**+8.6**		**+8.6**	
• Relaxation		+0.1 +3.7/+3.3[c]		+5.7 +3.0/+2.6[c]	
• Tai Chi		**+6.5**		**+4.5**	
Character strengths		+0.5	+1.0	-0.4	+1.0
Life skills training					
• Social skills training		+2.7		+0.9	
• Problem solving		-0.1	+0.0	-1.0	+0.1
• Goal setting training		**+13.4/+10.4[c]** +2.9 **+3.6** – 1.3	**+11.9/+10.4[c]** +1.1 +3.6	+8.6/+9.5[c] +4.3 0	
Lifestyle awareness					
• Comparison with similar people					
• Life review exercise					+8.6/+1.1/-0.5[c]
• Mood awareness training		**+3.9/+3.7/+0.7[c]**	**+4.2/+3.7/+1.2[c] +18.9/+23.2[c]**	+2.0/+4.0/+0.7[c]	+0.4/+1.1/+1.1[c]
List and practice perceived ways to happiness		+0.6/**+7.2[c]**			
• Live up to one's values		+1.0 +4.0	+2.5	+5.0 +7.8	+5.8
Meditation, mindfulness	+2.9	**+4.1** +13.2 **+4.6** +18.0 **+8.7/+7.6/+6.2[c]** +6.1 +2.4 +2.9	**+5.0 +5.6 +17.6** +4.8 +3.5	+8.5 –0.6 +18.0 **+9.0/+12.8/+8.0[c]** +6.9 +1.2 +4.3	–0.7 **+16.7** +4.7 +2.8
Novelty trying		**+3.6[a]**	+1.1[a]		
Positive thinking training		+2.4 **+4.0 +7.8**	**+7.0**	–0.4 **+5.0 +6.4**	–2.9
• Cognitive reframing		**+13.7**		**+12.5**	
• Count blessings and curses	**+6.5** 0 –3.3[a]	**+3.7** +2.4[a]	**+4.4**		
• Forgiveness exercises		+5.9	+5.0	+3.7	+5.5
• Gratitude training	**+12.3** –3.3 **+14.0**/+7.9[c] +5.4	+1.5 +2.4 -0.3 **+8.2** -1.8 +3.1 +2.9 +5.0 **+5.4** **+3.2/+5.2[c]** **+4.0** -1.7	–0.7 **+7.0** -0.5 **+4.2** -4.2	–0.8 -2.4 **+9.6/+5.5[c]** +3.8 +2.7 +3.3 +7.3 **+12.1** **+3.4/+6.6[c]** **+4.4** -5.8	–0.2 **+4.8/+2.9[c]** +1.9 **+5.2** -4.6
• Kindness training	+13.3/+6.0[c]	+0.6/–2.9[c] +8.9		+3.6/–4.0[c] +7.1	
• Recall of positive events		+1.9 **+3.7[a]** **+3.0** +4.9	+3.5 **+4.4[a]**	**+4.0** +3.3	

• Self-compassion training		+0.5		+1.4	
Savouring training		+8.0 +4.1	+1.6 +2.4	+9.6/+6.6[c] +5.1	–1.6/-0.9[c] +2.6
Self-awareness training		**+13.0**	+9.0	**+11.0**	+6.0
Multiple kinds combined					
Training for multiple mental skills		**+19.5 +10.0 +6.7** +3.7 **+7.8 +5.9 +15.2/+14.8[c] +19.3** +6.7 -0.2 +4.0 +2.5 **+16.8 +21.6** +5.0 **+3.8/+3.6[c]** +5.0 **+16.0**	**+13.9 +30.8 +15.8** +0.4 **+11.8/+14.8[c]** +7.9 +4.9 +10.0 **+12.4** +15.0	**+29.0[b] +8.3** +3.4 +2.0 **+23.8/+23.4[b] +20.1** -0.1 +1.7 +4.2 +1.3 **+19.8 +20.7** 0 **+4.0/+5.0[c]** -3.0 **+13.7**	**+27.9[b] +10.4** +10.4 –10.8 **+23.4/+25.4[b]** -2.1 +3.1 +3.7 -3.0
• Enlightenment + exercises		+3.6 **+7.8/+19.6[c] +3.9** +0.6 -0.1	+8.5 **+3.2** +0.8	+3.5 +9.3/+13.2/+18.9[c] +3.6/+3.0/+10.1[c] **+21.6/+46.1[b] +6.7/+4.0/+10[c]** +0.2 -1.0	–2.9
Number of studies and participants					
Number of studies	8	72	39	64	28
Participants (n)	630	6402	3455	8929[d]	4058[d]
Mean n	79	89	88	142	145
Median n; range	61; 31-192	46; 10-833	44; 10-606	88; 26-1070	78; 27-631
Results					
Mean change	+5.6 %	+5.7 %	+6.1 %	+5.2 %	+2.1 %
Median change	+6.0 %	+4.1 %	+4.6 %	+4.4 %	+2.3 %

Signs link to finding page in World Database of Happiness. Use control+click to view the page.
a: not included in calculation of mean/median because study appears twice in a column
b: not included in calculation of mean/median because of a huge decline in happiness in the control group (treated as outliers)
c: average value of multiple measures/multiple comparison groups used in calculation of mean/median
d: numbers of participants and controls added up

Happiness Changes for Studies that used Control Groups and Presented Data Before and After Intervention and at Follow-Up

There is some heterogeneity in the studies included in the columns of Table 4, since some report only a pre-post difference in happiness and other studies only the difference between pre-test and follow-up. We present a selection from these findings in Table 5, with 128 research findings from25 studies that (a) used a control group and (b) had measurements at pre-intervention, post intervention and follow-up. This selection gives a fairer insight into the observed differences at different measurements. The observed differences in the change in happiness between intervention and control groups ranged between -10.8% and +11,0% and for treated group between -1.7% and 30.8. The mean difference in the treated group was 4.4% post-intervention and 5.0 at follow-up. When the effect was assessed using a control group, the mean intervention effect was 3.0% post intervention and 1.7% at follow-up.

How Long Lasting is the Effect?

We added a column on the length of the follow-up in Table 5, which varied between 1 week and one year. Due to the fact that studies with a follow-up of more the 13 weeks are scarce, we are unable to reach a firm conclusion. For follow-up periods of 1 weeks to 3 months, the observed change in happiness between pre-test and post-test seemed to be greater than the change between pre-test and follow-up, however, in two cases with a 6-month follow-up, hardly any difference was found. For the two cases of follow-up after a year, a larger change was found at follow-up than right after the training [72,73] This suggests a declining effect in the short run, but a sleeper effect in the longer run.

Table 5: 128 research findings from 25 studies on the effect of happiness trainings on happiness, only studies with control group and follow-up measurement.

NATURE OF HAPPINESS TRAINING	LONGITUDINAL INVESTIGATION				
	Change in treated group only		***Difference with change in control group***		***Follow-up time in weeks***
	Post intervention	*After follow-up*	*Post intervention*	*After follow-up*	
Single kind of training					
Best possible self exercise	+5.1 +0.6 +5.8 **+5.0** +7.2	+1.6 -0.7 -6.4 **+4.6** +8.8	+0.5 +2.1 +5.4 **+5.4** +8.6	–2.3 +0.5 -4.0 **+5.6** +8.1	8-4-4-4-1
Character strengths	+0.5	+1.0	-0.4	+1.0	13
Life skills training					
• Problem solving	-0.1	+0.0	-1.0	+0.1	13
Lifestyle awareness					
• Mood awareness training	**+3.9/+3.7/+0.7**[c]	**+4.2/+3.7/+1.2**[c]	+2.0/+4.0/+0.7[c]	+0.4/+1.1/+1.1[c]	2
List and practice perceived ways to happiness					
• Live up to one's values	+4.0	+2.5	+7.8	+5.8	2
Meditation, mindfulness	**+4.6** +2.4 +2.9	**+5.6** +4.8 +3.5	–0.6 +1.2 +4.3	–0.7 +4.7 +2.8	6-4-1
Positive thinking training	+2.4	**+7.0**	–0.4	–2.9	26
• Forgiveness exercises	+5.9	+5.0	+3.7	+5.5	4
• Gratitude training	+1.5 **+8.2** +3.1 **+4.0** -1.7	–0.7 **+7.0** -0.5 **+4.2** -4.2	–0.8 **+9.6/+5.5**[c] +2.7 **+4.4** -5.8	–0.2 **+4.8/+2.9**[c] +1.9 **+5.2** -4.6	8-2-4-4-3
Savouring training	+8.0 +4.1	+1.6 +2.4	+9.6/+6.6[c] +5.1	–1.6/-0.9[c] +2.6	4-11
Self-awareness training	**+13.0**	+9.0	**+11.0**	+6.0	13
Multiple kinds combined					
Training for multiple mental skills	**+10.0 +6.7** +3.7 +6.7 +4.0 +2.5 +5.0	**+30.8 +15.8** +0.4 +7.9 +4.9 +10.0 +15.0	**+8.3** +3.4 +2.0 -0.1 +4.2 +1.3 -3.0	**+10.4** +10.4 –10.8 -2.1 +3.1 +3.7 -3.0	52-52 13-4-13 46- 52
Number of studies and participants					
Number of studies Participants (n) Mean n Median n; range	25 1793 62 38; 9-306	25 1654 57 38; 5-306	25 3505[d] 124 121; 30-306	25 3200[d] 145 110; 16-306	 14 6; 1-52
Results					
Mean change Median change	+4.4 % +4.0 %	+5.0 % +4.2 %	+3.0 % +2.7 %	+1.7 % +1.9 %	

Effect sizes expressed in % change on scale range
Signs link to finding page in World Database of Happiness. Use control+click to view the page.
c: average effect of multiple measures in study used in calculation of mean/median
d: numbers of participants and controls added up

What Nature of Happiness Training Techniques Work Best?

The data were not sufficient to answer this question, because of a lack of data for most of the categories. The study on laughter yoga and practice retrospective sources of happiness both had promising results, but lacked sufficient data. Here are some tentative indications.

Single Nature Training Techniques

Three categories had data from more than 5 studies: Gratitude training, Meditation, mindfulness and Best possible self exercises. We report the mean intervention effect of these single training techniques in comparison with a control group. For the gratitude training the mean effect was 3.4%, for meditation, mindfulness the mean effect was 6.9% and for the best possible self exercises 5.5%. The category of mood awareness training that had a strong effect in a studies with a high number of participants..

Multiple Nature Trainings

The happiness trainings that used multiple techniques stand out as having higher effects on happiness, with effect sizes that are almost double the average effect of single nature training techniques when we focus on change in the treated group only. When we look at the comparison with a control group the difference is smaller (post-intervention 6.3% for multiple interventions and 4.7% for single interventions). At follow-up the single interventions perform better (2.4%) than multiple interventions (1.1%) in comparison with a control group See Table 6 in which interventions using a single technique are signalled in red and the multiple techniques in blue. Part of this effect may be due to the length of the training, since the application of multiple techniques typically requires more sessions. The data do not allow a view on what mix of approaches works best, since most of the courses used the same set of '14 fundamentals' proposed by Fordyce [20].

Table 6: Observed % change in happiness by *nature* of happiness training: single or multiple nature training.
Table 4 with nature of happiness training indicated in **colours.**

NATURE OF HAPPINESS TRAINING	**METHOD OF INVESTIGATION**				
	Cross-sectional had training vs had not	**Longitudinal** before vs after training			
		Change in treated group only		***Difference with change in control group***	
		Post intervention	*After follow-up*	*Post intervention*	*After follow-up*
Single kind of training					
Best possible self exercise		+5.1 +0.6 +13.1 +5.8 +10.0 +3.2 **+5.0** +7.2	+1.6 -0.7 -6.4 **+4.6** +8.8	+0.5 +2.1 +8.6 +5.4 +10.0 +3.6 **+5.4** +8.6	–2.3 +0.5 -4.0 **+5.6** +8.1
Body Focussed trainings					
• Laughter Yoga		**+8.6**		**+8.6**	
• Relaxation		+0.1 +3.7/+3.3[c]		+5.7 +3.0/+2.6[c]	
• Tai Chi		**+6.5**		**+4.5**	
Character strengths		+0.5	+1.0	-0.4	+1.0
Life skills training					
• Social skills training		+2.7		+0.9	
• Problem solving		-0.1	+0.0	-1.0	+0.1
• Goal setting training		**+13.4/+10.4[c]** +2.9 **+3.6** –1.3	**+11.9/+10.4[c]** +1.1 +3.6	+8.6/+9.5[c] +4.3 0	
Lifestyle awareness					
• Life review exercise					+8.6/+1.1/-0.5[c]
• Mood awareness training		**+3.9/+3.7/+0.7[c]**	**+4.2/+3.7/+1.2[c] +18.9/+23.2[c]**	+2.0/+4.0/+0.7[c]	+0.4/+1.1/+1.1[c]
List and practice perceived ways to happiness		+0.6/**+7.2[c]**			
• Live up to one's values		+1.0 +4.0	+2.5	+5.0 +7.8	+5.8
Meditation, mindfulness	+2.9	**+4.1** +13.2 **+4.6** +18.0 **+8.7/+7.6/+6.2[c]** +6.1 +2.4 +2.9	**+5.0 +5.6 +17.6** +4.8 +3.5	+8.5 –0.6 +18.0 **+9.0/+12.8/+8.0[c]** +6.9 +1.2 +4.3	–0.7 **+16.7** +4.7 +2.8
Novelty trying		**+3.6[a]**	+1.1[a]		
Positive thinking training		+2.4 **+4.0 +7.8**	**+7.0**	–0.4 **+5.0 +6.4**	–2.9
• Cognitive reframing		**+13.7**		**+12.5**	
• Count blessings and curses	**+6.5** 0 –3.3[a]	**+3.7** +2.4[a]	**+4.4**		
• Forgiveness exercises		+5.9	+5.0	+3.7	+5.5
• Gratitude training	**+12.3** –3.3 **+14.0**/+7.9[c] +5.4	+1.5 +2.4 -0.3 **+8.2** -1.8 +3.1 +2.9 +5.0 **+5.4**	–0.7 **+7.0** -0.5 **+4.2** -4.2	–0.8 -2.4 **+9.6/+5.5[c]** +3.8 +2.7 +3.3 +7.3 **+12.1 +3.4/+6.6[c]**	–0.2 **+4.8/+2.9[c]** +1.9 **+5.2** -4.6

		+3.2/+5.2[c] +4.0 -1.7		**+4.4** -5.8	
• Kindness training	+13.3/+6.0[c]	+0.6/–2.9[c] +8.9		+3.6/–4.0[c] +7.1	
• Recall of positive events		+1.9 **+3.7[a]** **+3.0** +4.9	+3.5 **+4.4[a]**	**+4.0** +3.3	
• Self-compassion training		+0.5		+1.4	
Savouring training		+8.0 +4.1	+1.6 +2.4	+9.6/+6.6[c] +5.1	–1.6/-0.9[c] +2.6
Self-awareness training		**+13.0**	+9.0	**+11.0**	+6.0
Multiple kinds combined					
Training for multiple mental skills		**+19.5** **+10.0** **+6.7** +3.7 **+7.8** **+5.9** **+15.2/+14.8[c]** **+19.3** +6.7 -0.2 +4.0 +2.5 **+16.8** **+21.6** +5.0 **+3.8/+3.6[c]** +5.0 **+16.0**	**+13.9** **+30.8** **+15.8** +0.4 **+11.8/+14.8[c]** +7.9 +4.9 +10.0 **+12.4** +15.0	**+29.0[b]** **+8.3** +3.4 +2.0 **+23.8/+23.4[b]** **+20.1** -0.1 +1.7 +4.2 +1.3 **+19.8** **+20.7** 0 **+4.0/+5.0[c]** -3.0 **+13.7**	**+27.9[b]** **+10.4** +10.4 –10.8 **+23.4/+25.4[b]** -2.1 +3.1 +3.7 -3.0
• Enlightenment + exercises		+3.6 **+7.8/+19.6[c]** **+3.9** +0.6 -0.1	+8.5 **+3.2** +0.8	+3.5 +9.3/+13.2/+18.9[c] +3.6/+3.0/+10.1[c] **+21.6/+46.1[b]** **+6.7/+4.0/+10[c]** +0.2 -1.0	–2.9
Participants and Results					
All studies Nr of studies (n) Mean change	8 (630) +5.6 %	72 (6402) +5.7 %	39 (3455) +6.1 %	64 (8929[d]) +5.2 %	28 (4058[d]) + 2.1 %
Single nature Nr of studies (n) Mean change	8 (630) +5.6 %	49 (3597) +4.7 %	26 (2284) +4.2 %	44 (5247[d]) + 4.7 %	20 (2649[d]) + 2.4 %
Multiple kinds Nr of studies (n) Mean change		23 (2805) +8.1 %	13 (1151) +10.5 %	20 (3682[d]) + 6.3 %	8 (1409[d]) +1.1 %

Signs link to finding page in World Database of Happiness. Use control+click to view the page.
a: not included in calculation of mean because study appears twice in column
b: not included in calculation of mean because of huge decline in happiness in control group (treated as outliers)
c: average value of multiple measures/multiple comparison groups used in calculation of mean
d: numbers of participants and controls added up

What Modes of Trainings Work Best?

Happiness training is given in different contexts and in different ways. Differences in effects on happiness appear to be small.

Online vs Offline

From Table 7 we can see that no clear picture emerged. The online trainings can be recognized in the table by the colour blue and the offline trainings by the colour red. Online training yields somewhat smaller effects on happiness post-intervention, but a comparable effect at follow-up compared to a control group.

Context of Happiness Training

Happiness trainings are provided in the institutional context of care, in educational settings and at work, but also sought independently by people interested in raising their happiness. The latter group is discussed in the following paragraph. The observed effects on happiness for these different contexts are presented in Table 8, with the colour orange indicating a care setting, the colour blue indicating an educational setting and the colour green indicating a work setting.. We report the mean effect in different settings post-intervention in comparison with a control group. For the care setting the mean effect was 6.8%, for the educational setting 4.5% en the work setting 3.3%.

Table 7: Observed % change of happiness by mode of the training: online, offline.
Table 4 with mode of happiness training indicated in **colours**

NATURE OF HAPPINESS TRAINING	METHOD OF INVESTIGATION				
	Cross-sectional had training vs had not	**Longitudinal** before vs after training			
		Change in treated group only		***Difference with change in control group***	
		Post intervention	*After follow-up*	*Post intervention*	*After follow-up*
Single kind of training					
Best possible self exercise		+5.1 +0.6 +13.1 +5.8 +10.0 +3.2 **+5.0** +7.2	+1.6 -0.7 -6.4 **+4.6** +8.8	+0.5 +2.1 +8.6 +5.4 +10.0 +3.6 **+5.4** +8.6	–2.3 +0.5 -4.0 **+5.6** +8.1
Body Focussed trainings					
• Laughter Yoga		**+8.6**		**+8.6**	
• Relaxation		+0.1 +3.7/+3.3[c]		+5.7 +3.0/+2.6[c]	
• Tai Chi		**+6.5**		**+4.5**	
Character strengths		+0.5	+1.0	-0.4	+1.0
Life skills training					
• Social skills training		+2.7		+0.9	
• Problem solving		-0.1	+0.0	-1.0	+0.1
• Goal setting training		**+13.4/+10.4[c]** +2.9 **+3.6** –1.3	**+11.9/+10.4[c]** +1.1 +3.6	+8.6/+9.5[c] +4.3 0	
Lifestyle awareness					
• Life review exercise					+8.6/+1.1/-0.5[c]
• Mood awareness training		**+3.9/+3.7/+0.7[c]**	**+4.2/+3.7/+1.2[c]** **+18.9/+23.2[c]**	+2.0/+4.0/+0.7[c]	+0.4/+1.1/+1.1[c]
List and practice perceived ways to happiness		+0.6/**+7.2[c]**			
• Live up to one's values		+1.0 +4.0	+2.5	+5.0 +7.8	+5.8
Meditation, mindfulness	+2.9	**+4.1** +13.2 **+4.6** +18.0 **+8.7/+7.6/+6.2[c]** +6.1 +2.4 +2.9	**+5.0** **+5.6** **+17.6** +4.8 +3.5	+8.5 –0.6 +18.0 **+9.0/+12.8/+8.0[c]** +6.9 +1.2 +4.3	–0.7 **+16.7** +4.7 +2.8
Novelty trying		**+3.6[a]**	+1.1[a]		
Positive thinking training		+2.4 **+4.0** **+7.8**	**+7.0**	–0.4 **+5.0** **+6.4**	–2.9
• Cognitive reframing		**+13.7**		**+12.5**	
• Count blessings and curses	**+6.5** 0 –3.3[a]	**+3.7** +2.4[a]	**+4.4**		
• Forgiveness exercises		+5.9	+5.0	+3.7	+5.5
• Gratitude training	**+12.3** –3.3 **+14.0**/+7.9[c] +5.4	+1.5 +2.4 -0.3 **+8.2** -1.8 +3.1 +2.9 +5.0 **+5.4**	–0.7 **+7.0** -0.5 **+4.2** -4.2	–0.8 -2.4 **+9.6/+5.5[c]** +3.8 +2.7 +3.3 +7.3 **+12.1** **+3.4/+6.6[c]**	–0.2 **+4.8/+2.9[c]** +1.9 **+5.2** -4.6

		+3.2/+5.2[c] +4.0 -1.7		**+4.4** -5.8	
• Kindness training	+13.3/+6.0[c]	+0.6/–2.9[c] +8.9		+3.6/–4.0[c] +7.1	
• Recall of positive events		+1.9 **+3.7[a]** **+3.0** +4.9	+3.5 **+4.4[a]**	**+4.0** +3.3	
• Self-compassion training		+0.5		+1.4	
Savouring training		+8.0 +4.1	+1.6 +2.4	+9.6/+6.6[c] +5.1	–1.6/-0.9[c] +2.6
Self-awareness training		**+13.0**	+9.0	**+11.0**	+6.0
Multiple kinds combined					
Training for multiple mental skills		**+19.5** **+10.0** **+6.7** +3.7 **+7.8** **+5.9** **+15.2/+14.8[c]** **+19.3** +6.7 -0.2 +4.0 +2.5 **+16.8** **+21.6** +5.0 **+3.8/+3.6[c]** +5.0 **+16.0**	**+13.9** **+30.8** **+15.8** +0.4 **+11.8/+14.8[c]** +7.9 +4.9 +10.0 **+12.4** +15.0	**+29.0[b]** **+8.3** +3.4 +2.0 **+23.8/+23.4[b]** **+20.1** -0.1 +1.7 +4.2 +1.3 **+19.8** **+20.7** 0 **+4.0/+5.0[c]** -3.0 **+13.7**	**+27.9[b]** **+10.4** +10.4 –10.8 **+23.4/+25.4[b]** -2.1 +3.1 +3.7 -3.0
• Enlightenment + exercises		+3.6 **+7.8/+19.6[c]** **+3.9** +0.6 -0.1	+8.5 **+3.2** +0.8	+3.5 +9.3/+13.2/+18.9[c] +3.6/+3.0/+10.1[c] **+21.6/+46.1[b]** **+6.7/+4.0/+10[c]** +0.2 -1.0	–2.9
Participants and Results					
All studies Nr of studies (n) Mean change	8 (630) +5.6 %	72 (6402) +5.7 %	39 (3455) +6.1 %	64 (8929[d]) +5.2 %	28 (4058[d]) + 2.1 %
Online e-training Nr of studies (n) Mean change	2 (62) +10.3 %	29 (2631) +4.7 %	16 (1099) +5.7 %	23 (3936[d]) +4.4 %	11 (1765[d]) +2.2 %
Offline guided training Nr of studies (n) Mean change	6 (568) +4.0 %	43 (3771) +6.6 %	23 (2336) +6.5 %	41 (4993[d]) +5.7 %	17 (2293[d]) +2.0 %

Signs link to finding page in World Database of Happiness. Use control+click to view the page.
a: not included in calculation of mean because study appears twice in a column
b: not included in calculation of mean because of huge decline in happiness in control group (treated as outliers)
c: average value of multiple measures/multiple comparison groups used in calculation of mean
d: numbers of participants and controls added up

Table 8: Observed change of happiness by context of the training: care - education – work**.**
Table 4 with context of happiness training indicated in **colours**

NATURE OF HAPPINESS TRAINING	METHOD OF INVESTIGATION				
	Cross-sectional had training vs had not	**Longitudinal** before vs after training			
		Change in treated group only		***Difference with change in control group***	
		Post intervention	*After follow-up*	*Post intervention*	*After follow-up*
Single kind of training					
Best possible self exercise		+5.1 +0.6 +13.1 +5.8 +10.0 +3.2 **+5.0** +7.2	+1.6 -0.7 -6.4 **+4.6** +8.8	+0.5 +2.1 +8.6 +5.4 +10.0 +3.6 **+5.4** +8.6	–2.3 +0.5 -4.0 **+5.6** +8.1
Body Focussed trainings					
• Laughter Yoga		**+8.6**		**+8.6**	
• Relaxation		+0.1 +3.7/+3.3[c]		+5.7 +3.0/+2.6[c]	
• Tai Chi		**+6.5**		**+4.5**	
Character strengths		+0.5	+1.0	-0.4	+1.0
Life skills training					
• Social skills training		+2.7		+0.9	
• Problem solving		-0.1	+0.0	-1.0	+0.1
• Goal setting training		**+13.4/+10.4[c]** +2.9 **+3.6** –1.3	**+11.9/+10.4[c]** +1.1 +3.6	+8.6/+9.5[c] +4.3 0	
Lifestyle awareness					
• Life review exercise					+8.6/+1.1/-0.5[c]
• Mood awareness training		**+3.9/+3.7/+0.7[c]**	**+4.2/+3.7/+1.2[c] +18.9/+23.2[c]**	+2.0/+4.0/+0.7[c]	+0.4/+1.1/+1.1[c]
List and practice perceived ways to happiness		+0.6/**+7.2[c]**			
• Live up to one's values		+1.0 +4.0	+2.5	+5.0 +7.8	+5.8
Meditation, mindfulness	+2.9	**+4.1** +13.2 **+4.6** +18.0 **+8.7/+7.6/+6.2[c]** +6.1 +2.4 +2.9	**+5.0 +5.6 +17.6** +4.8 +3.5	+8.5 –0.6 +18.0 **+9.0/+12.8/+8.0[c]** +6.9 +1.2 +4.3	–0.7 **+16.7** +4.7 +2.8
Novelty trying		**+3.6[a]**	+1.1[a]		
Positive thinking training		+2.4 **+4.0 +7.8**	**+7.0**	–0.4 **+5.0 +6.4**	–2.9
• Cognitive reframing		**+13.7**		**+12.5**	
• Count blessings and curses	**+6.5** 0 –3.3[a]	**+3.7** +2.4[a]	**+4.4**		
• Forgiveness exercises		+5.9	+5.0	+3.7	+5.5
• Gratitude training	**+12.3** –3.3 **+14.0**/+7.9[c] +5.4	+1.5 +2.4 -0.3 **+8.2** -1.8 +3.1 +2.9 +5.0 **+5.4**	–0.7 **+7.0** -0.5 **+4.2** -4.2	–0.8 -2.4 **+9.6/+5.5[c]** +3.8 +2.7 +3.3 +7.3 **+12.1 +3.4/+6.6[c]**	–0.2 **+4.8/+2.9[c]** +1.9 **+5.2** -4.6

		+3.2/+5.2[c] +4.0 -1.7		**+4.4** -5.8	
• Kindness training	+13.3/+6.0[c]	+0.6/–2.9[c] +8.9		+3.6/–4.0[c] +7.1	
• Recall of positive events		+1.9 **+3.7[a]** **+3.0** +4.9	+3.5 **+4.4[a]**	**+4.0** +3.3	
• Self-compassion training		+0.5		+1.4	
Savouring training		+8.0 +4.1	+1.6 +2.4	+9.6/+6.6[c] +5.1	–1.6/-0.9[c] +2.6
Self-awareness training		**+13.0**	+9.0	**+11.0**	+6.0
Multiple kinds combined					
Training for multiple mental skills		**+19.5** **+10.0** **+6.7** +3.7 **+7.8** **+5.9** **+15.2/+14.8[c]** **+19.3** +6.7 -0.2 +4.0 +2.5 **+16.8** **+21.6** +5.0 **+3.8/+3.6[c]** +5.0 **+16.0**	**+13.9** **+30.8** **+15.8** +0.4 **+11.8/+14.8[c]** +7.9 +4.9 +10.0 **+12.4** +15.0	**+29.0[b]** **+8.3** +3.4 +2.0 **+23.8/+23.4[b]** **+20.1** -0.1 +1.7 +4.2 +1.3 **+19.8** **+20.7** 0 **+4.0/+5.0[c]** -3.0 **+13.7**	**+27.9[b]** **+10.4** +10.4 –10.8 **+23.4/+25.4[b]** -2.1 +3.1 +3.7 -3.0
• Enlightenment + exercises		+3.6 **+7.8/+19.6[c]** **+3.9** +0.6 -0.1	+8.5 **+3.2** +0.8	+3.5 +9.3/+13.2/+18.9[c] +3.6/+3.0/+10.1[c] **+21.6/+46.1[b]** **+6.7/+4.0/+10[c]** +0.2 -1.0	–2.9
Participants and Results					
All studies Nr of studies (n) Mean change	8 (630) +5.6 %	72 (6402) +5.7 %	39 (3455) +6.1 %	64 (8929[d]) +5.2 %	28 (4058[d]) + 2.1 %
Care setting Nr of studies (n) Mean change	2 (62) +10.3 %	12 (811) +8.0 %	9 (638) +9.2 %	12 (1323[d]) +6.8 %	7 (889[d]) +3.4 %
Education setting Nr of studies (n) Mean change	4 (492) +4.0 %	26 (2839) +4.2 %	11 (1493) +1.3 %	27 (3562[d]) +4.5 %	8 (1281[d]) -0.4 %
Work setting Nr of studies (n) Mean change	0	10 (774) +6.2 %	4 (198) +11.5 %	7 (1327[d]) +3.3 %	1 (72[d]) -3.0%

Signs link to finding page in World Database of Happiness. Use control+click to view the page.
a: not included in calculation of mean because study appears twice in a column
b: not included in calculation of mean because of huge decline in happiness in control group (treated as outliers)
c: average value of multiple measures/multiple comparison groups used in calculation of mean
d: numbers of participants and controls added up

What Kinds of People Profit most from using a Happiness Training?

Users of the happiness training techniques reviewed in this paper have much in common, mostly living in an individualized modern society and mostly higher educated.

Initially Low on Trained Characteristics

Training is likely to be more effective among people in need of improvement in their trained skills. This expectation was confirmed in three studies. Chan [74] compared the effect of gratitude training on people who were high or low on gratitude. Not unexpectedly the people low on gratitude experienced a significantly more positive affect after the intervention. The e-intervention by Bakker et al. [75] yielded a greater gain in happiness among the initially least happy users. The level of happiness of the self-selected participants in this study was slightly lower than in the general population. Likewise, Coote & MacLeod [76] report the largest change in happiness at follow-up in a depressed group at baseline.

Self-Selected

Happiness training techniques could be more effective among people who participate voluntary, typically because they are motivated to improve their happiness and hold positive opinions about psychological treatment. Self-selection is known to be a factor in effectiveness of psychotherapy [77]. We checked this expectation and show the results in Table 9, which is a variant of Table 4, now with changes in happiness among self-selected users indicated in green, changes among mandatory participants indicated in purple and changes among paid participants indicated in blue. Indeed, happiness gains tend to be higher among voluntary participants than among mandatory participants, but that difference appears only post-treatment, both in the treated group only and in comparison to a control group. At follow-up, participants who were paid had higher mean effects than both the mandatory and voluntary participants. For all groups all means were positive, with the exception of the

mandatory participants with a mean effect of -0.7% at follow-up in comparison to a control group.

Age differences: Children and University Students

Happiness training is likely to be more effective among users who are able to reflect on themselves and their lives and for that reason we expected greater effects among university students than among children in primary and secondary education. This expectation is confirmed by the average scores in the bottom rows of table 10. There was only one study among elderly participants, with modest positive results. The studies with children are visible in orange, with the university students in blue and with the elderly in green.

Table 9: Observed change of happiness by mode of the training: participation voluntary, paid, mandatory**.**
Table 4 with mode of happiness training indicated in **colours**

NATURE OF HAPPINESS TRAINING	**METHOD OF INVESTIGATION**				
	Cross-sectional had training vs had not	**Longitudinal** before vs after training			
		Change in treated group only		***Difference with change in control group***	
		Post intervention	*After follow-up*	*Post intervention*	*After follow-up*
Single kind of training					
Best possible self exercise		+5.1 +0.6 +13.1 +5.8 +10.0 +3.2 **+5.0** +7.2	+1.6 -0.7 -6.4 **+4.6** +8.8	+0.5 +2.1 +8.6 +5.4 +10.0 +3.6 **+5.4** +8.6	–2.3 +0.5 -4.0 **+5.6** +8.1
Body Focussed trainings					
• Laughter Yoga		**+8.6**		**+8.6**	
• Relaxation		+0.1 +3.7/+3.3[c]		+5.7 +3.0/+2.6[c]	
• Tai Chi		**+6.5**		**+4.5**	
Character strengths		+0.5	+1.0	-0.4	+1.0
Life skills training					
• Social skills training		+2.7		+0.9	
• Problem solving		-0.1	+0.0	-1.0	+0.1
• Goal setting training		**+13.4/+10.4[c]** +2.9 **+3.6** –1.3	**+11.9/+10.4[c]** +1.1 +3.6	+8.6/+9.5[c] +4.3 0	
Lifestyle awareness					
• Life review exercise					+8.6/+1.1/-0.5[c]
• Mood awareness training		**+3.9/+3.7/+0.7[c]**	**+4.2/+3.7/+1.2[c] +18.9/+23.2[c]**	+2.0/+4.0/+0.7[c]	+0.4/+1.1/+1.1[c]
List and practice perceived ways to happiness		+0.6/**+7.2[c]**			
• Live up to one's values		+1.0 +4.0	+2.5	+5.0 +7.8	+5.8
Meditation, mindfulness	+2.9	**+4.1** +13.2 **+4.6** +18.0 **+8.7/+7.6/+6.2[c]** +6.1 +2.4 +2.9	**+5.0 +5.6 +17.6** +4.8 +3.5	+8.5 –0.6 +18.0 **+9.0/+12.8/+8.0[c]** +6.9 +1.2 +4.3	–0.7 **+16.7** +4.7 +2.8
Novelty trying		**+3.6[a]**	+1.1[a]		
Positive thinking training		+2.4 **+4.0 +7.8**	**+7.0**	–0.4 **+5.0 +6.4**	–2.9
• Cognitive reframing		**+13.7**		**+12.5**	
• Count blessings and curses	**+6.5** 0 –3.3[a]	**+3.7** +2.4[a]	**+4.4**		
• Forgiveness exercises		+5.9	+5.0	+3.7	+5.5
• Gratitude training	**+12.3** –3.3 **+14.0**/+7.9[c] +5.4	+1.5 +2.4 -0.3 **+8.2** -1.8 +3.1 +2.9 +5.0 **+5.4**	–0.7 **+7.0** -0.5 **+4.2** -4.2	–0.8 -2.4 **+9.6/+5.5[c]** +3.8 +2.7 +3.3 +7.3 **+12.1 +3.4/+6.6[c]**	–0.2 **+4.8/+2.9[c]** +1.9 **+5.2** -4.6

		+3.2/+5.2[c] +4.0 -1.7		**+4.4** -5.8	
• Kindness training	+13.3/+6.0[c]	+0.6/–2.9[c] +8.9		+3.6/–4.0[c] +7.1	
• Recall of positive events		+1.9 **+3.7[a]** **+3.0** +4.9	+3.5 **+4.4[a]**	**+4.0** +3.3	
• Self-compassion training		+0.5		+1.4	
Savouring training		+8.0 +4.1	+1.6 +2.4	+9.6/+6.6[c] +5.1	–1.6/-0.9[c] +2.6
Self-awareness training		**+13.0**	+9.0	**+11.0**	+6.0
Multiple kinds combined					
Training for multiple mental skills		**+19.5** **+10.0** **+6.7** +3.7 **+7.8** **+5.9** **+15.2/+14.8[c]** **+19.3** +6.7 -0.2 +4.0 +2.5 **+16.8** **+21.6** +5.0 **+3.8/+3.6[c]** +5.0 **+16.0**	**+13.9** **+30.8** **+15.8** +0.4 **+11.8/+14.8[c]** +7.9 +4.9 +10.0 **+12.4** +15.0	**+29.0[b]** **+8.3** +3.4 +2.0 **+23.8/+23.4[b]** **+20.1** -0.1 +1.7 +4.2 +1.3 **+19.8** **+20.7** 0 **+4.0/+5.0[c]** -3.0 **+13.7**	**+27.9[b]** **+10.4** +10.4 –10.8 **+23.4/+25.4[b]** -2.1 +3.1 +3.7 -3.0
• Enlightenment + exercises		+3.6 **+7.8/+19.6[c]** **+3.9** +0.6 -0.1	+8.5 **+3.2** +0.8	+3.5 +9.3/+13.2/+18.9[c] +3.6/+3.0/+10.1[c] **+21.6/+46.1[b]** **+6.7/+4.0/+10[c]** +0.2 -1.0	–2.9
Participants and Results					
All studies Nr of studies (n) Mean change	8 (630) +5.6 %	72 (6402) +5.7 %	39 (3455) +6.1 %	64 (8929[d]) +5.2 %	28 (4058[d]) + 2.1 %
Voluntary Nr of studies (n) Mean change	3 (82) +7.8 %	42 (3213) +6.8 %	26 (1782) +6.1 %	34 (4542[d]) +6.0 %	17(2397[d]) +2.1 %
Paid/study credit Nr of studies (n) Mean change	2 (161) +2.7 %	20 (1279) +4.2 %	7 (440) +8.0 %	20 (2507[d]) +4.1 %	7 (826[d]) +3.8 %
Mandatory Nr of studies (n) Mean change	3 (387) +5.2 %	10 (1910) +4.5 %	6 (1213) +3.9 %	10 (1880[d]) +4.3 %	4 (835[d]) -0.7 %

Signs link to finding page in World Database of Happiness. Use control+click to view the page.
a: not included in calculation of mean because study appears twice in table
b: not included in calculation of mean because of huge decline in happiness in control group (treated as outliers)
c: average value of multiple measures/multiple comparison groups used in calculation of mean
d: numbers of participants and controls added up

Table 10: Size of changes in happiness among different users: children, university students, elderly**.**
Table 4 with users indicated in **colours**

NATURE OF HAPPINESS TRAINING	**METHOD OF INVESTIGATION**				
	Cross-sectional had training vs had not	**Longitudinal** before vs after training			
		Change in treated group only		***Difference with change in control group***	
		Post intervention	*After follow-up*	*Post intervention*	*After follow-up*
Single kind of training					
Best possible self exercise		+5.1 +0.6 +13.1 +5.8 +10.0 +3.2 **+5.0** +7.2	+1.6 -0.7 -6.4 **+4.6** +8.8	+0.5 +2.1 +8.6 +5.4 +10.0 +3.6 **+5.4** +8.6	–2.3 +0.5 -4.0 **+5.6** +8.1
Body Focussed trainings					
• Laughter Yoga		**+8.6**		**+8.6**	
• Relaxation		+0.1 +3.7/+3.3[c]		+5.7 +3.0/+2.6[c]	
• Tai Chi		**+6.5**		**+4.5**	
Character strengths		+0.5	+1.0	-0.4	+1.0
Life skills training					
• Social skills training		+2.7		+0.9	
• Problem solving		-0.1	+0.0	-1.0	+0.1
• Goal setting training		**+13.4/+10.4[c]** +2.9 **+3.6** –1.3	**+11.9/+10.4[c]** +1.1 +3.6	+8.6/+9.5[c] +4.3 0	
Lifestyle awareness					
• Life review exercise					+8.6/+1.1/-0.5[c]
• Mood awareness training		**+3.9/+3.7/+0.7[c]**	**+4.2/+3.7/+1.2[c] +18.9/+23.2[c]**	+2.0/+4.0/+0.7[c]	+0.4/+1.1/+1.1[c]
List and practice perceived ways to happiness		+0.6/**+7.2[c]**			
• Live up to one's values		+1.0 +4.0	+2.5	+5.0 +7.8	+5.8
Meditation, mindfulness	+2.9	**+4.1** +13.2 **+4.6** +18.0 **+8.7/+7.6/+6.2[c]** +6.1 +2.4 +2.9	**+5.0 +5.6 +17.6** +4.8 +3.5	+8.5 –0.6 +18.0 **+9.0/+12.8/+8.0[c]** +6.9 +1.2 +4.3	–0.7 **+16.7** +4.7 +2.8
Novelty trying		**+3.6[a]**	+1.1[a]		
Positive thinking training		+2.4 **+4.0 +7.8**	**+7.0**	–0.4 **+5.0 +6.4**	–2.9
• Cognitive reframing		**+13.7**		**+12.5**	
• Count blessings and curses	**+6.5** 0 –3.3[a]	**+3.7** +2.4[a]	**+4.4**		
• Forgiveness exercises		+5.9	+5.0	+3.7	+5.5
• Gratitude training	**+12.3** –3.3 **+14.0**/+7.9[c] +5.4	+1.5 +2.4 -0.3 **+8.2** -1.8 +3.1 +2.9 +5.0 **+5.4**	–0.7 **+7.0** -0.5 **+4.2** -4.2	–0.8 -2.4 **+9.6/+5.5[c]** +3.8 +2.7 +3.3 +7.3 **+12.1 +3.4/+6.6[c]**	–0.2 **+4.8/+2.9[c]** +1.9 **+5.2** -4.6

		+3.2/+5.2[c] +4.0 -1.7		**+4.4** -5.8	
• Kindness training	+13.3/+6.0[c]	+0.6/–2.9[c] +8.9		+3.6/–4.0[c] +7.1	
• Recall of positive events		+1.9 **+3.7[a]** **+3.0** +4.9	+3.5 **+4.4[a]**	**+4.0** +3.3	
• Self-compassion training		+0.5		+1.4	
Savouring training		+8.0 +4.1	+1.6 +2.4	+9.6/+6.6[c] +5.1	–1.6/-0.9[c] +2.6
Self-awareness training		**+13.0**	+9.0	**+11.0**	+6.0
Multiple kinds combined					
Training for multiple mental skills		**+19.5** **+10.0** **+6.7** +3.7 **+7.8** **+5.9** **+15.2/+14.8[c]** **+19.3** +6.7 -0.2 +4.0 +2.5 **+16.8** **+21.6** +5.0 **+3.8/+3.6[c]** +5.0 **+16.0**	**+13.9** **+30.8** **+15.8** +0.4 **+11.8/+14.8[c]** +7.9 +4.9 +10.0 **+12.4** +15.0	**+29.0[b]** **+8.3** +3.4 +2.0 **+23.8/+23.4[b]** **+20.1** -0.1 +1.7 +4.2 +1.3 **+19.8** **+20.7** 0 **+4.0/+5.0[c]** -3.0 **+13.7**	**+27.9[b]** **+10.4** +10.4 –10.8 **+23.4/+25.4[b]** -2.1 +3.1 +3.7 -3.0
• Enlightenment + exercises		+3.6 **+7.8/+19.6[c]** **+3.9** +0.6 -0.1	+8.5 **+3.2** +0.8	+3.5 +9.3/+13.2/+18.9[c] +3.6/+3.0/+10.1[c] **+21.6/+46.1[b]** **+6.7/+4.0/+10[c]** +0.2 -1.0	–2.9
Participants and Results					
All studies Nr of studies (n) Mean change	8 (630) +5.6 %	72 (6402) +5.7 %	39 (3455) +6.1 %	64 (8929[d]) +5.2 %	28 (4058[d]) + 2.1 %
Children Nr of studies (n) Mean change	1 (130) -3.3 %	4 (715) +2.7 %	4 (1051) +2.9 %	4 (208[d]) +1.4 %	3 (760[d]) -2.0 %
University students Nr of studies (n) Mean change	3 (362) +5.4 %	26 (2565) +4.3 %	9 (787) +1.4 %	26 (4305[d]) +4.7 %	7 (1208[d]) +0.9 %
Elderly Nr of studies (n) Mean change	0	3 (180) +4.8 %	2 (140) +4,3 %	3 (150[d]) +4.1 %	1 (78[d]) +5.5 %

Signs link to finding page in World Database of Happiness. Use control+click to view the page.
a: not included in calculation of mean because study appears twice in table
b: not included in calculation of mean because of huge decline in happiness in control group (treated as outliers)
c: average value of multiple measures/multiple comparison groups used in calculation of mean
d: numbers of participants and controls added up

Publication Bias?

This review is based on published reports of effect studies and we must be aware of the possibility of publication bias. Unwelcome research results are often not submitted for publication by investigators or are rejected by journals. A first thing to note in this context is that a substantial share of the findings in Table 3 are negative (13%) or zero (4%) and that only 40% of the findings are significant and positive. A more formal check for this 'file-drawer' problem and 'p-hacking' as the "sole explanation of the evidential value of a set of significant findings" is a p-curve analysis [78]. We performed such an analysis including 15 studies which reported a statistically significant increase in happiness after doing a happiness training. In a p-curve analysis only one finding from a particular study can be included. We used the follow-up measure if available and the post-treatment measure if a follow-up measure was lacking. If more than one happiness measure was reported, we chose overall happiness rather than affect balance or mixed measures. We excluded cross-sectional findings and treatment vs control comparisons, because a reported difference does not necessarily mean that happiness increased or decreased within the treatment group. The statistically significant results of some studies had to be excluded from the analysis because the statistics were poorly reported. The p-curve analysis supports the presence of evidential value ($p < 0.01$ for binomial test and $Z=-9.91$, $p < 0.001$ for continuous test). Thus, selective reporting and/or p-hacking is unlikely to be the sole explanation for the significant findings included in our research synthesis.

Discussion

What does this all mean for individuals and organizations looking for possibilities to boost happiness?

Main Finding: Happiness Trainings Boost Happiness

Together, our findings suggest that happiness training techniques usually have positive effects on happiness and that negative effects are uncommon. This appeared to be the case for different

interventions, delivered in different ways, for different groups, in different settings. This can be seen as a confirmation of a basic tenet in positive psychology, that it is worthwhile not only to solve one's problems, but also to enhance strengths and life skills [18,79]. How strong is the effect?

We estimate the real average gain at follow-up to be around 5%. From the bottom rows of Tables 4 and 5 we can see that gains in happiness following happiness training are smaller at follow-up when the change in happiness in a control group is subtracted, the difference for all studies being 5.7% for gains at post-intervention and 6.1 at follow-up for the treated group only, and in comparison with a control group 5.2% post-intervention and 2.1% at follow-up. The lower effect at follow-up in comparison with a control group is commonly seen as an indication for a placebo effect in the experimental group: But is it in this case?

Inevitably, awareness of their happiness has been raised among the controls, as they answered questions on their happiness during a pre-test, post-test and follow-up. In the waiting list condition, the prospect of participation in happiness training will also have sharpened their awareness of their personal happiness. Below, we will see that raising awareness of how happy one feels tends to raise the level of one's happiness, probably by its effects on the choices people make. Another thing to keep in mind is that the control groups differed considerably, which makes it difficult to interpret the differences with the experimental group (e.g. Dickens [69]). Some only used passive controls that filled in a survey, others received an alternative treatment, which is likely to have produced a gain in happiness by itself, e.g. in the case of doing a writing exercise. Expressive writing can be healing [80]. Together, this all means that we should not just take the lowest value at the bottom rows of Table 4 or 5 to be the best estimate.

Should a 5% Gain in Happiness be considered modest or Much?

At first sight a 5% gain in happiness does not impress as a great effect of following a happiness training. Yet, we are dealing with

a small gain of a big thing, satisfaction with one's life-as-a-whole, which in its turn brings several other desirable things in its trail, such as a longer lifetime [2]. Next to this absolute impact on happiness of following happiness training, we can also look at its impact relative to other determinants.

Financial Equivalence

Analyses on the German Socio-Economic Panel Study (GSOEP) have yielded estimates of the effect of change in household income on happiness. Using this dataset over the years 2003-2008, Pfeifer [81] reports that "Household income significantly increases life satisfaction on average by about 0.085 points per 1,000 Euros additional monthly net income in the pooled regressions and by about 0.039 points in the fixed effects regressions." Departing from the latter most conservative estimate of a 0.04 point rise on the 0-10 happiness scale per 1000 Euro additional monthly income, the 5% (0.05) gain in happiness following a happiness training course equals a gain in monthly income of about € 1.250, which was about one third of the average household income in Germany at that time. Such income equivalences will differ across places, persons and happiness variants, but are still considerable and comparable to amounts observed in studies on monetary compensation for losses in happiness, such as due to airport noise [82].

Similarity to Impact of Life-Events

Bakker et al. [75] compared the change in happiness following the use of their on-line Happiness Indicator with effects of real life-events on happiness as observed in longitudinal studies. Getting married appears to raise happiness by some 5% and a gain of only 0.5% in happiness was found for winning a lottery. Becoming unemployed reduces happiness by 8% and the loss of one's spouse by 12%. From this perspective, the average 5% gain in happiness after having followed a happiness training course is impressive.

What Works for Whom?

We can only provide provisional answers to the questions what kind(s) of training techniques work best and what types of people profit most from joining a happiness training course. Multiple interventions seem to outperform single interventions, which is in line with the meta-analysis by Hendriks et al. [39] and Van Agteren et al [41]. The fact that multiple interventions seem to work better may have to do with the variety that is needed to prevent hedonic adaptation after improvements [83]. Another reason may be that happiness can be thought of as a signal that people are doing well in life and that a lot of different skills are necessary to achieve this [9].

Other results are more tentative. Of the single interventions we had the best data for meditation, mindfulness, best possible self exercises and gratitude training. Meditation, mindfulness yielded the best results which is also reported by Van Agteren et al [41]. As expected, happiness training seemed more effective for adults, probably because of their ability to reflect on their lives. Training also worked better for people participating voluntarily. Pursuing happiness requires effort and that may be in short supply if you are forced to participate, for example in a classroom setting [8]. Personal involvement may also explain why offline training worked slightly better directly after the training, whereas online training yielded similar results at follow-up in comparison to a control group. Online training requires more internal motivation to complete and this may increase the likelihood that people keep expanding their life skills after training has ended.

We should stress that these conclusions are tentative, because the different aspects of what works for whom are clearly related in our set of studies. An example is that mandatory participation was often in the classroom setting and the worse results may just as well have to do with the (school) age of the participants or with the lack of free choice. A weakness of our research synthesis is that it is less suited to answer the more specific questions. We lacked statistical possibilities to untangle the influence of covariates.

There is however an advantage of bringing together all the research of happiness training techniques we discovered that efforts to merely raise happiness awareness were quite effective in raising happiness. This discovery is not yet sufficiently recognised by the field [84]. Therefore, we discuss this in a separate paragraph.

Raising Awareness Works

Most happiness training techniques aim to foster specific life skills, such as planning for the future or seeing positive things in life. The idea behind these interventions is that such aptitudes help to make one's life more satisfying. Evident limitations of this approach are that a) training is functional only when skills can be meaningfully improved, and b) that the functionality of particular skills may not fit the context of the person to be trained, for example planning for the future may have more functionality for young adults than for aged pensioners.

A minority of the interventions listed in Table 2 are aimed at raising awareness of how one lives and feels. Techniques used for this purpose are life review exercise, self-awareness training and mood awareness training. The idea behind these approaches is that such awareness will help you to find a way of life that feels good for you, as explained in more detail in Bakker et al. [75]. The limitations are that a) awareness of positive and negative moods does not automatically enable people to change their lives in a way that enables them to be happier more often, b) the effect of greater awareness can backfire on happiness when change is not possible and the intervention makes you are more keenly aware about what you miss in life.

From Table 3 we observe that both of the kinds of interventions discussed above yield positive effects on happiness and from Table 4 we can see that the resulting changes in happiness following raised awareness are in the range between -0.5% and 23%, which is higher on average (9.2% post-intervention for the treated group) than the effects yielded by the other single-method training techniques listed in Table 4. If raising happiness awareness enables people to change their lives in ways that they

become happier, then this has important implications for all the studies used in the research synthesis. All training, and even all filling out surveys in a control group, will raise awareness of how happy one feels. Raising awareness may partly explain the effectiveness of other life skills training.

The fact that mood awareness is effective, highlights the fact that pursuing happiness has two sides to it. The first is the effort to milk as much positive affect out of interaction with the world, for example by increasing gratitude, savouring or avoiding self-defeating lines of reasoning. Positive psychology often aims to create positive feelings along this line of reasoning. Raising mood awareness starts out with the opposite. You can try to do more of what feels good, and avoid what feels bad. After all, our emotions can also be thought of as a signal that we are doing well or bad. Negative affect signals that we should try to change something, positive affect that we are doing fine and we can explore the world [85]. Pursuing happiness is just a much about listening to the messages of our emotions and moods and changing our behaviour and the circumstances of life accordingly, as it is about creating more pleasant feelings in our current interaction with the world [86,87].

Similarity with Other Overview Studies on the Effect of PPI's

If we compare our results with earlier work on the effects of PPI's on wider subjective well-being, we can conclude that our results are in line with these. Sin & Lyubomirsky [19], Bolier et al. [38], White, Uttl & Holder [40], Hendriks et al. [39] and Van Agteren et al. [41] describe similar modest and positive effects, which suggests that the heterogenous subjective well-being measures used in these meta-analyses have not changed the average effect.

Conclusions

Participation in a happiness training course is typically followed by a rise in happiness, in particular participation in training that focusses on multiple mental skills and/or happiness awareness

techniques and by people voluntary looking to achieve greater happiness. Hence offering happiness training to employees is a good option for organizations that want to boost their productivity through employee happiness.

References

1. *Studies included in this research synthesis are marked with a link at the end of the reference. The links lead to a standardized description of that study in the World Database of Happiness. The codes denote place and year of the study.* Diener E, Sapyta JJ, Suh E. Subjective well-being is essential to well-being. Psychological Inquiry. 1998; 9: 33-37.
2. Veenhoven R. Happiness: History of the concept. In: James Wright (Ed.) International Encyclopaedia of Social and Behavioural Sciences. Amsterdam: Elsevier.2015; 521-525.
3. Nes RB, Røysamb E. Happiness in behavior genetics: An update on heritability and changeability. Journal of Happiness Studies. 2017; 18: 1533-1552.
4. Sezer S, Can E. School Happiness: A Scale Development and Implementation Study. Eurasian Journal of Educational Research. 2019; 79: 167-190.
5. Elliott A, Lemert C. The New Individualism: The Emotional Costs of Globalization. London: Routledge. 2009.
6. Lyubomirsky S, Sheldon KM, Schkade D. Pursuing Happiness: The Architecture of Sustainable Change. Review of General Psychology. 2005; 9: 111–113.
7. Brown NJ, Rohrer JM. Easy as (happiness) pie? A critical evaluation of a popular model of the determinants of well-being. Journal of Happiness Studies. 2019; 20: 1-17.
8. Sheldon KM, Lyubomirsky S. Revisiting the Sustainable Happiness Model and Pie Chart: Can Happiness Be Successfully Pursued? The Journal of Positive Psychology. 2019; 1-10.
9. Veenhoven R. Healthy happiness: Effects of happiness on physical health and the consequences for preventive health care. Journal of Happiness Studies. 2008; 9: 449-464.
10. Guven C. Are Happier People Better Citizens? School Working Papers, Economic Series, SWP 2009/4, Deakin

University, Melbourne, Australia (also SOEP paper no. 199, DIW, 2009, Berlin Germany). 2008.
11. Gaucher R, Veenhoven R. The Happy Productive Worker Thesis refined: Productivity depends more on life-satisfaction than on job-satisfaction. Paper in preparation, Erasmus Happiness Economics Research Organization, Erasmus University Rotterdam, Netherlands. 2020.
12. Bergsma A, Veenhoven R. In: A Bergsma, E Hamburger, E Klappe, editors. Het rendement van geluk, het belang van levensgeluk voor werkprestaties. Amsterdam: Handboek Werkgeluk. 2020; 130-144.
13. Bergsma A. Do self-help books help? Journal of Happiness Studies. 2008; 9: 341-360.
14. Parks AC, Schueller SM, Tasimi A. In: SA David, I Boniwell, AC Ayers, editors. Increasing happiness in the general population: empirically supported self-help. The Oxford Handbook of Happiness. Oxford: Oxford University Press, 2013. 2013; 901-914.
15. Freire T. Positive psychology approaches. In: J Passmore, D Peterson, T Freire, editors. The Wiley-Blackwell Handbook of the Psychology of Coaching and Mentoring. West Sussex: Wiley-Blackwell. 2013; 426–442.
16. Grant AM, Spencer GB. Using coaching and positive psychology to promote a flourishing workforce: A model of goal-striving and mental health. In: PA Linley, S Harrington, N Page, editors. Oxford Handbook of positive psychology and work. Oxford: Oxford University Press. 2010; 175-188.
17. Tarragona M. Positive psychology and life coaching. In: S Joseph, editor. Positive Psychology in Practice. Hoboken: John Wiley & Sons. 2015; 249-264.
18. Boniwell I. Positive psychology in a nutshell: The science of happiness. UK: McGraw Hill. 2012.
19. Sin NL, Lyubomirsky S. Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. Journal of clinical psychology. 2009; 65: 467-487.
20. Fordyce MW. Development of a Program to Increase Personal Happiness. Journal of Counselling Psychology. 1977; 24: 511 -521.
21. Feicht T, Wittmann M, Jose G, Mock A, Von Hirschhausen

E, et al. Evaluation of a Seven-Week Web-Based Happiness Training to Improve Psychological Well-Being, Reduce Stress, and Enhance Mindfulness and Flourishing: A Randomized Controlled Occupational Health Study. Evidence-Based Complementary and Alternative Medicine, No. 676953. 2013; 1 – 14.

22. College of Well-being. (n.d.). Happiness Training Plan. 2020. Available online at: http://collegeofwellbeing.com/happiness-training-plan/
23. Indian School for Business (n.d.) A Life of Happiness and fulfillment. 2020. Available online at: https://www.classcentral.com/course/happiness-2860
24. Action for happiness (n.d.) The action for happiness course. 2020. Available online at: https://www.actionforhappiness.org/the-action-for-happiness-course
25. Nielsen K, Nielsen MB, Ogbonnaya C, Känsälä M, Saari E, et al. Workplace resources to improve both employee well-being and performance: A systematic review and meta-analysis. Work & Stress. 2017; 31: 101-120.
26. Donaldson SI, Lee JY, Donaldson S I. The Effectiveness of Positive Psychology Interventions in the Workplace: A Theory-Driven Evaluation Approach. In: LE Van Zyl, S Rothmann, editors. Theoretical Approaches to Multi-Cultural Positive Psychological Interventions. Cham: Springer. 2019; 115-159.
27. Donaldson SI, Lee JY, Donaldson SI. Evaluating positive psychology interventions at work: A systematic review and meta-analysis. International Journal of Applied Positive Psychology. 2019; 4: 113-134.
28. Roll LC, Van Zyl LE, Griep Y. Brief Positive Psychological Interventions Within Multi-Cultural Organizational Contexts: A Systematic Literature Review. In Theoretical Approaches to Multi-Cultural Positive Psychological Interventions. Cham: Springer. 2019; 523-544.
29. Ivandic I, Freeman A, Birner U, Nowak D, Sabariego C. A systematic review of brief mental health and well-being interventions in organizational settings. Scandinavian Journal of Work, Environment & Health. 2017; 43: 99–108.
30. Brickmann P, Campbell DT. Hedonic relativism and

planning the good society. In: MH Appley, editor. Adaptation level theory: A symposium. New York: Academic Press. 1971; 287–302.
31. Ormerod P. The Folly of Wellbeing in Public Policy. In P. Booth (Ed). And the Pursuit of Happiness, Wellbeing and the role of government. London: Institute of Economic Affairs. 2012; 39 – 57.
32. Ford BQ, Mauss IB. The Paradoxical Effects of Pursuing Positive Emotion: When and Why Wanting to Feel Happy Backfires. In: J Gruber, J Moskowitz, editors. Positive Emotion: Integrating the Light Sides and Dark Sides. Oxford: Oxford University Press. 2014; 363-381.
33. Ford BQ, Dmitrieva JO, Heller D, Chentsova-Dutton Y, Grossmann I, et al. Culture shapes whether the pursuit of happiness predicts higher or lower well-being. Journal of Experimental Psychology: General. 2015; 144: 1053.
34. Mauss IB, Savino NS, Anderson CL, Weisbuch M, Tamir M, et al. The pursuit of happiness can be lonely. Emotion. 2012; 12: 908.
35. Ford BQ, Shallcross AJ, Mauss IB, Floerke VA, Gruber J. Desperately seeking happiness: Valuing happiness is associated with symptoms and diagnosis of depression. Journal of social and clinical psychology. 2014; 33: 890-905.
36. Veenhoven R. Greater Happiness for a Greater Number. Is that Possible and Desirable? Journal of Happiness Studies. 2010; 11: 605 – 629.
37. Soroka S, McAdams S. News, politics, and negativity. Political Communication. 2015; 32: 1-22.
38. Bolier L, Haverman M, Westerhof GJ, Riper H, Smit F, et al. Positive psychology interventions: a meta-analysis of randomized controlled studies. BMC public health. 2013; 13: 119.
39. Hendriks T, Schotanus-Dijkstra M, Hassankhan A, de Jong J, Bohlmeijer E. The efficacy of multi-component positive psychology interventions: A systematic review and meta-analysis of randomized controlled trials. Journal of Happiness Studies. 2019; 20: 1-34.
40. White CA, Uttl B, Holder MD. Meta-analyses of positive psychology interventions: The effects are much smaller than previously reported. PLoS ONE. 2019; 14: e0216588.

41. Van Agteren J, Iasiello M, Lo L, Bartholomaeus J, Kopsaftis Z, et al. A systematic review and meta-analysis of psychological interventions to improve mental wellbeing. Nature Human Behaviour. 2021; 5: 631-652.
42. Buettner D, Nelson T, Veenhoven R. Ways to Greater Happiness: A Delphi Study, Journal of Happiness Studies. 2021; 21: 2789-2806.
43. Held BS. The Tyranny of the Positive Attitude in America: Observation and Speculation. Journal of Clinical Psychology. 2002; 58: 965–992.
44. Held BS. Positive psychology's a priori problem. Journal of Humanistic Psychology. 2018; 58: 313-342.
45. McMahon DM. From the Paleolithic to the present: Three revolutions in the global history of happiness. In: E Diener, S Oishi, L Tay, editors. Handbook of well-being. Salt Lake City: DEF Publishers. 2018.
46. Diener E, Oishi S, Lucas RE. National accounts of subjective well-being. American Psychologist. 2015; 70: 234.
47. Veenhoven R. Conditions of Happiness, Reidel. Dordrecht: Now Nature-Springer. 1984.
48. Bentham J. An Introduction to the Principles of Morals and Legislation. London, England. Reprinted in 2000 by Batoche Books. 1789.
49. Veenhoven R. How do we assess how happy we are? In: AK Dutt, B Radcliff, editors. Happiness, Economics and Politics: Towards a multi-disciplinary approach. Cheltenham: Edward Elger Publishers. 2019; 45-69.
50. Delle Fave A, Brdar I, Freire T, Vella-Brodrick D, Wissing MP. The eudaimonic and hedonic components of happiness: Qualitative and quantitative findings. Social indicators research. 2011; 100: 185-207.
51. Veenhoven R. The four qualities of life: Ordering concepts and measures of the good life. Journal of Happiness Studies. 2000; 1: 1-39.
52. Diener E, Lucas RE, Smith HL, Suh EM. Subjective Well-Being: Three Decades of Progress. Psychological Bulletin. 1999; 125: 276 – 230.
53. Veenhoven R. World Database of Happiness: Archive of research findings on subjective enjoyment of life. Erasmus

University Rotterdam. 2021. Available online at: https://worlddatabaseofhappiness.eur.nl
54. Veenhoven R. Bibliography of happiness. World Database of Happiness, Erasmus University Rotterdam. 2021. Available online at: https://worlddatabaseofhappiness.eur.nl/collections/bibliography/what-is-this-bibliography-of-happiness/
55. Veenhoven R. Correlates of Happiness. World Database of Happiness, Erasmus University Rotterdam. 2021. Available online at: https://worlddatabaseofhappiness.eur.nl/collections/correlational-findings/what-is-this-collection-of-correlational-findings-on-happiness/
56. Veenhoven R. World Database of Happiness: A 'findings archive. In: H Welsch, D Maddison, K Rehdanz, editors) Handbook of Wellbeing, Happiness and the Environment, Cheltenham: Edward Elger Publishing. 2020; 25-45.
57. Bergsma A, Buijt I, Veenhoven R. Is gelukstraining effectief? Gelukkiger dankzij training? Een overzicht van experimenten uit de World Database of Happiness. (Are happiness trainings effective?) Tijdschrift Positieve Psychologie. 2021.
58. Bergsma A, Buijt Y, Veenhoven R. Will happiness-trainings make us happier? A research synthesis using an online findings-archive. Frontiers in Organizational Psychology. 2020; 11.
59. Veenhoven R. Collection of scientific publications on happiness. World Database of Happiness, Erasmus University Rotterdam. 2021. Available online at: https://worlddatabaseofhappiness.eur.nl/wp-content/uploads/2020/08/Introtext-Bibliography-Chapter3.pdf
60. Veenhoven R. Measures of happiness. World Database of Happiness, Erasmus University Rotterdam. 2021. Available online at: https://worlddatabaseofhappiness.eur.nl/collections/measures-of-happiness/what-is-this-collection-measures-of-happiness/
61. Diener E, Emmons RA, Larsen RJ, Griffin S. The Satisfaction with Life Scale. Journal of Personality Assessment. 1985; 49: 71-75.

62. Lyubomirsky S, Lepper H. A measure of subjective happiness: Preliminary reliability and construct validation. Social Indicators Research. 1999; 46: 137-155.
63. [The happiness course] (n.d.) 2020. Available online at: https://livability.org.uk/resources/happiness-course/
64. Sheldon KM, Kasser T, Smith K. Personal Goals and Psychological Growth: Testing an Intervention to Enhance Goal attainment and Personality Integration. Journal of Personality. 2002; 70: 5 – 31.
65. Veenhoven R. Notations of findings. World Database of Happiness, Erasmus University Rotterdam. 2021. Available online at: https://worlddatabaseofhappiness.eur.nl/wp-content/uploads/2020/08/Introtext-CorrelationalFindings-Chapter3.pdf
66. Veenhoven R. Correlational Findings on Happiness and Health: Psychological Treatment. World Database of Happiness. Rotterdam: Erasmus University. 2021.
67. Borenstein M, Hedges LV, Julian PT, Higgins JPT, Rothstein HR. Introduction to Meta-Analysis. NJ: Wiley. 2009.
68. Franke RH, Kaul JD. The Hawthorne experiments: First statistical interpretation. American Sociological Review. 1978; 43: 623-643.
69. Dickens LR. Using gratitude to promote positive change: A series of meta-analyses investigating the effectiveness of gratitude interventions. Basic and Applied Social Psychology. 2017; 39: 193-208.
70. Watson DC, Lee A, Tellegen A. Development and validation of brief measures of positive and negative affect: The PANAS scales. Journal of Personality and Social Psychology. 1988; 54: 1063-1070.
71. Cheung MWL. A guide to conducting a meta-analysis with non-independent effect sizes. Neuropsychology review. 2019; 29: 387–396.
72. Parks AC. Positive Psychotherapy: Building a Model of empirically supported Self-Help. PhD dissertation, University of Pennsylvania, USA. 2009. Available online at: US Philadelphia, Pennsylvania 2004 /1 and US Philadelphia Pennsylvania 2007
73. Moskowitz JT, Carrico AW, Duncan LG. Randomized Controlled Trial of a Positive Affect Intervention for People

Newly Diagnosed With HIV. Journal of Consulting and Clinical Psychology. 2017; 85: 409-423.
74. Chan DW. Gratitude, Gratitude Intervention and Subjective Well-Being among Chinese School Teachers in Hong Kong. Educational Psychology. 2010; 30: 139 – 153.
75. Bakker AB, Burger M, Oerlemans W, van Haren P, Veenhoven R. Raise of Happiness Following Raised Awareness of How Happy One Feels: A Follow-Up of Repeated Users of the Happiness Indicator Website. Accepted for publication in International Journal of Applied Positive Psychology. 2020.
76. Coote HMJ, MacLeod AK. A Self-help, Positive Goal-focused Intervention to Increase Well-being in People with Depression, Clinical Psychology and Psychotherapy. 2012; 19: 305 – 315.
77. Le QA, Doctor JN, Zoellner LA, Feeny NC. Cost-effectiveness of prolonged exposure therapy versus pharmacotherapy and treatment choice in posttraumatic stress disorder (the optimizing PTSD treatment trial): A doubly randomized preference trial. The Journal of Clinical Psychiatry. 2014; 75: 222–230.
78. Simonsohn U, Nelson LD, Simmons JP. P-curve: a key to the file-drawer. Journal of experimental psychology: General. 2014; 143: 534-547.
79. Seligman MEP, Csikszentmihalyi M. Positive psychology, An introduction. American Psychologist. 2000; 55: 5–14.
80. Pennebaker JW. Expressive writing in psychological science. Perspectives on Psychological Science. 2018 ; 13 : 226-229.
81. Pfeifer C. Life satisfaction and the consumption values of partners and friends: Evidence from German panel survey data. Economics Bulletin. 2013; 33: 3131-3142.
82. Van Praag BM, Baarsma BE. Using Happiness Surveys to Value Intangibles: The Case of Airport Noise. The Economic Journal. 2005; 115: 224 – 246.
83. Sheldon KM, Lyubomirsky S. The challenge of staying happier: Testing the hedonic adaptation prevention model. Personality and Social Psychology Bulletin. 2012; 38: 670–680.
84. Ludwigs K, Burger M, Lucas RE. How Does More Attention to Subjective Well-Being Affect Subjective Well-Being?

Applied Research in Quality of Life. 2018; 13: 1055 – 1080.
85. Frijda NH. The emotions. Cambridge: Cambridge University Press. 1986.
86. Bergsma A. Transhumanism and the Wisdom of Old Genes. Neurotechnology as Source of Future Happiness? Journal of Happiness Studies. 2000; 1: 401-417.
87. Bergsma A. Paradoxen bij het streven naar werkgeluk. In: A Bergsma, E Hamburger, E Klappe, editors. Handboek Werkgeluk. Amsterdam, Boom. 2020; 317-328.
88. Cerezo MV, Cardenal V, Ortiz-Tallo M. Positive Psychology Group Intervention for Breast Cancer Patients: A Randomized Trial Psychological Reports: Disability & Trauma. 2014; 115: 44-64.
89. Cheung EO, Cohn MA, Dunn LB. A Randomized Pilot Trial of a Positive Affect Skill Intervention (Lessons in Linking Affect and Coping) for Women with Metastatic Breast Cancer. Psycho-Oncolgly. 2017; 26: 2101-2108.
90. Cohn MA, Pietrucha ME, Saslow LR. An Online Positive Affect Skills Intervention Reduces Depression in Adults with Type 2 Diabetes. The Journal of Positive Psychology. 2014; 9: 523-534.
91. Drozd F, Kraft P, Skeie LG. A Web-Based Intervention Trial for Depressive Symptoms and Subjective Well-Being in Patients with Chronic HIV Infection. AIDS Care. 2014; 26: 1080-1089.
92. Emmons RA, McCullough ME. Counting Blessings versus Burdens: An Experimental Investigation of Gratitude and Subjective Well-Being in Daily Life. Journal of Personality and Social Psychology. 2003; 84: 377 – 389.
93. Fernros L, Furhoff A, Wändell PE. Improving Quality of Life using Compound Mind-Body Therapies: Evaluation of a Course Intervention with Body Movement and Breath Therapy, Guided Imagery, Chakra Experiencing and Mindfulness Meditation. Quality of Life Research. 2008; 17: 367 – 376.
94. Kerr SL, O'Donovan A, Pepping CA. Can Gratitude and Kindness Interventions Enhance Well-Being? Journal of Happiness Studies. 2015; 16: 17-36.
95. Mohammadi N, AghaYousefi A, Nikrahan GR. A Randomized Trial of an Optimism Training Intervention in

Patients with Heart Disease. General Hospital Psychiatry. 2018; 51: 46-53.
96. Müller R, Gertz KJ, Molton IR. Effects of a Tailored Positive Psychology Intervention on Well-Being and Pain in Individuals with Chronic Pain and a Physical Disability. A Feasibility Trial. Clinical Journal of Pain. 2016; 32: 32-44.
97. Nyklícek I, Kuijpers KF. Effects of Mindfulness-Based Stress Reduction Intervention on Psychological Well-being and Quality of Life: Is Increased Mindfulness Indeed the Mechanism? Annals of Behavioural Medicine. 2008; 35: 331- 340.
98. Peters ML, Feijge M, Smeets E. Happy Despite Pain. A Randomized Controlled Trial of an 8-Week Internet-delivered Positive Psychology Intervention for Enhancing Well-being in Patients with Chronic Pain. Clinical Journal of Pain. 2017; 33: 962-975.
99. Sanjuan P, Montalbetti T, Perez-Garcia AM. A Randomized Trial of a Positive Intervention to Promote Well-Being in Cardiac Patients. Applied Psychology: Health and Well-Being. 2016; 8: 64-84.
100. Alden LE, Trew JL. If It Makes You Happy: Engaging in Kind Acts Increases Positive Affect in Socially Anxious Individuals. Emotion. 2013; 13: 64-75.
101. Al-Seheel AY, Noor NM. Effects of an Islamic-Based Gratitude Strategy on Muslim Students' Level of Happiness. Mental Health, Religion and Culture. 2016; 19: 686 – 703.
102. Baker M. It's Good to Be Grateful: Gratitude Interventions at Work. Msc Thesis, Department of Psychology. East Carolina University, USA. 2011.
103. Bryant FB, King SP, Smart CM. Using the Past to Enhance the Present: Boosting Happiness Through Positive Reminiscence. Journal of Happiness Studies. 2005; 6: 227 – 260.
104. Conner TS, Reid KA. Effects of Intensive Mobile Happiness Reporting in Daily Life. Social Psychological and Personality Science. 2012; 3: 315-323.
105. Conner TS, Reid KA. Effects of Intensive Mobile Happiness Reporting in Daily Life. Social Psychological and Personality Science. 2012; 3: 315-323.
106. Della Porta MD. Enhancing the Effects of Happiness-

Boosting Activities: The Role of Autonomy Support in an Experimental Longitudinal Intervention. UC Riverside Electronic Theses and Dissertations. 2013; 57.
107. Dosset TH. The Influence of the Character Strengths of Gratitude and Kindness on Subjective Well-Being. PhD Thesis, College of Education, Louisiana University, USA. 2011.
108. Eryilmaz A. Positive Psychology in the Class: The Effectiveness of a Teaching Method Based on Subjective Well-Being and Engagement Increasing Activities. International Journal of Instruction. 2015; 8: 17 – 32.
109. Fofonka Cunha L, Campos Pellanda L, Tozzi Reppold C. Positive Psychology and Gratitude Interventions: A Randomized Clinical Trial. Frontiers in Psychology. 2019; 10: 584.
110. Fordyce MW. A Program to Increase Happiness: Further Studies. Journal of Counselling Psychology. 1983; 30: 483 – 498.
111. Gavian M. The Effects of Relaxation and Gratitude Interventions on Stress Outcomes. PHD dissertation, School of the University of Minnesota, Minesota, USA. 2011.
112. Goldwurm GF, Baruffi M, Colombo F. Subjective Well-Being Training to Increase Happiness. In: A DelleFave, editor."Dimensions of Well-Being (pp Franco Angeli, Milano, Italy. 2006; 441-454.
113. Hurley DB, Kwon P. Results of a Study to Increase Savouring the Moment: Differential Impact on Positive and Negative Outcomes. Journal of Happiness Studies. 2012; 13: 579 – 588.
114. Lambert LT, Joshanloo M, Passmore HA. A Positive Psychology Intervention Program in a Culturally-Diverse University: Boosting Happiness and Reducing Fear. Journal of Happiness Studies. 2019; 20: 1141 – 1162.
115. Lambert LT, Passmore HA, Sabah I Al, Scull N. Wellbeing Matters in Kuwait: The Alnowair's Bareec Education Initiative. Social Indicators Research. 2019; 143: 741-763.
116. Layous K, Chancellor J, Kurtz JL, Lyubomirsky S. Reframing the Ordinary: Imaging Time as Scarce Increases in Wellbeing, Journal of Positive Psychology. 2008; 13: 301

– 308.
117. Liau AK, Neihart MF, Teo CT. Effects of the Best Possible Self Activity on Subjective Well-Being and Depressive Symptoms. The Asia-Pacific Education Researcher. 2016; 25: 473 – 481.
118. Lichter S, Haye K, Kammann R. Increasing Happiness through Cognitive Lü W, Liu Y, Wang ZH. A Pilot Study on Changes of Cardiac Vagal Tone in Individuals with Low Trait Positive Affect: The Effect of Positive Psychotherapy. International Journal of Psychophysiology. 2013; 88: 213-217.
119. Lyubomirsky S, Dickerhoof R, Sousa LA. The Costs and Benefits of Writing, Talking, and Thinking about Life's Triumphs and Defeats. Journal of Personality and Social Psychology. 2006; 90: 692-708.
120. MacLeod AK, Coates E, Hetherton J. Increasing Well-being through Teaching Goal-Setting and Planning Skills: Results of a Brief Intervention. Journal of Happiness Studies. 2008; 9: 185 – 196.
121. Martinez-Marti ML, Avia MD, Hernández-Lloreda MJ. The Effects of Counting Blessings on Subjective Well-Being: A Gratitude Intervention in a Spanish Sample. Spanish Journal of Psychology. 2010; 13: 886 – 896.
122. Meevissen YMC, Alberts HJEM, Peters ML. Become More Optimistic by Imagining A Best Possible Self: Effects of A Two Week Intervention. Journal of Behavior Therapy and Experimental Psychiatry. 2011; 42: 371 – 378.
123. Nelson SK, Fuller T, Lyubomirsky S. Beyond Self-Protection: Self-Affirmation Benefits Hedonic and Eudaimonic Well-Being. Personality and Social Psychology Bulletin. 2014; 1 – 14.
124. Renner F, Peters ML, Schwarz P. Effects of A Best-Possible Self Mental Imagery Exercise on Mood And Dysfunctional Attitudes. Psychiatry Research. 2014; 215: 105 – 110.
125. Sheldon KM, Boehm JK, Lyubomirsky S. Variety is the Spice of Happiness: The Hedonic Adaptation Prevention Model. In: SA David, I Boniwell, AC Ayers, editors. The Oxford Handbook of Happiness. Oxford: Oxford University Press, 2013. 2013; 901-914.

126. Sheldon KM, Lyubomirsky S. How to Increase and Sustain Positive Emotion: The Effect of Expressing Gratitude and Visualizing best possible Selves. The Journal of Positive Psychology. 2006; 1: 73 – 82.
127. Smeets E, Alberts HJEM, Neff KD. Meeting Suffering with Kindness: Effects of a Brief Self-Compassion Intervention for Female College Students. Journal of Clinical Psychology. 2014; 70: 794 – 807.
128. Watkins PC, Pichinevskiy S, Uhder J. Grateful Recounting Enhances Subjective Wellbeing: The Importance of Grateful Processing. The Journal of Positive Psychology. 2014; 10: 91 – 98.
129. Boerefijn J, Bergsma A. Geluksles verbetert Schoolprestaties. (Happiness training adds to school performance). Tijdschrift voor Orthopedagogiek. 2011; 50: 110 - 121.
130. Carter PJ, Hore B, McGarrigle L. Happy thoughts: Enhancing Well-Being in the Classroom with a positive events Diary. Journal of Positive Psychology on-line version. 2012.
131. Froh JJ, Emmons RA, Sefick WJ. Counting Blessing in Early Adolescents: An Experimental Study of Gratitude and Subjective Well-Being. Journal of School Psychology. 2008; 46: 213 – 233.
132. Froh JJ, Kashdan TB, Ozimkowski KM. Who Benefits the Most from a Gratitude Intervention in Children and Adolescents? Examining Positive Affect as a Moderator. Journal of Positive Psychology. 2009; 4: 408 – 422.
133. Leeuw S. The Happy Factor. Lessons in Happiness: Can they Affect Well- Being, Classroom Climate and Academic Achievement? Master Thesis, Leiden University. The Netherlands. 2012.
134. Owens RL, Patterson MM. Positive Psychological Interventions for Children: A Comparison of Gratitude and Best Possible Selves Approaches. The Journal of Genetic Psychology. 2013; 174: 403-428.
135. Suldo SM, Mercer SH, Savage JA. Increasing Middle School Students' Life Satisfaction: Efficacy of a Positive Psychology Group Intervention. Journal of Happiness Studies. 2014; 15: 19 – 42.

136. Allemand M, Hill PL, Steiner M. Effects of a Forgiveness Intervention for Older Adults. Journal of Counseling Psychology. 2013; 60: 279 – 286.
137. Arola A, Dahlin-Ivanoff S, Häggblom-Kronlöf G. Impact of a Person-Centred Group Intervention on Life Satisfaction and Engagement in Activities among Persons Aging in the Context of Migration. Scandinavian Journal of Occupational Therapy. 2020; 27: 269 – 279.
138. Haight BK. The therapeutic Role of a structured Life Review Process in homebound elderly Subjects. Journal of Gerontology. 1988; 43: 40 – 44.
139. Killen A, MacasKill A. Using a Gratitude Intervention to Enhance Well-Being in Older Adults. Journal of Happiness Studies. 2015; 16: 947 - 964.
140. Li F, Duncan SC, Duncan TE, McAuley E. Enhancing the Psychological Well-Being of Elderly Individuals Through Tai Chi Exercise: A Latent Growth Curve Analysis. Structural Equation Modeling. 2001; 8: 53-83.
141. Chan DW. Counting blessings versus misfortunes: positive interventions and subjective well-being of Chinese school teachers in Hong Kong. Educational Psychology. 2013; 33: 504-519.
142. Dyrbye LN, Richards ML, West CP. A Randomized, Controlled Study of an Online Intervention to Promote Job satisfaction and Well-Being among Physicians. Burnout Research. 2016; 3: 69-75.
143. Kehr HM. Goal Conflicts, Attainment of New Goals, and Well-Being Among Managers. Journal of Occupational Health Psychology. 2003; 8: 195 – 208.
144. Ki TP. Gratitude and Stress of Health Care Professional in Hong Kong. Postgraduate Thesis, Department of Applied Social Studies, City University of Hong Kong. 2009.
145. Neumeier LM, Brook L, Ditchburn G. Delivering Your Daily Dose of Well-Being to the Workplace: A Randomized Controlled Trial of an Online Well-Being Program for Employees. European Journal of Work and Organizational Psychology. 2017; 26: 555-573.
146. Page KM, Vella-Brodrick DA. The Working for Wellness Program: RCT of an Employee Well-Being Intervention.

Journal of Happiness Studies. 2013; 14: 1007 – 1031.
147. Peters RK, Benson H, Porter D. Daily Relaxation Response Breaks in a Working Population: Effects on Self-reported Measures of Health, Performance, and Well-being. American Journal of Public Health. 1977; 67: 946 – 953.
148. West CP, Dyrbye LN, Rabatin JT. Intervention to Promote Physician Well-being, Job Satisfaction, and Professionalism. JAMA Internal Medicine, 2014; 174: 527 – 533.
149. Al-Hussaini AA, Antony SX, Dorvlo AS. Vipassana Meditation: A Naturalistic, Preliminary Observation in Muscat. Medical Sciences. 2001; 3: 87 – 92.
150. Brown KW, Kasser T, Ryan RM. When what One has is Enough: Mindfulness, Financial Desire Discrepancy, and Subjective Well-Being. Journal of Research in Personality. 2009; 43: 727–736.
151. Choi YW. Pathways to Happiness. Doctoral dissertation Radboud University, Nijmegen, Netherlands. 2011.
152. Drozd F, Mork L, Nielsen B. Better Days - A Randomized Controlled Trial of an Internet-Based Positive Psychology Intervention. The Journal of Positive Psychology. 2014; 9: 377-388.
153. Enrique A, Bretón-López J, Molinari G. Efficacy of An Adaptation of The Best Possible Self Intervention Implemented Through Positive Technology: A Randomized Control Trial. Applied Research Quality Life. 2018; 13: 671 – 689.
154. Goldstein ED. Sacred Moments: Implications on Well-Being and Stress. Journal of Clinical Psychology. 2007; 63: 1001 – 1019.
155. Haeck C, Parks AC, Schueller SM. Impact of Psycho-educational Content Delivered Online to a Positive Psychology Aware Community. Journal of Positive Psychology. 2016; 11: 270 – 275.
156. Heintzelman SJ, Kushlev K, Lutes L, Wirtz D. ENHANCE: Evidence for the Efficacy of a Comprehensive Intervention Program to Promote Subjective Well-Being. Journal of Experimental Psychology Applied. 2020; 26: 360 – 383.
157. Howells A, Ivtzan I, Eiroa-Orosa FJ. Putting the ‘app’ in

happiness: a randomized controlled trial of a smartphone-based mindfulness intervention to enhance wellbeing. Journal of Happiness Studies. 2016; 17: 163-185.
158. Krejtz I, Michnicka A, Nezlek JB. Counting One's Blessings can reduce the Impact of Daily Stress. Journal of Happiness Studies. 2016; 17: 25 – 39.
159. Littman-Ovadia H, Nir D. Looking Forward to Tomorrow: The Buffering Effect of A Daily Optimism Intervention. The Journal of Positive Psychology. 2014; 9: 122 – 136.
160. Manthey L, Renner K, Vehreschild V. Effectiveness of Two Cognitive Interventions Promoting Happiness with Video-Based Online Instructions. Journal of Happiness Studies. 2016; 17: 319 – 339.
161. Martinez-Marti ML, Avia MD, Hernández-Lloreda MJ. Psychology of Aesthetics, Creativity, and the Arts. Effects of an Appreciation of Beauty Randomized-Controlled Trial Web-Based Intervention on Appreciation of Beauty and Well-Being. Psychology of Aesthetics, Creativity, and the Arts, online. 2018; 1 -12.
162. Mitchell J, Klein B, Stanimirovic RA. Randomized Controlled Trial of a Self-Guided Internet Intervention Promoting Well-Being. Computers in Human Behaviour. 2009; 25: 749 – 760.
163. Moodscope. Mood Management through Self-Tracking and Peer Support. 2010. www.moodscope.com.
164. Moskowitz JT, Cheung EO, Snowberg KE. Randomized Controlled Trial of a Facilitated Online Positive Emotion Regulation Intervention for Dementia Caregivers. Health Psychology. 2019; 38: 391-402.
165. Odou N, Vella-Brodrick DA. The Efficacy of Positive Psychology Interventions to Increase Well-Being and the Role of Mental Imagery Ability. Social indicators Research. 2013; 110: 111 – 129.
166. Rash JA, Matsuba MK, Prkachin KM. Gratitude and Well-Being: Who Benefits the Most from a Gratitude Intervention? Applied Psychology: Health and Well-Being. 2011; 3: 350 – 369.
167. Sheldon KM, Lyubomirsky S. Change Your Actions, Not Your Circumstances: An Experimental Test of the

Sustainable Happiness Model. In: Dutt AK, Radcliff B, editors. Happiness, Economics and Politics (Chapter 12). Cheltenham: Edward Elgar Publishing. 2009.

168. Weinberg MK, Cummins RA, Hammond TG. The Impact of Laughter Yoga on Subjective Well-Being: A Pilot Study. European Journal of Humour Research. 2014; 1: 25 – 34.