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## RESEARCH PAPER

# No laughing matter: Qualitative study of the impact of laughter yoga suggests stress inoculation

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## Abstract

**Background:** Laughter is a socially bonding form of communication seen in all humans. Deep breathing is a way of controlling parasympathetic nervous system activity, introducing a sense of calm. In 1995, a medical doctor in India combined laughter, generated through exercises not reliant on humour, and yogic breathing as laughter yoga, designed to address physical, psychological and spiritual health. Despite limited peer-reviewed high-quality evidence for its efficacy, it is now practised around the world.

**Objective:** This qualitative study sought to understand the experiences and perceptions of laughter yoga of members of a UK-based laughter club, meeting once a month for one hour.

**Method:** Nine laughter club members were interviewed using semi-structured techniques. Interviews were recorded and transcribed, and data was analysed using inductive reflexive thematic analysis to identify themes, exploring the perceived benefits of laughter yoga.

**Results:** Key findings of this study were that, for these participants, laughter yoga presented an opportunity for human connection and personal growth, together with an inoculation against the stresses of life, providing a valued coping strategy for dealing with life's challenges. Laughter yoga also represented an overarching narrative journey from initially being sceptical about laughter yoga to becoming an advocate for laughter yoga.

**Conclusions:** Laughter yoga is an accessible, enjoyable activity, which fits within the model of person-centred healthcare and social prescribing.

**Key words:** laughter, laughter yoga, social prescribing, stress inoculation, coping strategy, reflexive thematic analysis.

## INTRODUCTION

Although laughter has long been regarded as “good medicine” and there is some evidence that mirthful laughter increases pain tolerance (Dunbar et al., 2012), improves immune function (Martin, 2001) and strongly activates abdominal muscles (Wagner et al., 2014), empirical research on the therapeutic benefits of laughter is in its infancy (Provine, 2012). This study has sought to explore the experiences of people who attend monthly,

hour-long laughter yoga (LY) sessions and their perceptions of the effects of LY.

## LAUGHTER IN LIFE

Few people would contest that laughter makes a positive contribution to life and that a human life without laughter would not be regarded as life well lived. People express joy by laughing (Shaver et al., 1987). Laughter is a powerful, universal human language (Provine, 2017), associated with bonding, affection and emotional

regulation (Scott et al. 2014). Laughter is a socially bonding behaviour (Dunbar et al., 2012; Kashdan, Yarbrow, McKnight & Nezlek, 2013; Lyubomirsky, King, & Diener, 2005), shared laughter having been demonstrated to promote higher quality relationships (Kurtz & Algoe, 2017). Laughter as a potential medium for influencing wellbeing and health is an under-researched area (Provine, 2012; Miller & Fry, 2009; Mora-Ripoll, 2011).

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### PERSON-CENTRED HEALTHCARE

Social prescribing in the UK is a similar model to the integrative medicine model which has emerged in the US over the past twenty years (Horrigan, Lewis, Abrams, & Pechura, 2012). Integrative medicine puts the patient at the centre of care, addressing the full range of physical, emotional, mental, social, spiritual and environmental influences that affect a person's health. The re-calibration of health as the concept of flourishing is a broader interpretation of what matters in a person's life and how they interpret being human (VanderWeele, McNeely & Koh, 2019). Social prescribing focuses on commissioning and providing access to services which will prevent deterioration in health for people living with long-term illnesses (Bikerdike et al. 2017), designed to reduce pressure on healthcare services, and improve individual ability to self-regulate and self-manage (The Mindfulness Initiative, 2019). Social prescribing represents a cultural change in healthcare away from the traditional medical model of 'doing to, in order to cure', towards 'working with, in order to cope'. LY, as a vehicle for people taking more control of their own health, fits within the social prescribing model.

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### ORIGINS

Laughter Yoga (LY) was devised by Dr. Madan Kataria, in India in 1995, as a health intervention aimed at promoting good health and maintaining wellbeing (Kataria, 2018). LY was developed to address the physical, psychological and spiritual aspects of health. It is practised in groups led by laughter instructors. LY has four core components: warm-up exercises, e.g. clapping, laughter exercises, deep breathing exercises and an attitude of childlike playfulness (Bressington et al., 2019; Bressington et al., 2018). LY does not involve yoga mats, yogic poses, require exercise clothes or demand a high level of fitness or mobility but does import a yogic element through the breathing exercises. It does not depend on humour. Anyone can participate in LY without any previous experience or physical skill (Lyle, 2014).

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### REVIEW OF PRIOR EVIDENCE

The spread of LY and its popularity is gaining momentum despite limited peer-reviewed research. Currently there are over 1,670 LY clubs worldwide ([www.laughteryoga.org](http://www.laughteryoga.org)). As there is no pre-existing study of participants' lived experience of regular attendance at LY sessions, this qualitative study will provide fresh data and aims to explore first-hand experiences and perceptions of LY.

Bressington et al. (2018) undertook a systematic review of LY group interventions in mental health in adults. Only studies containing the core components of LY were reviewed (Bennett, et al., Ellis et al., 2017; 2015; Farifteh et al., 2014; Shahidi et al., 2011; Weinberg, Hammond & Cummins, 2014; Yazdani et al., 2014). It concluded that the papers reviewed demonstrated that LY shows some potential for improving mental health. No adverse effects of LY participation have been reported.

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### RESEARCH CONTEXT

This study was undertaken as part of a Masters in Applied Psychology programme with ethical approval received prior to the study from Bucks New University UK. Consideration was given to researching in the area of positive psychology within the scope of practice and training (Jarden, Rashid, Roache, & Lomas, 2019). The study was undertaken by a physiotherapist with over thirty years' experience in healthcare.

The starting position of this study was that LY is not a 'spectator sport'. In order to have credibility and be of value, the study was conducted by a researcher who had been trained in the delivery of LY by the Laughter Club (LC) leader. The researcher had attended the LC twice as a participant and twice as a trainee LY instructor prior to the study. This level of participation was deemed to give the researcher credibility in the role of participant observer (Scotland, 2012) to the study. This study was approached from the perspective of critical realism, accepting that there is a 'reality' perceived through a filter of personal experience (Howitt & Cramer, 2017), and that there are as many realities as there are individuals (Scotland, 2012).

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### RESEARCH PARTICIPANTS

The convenience sample of nine LC members comprised eight women and one man. Participants had been attending LC for an average of 3.6 years. One of the participants has been registered blind for 31 years. Inclusion of a person with a disability added diversity, moving towards inclusion of individuals with disabilities

in qualitative studies, as recommended by Hefferon, Ashfield, Waters & Synard (2017).

## METHODS

### Data Collection

A semi-structured interview schedule was used to ask the participants to reflect on their experiences and perceptions of the benefits of LY. Interviews lasted an average of 32 minutes. Interviews were audio-recorded, transcribed by hand, anonymised and analysed qualitatively using inductive reflexive thematic analysis (Braun & Clarke, 2013, 2020).

### Thematic Analysis

Thematic analysis lends itself to allowing the voices of the participants to be heard (Braun & Clarke, 2013). It is particularly applicable in the case, as this is, of interrogating a novel subject, with no existing comparable data. The ongoing invitation of Braun and Clarke (2006, 2013, 2020), the leading authors in the field, is for a context-dependent, individualist and reflexive interpretation of the framework and process. Reflexivity throughout this study was assisted by the keeping of a reflexive research diary as recommended in the field of qualitative research (Gough, 2016; Rolfe, 2006), as well as periods away from the research (Greenhalgh, 2019). Reflexive thematic analysis values the subjectivity of the researcher as an analytic resource (Braun & Clarke, 2020). Conscious biases were used with an alertness and care that form an integral part of the analysis and interpretation in this study.

### Data Analysis and Interpretation

A six-step process of thematic analysis was used (Braun & Clarke, 2013, 2020). First, familiarisation with the data involved manual transcription, reading and re-reading and becoming intimately familiar with the data. The coding process involved re-examination of the data, generating labels to identify important features in the data. Generating initial themes involved examining and re-examining labels given to codes to identify broader patterns of meaning. Themes were reviewed, refined and reflected upon to ensure relevance and contribution to the research question of exploring participants' experiences and perceptions of LY. Themes identified in the data were named and defined, generating and refining thematic maps (Fig. 1). Finally, the inductive reflexive analysis was broadened and contextualised through examination of

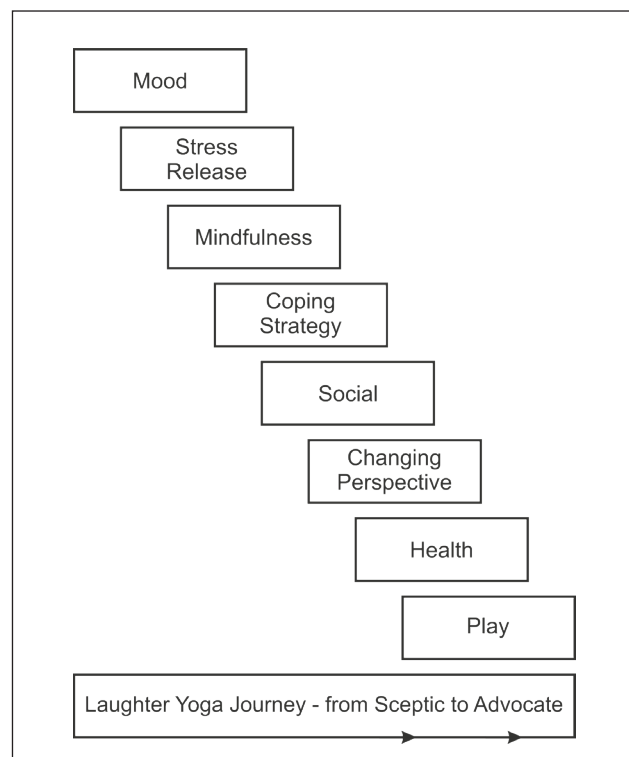


Figure 1

existing relevant literature. Extracts from interviews are presented in italics with pseudonyms attributed for convenience, and anonymity.

### THEME 1: MOOD – LY LIFTS MOOD AND INDUCES HAPPINESS

All participants talked about LY having a positive effect on mood. *“happy, really happy it cheers me up no end” – Jane 207*

One participant, who was keen on cardio-vascular exercise, volunteered that running and spinning gave her a buzz which she rated ‘six out of ten’, whereas LY gave her a ‘ten out of ten’ buzz.

Typically, participants reported that hearing other people laugh made them laugh and was infectious. The ‘contagion effect’ of laughter (Provine, 1992) plays an important role in LY, as it is always performed in groups. Laughing has been reported as 30 times more likely in a group than alone (Dunbar et al., 2012; Provine, 2012). This study lends weight to this finding, illustrated by reports that participants liked it when attendance was high as more people, they felt, made a better session.

*"I think hearing the laughter can be infectious, so that in itself could trigger laughter" – Jennifer 189-190*

The effects of mirthful laughter has been defined as "eustress, a positive phenomenon that ameliorates the biological effects of distress" (Berk, Felten, Tan, Bittman & Westengard, 2001, p.63). Thus, eustress not only works by creating positive emotion, but also through the process of easing distress or stress-induced negative emotion. This phenomenon is described by Louise:

*"throws out the negative, brings in the positive and helps keep you mentally balanced" – Louise 446*

Notably, many participants reported that the lift in mood lasted at least the rest of the day and in some cases, the rest of the week. Sarah described her perception of the effect of LY on her mood:

*"it's almost like having a month-long glass of wine" – Sarah 188*

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## THEME 2: STRESS RELEASE, LETTING GO OF LIFE'S WORRIES, RELAXING

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Many participants reported an effect of LY as being stress release, letting go of life's stressors. This letting oneself go and stopping thinking about niggling worries induced a state of relaxation. A cascade of potentially protective and health-promoting behavioural and biological effects are induced through experiencing positive emotion (Richman et al., 2005). Positive emotions may act as stress buffers (Fredrickson, Tugade, Waugh, & Larkin, 2003), playing a role in protecting people from ill health (Richman et al., 2005).

*"stress relief, it seems to clear all, takes all your stress away, it's like mindfulness" – Sarah 301-302*

One participant, Wilma, has had long-term significant health problems, recently being the recipient of a kidney transplant. She described LY as:

*"a great release that laugh; it's almost as if you're laughing out your troubles" – Wilma 109-110*

Some participants reported having an overwhelming desire to cry after a couple of sessions, putting this down to stress release and characterised this as a positive rather than negative experience. Although these participants framed the desire to cry as positive, this experience underlines the powerful effect of LY. The coactivation model of healthy coping proposes that coping with severe stressors requires experiencing and grappling with negative emotions associated with the stressor as well as experiencing positive emotions associated with the stressor (Larsen, McGraw & Cacioppo, 2001).

Negative emotions are an important and appropriate part of people's emotional experience, playing an important and necessary role in ameliorating and repairing negative states, promoting human flourishing and growth (Fredrickson & Losada, 2005; Kashdan & Biswas-Diener, 2015).

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## THEME 3: MINDFULNESS – BEING IN THE MOMENT, STEPPING OUT OF DAILY LIFE

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This theme relates to participants reporting that it was necessary to let go and be open to the experience of LY.

*"you just totally give yourself over. All your feelings come out in that laughter" – Sarah 143-144*

A common perception reported was that LY was very difficult to describe and that nothing participants could say about the experience did justice to the experience itself. Clearly LY is about doing, joining in. It is an experiential construct and concept, central to which is being in the present, losing oneself to the experience, opening up and letting the LY do its good work. The paradox is therefore that active participation, through suspending judgement, is required, but at the same time going with the flow is essential. LY is therefore both active and totally engaging whilst also inducing a passivity in acceptance of what is going on and allowing the experience to 'give you what you need'.

*"I think it's a bit of mindfulness really. It's just taking your mind off absolutely everything that's going on in your life and just being silly and enjoying it for what it is" – Helen 226-228*

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## THEME 4: COPING - LY IS A COPING STRATEGY

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This theme concerns coping with the stresses and strains of life. Participants acknowledged that everybody has to deal with stress in life.

*"I would put LY as one of my coping strategies if you like, because I think I've never done something that's given me that kind of positive buzz for your mind." Ruth 394-403*

Typically, participants reported that they laugh more easily since starting LY. LY was described by one participant as providing a tablet to cope with life; and another as a monthly coping infusion. Jane reported that it was her mission, having recently started up a LC, to give people suffering from mental health issues an alternative to medication through LY attendance.

### THEME 5: SOCIAL – WELCOME, LIKE-MINDED PEOPLE, CHATTING AFTER SESSION

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Social connection depends on developing a feeling of safety in circumstances which were typically reported as ‘strange’. Wilma reported that the LY leader “*kind of practises what she preaches*” (78). Terry made reference to a warm welcome: “*it’s a critical thing to have that welcoming aura*” (208), “*if they (newcomers) feel unwelcome or isolated for any reason you’ve lost them*” (224-5).

Connectedness was facilitated by the LC leader. Positive psychology is not a spectator sport (Peterson, 2006). In order to deliver laughter yoga in an authentic, credible and accessible form, laughter yoga leaders might benefit from investigating themselves as an instrument and exploring their ‘congruence’ in terms of both living in the spirit of laughter and modelling positive emotions in their own lives (Worth, 2017).

A trend observed within the transcriptions was repeated references to the social aspect of LY. Typically, participants valued and enjoyed chatting with other group members at the end of the session and felt that it formed part of the complete ‘jigsaw’ of LY, with its many components. Many participants spoke of their ‘laughter friends’ as people they only saw once a month and people who were ‘like-minded’. This presented a paradox. On one hand, the social aspect and getting to know others in the group was regarded as important; on the other hand, being with people other than their normal friendship group seemed to provide participants with an important distance from their daily lives, and may have provided a degree of anonymity which allowed them to let themselves go without fear of judgement from familiar people. This seemed to facilitate stepping out of the ‘grind’ of normal existence and, critically, being with other people who ‘get’ LY.

The shared experience of LY resonates with what Thoits (2011) refers to as ‘experientially similar others’, who may be sources of social support, buffering stress and providing emotional sustenance. Shared laughter communicates to people present that this situation is perceived as safe and that you are therefore comfortable building connections (Lyubomirsky, King, & Diener, 2005). Thus, even though the members of LC do not, according to the participants, comprise a close friendship group, they do provide a perception of high quality relationships (Moore & Diener, 2019), offering an appreciated social resource and valued support, for example in times of ill health, to some of the participants.

Terry reported that he was happy to chat to people after the session, but not before, feeling a priming effect of LY:

*“I think it makes me more receptive to socially bonding” – Terry 329*

Eye contact is a key component of the contagion effect of laughter (Dunbar et al., 2012).

*“Laughing is quite a I dunno intimate, is that the right word? It’s quite an intimate thing to do [laughing] with somebody. It’s not something you do with people you’ve never met before, and there’s quite a lot about making eye contact” – Ruth 132-135*

### THEME 6: CHANGE – MORE OPEN, CONFIDENT, LAUGHING MORE; DIFFERENT PERSPECTIVE

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*“making people feel good with themselves, good in their own skin” – Janet 299-300*

Typically, participants talked about being changed as a person through their participation in LY. Ruth, aged 34, talked about being in awe of older people enjoying themselves and described her desire to be more open, which she felt she was becoming. Jennifer mentioned that she has joined a choir since starting LY and now has grown sufficient self-confidence to perform at Edinburgh Fringe Festival.

*“It’s made me feel a little bit less inhibited and a bit more self-confident” – Jennifer 184*

Terry spoke about leaving all his troubles in a box at the door of LC. He reported that LY put things into perspective, giving a clearer picture about what matters in life. He spoke about reducing his troubles in volume during a session:

*“rather than picking up a box, you’re picking up an egg cup” – Terry 354*

### THEME 7: HEALTH – HELPED WITH BREATHING AND WALKING

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*“I think it’s helped me with my breathing, I think it’s helped me with my walking.” – Janet 193-194*

There was a strong theme around LY providing an impetus for change towards a healthier lifestyle. Rather than rely on medication, some participants reported a stronger urge to self-manage and exercise more in order to become fitter. The upward spiral theory of lifestyle change explains how the experience of positive affect during behaviours designed to improve health leads to improved motivation for these behaviours (van Capellen, Rice, Catalino & Fredrickson, 2017). Thus the data provided support for the upward spiral theory of lifestyle change, implying that LY for one hour per month contributes to the upward spiral effect (Fredrickson & Joiner, 2018).



*"I would say that it's done me the world of good. I think it's made me a less of a worrier and I would say that, from a health point of view it's probably done me the world of good really. I think, from a kind of fitness point of view, it's been like a kind of a springboard to maybe getting myself a bit more fitter." – Wilma 364-368*

### THEME 8: FUN – RECONNECTING WITH CHILDHOOD, PLAY

Stuart Brown, a renowned play expert suggests that play is not defined as an activity, rather it is a state of mind which is "an absorbing, apparently purposeless activity that provides enjoyment and a suspension of self-consciousness and sense of time" (Brown, 2009, p.60). Vaillant (2002) sees play as a proper role for both child and retiree, observing that play produces joy, and that joy requires neither re-inforcement nor reward.

*"I realised that all we're doing is just being silly and behaving like children, which is what I like doing." – Helen 9-11*

The importance of person-activity fit in the role of positive activities having the potential to increase a person's happiness has been highlighted by Lyubomirsky and Layous (2013). Social prescribing is about offering people choices of life-enhancing activities, allowing people to choose what resonates with them. LY is an unusual experience, requiring a playful, child-like attitude and will not be an activity for everyone.

Many participants mentioned that LY was fun, some commenting that fun was not often a feature of their daily lives.

*"it's so fun, it's so much fun" – Ruth 121*

### OVER-ARCHING THEME: LY JOURNEY (FIG. 2) – FROM SCEPTIC TO ADVOCATE

The data demonstrated a journey from scepticism of LY to a desire to advocate the benefits of LY. Typically, participants were recommended LY by someone else who had experienced it. LY appeared to address wellbeing at the hedonic level through positive and pleasant experiences, at the eudaimonic level through improving self-confidence whilst sparking personal growth towards self-actualisation, and also at a social and interpersonal level through spreading the word to others (Riva et al. 2012). This journey indicated personal growth towards a state of flourishing and becoming a more fully functioning person (Proctor, Tweed & Morris, 2015).

*"I feel the whole thing has made me feel a different person. It's*

*just, instead of being down in the depths of wherever, I'm lifted up by it. I can't explain it really. It's just given me a different attitude towards things; maybe not to take them quite so seriously; not to get so bogged down in them and take them on, rather than be the victim of them" – Sarah 256-61*

LY is a positive activity of expanding the ordinarily experienced bandwidth of emotions in those open to experiencing and broadening emotional experience. Openness to experience contributes to what Vaillant describes as 'mature defence mechanisms' which contribute to the process of aging well (Vaillant, 2002, 2012). This study found that is not always a comfortable activity, even for willing participants.

There was a strong sense of people wanting other people to benefit from LY, as they themselves had. One participant has started another LY group, and another volunteered that she would have started a LY group, if she were younger.

Two main themes of connection and coping were generated through recursive re-examination of the data (Fig. 3, page 8). Connection was both external, towards others and internal, towards self. There was a connection with childhood and memories of play while the coping theme referred to the present, as in mindfulness during LY. Coping was described as developing different perspectives on life and prioritising self-care. An overarching theme was that LY provided an inoculation against the stresses of life to the study participants.

### HUMAN CONNECTION

Connectedness captures the fundamental neurobiological imperative for human beings to engage with others (Porges, 2009). As a concept, in the context of LY, connectedness captures the feeling of connection both inwards, towards the self, as well as laterally within the room with others experiencing LY. Connectedness is a core theme of this analysis as almost all participants talked about their confidence engaging with others and a desire to encourage others to attend.

The concept of connectedness was perhaps not surprising; however, the strength, breadth and universal reach of the connectedness was. Typically, the participants could be described as LY advocates. They themselves had found enormous benefits in attending a monthly LY and they desperately wanted to spread the word and see others benefit too.

*"it should be world-wide obligation for governments to provide it" – Sarah 289-90*

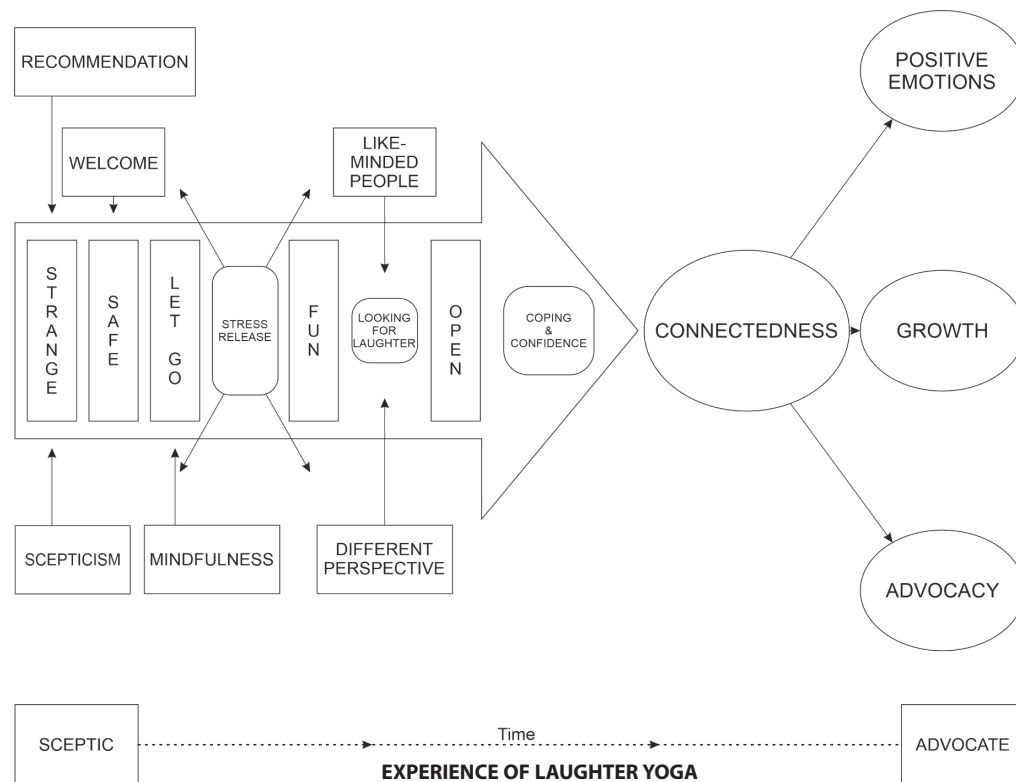


Figure 2: LY Journey

### INOCULATION AGAINST THE STRESSES OF LIFE

Evidently LY plays a significant and positive role in many of the participants' lives, enabling them to cope with the ups and downs of life and their interpretations and anxieties around what happens to them, whilst also, in their experience, lightening the load of life, broadening their outlook, and changing their perspective on what is important in life and what matters to them.

*"It's given you a little tool to help; it's not like a magic fix, it doesn't get rid of the pressure it doesn't get rid of the stress, it doesn't get rid of the difficulties at work, but it becomes something that you can have in your drawer in your desk"* Wilma 433-436

### CONCLUSIONS

On the basis of the data, interpreted through the qualitative research process of interview and inductive reflexive thematic analysis, participants garnered a significant level of both intra-and

inter-personal support and inoculation against the stresses of life through attendance at a monthly one hour LY session over an average period of 3.6 years. LY is spreading with little research evidence for its efficacy, save for weak evidence for some potential in the mental health arena. This qualitative research contributes to the understanding of this currently under-researched field.

Findings of this study support the 'broaden and build' theory of positive emotions both broadening outlook in the moment and opening up possibilities for future growth (Fredrickson, 2000). The field of positive psychology has provided robust evidence of the links between mental and physical health, identifying various health protective benefits of flourishing (Boehm & Kubzansky, 2012; Hefferon, 2013; Kubzansky et al. 2018). This is a small study systematically establishing a body of data. However, limitations are the self-selected demographically similar group, and analysis undertaken by a single novice researcher. A replication of this study with expanded participant



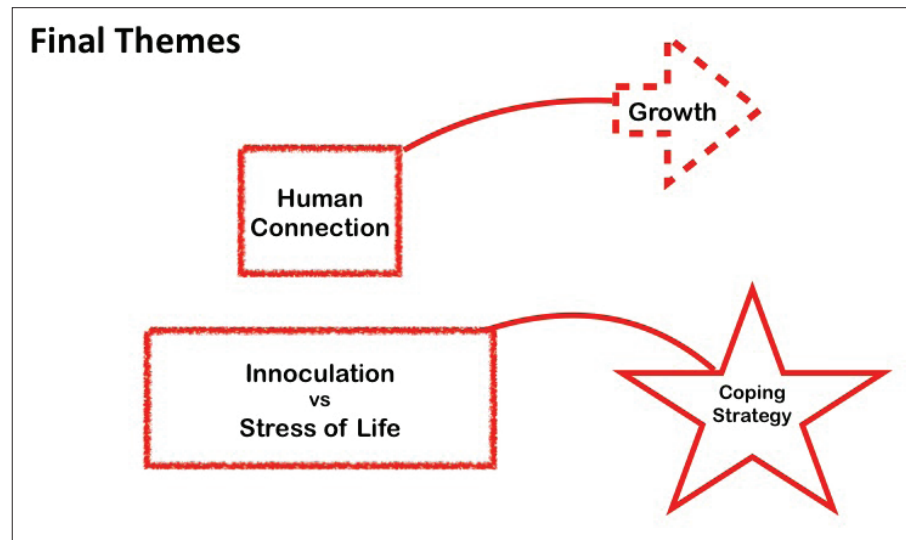


Figure 3

numbers would extend, deepen and check understanding of experience. Future qualitative and quantitative studies exploring content and dose, together with physiological and psychological effects of LY and its potential in health promotion, both in clinical and non-clinical settings, will be useful.

LY is an exercise, a mind-body activity, in line with the ethos of social prescribing. It encourages positive affect without any active cognitive adjustment away from negativity towards positivity. This cognitive independence gives LY its reported mindful quality. LY does not seek to promote the tyranny of positivity (Held, 2002), rather it seeks to use laughter exercises to facilitate adaptive responses to stress through increasing the psychological distance from distress (Keltner & Bonanno, 1997).

LY is a way of 'metabolising' a physical experience of a sense of fun, expressing joie de vivre. LY appears to foster a stronger sense of connectedness and build the perception of an increased ability to cope with the stresses of life. It offers an opportunity of letting go of the "you" that is experienced on a daily basis and being open to growth (Campbell, 1990; Proctor, Tweed & Morris, 2015).

Everybody knows how to laugh and everybody knows how to breathe – two vital essences of what it is to be human. Laughter and breathing are free, accessible and portable potential avenues for positively influencing health, potentially improving levels of flourishing: both 'ordinary magic' (Masten, 2001), powerful tools for coping with life hiding in plain sight. ■

### Citation


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### Biographies

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