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A DIGITALLY ENHANCED PHOTOGRAPH TITLED; "LAUGHTER TABLETS - EFFECTIVE MISERY RELIEF" – AN ENVIRONMENTALLY SUSTAINABLE HEALTH PROMOTION INITIATIVE

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Abstract: To ascertain from delegates at the International Union for Health Promotion and Education [IUHPE2022] conference and from participants at a photographic exhibition whether they considered that this photographic idea conveyed the message that laughter is good medicine and whether they consider alternative sustainable options such as laughter therapy where there is evidence. A literature search review was conducted using the PubMed MeSH Browser; "Laughter"[Mesh] AND "Laughter Therapy"[Mesh]. A photograph that was taken was digitally modified/enhanced with Adobe Photoshop. It shows a Doctor's prescription pad and some round chocolates with a smiling/ laughing mouth that have fallen from a medicine bottle. On the bottle, it says; Laughter tablets – effective misery relief. A link to a typeform survey gave some people access to a brief survey while others were given paper surveys. The results of the literature review were that 56 results were retrieved. Seven people completed the short typeform or paper survey. Everyone considered that alternative sustainable options such as laughter medicine, yoga, pilates, or other non-medicine-related modalities should be considered where there is evidence in support of benefit. The majority of respondents considered that the photographic idea very much conveyed the message that laughter is good medicine.

Keywords: laughter therapy, humour, laughter yoga, sustainable development

Introduction

Laughter yoga is increasingly being utilized as a non-pharmaceutical methodology for alleviating stress, anxiety, depression, and psychological states associated with illness. Wikipedia defines laughter yoga with another term, Hasyayoga, being prolonged voluntary laughter [Laughter yoga - Wikipedia].

Figure 1 Nathan Anderson on Unsplash [https://unsplash.com/]; The internet's source of freely-usable images

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Figure 2. laughter picture; Acknowledgment; [Mr Stephen Hilton] amateur photographer.

A search strategy was created using the PubMed MeSH Browser in order to identify and locate the currently published research on the topic. The MeSH (Medical Subject Headings) is the NLM controlled vocabulary thesaurus used for indexing articles for PubMed and can be found at; https://www.ncbi.nlm.nih.gov/mesh [PubMed MeSH Browser].The first MeSH search hence was; "Laughter"[Mesh] AND "Laughter Therapy"[Mesh]. This review formed the background information for the pre-recorded presentation at the International Union for Health Promotion and Education [IUHPE2022] conference 2022 [[IUHPE] World Conference]. The questionnaire that was included is described below under the methodology.

The theme for the conference was 'Promoting policies for health, well-being, and equity'. The website states that disciplines, silos, boundaries, and identities are engrained in our practices and understandings, and hence they are looking for innovation. They are hoping and allowing activists and practical health promoters from around the world to participate, engage, and shape policy agendas while respecting their carbon footprint. This idea that is presented in this manuscript is innovative, and practical while also at the same time respecting the carbon footprint.

The results of the literature review were that 56 results were retrieved. Standard filters on Pubmed that could be included were; text availability, article attribute, article type and publication date. There were no systematic reviews or meta-analysis using this article type filter. 18 of these results were either a clinical trial, randomised controlled trial, or a review when these article types were selected. None of those 18 were published in the last year when the filter of publication in the last year was selected. 7 results were clinical trials, 5 results were randomised controlled trials and 11 were listed as reviews [hence there must be some overlap with categorization].

A systematic scoping review of the scientific research assessed laughter and humour for personal development. This was a systematic scoping review of the evidence [F.N., Gonot-Schoupinsky et al 2020]. There were 564 discrete articles with 574,611 participants which showed there were diverse personal development outcomes associated with biological, psychological, social, environmental, and behavioural (BPSE-B) factors. Laughter and humor has diverse applications and benefits as demonstrated by the mounting evidence in this review.

An ethnographic study in a comprehensive cancer centre assessed the role of humour and laughing for cancer patients [H.M. Buiting et al 2020]. Patient feedback was gathered via 4 short conversations, 18 in-depth interviews, and 11 observational fieldnotes. There was an online questionnaire to 33 oncology clinicians. The qualitative data was thematically analysed and this also distinguished humour from laughter. Humour was utilised by 97% of specialists and 83% said laughter had a positive effect. Laughter resulted in a vanishing hierarchy that usually exists between professionals and patients/relatives. Shared decision-making may be enhanced if shared laughter is used aptly.

A longitudinal study on laughter and blood pressure [BP] was performed [S. Ikeda et al 2021]. This longitudinal study of the Japanese general population assessed the longitudinal trends in blood pressure [BP] associated with the frequency of laughter. Termed the Circulatory Risk in Communities Study (CIRCS) it involved n= 554 men and n = 887 women aged 40-74 years. The frequency of laughter was quantified via a self-administered questionnaire. BP was measured twice, for each year from 2010 to 2014 using automated sphygmomanometers. Over the 4-year period, men who laughed 1 to 3 times/ month or almost never had significantly increased systolic and diastolic BP levels. Among middle-aged men, infrequent laughter was associated with long-term BP increment.

A summary of the Adolescent Laughing Qigong Program was published by Chang and colleagues in 2013 [C. Chang et al 2013]. The psychological, immunological, and physiological effects of the program was assessed. Sixty-seven adolescents in Taiwan were included and there were two groups; experimental (n=34) & control subjects (n=33). Saliva cortisol (CS) was assessed as an immunological marker and the Rosenberg Self-Esteem scale (RSE), the Chinese Humor Scale (CHS) and the Face Scale (FS) as psychological markers. Lastly as physiological markers there was blood pressure (BP), heart rate (HR), and heart rate variability (HRV) measured. Mood states (p=.00) and humor (p=.004; p=.003) improved in the experimental group [no significant change for subjects in the control group]. The immunological marker of stress, being cortisol levels, decreased significantly in the experimental group. For mitigating stress, the authors concluded that the program was a cost-effective method.

Another systematic review on laughter yoga was located elsewhere, not in the Pubmed retrieval list which is described above [N. Kuru Alici et al 2020]. This systematic review determined the effectiveness of laughter yoga on physical function & psychosocial outcomes in older adults. The review included 3210 studies - 6 quasi-experimental & 1 randomized control trial. Significant differences were found in the effectiveness on physical function (BP, cortisol level, sleep quality) & psychosocial health (depression, mood, happiness, life satisfaction, quality of life, loneliness, and death anxiety) in older adults. In addition, it was found to be cost-effective with no adverse effects.

Materials and Methods

A photograph that was taken was digitally modified/enhanced with Adobe Photoshop.

It was titled; Laughter tables – effective misery relief.

It shows a Doctor's prescription pad; and some round chocolates which have fallen from a medicine bottle. Digital enhancement has given the m & m type chocolates a smiling/ laughing mouth. On the bottle, it says; Laughter tablets – effective misery relief. On the script pad it says; Seek medical advice if laughter becomes uncontrollable.

Insert laughter picture

A link to a typeform survey [https://admin.typeform.com/] was included in the slidepack so that delegates could complete a brief survey [questions are below]. The results from the typeform survey have been subsequently downloaded and archived so that the survey can no longer be found on the link that was included in the slidepack for delegates. The slidepack included the statement; please open the typeform URL to leave your feedback on this digitally enhanced photo idea.

The survey was as follows;

A digitally enhanced photograph titled; 'Laughter tablets - effective misery relief' – a health promotion initiative".

Thank you for viewing my art and technology pre-recorded video presentation at the 24th IUHPE World Conference on Health Promotion IUHPE2022. I would be glad if you can answer anonymously the following four brief questions, and hence if you give consent for these answers to be collated, please click sure thing and enter.

Sure thing, press Enter ↲

Four questions;

1. Were you previously aware of the scientific literature on laughter and health?

- Yes - No

2. Do you think this picture conveys the message that laughter is good medicine?

-Extremely so -Very much so - Moderately so -Somewhat so -Not at all

3. Do you consider this type of picture with text is best as;

- A small flyer - A poster - On a social media site - On a website

4. Do you consider that we should consider alternative sustainable options where there is evidence that it may benefit health? [such as laughter medicine, yoga, Pilates, or other non-medicine-related modalities]

- Yes - No - Unsure

Thank you for answering these questions, it is very much appreciated.

The photograph and these 4 questions were also shown to several participants at a photography exhibition whereby I also showed them this photographic initiative.

Results and Discussions

Three delegates from the conference completed the typeform survey, while one delegate sent a reply back from the survey via email and another indicated that given they couldn't view the presentation during the conference, they requested that it be emailed to them afterward. However, this 5th person didn't return the question answers.

The typeform summary results showed that there were 16 survey views, 6 survey starts, and 3 survey submissions. This is a completion rate of 50%. The average time to completion was 1 min 18 seconds. In addition, as stated there was one delegate who sent a reply back from the survey via email. Three people at the photographic exhibition completed a paper survey, yet these people were not shown the pre-recorded presentation, only the photographic idea.

When the results from these seven people were summarized, the following results were obtained. Five people were not previously aware of the scientific literature on laughter and health, while two were. To the question; Do you think this picture conveys the message that laughter is good medicine? Six replies were very much so, and one reply was moderately so. To the question about the picture with text and how it is best displayed; four replies were poster while four said on a social media site [hence one person ticked two options]. The last question that was; Do you consider that we should consider alternative sustainable options where there is evidence that it may benefit health? [such as laughter medicine, yoga, Pilates, or other non-medicine related modalities]. Seven replies were yes, no one answered no or unsure.

The Global Goals, also known as the Sustainable Development Goals (SDGs), were adopted by the United Nations in 2015. They were designed to be a universal call to action to protect the planet, end

poverty, and to enable people to enjoy peace and prosperity by 2030 [United Nations Development Programme 2022]. It is recognized that action in one area will affect outcomes in others, so hence the 17 SDGs are integrated. There is a balance between social, economic, and environmental sustainability.

Laughter therapy incurs fewer costs and has fewer environmental impacts than medications and hence fulfills various of the goals related to sustainable development. In terms of the specific goals that laughter therapy or other sustainable therapy options address it may have influence and be applicable to goal 3 which is good health and wellbeing; goal 11 – sustainable cities and communities; goal 12 – responsible consumption and production; goal 13 – climate action and goal 16 – peace, justice, and strong institutions.

The carbon footprint of Australian health care has been described [A. Malik et al 2018]. The authors state that the carbon footprint attributed to health care was 7% of Australia's total, with hospitals and pharmaceuticals the major contributors. In 2014-15, health care represented 35,772 (7%) of 494,930 kilotonnes total CO2 equivalent (CO2e) emissions in Australia. In decreasing order, being the five most important contributions to this are; public hospitals, private hospitals, other medications, benefit-paid drugs, and capital expenditure for buildings. Public health measures that are carbon efficient can lower the impact on the environment. This initiative is one such idea that aligns with this philosophy.

Alternative sustainable options as they relate to laughter therapy were not located when a search with the following MeSH (Medical Subject Headings) was performed; ("Sustainable Development"[Mesh]) AND "Laughter Therapy"[Mesh]. It resulted in the following message; your search was processed without automatic term mapping because it retrieved zero results. Repeating the search with these words as text words resulted also in zero hits. If the text words; sustainable AND laughter were utilized there were 35 results retrieved. It is useful to consider the environmental sustainability of alternative treatments and their alignment with people's health.

Sustainable options are increasingly being explored by diverse scientific disciplines with one such area of previous research being nutrition [Meybeck A et al 2017]. The authors state that there is recognition by the international community who are called upon to orient action towards the eradication of environmental catastrophe and to enable the fulfillment of SDGs. Combining different dimensions and reasons for change can help facilitate the transition to sustainability. The adoption of sustainable options can be facilitated and enabled by appropriate systems, policies, and incentives.

Effect of workplace laughter groups on personal efficacy beliefs was studied [H. Beckman et al 2007]. Employees at a behavioral health center [n=33] were included. Various measures including optimism, self-regulation, and positivity improved as examples. Purposeful laughter is a sustainable, realistic, and generalizable method that can improve and augment morale, resilience, and personal worth.

Laughter therapy is an alternative to medication for relieving anxiety and stress and potentially the environmental impact would be less hence it is considered a more sustainable alternative. One such author studied this in the context of reducing stress and anxiety [C. Eraydin et al 2022]. This randomized controlled study assessed the effect of laughter therapy on nursing students' anxiety, satisfaction with life, and psychological well-being during the COVID-19 pandemic. Forty students were selected for the intervention group and received ten sessions of online laughter therapy two days a week for five weeks. Forty students in the control group did not receive any intervention during the study. Life satisfaction and psychological well-being scores increased in the intervention group, while anxiety scores decreased. Hence it was considered to have significant positive effects.

A systematic review and meta-analysis on laughter-inducing therapies suggests in the introduction that laughter therapy may be cost-effective [C.N. van der Wal et al 2019]. The authors found that laughter-inducing therapies can improve depression. Given the increasingly greater proportion of

elderly in the population along with escalating health care costs, the simple, low-cost laughter therapy alternative can be performed with little training required.

Laughter therapy can include therapeutic interventions ranging from humorous videos, stories, laughter clowns, as well as raucous, loud simulated laughter and laughter yoga [P.N. Bennett et al 2014]. The effect of laughter and humor can influence depression, anxiety, pain, immunity, fatigue, and sleep quality as some examples of parameters that may benefit.

An evaluation of a laughter-based exercise program on health and self-efficacy for exercise was published [C.M. Greene et al 2017]. The LaughActive program incorporates simulated laughter exercises with balance, strength, and flexibility in the physical activity program. Not only were there improvements in aerobic endurance and exercise self-efficacy but improvements were observed in mental health (SF-36v2); all ($p < .05$-$.10$).

If we turn to the survey replies, it is noted that on the website for the International Union for Health Promotion and Education [IUHPE2022] conference, it stated that the meeting included over a dozen sub-plenaries with opportunities to discuss in-depth the themes of the conference, with nearly 1000 oral presentations, posters, and workshops to address the most recent developments in health promotion. Given the number of presentations or workshops neared 1000, it is a totally unacceptable poor response rate to the Typeform survey that I included in the slidepack, given I would have hoped that more than four delegates viewed my presentation. While I could not determine in fact how many delegates viewed the presentation, I would suspect it would have been more than four. The optional typeform survey was on the last page. In order to make the URL link more user-friendly, I utilized bitly to shorten the URL https://bitly.com/ [Bitly]. I realised that delegates should they experience the problem that the link did not open with paste and copy, they may not want to write down the URL if it was long in order to type it in manually, as they are often crying time-poor. Hence, I shortened it with bitly so it was easy to write down, to save delegates time.

There may be several reasons for the poor response rate to the typeform survey. This could include; A. That the link did not open on the delegate's computer system. This was the case for one delegate who emailed to have the survey questions sent. In fact another delegate also did email to say she would complete it via email, but never did. B. Time factors. Conferences are renowned for being busy with concurrent copious joint plenary and parallel sessions. I find it incredibly difficult to navigate a conference whether this is in person or virtually. I find I miss opportunities, miss sessions and I often try to view multiple sessions at once. As stated, two delegates did email me after the conference for this reason stating they didn't have time during the conference to view my slide pack/do the survey but that they were interested in viewing it after the conference. This topic is touched upon and discussed by Professionals Australia who have written an online document titled; Video Conference exhaustion [S. Pavlis]. They discuss how the new normal is the rapid development of video conferencing. They also mention how there is a blurring of the line between home and social occasions, in that after a workday with video conferencing you might switch to 'zooming' with extended family/friends. They also report on communication styles, technical issues, how people may be wearing 'black trackies' when working from home, or how people become stressed about the abundance of mess/ clutter in the background if the video camera is on. They discuss fatigue and mental exhaustion associated with video conferencing. They state that the most used phrase with video conferencing is; "I think you're on mute", and I did hear that phrase many times during this conference mentioned in this manuscript, and other conferences that I have also attended. Hence maybe fatigue, technical issues, overload, and mental exhaustion associated with the virtual environment that it was displayed in could be an important factor for the minimal number of replies. The other factor may be C. that it wasn't of interest or seen as that important to complete. However, of those that did reply, the replies were pleasing.

Conclusion

The majority of people who viewed this photographic idea said that it very much conveyed the message that laughter is good medicine. Most people were not aware of existing literature on laughter medicine. In addition, all replies were that alternative sustainable options such as laughter medicine, yoga, pilates, or other non-medicine-related modalities should be considered where there is evidence in support of benefit. Equal numbers of people thought it should be either displayed as a poster or on a social media website. In summary, the photographic initiative was perceived well.

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