International Journal of Applied Positive Psychology (2023) 8 (Suppl 1):S3–S16
https://doi.org/10.1007/s41042-022-00063-5

RESEARCH PAPER

Humour Workshops for Staff Working in Palliative Care

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Accepted: 10 April 2022 / Published online: 4 May 2022

Abstract

Palliative care teams frequently use humour as a coping instrument. Humour used within the professional team has to be distinguished from humour in the interaction with patients. Humour among staff members working in palliative settings is widely accepted and the positive effect has been demonstrated. Four humour-workshops were organized for staff working in a palliative care unit. All participants completed the State-Trait-Cheerfulness-Inventory (STCI-S and T) and the Distress-Thermometer. Before and after the last two workshops, saliva samples were collected for analysis of oxytocin concentrations. The humour workshops were performed by two coaches based on a concept for the use of humour and mindfulness in the nursing routine. Overall 31 staff members out of 37 participated. Representatives of all professions were included, 28 women, 3 men, 24 to 59 years old. Saliva samples demonstrated a small but not significant oxytocin increase from a mean of 1.52 pg/ml to 1.80 pg/ml after the intervention (p .26). The mean p value of distress was reduced from 5.24 to 3.90 with an effect of $p = .05$ and bad mood was reduced from 11.19 to 9.43 ($p = .36$), seriousness decreased from 15.06 to 12.26 (p .01) and cheerfulness changed from 16.33 to 19.03 ($p = .02$). Despite the small sample size, the reduction of distress and seriousness and the increase of cheerfulness was significant. The changes in Oxytocin and bad mood proved to not be significant. Feedback from participants confirmed the value of humour in palliative care.

Keywords Humour/humor · Intervention · Cheerfulness · Palliative care · Staff-centred

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1 Background

The nursing crisis in Germany poses an enormous amount of stress on clinical staff. Death of patients (Wilson & Kirshbaum, 2011), burnout, fatigue, and distress (Cherny et al., 2015) intensify the precarious situation of lack of staff and extreme burden for existing staff.

Humour has been used in various contexts and concepts. Therefore we would like to define what humour means in this study. In his book chapter 'psychology of humour' Ruch (2008) identified the perception that something is funny as a foundation for the occurrence of humour. Martin & Ford (2018, p. 3) defined "*humour as a broad, multifaceted term that represents anything that people say or do that others perceive as funny and tends to make them laugh, as well as the mental processes that go into both creating and perceiving such an amusing stimulus, and also the emotional response of mirth involved in the enjoyment of it*". Adding to the social component of humour they add that "*humour essentially is a way for people to interact in a playful manner*" which is the core component of the humour intervention in this study. The outcome measure of humour in this study focuses on the state-trait-model of cheerfulness (Ruch & Zweyer, 2001) to enable people to be in a playful and cheerful interaction and state. Ruch et al. (2018) analysed eight humour styles and defined lighter (fun, humour, nonsense and wit) and darker styles (irony, satire, sarcasm and cynicism). In accordance with the aims and functions of the lighter styles of humour we integrated those in the construction of this study. The potentially destructive or negative-critical nature of the darker comic styles do not fit the aims of this study. Ruch (2010) also postulated that humour needs to be evaluated using a personality approach to analyse the reasons for different perceptions of individuals to humorous content. Therefore not only the state of participants needs to be measured, but also the trait of humour and other relevant characteristics.

The relationship of humour and well-being has been investigated in depth for some years now. Proyer and Wolf (2017) described in their overview that research proves a link between humour and well-being. Martin (2001, 2002, 2008) has been reviewing the progress in the field for almost a decade. Two monographs give more detailed information on methodology and findings in the field (Attardo, 2014; Raskin, 2008). Attardo (2014) classified all facets of humour in his encyclopaedia including a rich pool of detailed information on the history of humour. Raskin (2008) on the other hand focused on various disciplines perspectives on humour like linguistics, psychology, folklore, philosophy and others to give a solid foundation to researchers new to the field of humour research. The effect of laughter during breaks in the workspace was described as an efficient buffer for stress (Scheel et al., 2017b) and a meta-analysis stressed the value of the use of humour of supervisors to efficiently improve output performance of subordinate workers (Mesmer-Magnus et al., 2012). But what is the effect of humour on staff working in palliative care? Pinna et al. (2018) and Linge-Dahl et al. (2018) summarized the research on humour in palliative care mainly with the focus on the patient's perspective. Teams working in palliative care have to deal

with the constant presence of death and dying as an additional emotional burden compared to other health sectors. The function of humour and laughter in palliative care teams has been documented (Müller et al., 2012) and appears to be strong. However, humour in the team needs to be distinguished from humour during the interaction with the patient (Dean & Gregory, 2004). While the first is widely accepted, the latter has been discussed critically in the past (Herth, 1990). Cain (2012) looked at the use of humour in "front and back regions" (in front of patients and relatives vs. between staff only) in hospice staff and found that humour in the "back region" during interactions between team members was more frequent, accepted, and served beneficial effects for the employees. Adamle and Ludwick (2005) illustrated that humour during the interaction with the patient is also frequently observed in a hospice setting and is most often initiated by the patients themselves. Cavendish et al. (2003) described humour as one of the techniques used by nurses providing spiritual care.

Parameters which are often investigated in palliative care research are quality of life, burden of symptoms, and stress (Bausewein et al., 2010; Ngamaba et al., 2017; Rolke et al., 2005). Research in the field of positive psychology focuses on life satisfaction and personality traits such as cheerfulness, playfulness or preferred humour styles instead (Craik et al., 1996; Pavot & Diener, 2008). This study seeks to combine the methodology from both fields. Hofmann et al. (2018) discovered that lighter forms of humour correlate with and reinforce mindfulness, which supports the combination of both in the humour intervention. Since Müller et al. (2012) stressed that humour is one of the three most powerful tools to protect palliative care teams from the distress related to their work, it seems reasonable that humour training for health care professionals could be worthwhile toward increasing resilience. Oxytocin has been proven to enhance wound healing, reduce stress, and has been described as an indicator of wellbeing (Scheel et al., 2017a), and was thus selected as a physiological outcome parameter in this study. Wellenzohn et al. (2018)) discussed that extraversion moderates the effect of humour interventions, but humour itself may be enhanced by situationally tailored interventions (Ruch & McGhee, 2014; Wellenzohn et al., 2016). Humour interventions showed to be efficient in structured or improvised versions as well as online self-administered applications (Ruch & Hofmann, 2017). As part of a study on humour interventions for palliative care patients based on the humour habits program by McGhee (McGhee, 2010), we implemented four humour workshops for the staff members working in the palliative care ward based on a concept of Michael Christensen. Staff supported and cooperated highly in the study and therefore received the humour workshops as an expression of gratitude from the research team afterwards to compensate stress (Vachon, 1995), lack of staff (Cherny et al., 2015), and as a preventive measure against burnout (Schmitz et al., 2000). Humour interventions have been shown to increase cheerfulness and decrease seriousness, bad mood, and distress (Vachon, 1995). Oxytocin has been suggested as an indicator of well-being (Scheel, 2017a). This led to the following research questions for the evaluation of the workshops:

➔ What is the effect of humour workshops on the mood of staff working in palliative care?

➔ Do humour workshops affect distress and oxytocin-levels of staff working in palliative care?

2 Methods

2.1 Participants

Participants were recruited from all 37 health care professionals working in the palliative care ward or the hospital palliative care support team of the University Hospital Bonn, Germany in the manner of a pilot study. All staff members were informed via email six weeks before each humour workshop and could enrol for free by signing up on lists which had been put up in the team rooms. The workshops were 3–3.5 h long. The time spent in the workshop was counted as working time. As to additional psychosocial support, it needs to be noted that the team has access to supervision on a regular basis as well.

2.2 Humour Workshops

The four workshops offer practical insights into the seminars developed by the foundation 'Humor Hilft Heilen (Humour Helps Healing, HHH)' for physicians, nurses and caregivers in 2018. Through playful exercises, social humour is made tangible with respect to the professions of medicine and nursing. The topics of this workshop are based on the concepts of Michael Christensen, founder of the New York "Big Apple Circus Clown Care Unit", whose ideas, by example, started a worldwide healthcare clowning movement. However, the workshop is not about teaching clowning, but about fostering humorous awareness and opening hearts. A concept with overlapping topics is the 7 humour habits programme by McGhee (2010). Playfulness, humour under stress, and humour in everyday life are core topics of our workshops as well. The workshops were conducted by two trained humour coaches from the foundation HHH tailored for this target group. Workshops started with a 10-min video with background information on the concept. Three sessions of practical exercises followed. Feedback and reflection followed after each session, with discussions on the implications in clinical practice. The first session covered the topic 'playful attitude' with different games. For example, the 'Woosh' game incorporates different signals passed on verbally or physically in the group as fast as possible. The second session under the headline 'mindfulness and awareness' included pairwork exercises like 'leading and being led'. The persons being led closed their eyes as soon as they felt safe and were lead through the room by their partner. In the third session on 'self-compassion and coping with stressful situations', the 'applause game' was played, amongst others. One participant volunteers to leave the room while the others build an obstacle course which must be passed in a certain order. The volunteer is led through the obstacle course by applause. When they walk/climb or perform another activity correctly, the other participants applaud. This way, the volunteer finds the right way to solve the final task.

Four workshops were organized. The third and fourth workshops were planned as extension modules for the previous workshops, and were held six months after the first two workshops. Before and after the third and fourth workshop saliva samples were collected. Then the humour workshop took place. After approximately three hours participants received a small gift and some take-home tasks and filled in the STHI-S and the distress-thermometer again.

The gift was meant as an anchor for implementation of the newly acquired skills to their clinical routine.

2.3 Measures

Outcome was evaluated assessing cheerfulness with the State-Trait-Cheerfulness-Inventory (STHI-T and –S) focussing on the state measures before and after the workshops (Ruch & Hofmann, 2012; Ruch & Zweyer, 2001), the Distress-Thermometer (Mehnert et al., 2006) psychometric questions (age, gender, profession and work years) and the measurement of oxytocin in saliva before and after the third and fourth workshop.

The STHI-S consists of 18 items rated on 4-point Likert scale (strongly disagree, moderately disagree, moderately agree, strongly agree), with subscales on cheerfulness, seriousness and bad mood as experienced right now. The STHI-T trait questionnaire includes 30 items with the same Likert scales and the same subscales as the STHI-S but in relation to constant personality traits (Ruch & Hofmann, 2012; Ruch et al., 1996, 1997; Ruch & Zweyer, 2001). The mean values in the main construction sample (N = 595; Ruch et al., 1997) of the STHI-S 30 (state) were 25.75 (*M*, *SD* = 6.87) cheerfulness (Cronbach's alpha .93), 24.28 (*M*, *SD* = 6.03) seriousness ($\alpha = .85$) and 15.20 (*M*, *SD* = 6.31) bad mood ($\alpha = .93$). We used the STHI-S 18 where no construction values are given. Adapting the sum scores of ten items per scale to 6 items resulted in the following mean sum score values: 15.45 cheerfulness, 14.57 seriousness and 9.12 for bad mood.

The Distress Thermometer includes a scale from 0 to 10 where participants can mark their level of distress by marking it on the scale, and a problem checklist with 35 items in five categories (practical problems, family problems, emotional problems, spiritual/religious concerns, physical problems). Only the 0–10 distress scale was included in this study. Internal consistency values were only given for the complete scale in validation studies of the instrument. All questionnaires were used in the German version for self-assessment. The questionnaires which have been used can be found in the supplementary material.

For the saliva sample the test subjects had to chew on a cotton wool roll (Salivette® Sarstedt) for at least one minute. This sample was stored on dry ice immediately because the half-time period of oxytocin is less than 2 min and then stored in a − 80 °C freezer until it was shipped on dry ice via courier service to the laboratory analysing the concentration of oxytocin (Scheel et al., 2017a, b). The RIAgnosis laboratory in Sinzing, South Germany was chosen due to its specialization on saliva extractions as used in this study. Radioimmunoassay (RIA) oxytocin (OXT) has previously described by de Jong et al. (de Jong et al., 2015). The

analysis was performed on all saliva samples which were labelled with consecutive numbers. For each sample 300 µl of saliva was evaporated (Concentrator, Eppendorf, Germany), and 50 µl of assay buffer was added followed by 50 µl antibody raised in rabbits against OXT. The detection limit of the RIA was in the 0.1–0.5 pg/sample range; the intra- and inter-assay variabilities were < 10%. All saliva samples were assayed in the same batch. Plasma samples (0.5 ml) were kept at −20 °C until extraction using LiChroprep® Si60 (Merck) heat-activated at 690 °C for 3 h. 20 mg of LiChroprep® Si60 in 1 ml distilled water were added to the sample, mixed for 30 min, washed twice with distilled water and 0.01 mol/l HCl, and eluded with 60% acetone. The evaporated extracts together with evaporated saliva samples (0.3 ml) were analysed for OXT in a highly sensitive and specific RIA.

2.4 Procedure of Data Collection

Each participant who arrived at the site had to complete a set of questionnaires on cheerfulness (STHI-S and T), level of distress and psychometric questions. The same set of questionnaires was provided directly after the workshop again except from the STCI-T (see Table 1). Eleven people took part in the first, eight in the second, eight in the third and four in the fourth workshop. Between the first two workshops and the third and fourth workshop was a six-month break for participants to apply their new skills in practice and reflect on the effect of the first workshop. The following workshops were planned as extension modules. The long-term effect was meant to be evaluated during these workshops.

However, as very few participants took part in the first or second and the follow-up workshops, this evaluation of long-term effectiveness was not possible. The evaluation results from all four workshops were compiled, as all workshops included only two participants with prior humour training.

2.5 Analyses

To compare pre- and post-workshop data mean values were compared using frequencies and variance that was related to group membership was tested using SPSS Statistics 27. For evaluation of significance in differences an analysis of variance was implemented. The data on the sample are calculated as frequencies. Effect sizes for all variables were calculated using η^2_p for the difference between the pre- and post-observations of the within subjects' design.

3 Results

3.1 Participants

In total 31 persons (out of 37) participated in the four workshops. The majority of participants were female (3 men, 28 women) between 24 and 59 years old (M = 45.75, SD = 8.86) and had been working for 0.5–35 years (M = 9.87,

Table 1 procedure of data collection

	Procedure (minutes)	Assessment instruments
Workshop 1 + 2	Briefing (10)	Providing information & consent to participate
	Assessment of psychological parameters (questionnaires) (10)	State- and Trait-Cheerfulness (STHI-S & T), Distress-Thermometer, sociodemographic variables
	Introduction movie (10)	Short movie on humour workshops for medical staff
1st session	Icebreaker game (15)	Whoosh game - passing different signals as fast as possible
	Reflection and discussion (15)	Reflection of the game and transfer of the exercises to the job environment
	Mindfulness exercise (15)	Moving through the room focusing on different sensory aspects
	Reflection and discussion (15)	Reflection and report on perceptions - transfer of the exercise to the job environment
	Break (15)	Coffee/ Tea break
2nd session	Childhood game (15)	"Grandma's footsteps" – fostering playfulness and being silly
	Reflection and discussion (15)	Reflection and report on perceptions - transfer to positive emotions from childhood
	Mindfulness exercise (15)	Leading- and being led eyes closed
	Reflection and discussion (15)	Reflection and report on perceptions – team dynamics, sharing tasks
	Break (20)	Refreshments and Snacks
3rd session	Applause game (20)	Participant finds the right way through obstacle course led by applause
	Reflection and discussion (15)	Reflection and report on perceptions – team dynamics, sharing tasks
	Gift and Homework (10)	Anchor gift and homework to apply the results in the daily routine
	Assessment of psychological parameters (questionnaires) (10)	State- and Trait-Cheerfulness (STHI-S & T), Distress-Thermometer
Workshop 3 + 4	Similar exercises + saliva samples	Before and after the workshop saliva samples were collected to measure oxytocine level

SD = 10.69) in Palliative Care. Participants included nurses, physicians, case managers, psychologists, researchers and sociologists and a documentation assistant. The fourth workshop was moved on short notice due to the participation of a key member of staff. This significantly reduced the number of participants.

3.2 Pre- Post Comparisons

Mean oxytocin concentration in saliva was 1.52 pg/ml (SD = 0.47) before, and 1.80 pg/ml (SD = 0.67) after the humour workshop ($F(1,22) = 1.35$, $p = .26$) in those 12 team members who took part in the 3rd and 4th workshop (95% CI [1.39, 1.96]). Thirty persons completed the Distress Thermometer, with a mean value of 5.24 (*SD* = 2.44) before and 3.90 (*SD* = 2.46) ($F(1,60) = 4.07$,$p = .05$) after the workshop (95% CI [3.04, 5.38]). Thirty participants responded to the STHI-S before and after the workshop. The mean value for the STHI-S subscale for cheerfulness increased from 16.33 (*SD* = 5.27) to 19.03 (*SD* = 3.52) ($F(1,60) = 5.50$, $p = .02$) post-workshop (95% *CI* [16.63, 20.41]) (see Table 2). Bad mood was reduced from 11.19 (*SD* = 7.61) to 9.43 (*SD* = 7.72) ($F(1,60) = 0.81$, $p = .36$; 95% CI [8.30, 18.84]) and seriousness decreased from 15.06 (*SD* = 2.84) to 12.26 (*SD* = 3.14) ($F(1,60) = 13.24$, $p = .01$; 95% CI [11.98, 15.25]). Effect sizes (η^2_p) ranged from 0.013 for bad mood to 0.182 for seriousness (see Table 2).

3.3 Qualitative Data

In the warm-up round before the exercises in the workshop, the majority of the participants stated to be "tired", "stressed", "worn-out". During and after the workshop more than 70% of participants explicitly provided positive feedback on the

Table 2 Differences pre- and post-testing

Group affiliation		Oxytocin in saliva	Distress	Cheerfulness*	Seriousness*	bad mood*
pre-workshop	Mean	1.52	5.24	16.33	15.06	11.19
data	N	12	30	30	30	30
	standard deviation	0.47	2.44	5.27	2.84	7.61
	mean standard error	0.13	0.45	0.92	0.50	1.34
post-workshop	Mean	1.80	3.90	19.03	12.26	9.43
data	N	12	30	30	30	30
	standard deviation	0.67	2.46	3.52	3.14	7.72
	mean standard error	0.19	0.47	0.63	0.56	1.41
Effect sizes	η2 p	0.058	0.071	0.084	0.182	0.013

*STCI-S values

workshop. Expressions of gratefulness and statements such as "feeling like having had a small vacation" have been recorded.

4 Discussion and Conclusion

Over the timespan of six months, four humour workshops were held. Participants indicated significant changes with reduced distress level, more cheerfulness, and less bad mood. Mimic expressions and verbal remarks after the workshops were grateful and positive. With these effects on cheerfulness, seriousness, and distress level, the combination of practical training on humour and mindfulness in this study match the effects described by Hofmann et al. (2018), who reported correlating as well as mediating effects between humour and mindfulness. The short term-effects were striking, showing significant improvement in cheerfulness, mood and distress levels. However, as the subsequent workshops were not used as follow-up, we were not able to evaluate the long-term effectiveness of the intervention. All results must be interpreted critically since no power analysis was conducted prior the workshop to determine the appropriate sample size. The effect sizes (η^2_p) were small and therefore other factors might have been part of the more cheerful mood after the workshops. Only the effect of the reduction of seriousness is worth mentioning, since the pre- and post-value difference was significant and 18% of the variance can be explained via the effect of the workshops. Other factors which might have had an effect on the participants could be the food provided or the relief that the long work day was over after the workshop.

Participants responded that they found the workshops worthwhile. In addition to the significant changes in distress level, cheerfulness, and bad mood, the facial and verbal feedback revealed that staff benefited from participation. Four participants even came to the hospital to participate in the workshop on their day off. The literature confirms that humour workshops and interventions are very well suited for staff working in a palliative working sector (Hirsmüller & Schröer, 2012); Müller et al., 2012; Ross & Cornbleet, 2003). This seems worthwhile considering the high level of burn-out (Schmitz et al., 2000) and shortage of skilled workers in German hospitals (Oulton, 2006).

The voluntary participation might also have led to a bias in the data, since persons with a stronger sense of humour were more likely to participate in the humour workshops. However, 84% of all staff members participated in the workshops, and the high rate of participation seems to outrange this bias.

The workshops were also created as an incentive for better cooperation and less gatekeeping of the staff towards recruitment for a study on the implementation of a humour intervention for patients in palliative care. Ross and Cornbleet (2003) stated that staff in palliative care is cooperative and has a realistic view on the state of their patients, however, we found significant barriers with the recruitment of patients for that study.

The use of oxytocin in saliva as outcome parameter needs to be evaluated critically. Scheel et al., (2017a) discussed that oxytocin is a questionable indicator for well-being because of its fluctuations during the day and uncharted influences of

medications like contraceptives (de Jong et al., 2015) have not been examined in this study. Though the difference of the pre- and post-oxytocin measures was not significant, the interpretation of the insignificantly small difference needs to be interpreted cautiously. Scheel et al., (2017a) tested the oxytocin levels of children which should not be compared to adult concentrations. Therefore we only focused on pre- post-differences in this study and did not compare the results to the literature in exact numbers.

The first game was designed to stimulate playfulness, create an atmosphere of well-being, and encourage the participants to be present in the moment. With this introduction and the professional set-up, all participants were able to truly engage in the workshops. In the second session, conscious leading and relinquishing control as well as confidence were trained. This led to a fruitful discussion after the game and created an atmosphere of peacefulness in the room. The desired effect of the third session was the perception of useful stimuli and to empower participants to send impulses signalling one's own needs. Several participants stated that they had problems communicating their needs and that the positive reinforcement of the applause game was considered as helpful if transferred to their professional work field. The theoretical concept of the three workshop sessions getting in contact, being in contact and staying in contact with oneself and others thus has worked well for the team.

4.1 Limitations

A key challenge was to overcome the problem of the staff members' work overload and the need for maintenance of the palliative care ward. Additionally, sick-leave and the work shifts of medical and nursing staff made scheduling the workshops quite challenging. Initially, we had planned for participants to complete a basic workshop and a follow-up workshop after six months. No participant followed this concept because of the health care staff shortages in Germany, especially prominent for nurses. Some staff members found it challenging to participate in the workshops as they already had accumulated excessive overtime hours.

Originally the third and fourth workshops were planned as extension modules for the first two workshops, implying that the same people would participate in the second set of workshops than in the first set. However, only two members of the team participated in both the first and the second set of workshops, so that evaluation of the long-term effect of the humour training was not possible. Instead, all four workshops had participants without previous training. However, this means that staff members had a total of four workshops to choose from, enabling a large part of the palliative care to participate in the humour training.

The most severe limitation of this study is the lack of a control group. We wanted to offer all staff members the possibility to participate in the workshops and thus had decided against a control group.

The participation in the humour workshops was optional for the entire staff, which was essential considering that Gelotophobes would most seemingly not profit from this kind of workshop (Ruch et al., 2013). Gelotophobes have an irrational fear of being laughed at.

For future studies, evaluation of the long-term effectiveness requires careful and well in advance scheduling of workshops and the commitment of staff members to participate in longitudinal training.

This study presents data from only one centre, and with two humour coaches, and results may not be representative for other palliative care settings. More research would be needed to confirm the validity of the results in different settings and the sustainability of the positive effects over time.

Last, we would like to discuss the topic of expectations insofar as they might change the results of the humour workshop. The participants had been informed about the aim of the humour workshop in advance, and expectations were expressed by several team members, for example "hope it is going to be funny" or "hope I won't make a fool of myself". These expectations might have led to a positive bias.

4.2 Conclusion

A series of humour workshops for health care professionals working in palliative care was beneficial, demonstrating improvements in distress levels, cheerfulness, seriousness and bad mood. Careful scheduling and organization of the workshops seems to be necessary in order for staff members to participate and benefit from them. Even with the small sample size the results seem promising and warrant follow-up research projects on humour training for staff members in palliative care.

Evaluation with a larger and multicentre sample as well as long-term follow-up evaluation is required to ensure representativity, and long-term follow-up evaluation to ensure sustainability. Stratification for different personality types (e.g.: gelotophobes) would be interesting in future research.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s41042-022-00063-5.

Acknowledgements Our thanks go to all persons at the university hospital Bonn and most importantly to the staff who agreed to take part in this study. Laura Fernandez and Sarit Quirin for their help in various stages for their feedback on language and content of the manuscript.

Authors' Contributions The manuscript has been written by the first author. All other authors contributed in the development of the workshop setting and provided substantial feedback to the manuscript.

Funding Open Access funding enabled and organized by Projekt DEAL. The foundation Humour Helps to Cure (Humor Hilft Heilen), Bonn participated in the conceptualization of the study as a source of knowledge on humour interventions. During data collection this non-profit organization provided the salary for their humour coaches.

Data Availability Changes in the dataset have been documented and saved in different file versions. The data is accessible by the research team in Bonn only.

Code Availability Each participant was given a custom code.

Declarations

Ethics Approval The study has been approved by the ethics committee of the University Hospital Bonn (No. 003/16).

Consent to Participate Every participant was asked to give written informed consent before being included in the study.

Consent for Publication This article does not include details, images, or videos relating to an individual person. All information has been pseudonymized. A trial number was assigned to each patient, and all personal data have been linked to this number. Consent for publication of these pseudonymized data has been given by all participants.

Conflict of Interest/ Competing Interests No competing interest exist for any author of person involved in this article.

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