



**EVALUATION OF**

**A MINDFULNESS-BASED STRESS**

**REDUCTION PROGRAMME ON THE**

**QUALITY OF LIFE OF SURVIVORS LIVING**

**WITH SECONDARY CANCER**

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# SUMMARY

This report investigated the impact of an 8-week Mindfulness Based Stress Reduction (MBSR) programme on people with a secondary cancer diagnosis, attending Cork Arc Cancer Support House. A monthly MBSR meeting is held also, which is open to everyone who has completed the programme.

Over three years, this programme was run five times. Overall almost 3 in 5 of those with secondary cancer who were enrolled completed at least half of the MBSR programme. Disease progression and feeling unwell were principal reasons for participants missing some of the classes.

Using mix-methods, this study shows that participants experienced multiple benefits of the MBSR program. Physical wellbeing, in particular pain and fatigue were either improved or the same as for 3 in 4 of participants. All of the emotional domains measured including depression, irritability, tension, worry, stress, concentration and sleep were reported to have improved or stayed the same for at least 3 in 4 participants following completion of the MBSR programme. Social functioning also either improved or stayed the same for more than 4 in 5 people with secondary cancer. Overall Quality of Life was reported to be either higher or the same in almost 9 in 10 people with secondary cancer after completion of the MBSR programme.

Mindfulness practice improved for people with secondary cancer. Learning a variety of mindfulness techniques, including body scan, check in, connecting with the breath and loving kindness, was appreciated by participants. These practices were integrated into the everyday lives of people living with secondary cancer, as well as helping in times of increased stress, for example attending hospital appointments and waiting for scan results. The practice of mindfulness instructs participants to deliberately focus on the present and monitor their experiences at the time without passing judgment. Some of the benefits experienced by participants were mediated through the mind-body connection, staying in the present and focusing on the positive. The programme also led to an increased feeling of control over their health. The peer support experienced in the group setting of this programme was very beneficial, where they found understanding from meeting people who were also living with secondary cancer. The expertise and competence of the MBSR practitioner and facilitator was very important for these groups of participants living with secondary cancer.

This study reports that the MBSR program had a retained effect on wellbeing through continued use of mindfulness practices after the course, and an integration of these practices into the lives of those living with advanced cancer. The monthly mindfulness meetings are a very valuable addition to the MBSR programme.

This study had a number of limitations, including response rate, non-responders may have had different experiences and possible social bias. However, despite these, this study is one of the first to evaluate the feasibility and impact of the MBSR programme on people living with advanced cancer. It was recommended by all members of the focus groups to others living with secondary cancer. We conclude that the MBSR Programme is both feasible and beneficial for people living with secondary cancer.

# INTRODUCTION

## CANCER IN IRELAND

Every year it is estimated that approximately 43,500 cancers (including non-malignant skin cancers) are diagnosed.<sup>1</sup> Of these, 1 in 2 (n=24,327) are invasive cancers, requiring extensive treatment.

The average 5-year survival at the majority of cancer sites reported has increased in the last two decades (when comparing the period from 1994-1998 to 2014-2018), see Figure 1.<sup>1</sup> There are now more than 200,000 people living after a cancer diagnosis in Ireland. Some of these people were diagnosed at an early stage and following treatment are living cancer-free. Others are diagnosed with late stage cancer which has metastasised or spread to another part of the body. The number of people living with metastatic or secondary cancer is unknown currently, however the National Cancer Registry have begun to examine this.

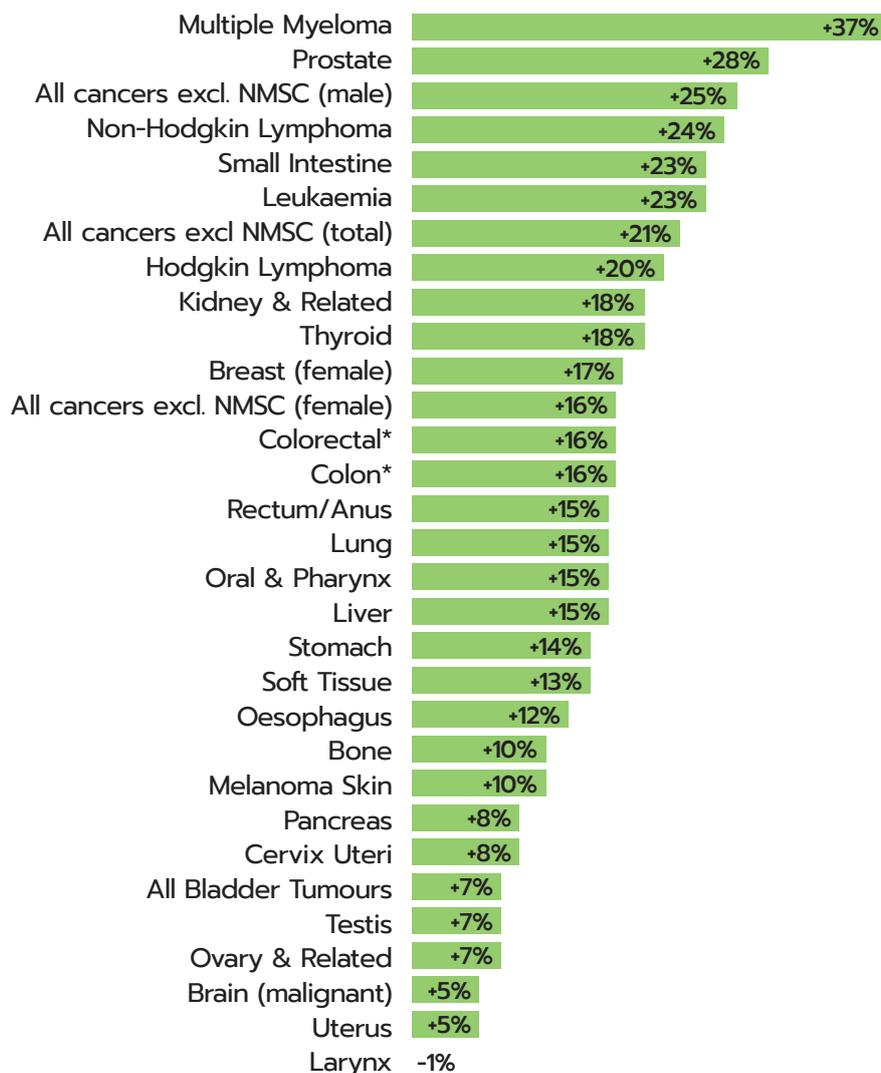


Figure 1: Change in 5-year net survival: 1994-1998 to 2014-2018<sup>1</sup>

<sup>1</sup> Cancer in Ireland 1994-2020. Annual Statistics Report, 2022. National Cancer Registry. [NCRI\\_AnnualStatisticalReport\\_2022.pdf](#)

## IMPACT OF CANCER

A cancer diagnosis and treatment can have life changing impacts on many aspects of the person's life, including physical, psychological, social and financial functioning. Consequently, many require supports, both short- and long-term to help to adjust and cope with their new norm. However, a scoping review found evidence of unmet needs among cancer survivors in Ireland, across a spectrum of cancer types.<sup>2</sup>

Some unmet needs were observed across multiple cancer types, including physical needs (specifically, pain, fatigue, and sleep disturbances), psychological needs (anxiety, depression and fear of recurrence), need for greater access to support services, sexuality related needs and information deficits.<sup>2</sup> Few studies investigated the needs of those with metastatic or secondary cancer, but it is likely that they will differ to those who have finished their cancer treatment and are in remission or are cancer-free. One report described findings from a study on quality of life (QoL), fatigue, and cognitive concerns in twelve women with metastatic breast cancer in Ireland.<sup>3</sup>

Understanding the burden of metastatic or secondary cancer in Ireland is needed. Research around the patient experience and unmet needs of those living with this diagnosis is also required to help inform the development of evidence-based support services specific for those living with metastatic or secondary cancer.

The priorities of the National Cancer Strategy 2017-2026 include maximising the QoL of people living with cancer throughout survivorship – from diagnosis until end of life. The National Cancer Control Programme (NCCP) are committed to work with organisations across the care continuum, including primary care, cancer centres and voluntary organisations to develop and implement care pathways and survivorship programmes.<sup>4</sup>

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<sup>2</sup> National Cancer Survivorship Needs Assessment: The Unmet Needs of Cancer Survivors in Ireland: A Scoping Review 2019. Mairead O'Connor, Frances J Drummond, Bernadine O'Donovan, Conan Donnelly. [unmet needs of cancer survivors.pdf \(hse.ie\)](https://www.hse.ie/eng/health/cancer/cancer_survivorship_needs_assessment_the_unmet_needs_of_cancer_survivors.pdf)

<sup>3</sup> Barron, P. Gallagher, N. Fitzgibbon and R. O'Connor, "Quality of Life, Fatigue and Cognitive Concerns of Women with Metastatic Breast Cancer in Ireland," in Irish Association for Nurses in Oncology Annual Conference, Limerick, Ireland, 2017

<sup>4</sup> National Cancer Strategy 2017-2026. [6f1592a09583421baa87de3a7e9cb619.pdf \(assets.gov.ie\)](https://assets.gov.ie/6f1592a09583421baa87de3a7e9cb619.pdf)

## MINDFULNESS-BASED STRESS REDUCTION (MBSR)

Mindfulness-Based Stress Reduction (MBSR) is a group-based programme developed by Jon Kabat-Zinn.<sup>5</sup> The integration of mindfulness meditation practices within clinical mainstream medicine and psychology has grown rapidly since 1979, and the benefits of mindfulness training for a variety of problems, disorders, and populations are increasingly recognized.<sup>6,7</sup>

Over 30 years of research on MBSR has shown many positive health benefits of mindfulness practice. Some of those benefits include Increased ability to manage anxiety, depression and low mood, Improved sleep, ability to handle stressful situations more effectively, increased ability to relax, reductions in pain levels and an enhanced ability to cope with the pain that may not go away and enhanced immunity.<sup>8,9</sup>

The MBSR programme teaches formal and informal mindfulness practices (see Table 1) that have demonstrated effectiveness for a wide variety of physical and psychological health problems and ongoing life challenges. The Cork ARC Cancer Support MBSR course follows the same approach taught at the Centre for Mindfulness in Medicine, Health Care, and Society at the University of Massachusetts Medical School (CFM) and is taught by a qualified MBSR teacher trained by the CFM.<sup>10</sup> The 8-week programme is provided in a group setting. Please see Appendix 1 for more details of the programme.

The Cork ARC Cancer Support MBSR programme is offered to people who have received a diagnosis of a secondary or advanced cancer (from here on described as secondary cancer). Perspective participants meet with the facilitator and are given information on the structure of programme prior to enrolment. All participants receive resources to assist in the learning and practice, including a CD and notes.

Following the 8-week programme, a monthly meeting which encompasses a 1-day practice is held and all participants of the MBSR programme are invited to attend.

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<sup>5</sup> Kabat-Zinn, J. (2003). Mindfulness-based stress reduction (MBSR). *Constructivism in the Human Sciences*, 8(2), 73–107.

<sup>6</sup> Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, 4, 33–47.

<sup>7</sup> Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your mind and body to face Stress, pain, and illness*. New York, NY: Delacorte.

<sup>8</sup> Tian X, Liao Z, Yi L, Tang L, Chen G, Jiménez Herrera MF. Efficacy and mechanisms of 4-week MBSR on psychological distress in lung cancer patients: A single-center, single-blind, longitudinal, randomized controlled trial. *Asia Pac J Oncol Nurs*. 2022 Oct 13;10(1):100151. doi: 10.1016/j.apjon.2022.100151. PMID: 36406466; PMCID: PMC9667193.

<sup>9</sup> Yu J, Han M, Miao F, Hua D. Using mindfulness-based stress reduction to relieve loneliness, anxiety, and depression in cancer patients: A systematic review and meta-analysis. *Medicine (Baltimore)*. 2023 Sep 15;102(37):e34917. doi: 10.1097/MD.00000000000034917. PMID: 37713902; PMCID: PMC10508374.

<sup>10</sup> Center for Mindfulness - UMass Memorial Health ([ummhealth.org](http://ummhealth.org))

**Table 1.**  
**Mindful practices taught through the MBSR programme**

FORMAL MINDFUL PRACTICES	INFORMAL MINDFUL PRACTICES
Awareness of breathing	Mindful check-in
Body scan	Coming to the breath,
Mindful movement	Mountain
Loving kindness	Mindfulness of routine activity
Choice-less awareness	Stop practice,
Mindful walking	Physical barometer
	Gently being with the difficult



## AIM

The aim of this study was to investigate the feasibility and impact of the MBSR programme on people living with secondary cancer. There are very few studies to date investigating the feasibility and impact of MBSR on people living with secondary cancer<sup>11</sup>

## MEASURES

A mixed methods approach was taken to investigating the impact of the MBSR programme on people with secondary cancer.

## SURVEYS

All participants in the study were enrolled on the MBSR programme and joined in one of five MBSR groups between 2015 and 2018. Prior to starting the programme, each participant was given a questionnaire to assess their Quality of Life (QoL). They were also asked to complete this questionnaire after the programme was finished. This questionnaire contained questions from the EORTC QLQ30<sup>12</sup> questionnaire. Brief sociodemographic and clinical questions were also included.

An evaluation questionnaire was given to all participants at the end of the programme. This contained 11 open questions, see Table 2. These responses were coded and content analysis was used to quantify and analyse the themes arising. No reminders were sent to participants who did not submit their questionnaires.

## FOCUS GROUPS

Two focus groups were undertaken with a total of 16 people living with secondary cancer who had completed the MBSR programme and who regularly attended the monthly practice, to gain a deeper understanding of the impact of the MBSR programme on people living with secondary cancer. All focus group participants were given information about the study and gave written consent to take part in the focus group. A semi-structured interview schedule was used. The focus groups were audio-recorded, transcribed verbatim and anonymised. The data was coded and thematic analysis was used. Illustrative quotations are given.<sup>14</sup>

11 Lengacher CA et al., A Pilot Study Evaluating the Effect of Mindfulness-Based Stress Reduction on Psychological Status, Physical Status, Salivary Cortisol, and Interleukin-6 Among Advanced-Stage Cancer Patients and Their Caregivers. *Journal of Holistic Nursing* American Holistic Nurses Association Volume 30 Number 3 September 2012 170-185

12 The EORTC QLQ 30 Microsoft Word - SCmanual.doc (eortc.org)

13 Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs*. 2008 Apr;62(1):107-15. doi: 10.1111/j.1365-2648.2007.04569.x. PMID: 18352969

14 Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2026 (3). <https://doi.org/10.1191/1478088706qp063oa>

**Table 2:**  
**Post-MBSR Programme Evaluation Questionnaire**

POST-MBSR PROGRAMME EVALUATION QUESTIONNAIRE
What were the Benefits of the programme?
What did you learn at a personal level?
What formal mindfulness practices were most useful?
Please say more about the ways in which they were useful/supportive.
What formal mindfulness practices which they did not find useful?
Were there any practices you did not find useful and supportive, and please say something about this?
What informal (Short) practices did you find useful/a support to you? (Mindful check-in, coming to the breath, mountain, mindfulness of routine activity, stop practice, physical barometer, gently being with the difficult)
Please say some more about the ways in which these were supportive.
The educational themes we explored in the course (the inputs on stress, reactions to stress, responding, being with the difficult, communication, self-care, etc) is there anything you would like to say about these aspects?
If you missed any of the classes how did you find returning and picking up the thread of the course?
Is there any feedback you would like to give on the course materials, notes, CD's etc?

## FINDINGS

Findings from the (i) QoL questionnaire and (ii) evaluation questionnaire are given. Empirical data from the survey is given more in-depth meaning from the experiences described in the focus groups.

### MBSR PROGRAMME PARTICIPANTS

Overall 97 people with secondary cancer were interviewed and enrolled in one of five MBSR groups, programme, run over three years. Each was given the QoL questionnaires immediately before and again following completion of the programme.

Sociodemographic information was obtained from 87 participants, see Table 3. The majority were women (71%) and married (60%). Breast (24.7%) or colorectal (12.4%) cancers were the most common cancer sites, however, participants had received a cancer diagnosed at 19 different sites.

### FOCUS GROUP PARTICIPANTS

Sixteen people took part in two separate focus groups to gain a deeper understanding of the impact of the MBSR programme on them. All of these participants were enrolled in the 8 week MBSR programme, up to three years previously, and were attending the monthly mindfulness meeting regularly. To maintain anonymity no demographics or clinical information were collected. The groups consisted of men and women of varying ages.

### LIVING WITH A SECONDARY CANCER DIAGNOSIS

All participants in this study were living with a secondary cancer diagnosis. The participants of the focus groups described some of the impacts of receiving and living with this diagnosis.

Waiting for and ultimately receiving a diagnosis of a secondary cancer diagnosis was described as 'frightening'. Many also described this as a lonely experience, where they did not know where to find someone to talk to. Some were protecting their families, others experienced a lack of understanding from those around them, of living with this diagnosis. Many found the MBSR programme at Cork ARC Cancer Support Centre when they were looking for someone or something to help them to cope with their diagnosis.

*"When I went through stages where it was unknown whether I had secondary or not, it was extremely frightening, and I didn't know where, who to talk to, ...so I did have support the first time around, but the second time around, it was very, very scary. I kept thinking, 'This can't be it. There has to be more out there to help other people.' My aim was almost, [laughing] 'Jesus, there has to be more help out there.'"*

FG201

**Table 3:**  
**Characteristics of the participants registered for the MBSR programme over 5 sessions**

CHARACTERISTIC		N	%
Gender	Male	25	26%
	Female	62	64%
	NR	10	10%
Marital status	Married/living as married	58	60%
	Single	14	14%
	Separated/Widowed	6	6%
	NR	19	20%
Cancer site	Colorectal	12	12.4%
	Breast	24	24.7%
	Melanoma	6	6.2%
	Lung	5	5.2%
	Ovarian	4	4.1%
	Brain	3	3.1%
	Endometrial	2	2.1%
	Lymphoma	2	2.1%
	Mouth and neck	2	2.1%
	Liver	2	2.1%
	Other*	9	9.3%
	Not Recorded	26	26.8%

\*One participant each had a diagnosis of Kidney, Gallbladder, Adrenal and Pancreas, Cervical, Prostate, Renal or Stomach Cancer, Sarcoma or Multiple Myeloma.

## PREPARATION OF PARTICIPANTS FOR THE PROGRAMME

The MBSR programme is delivered in a group setting, with an experienced, MBSR-trained facilitator and counsellor.

The facilitator meets with everyone individually before participants enrol in the programme. During this meeting, the facilitator provides detailed information about the course, and answers any questions potential course participants may have. Also discussed is the confidentiality policy, covering the understanding that all group members are living with a diagnosis of secondary cancer and out of respect for others, that participants are asked not to inquire into the other group members specific diagnosis or treatment. This was appreciated by participants as a method of 'self-care' and of protecting the privacy of everyone in the focus groups.

*"I think the good thing about this course was, everyone that was at this course, we knew, had some form of secondary cancer, but we didn't need to know the details. It was stopped in its tracks fairly suddenly, initially. Eventually, after a few, there was some chat about it, and you were given the opportunity to chat, but I do think that [the facilitator] managed it very well in that, there is not that vulnerability. Everybody knows, everybody knows you need to be private, but you don't need to... It's about caring for yourself, but not having to. It's different to a support group, in which you could probably get around [laughing] everyone's different circumstances."*

FG105

*"You don't need to know the details, I have learned, you don't need... Nosiness doesn't help, It only complicates things. So, I've cut the drama."*

FG103

This means that the group is about the person not their cancer. This management of the group also helped with everyone's wellbeing by not "comparing" people's situation to others.

*"I remember she said at the beginning, 'Don't speak about your personal experience, because yours could be better than somebody's, but worse than somebody's. We don't want to compare.'"*

FG201

The competence of the facilitator was important and appreciated by the participants.

*"[She] was amazing. My God, she couldn't do enough for us. She's unbelievable. There are no words to describe how good she is."*

## COMPLETION OF THE PROGRAMME

Overall, 57.8% of the participants completed 5 or more of the classes, with 15.5% completing all of the classes in the programme, see Table 4.

Reasons for non-completion of all of the classes was recorded for 32 participants, see Table 5. Of those who missed some of the classes, 28% experienced disease progression, 19% felt unwell and could not attend some classes, 6% had clashing hospital appointments and/or started a new treatment regimen, 6% had moved away and 3% reported that it was too far to travel. Two people (6%) died during the programme. Five people (16%) who had been enrolled never started.

**Table 4:**  
**Number of classes completed by participants.**

NO. CLASSES COMPLETED	N	%
0	7	7.2%
1	11	11.3%
2	8	8.2%
3	9	9.3%
4	3	3.1%
5	4	4.1%
6	7	7.2%
7	6	6.2%
8	9	9.3%
9	15	15.5%
All	15	15.5%
Not Recorded	3	3.1%

**Table 5:**  
**Reason for missing MBSR classes**

REASON	N	%
Disease progression	9	28%
Cancer Treatment started/restarted/hospital appointment	2	6%
Felt unwell	6	19%
Return to work	2	6%
Did not like it/engage	3	9%
Died	2	6%
Too far to travel	1	3%
Never started	5	16%
Moved away	2	6%
Not Recorded	9	28%

## EVALUATION OF THE INDIVIDUAL MINDFULNESS PRACTICES IN THE MBSR PROGRAMME

Most of the participants had no knowledge of mindfulness prior to starting this programme. Some had a limited knowledge or experience of mindfulness techniques, for example some occasionally used apps.

Overall, 34 returned the evaluation questionnaire. To assess the impact of the different practices of the programme, participants were asked "What formal and informal mindfulness practices were most useful?" and were there any "practices which they did not find useful"

All of the practices learned during the MBSR programme were reported to be useful to the participants, with the exception of 'Choiceless awareness', see Table 6 & 7. The variety of practices was appreciated by participants.

*"I suppose there was a lovely variety. We did a lot of mindful walking. We did body scans. We did sitting practice. The variety was lovely."*

FG206

**Table 6:**  
**What formal mindfulness practices were most useful?**  
**Which did you not find useful?**

FORMAL PRACTICE	USEFUL N (YES)	NOT USEFUL N (YES)
Body Scan	24	
Mindful movement	22	5
Mindful walking	22	3
Awareness of Breathing	20	
Loving kindness	12	1
Mindful Eating	6	5
Mountain	7	
STOP Practice	7	
Choiceless awareness	0	1

**Table 7:**  
**What informal (Short) practices did you find useful/a support to you?**

INFORMAL (SHORT) PRACTICES	USEFUL YES (N)
Mindful check in	21
Coming to the breath	18
Mindfulness of Routine activity	9
Stop practice	9
Mountain	9
Checking my feet	3
How are you feeling right now?" Physical Barometer	5
Gently being with the difficult	4
On the mat doing body scan	3
Mindful taste	3

## BODY SCAN

The body scan was reported to be the most widely used practice by those who completed the survey and by those in the focus group. Many incorporated it into their daily life, either with the assistance of the CD or without.

*"I have found, in the beginning, I might have been more diligent about doing my CD every day, and I love the scan."*

FG204

The body scan was difficult at the start of the programme for some people living with secondary cancer. Some experienced "anger", "frustration" and "judgement" at the body part(s) impacted by cancer during the body scan. Consequently, it is difficult when they get to this part during the body scan. The role of the facilitator was important to help participants to navigate and cope with this experience. The participants are invited to "accept" this part of their body.

*FG201: In the body scan, where you go through your body, I think it's around your middle, but it's, if you meet a part of your body, treat it...*

*FG202: That's difficult, or...*

*FG201: That is having a difficulty, treat it with kindness. Don't judge it, don't have any frustrated judgement about it, just accept it. I think that's... [pause] I love that line. You know the way, the part of you that has cancer, sometimes you could be angry. You think, you didn't ask to have cancer. It just happened. You shouldn't be angry with it, because...*

*FG202: That's just life.*

The body scan helped those living with secondary cancer to deal with their internal dialogue, and quiet their mind. This was reported to be a very beneficial effect of their MBSR practice.

*"I found the body scan. My mind wanders during it, but I suppose I just keep bringing myself back as best I can. I found it slows me down dramatically and stops silly dialogue that I would have going on in my head all the time. Yes, that's the most beneficial part to me, I think."*

FG206

Many participants adapted the body scan to fit into their own lives. In this way they made the body scan practice work for them.

*"The body scan is good. I think sometimes, I go to a place myself that, I might not have actually found the true mindfulness, the technique or whatever, but if I have five or ten minutes, I might just do an improvised mindfulness, do you know what I mean? It's hard to explain. Something that works for you."*

FG202

## THE CHECK-IN

The Check-in was reported to be the most commonly used informal mindfulness technique. Participants reported that this can be done any time, and it works to "ground" them in the present and help to regulate when they feel "stressed".

*"The check-in, yes. I do those quite often, and that brings me back. That grounds me a bit, because I'm a bit stressed at the moment. My blood pressure has gone up. I know it has gone up because of factors in my life. The fact that I know it has gone up makes me more stressed."*

FG201

*"The check in and the body scan would be the two. I think use of the breathing as a way of getting back into the now is the third one that I would probably find that I will continue and hope to use."*

FG104

Other practices were also beneficial, like Mindful Walking, but less people with secondary cancer reported using them. These also had the benefit of bringing the participants into the present moment.

*"The body scan is great, yes. I found mindful walking great as well. You forget your problems. I found that brilliant, this time."*

FG105

## INTEGRATING MINDFUL PRACTICES

Following the MBSR programme, many describe using informal mindfulness practices as part of their day, and adopting them to fit their preferences and their lives.

**FG203:** *But you are probably doing more than you think. [overtalking] Do you stop yourself and say, 'Am I breathing properly?' Or if you're feeling a bit anxious, do you stop...?*

**FG205:** *Yes, I do it.*

**Facilitator:** *You wouldn't have done that before the course?*

*FG203: No, of course I wouldn't, no.*

*FG205: So, that is mindfulness.*

*FG203: But it is great to go back...*

*FG205: It doesn't have to be the half an hour.*

*"No, but when my daughter is at piano, I put on my Calm app. It's only ten minutes, but there is a little story with it every day, and there is the breathing and the relaxing. So, I entwine the two. It's a skill I learned from the MBSR. I find that applies, because it's literally only ten minutes. If I don't do it in the morning or during the night, I will do it as some stage."*

*FG107*

*"Yes, sometimes, if I just play a bit of music or something like that, and just relax to that. Again, without going through a check-in or anything like that. I would still be mindful. I would be in the space, as it were."*

*FG202*

Some participants also got their family involved to help to integrate mindfulness practices into the life of their family as well as their own life.

*"It's probably just a matter of time. I have small children, and it's not ideal from that point of view. Even though in the past I have encouraged them to meditate along with me. But they're not currently that keen. [laughing]"*

*FG204*

After completion of the programme, learning continued as participants continued to practice and also to study the notes and other resources given to them during the MBSR programme.

*"I would do the check-in a little bit more than others. But I find, having gone through all the notes – I had all my notes when I was doing the weekly course – but then I said, I knew all that, I left them aside. But I must go back to them now, because when I go back to them, I find something new."*

## IMPACT OF THE MBSR PROGRAMME ON QUALITY OF LIFE OF PEOPLE LIVING WITH ADVANCED CANCER

Overall, 72 people enrolled in the MBSR programme completed the baseline questionnaire prior to starting the programme (T0). Just over half of participants (53%, n=37 people) completed the questionnaire when they finished (T1), see Table 8.

<sup>9</sup> Yu J, Han M, Miao F, Hua D. Using mindfulness-based stress reduction to relieve loneliness, anxiety, and depression in cancer patients: A systematic review and meta-analysis. *Medicine (Baltimore)*. 2023 Sep 15;102(37):e34917. doi: 10.1097/MD.00000000000034917. PMID: 37713902; PMCID: PMC10508374.

Scores for each QoL domain was calculated<sup>9</sup> and the score upon completion of the programme was compared to the score(s) prior to starting the programme only for those participants for which both scores were recorded. Results are presented on Table 8.

## Physical Functioning

Following completion of the MBSR programme, participants reported an improvement in how they felt physically. Almost 3 in 4 participants (73%) reported that their tiredness or fatigue was either improved or the same as it was prior to starting the MBSR programme.

A similarly proportion, 76% reported that their pain was either the same or improved following the MBSR programme.

## Emotional Functioning

Improvements in all of the emotional domains measured following completion of the MBSR programme were observed.

Depression, irritability and tension were all reported as being either lessened or the same after the MBSR programme in 89%, 86% or 84% of responders.

Sleeping difficulty was either lower or the same in 86% of respondents. Difficulty in concentration was lower in 57% of respondents.

Stress in the last 7 days had either improved or stayed the same for 70% of participants.

## Social Functioning

Four in ten (81%) responders reported less or the same difficulty meeting family or friends after the MBSR programme. This was more difficult for 19% of participants.

## Overall Global QoL

Global, or overall QoL was reported to be either higher or the same in 86% of responders after completion of the programme when compared to before starting the programme.

The average overall QoL prior to starting the MBSR programme was slightly higher in the participants who completed the questionnaire at both time points (score = 67.36) than those who only completed it prior to starting the programme (score = 59.03).

Some participants gave explanations for their scores in the week that they were measured, including waiting for an imminent scan, or just back from holidays by way of explanation.

**Table 8:**  
**Quality of Life domain changes after participating in the MBSR programme compared to baseline measures prior to the programme**

QUALITY OF LIFE (QOL) DOMAIN	STATUS	N (%)	%
Stress in the last 7 days (n=30)	Higher	9	30%
	Lower	13	43%
	Same	8	27%
Global QoL in last 7 days (n=36)	Higher	16	44%
	Lower	15	42%
	Same	5	14%
<b>Physical Functioning (n=37)</b>			
Tiredness/Fatigue	Less	12	32%
	Same	15	41%
	Higher	10	27%
Feel pain	Less	10	27%
	Same	18	47%
	Higher	9	24%
<b>Emotional Functioning</b>			
Depression	Less	16	43%
	Same	17	46%
	Higher	4	11%
Irritability	Less	19	51%
	Same	13	35%
	Higher	5	14%
Worry about the future	Less	19	51%
	Same	17	46%
	Higher	1	3%
Tense	Less	21	57%
	Same	10	27%
	Higher	6	16%
Difficulty sleeping	Less	14	38%
	Same	18	49%
	Higher	5	14%
Difficulty concentrating	Less	21	57%
	Same	9	24%
	Higher	7	19%
<b>Social Functioning</b>			
Difficulty meeting family/friends	Less	11	30%
	Same	19	51%
	Higher	7	19%

Note: N=72 participants completed a baseline questionnaire, n=37 completed the same questionnaire when they completed the MBSR programme

## BENEFITS OF THE MBSR PRACTICES PERSISTED BEYOND THE 8 WEEK PROGRAMME

Participants of the focus groups attending the monthly mindfulness meeting reported that the mindfulness techniques learned during the MBSR programme had many benefits. The group setting helped participants to identify a source of support, people who understood how they felt. This helped with the sense of loneliness and lack of support.

*"I have had cancer three times. I have had a lot. In twenty years, I have battled it a lot. There have been times... The third time, that is what drove me to ARC House, really. [laughing] That is why I went, because I just couldn't deal with it again. I said to [husband], 'I can't do it again,' and he said, 'Yes, you can,' but I couldn't have done it without ARC House, I think, then. I needed them, and everything."*

FG101

*"I would find that it [MBSR] brings me a calm, and that it helps me. It's not a physical thing, but is calm physical. It helps me to deal with things a little bit better, just to stop, to reflect, things like that. The course is good for my head."*

FG207

It helped participants to regulate or cope with many difficult emotions, including 'anger' and 'fear', and also 'catastrophising' following their diagnosis. People living with secondary cancer were able to find some 'loving kindness' and 'gentleness' for themselves. It also brings 'calmness' and 'peace' instead of more difficult emotions. This is mediated by using practices to 'stay in the present' and 'focusing on the positive'.

*"So, sorry, your question was about the... It's not that I'm angry with the part of my body, but I think I'm probably angry with the cancer more than the part of it. So, I think it [MBSR] makes you be gentler on yourself, and be kind to yourself. I think the kindness is important, because sometimes we don't stop to look after ourselves. We are so busy, life is so busy, and everybody is going, coming, doing the things. You need to stop."*

FG103

*"Calmness and peace, I think. Yes, peace is amazing."*

FG202

*"Well, I am too. [laughing] I mean, it tends to... I get caught up in that kind of situation regularly. Whereas, using mindfulness, 'Oh, look, I can just calmly work my way through this, and the end result will be great. It will be fine.'*

FG107

The benefits of the MBSR programme to the people living with secondary cancer were sometimes more oblivious to their family than to themselves.

*“So, it’s tricky. But one of the things that could be looked at is the benefit of, as you say, the calmness, the peace, the positive side, rather than focusing just on the negative. I have always found, my own self, that the feedback is from the people around me. The change that is happening in me tends to be seen more by my family, my children. They will comment that I might be calmer. It changes over time, but it’s really a lot, over time.”*

**FG104**

*“Being able to stay in the moment, yes. That thing, what [name] said there about the people around us, probably, would observe better how it has helped us.”*

**FG204**

MBSR practices were very beneficial in more difficult times, for example waiting for scans and hospital appointments.

*FG202: I would always use the breathing exercises, waiting for scans, waiting. It’s the waiting times.*

*FG205: I use the breathing as well. It helps great with that. It really does.*

*FG204: I did a type of radiotherapy where you have to do a particular type of breathing exercise during it. It very much helped me with that. I was able to do the breathing better than people who hadn’t done meditation practice.*

*“It’s very hard to measure. It’s when you’re going and waiting, going to radiotherapy, waiting for scans, PET scans, CAT scans, all those things, waiting for results of blood tests, waiting for surgery or to meet the doctor. It’s how you deal with that”*

**FG105**

The MBSR programme also helped people living with secondary cancer to gain some control over their health, where they did not have control since their diagnosis.

*FG101: I think that’s one of the things about cancer. You can’t control it. It’s happening, and you have no way of stopping it or controlling what’s going on. That’s what I think you need...*

*FG102: You learn from mindfulness, definitely.*

*FG101: You do need something to help. You’re dependent on the skill of your oncologist, and the nurses. You can’t do anything yourself. Alright, you can keep yourself healthy, but you can’t actually change how it is, it’s going to be... So, I think that’s why you need something to help you.*

*F3103: I would agree with that there. It helps to accept the things you can't control.*

The MBSR practices also helped people living with secondary cancer with their sleep disruption.

*"I use the body scan at night to help fall asleep."*

**FG203**

The monthly meetings are a very important part of the programme, reminding participants of the benefits of MBSR and refreshing their practice.

*"I felt I needed to come back again, because I kind of had forgotten how to do it properly, and I needed them so much again. I realised how brilliant it was, and I'd feel so much at peace with myself and the problems with my health and everything. So, it's after doing wonders for me. I've refreshed all myself again."*

**FG205**

Attendees of the monthly meeting described attendance at these as a good measure of how good the MBSR programme is to them.

*"I don't think there's any measure that's there, that I can think of. I do think the monthly group meetings on Mondays would possibly be one measure."*

**FG102**

Furthermore, all of the focus group participants would 'recommend' the MBSR programme to others living with secondary cancer. However, they also report that there needs to be a readiness a openness within people before they start.

*"I feel as though there are times in my life when I am open and receptive to this type of an intervention, but other times, absolutely not."*

**FG202**

## EVALUATION SURVEY & CONTENT ANALYSIS

In the evaluation survey given following completion of the MBSR programme, participants were asked to describe the benefits of the programme to them. The free comments were coded in content analysis.

### Benefits of the programme

Learning mindfulness techniques and coping skills were the most frequently reported benefits of the MBSR Programme, see Table 9. Following the programme, people living with secondary cancer reported that they felt calmer, including during difficult times in their lives, for example while waiting for hospital appointments. They also reported 'less worry' and 'more hope about the future' than before the MBSR programme. Important benefits included 'empowerment' and 'self-confidence'.

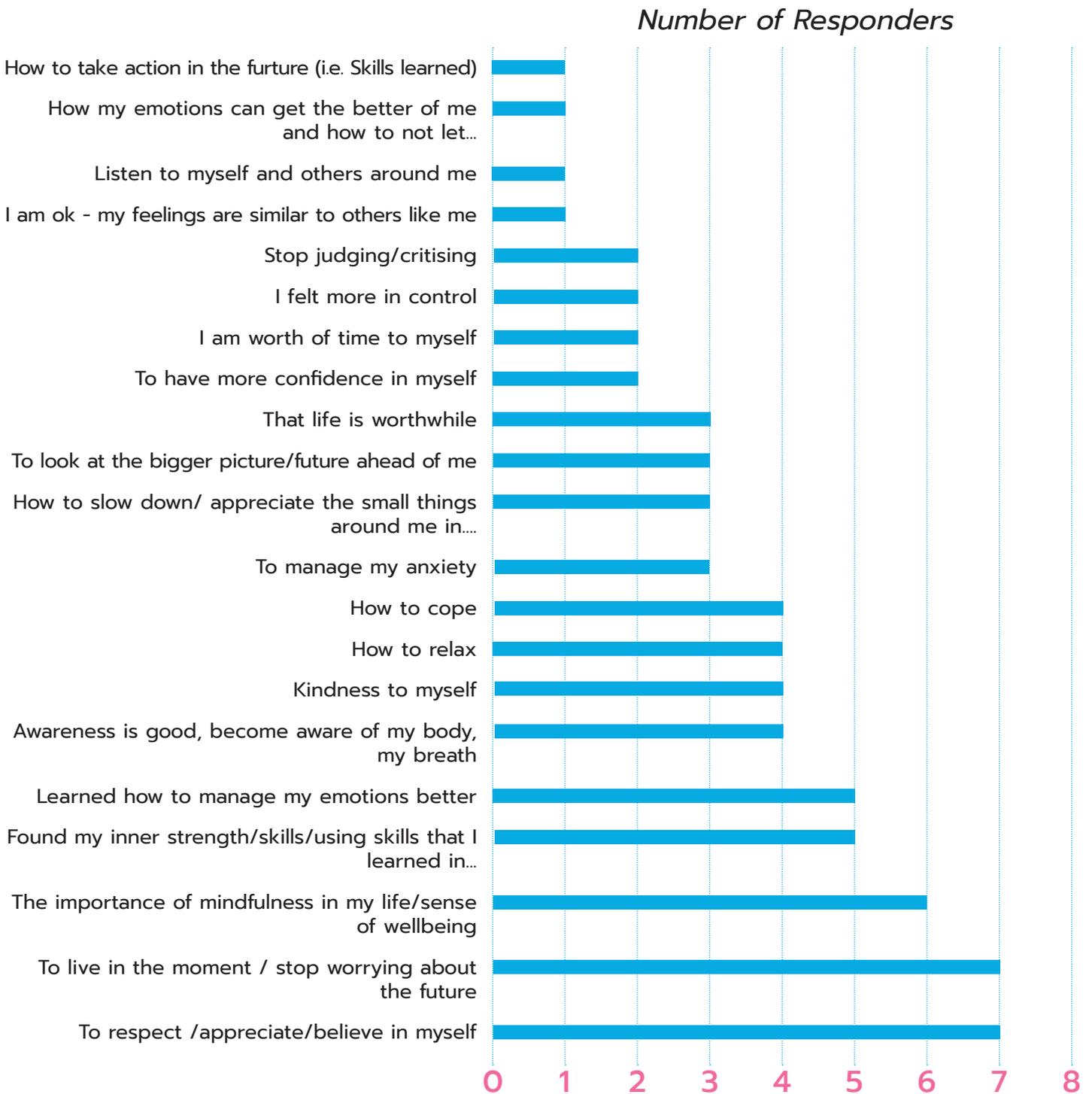
## Learning at a personal level

Many learnings were reported at a personal level. Most frequent among these were learning to 'respect', 'appreciate' and 'believe in themselves' again, see Figure 2. 'Learning to live in the moment' and 'appreciate the little things', and 'using mindfulness techniques' to manage emotions were also frequently reported learnings.

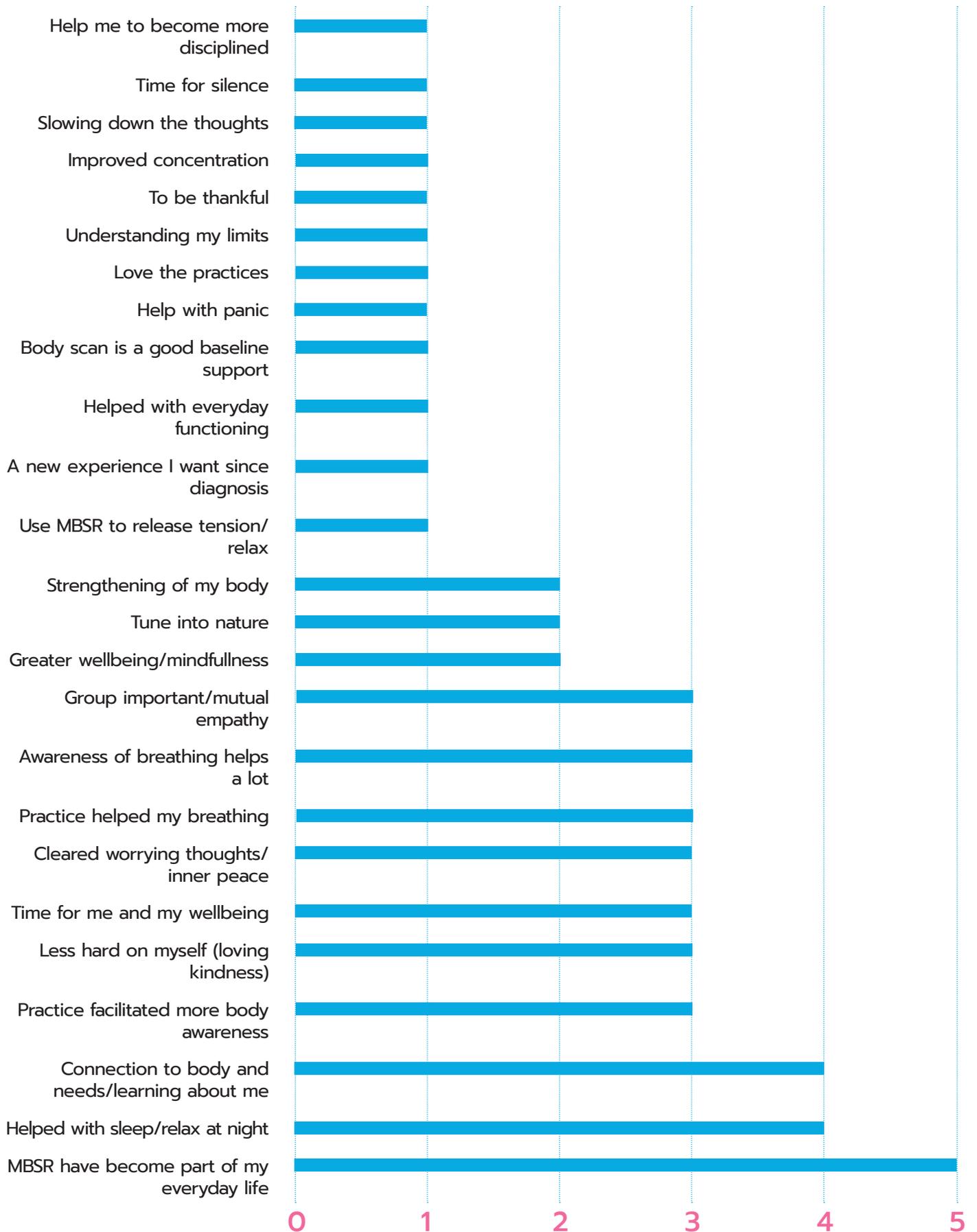
When asked to say more about the ways in which they were useful/supportive, participants also described a 'strengthening of their body' and 'learning to be grateful'. They also reported that learning 'MBSR practices', is one of the new experiences that they sought since their secondary cancer diagnosis. See Figure 3.

**Table 9:**  
**Benefits of the MBSR programme for people living with secondary cancer**

BENEFITS OF THE MBSR PROGRAMME TO PEOPLE LIVING WITH SECONDARY CANCER	N
<b>Mindfulness skills</b>	
Learned mindfulness techniques	10
Learned coping strategies	8
Increased awareness of my breath and body	2
<b>Emotional wellbeing</b>	
Feel calmer	3
Benefited emotionally	2
Worried less [about the future]	2
Looked forward to the future	2
<b>Improved situational anxiety</b>	
Managed hospital appointments	1
Felt calmer in medical situations	1
<b>Empowerment</b>	
Empowering and gained self-confidence	1
<b>Support</b>	
Peer support [could talk to people in the same situation]	3
<b>Overall</b>	
Benefited greatly	5



**Figure 2: What did you learn at a personal level?**



**Figure 3: Please say more about the ways in which they were useful/supportive**

## Monthly mindfulness meeting

The monthly mindfulness meeting was described as a 'refresher'. It was 'beneficial' and 'essential' to keep up the mindfulness practice. It is also 'relaxing' and again reminds people living with secondary cancer to 'accentuate the positive.'

*"But I found it was good. I think it gave me something positive to focus on. You are accentuating the positive all of the time, really, whether it's just concentrating on your breathing, or whatever the case may be. I find that good, and I find it relaxing. The only thing is, I tend to relapse very often, and again, I find these monthly meetings an ideal way of saying, 'Okay, I must go along on Monday, and I'm going to be great for the rest of the week until the next one.' I mean, the best of intentions, but at the same time, I know if I stopped coming, I wouldn't be doing anything. It is good. I do find the exercises good. Yes, I enjoy it."*

FG201

## LIMITATIONS

We must acknowledge that this study has several limitations - we used self-reported instruments to collect data, which may affect the accuracy of the results. The EORTC QLQC30 is a validated instrument to measure Quality of Life, however, some questions were not included as they were deemed to be too sensitive and/or irrelevant for this patient group. The numbers who completed the questionnaires upon completion of the MBSR programme were just over one-third of those enrolled. Reminders were not sent and non-responders may have had different experiences.



# CONCLUSIONS

This study demonstrates that it is feasible to run the MBSE programme for people living with secondary cancer. While not all people enrolled in the programme completed all of the weekly classes, almost 60% completed 5 or more of the 8-week programme. Furthermore, the MBSR programme was recommended to people with secondary cancer by all members of the focus group who had previously completed it.

This study shows multiple benefits of the MBSR program for all dimensions of psychological wellbeing measured (anxiety, depression, worry, concentration, stress, and sleep), physical wellbeing (pain and fatigue), social support and mindfulness of people with secondary cancer. Benefits to social functioning and overall quality of life were also observed.

Learning a variety of mindfulness techniques, including body scan, check in and loving kindness to name just a few, was appreciated by participants, and these were integrated into their lives. These practices helped to gain a sense of control over their health and also helped in times of increased anxiety, for example, hospital appointments and waiting for scan results.

The practice of mindfulness instructs participants to deliberately focus on the present and monitor their experiences at the time without passing judgment. As a result, participants experience some of the benefits through the mind-body connection, focusing on the positive as well as improved peer support from their peers in the groups. The monthly mindfulness meetings were also a valuable addition to the programme.

This study also showed that the MBSR program had a retained effect on wellbeing after ending the programme through continued use and integration of mindfulness techniques into the lives of those living with advanced cancer.

We must acknowledge that this study has several limitations - we used self-reported instruments to collect data, which may affect the accuracy of the results. The numbers who completed the questionnaires upon completion of the MBSR programme are small. Reminders were not sent and non-responders may have had different experiences.

However, despite these limitations, this study is one of the first evaluating the feasibility and impact of the MBSR programme on people living with secondary cancer. Multiple benefits to the lives of people living with secondary cancer are reported, and these persisted beyond the completion of the programme. It was recommended by all members of the focus groups to others living with secondary cancer.

We conclude that the MBSR Programme is both feasible and beneficial for people living with secondary cancer.

# ACKNOWLEDGEMENTS

We would like to thank all of the people who took the time to complete the questionnaires and to take part in the focus groups. We would also like to thank Ellen Joyce and all of the therapists in Cork Arc Cancer Support who do amazing jobs every day to support people living with cancer and their families.

# FUNDING

From: Breakthrough Cancer Research



# APPENDIX 1

## MBSR WEEK BY WEEK



### WEEK 1

- Coming into the present moment
- Check in practice
- Introductions
- Raisin practice
- Body scan practice

### WEEK 2

- The wandering mind
- Body Scan practice
- Inquiry and discussion
- Working with the wandering mind
- Walking down the street reflection
- Perception
- Mountain practice

### WEEK 3

- Body Scan practice
- Inquiry and discussion
- Pleasant events exploration
- Walking practice
- Role of thoughts
- Mindfulness of routine activity

### WEEK 4

- Awareness of breathing practice
- Inquiry and discussion
- 3 mindful breaths practice
- Unpleasant events exploration
- Mindful movement practice
- Stress definition and how it shows up

### WEEK 5

- Awareness of breathing practice
- Inquiry and discussion
- Stress calendar exploration
- Stress reactivity
- Mindful movement
- The barometer practice

### WEEK 6

- Open awareness practice
- Inquiry and discussion
- Responding to stress
- Mindful movement
- Stop practice
- Introducing the Morning of Mindfulness

#### MORNING OF MINDFULNESS

- Silence
- Introductions and guidance for the morning
- Practices
- Awareness of breathing
- Mindful walking
- Mountain meditation
- Mindful movement
- Body scan practice
- Kindness practice
- Breaking silence

### WEEK 7

- Open awareness practice
- Inquiry and discussion
- The stress/ exhaustion spiral
- Self care
- Mindful movement
- Kindness practice
- Gently being with the difficult practice

### WEEK 8

- Body Scan practice
- Week 8 is the rest of your life
- Review and discussion of course
- What do you want to remember
- Bringing the practice forward
- Supports for your practice
- Closing circle



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