Incorporating Mindfulness Intervention into Health Related Educational Intervention: Does it help?

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Foreword and Acknowledgements

Submitted in partial fulfillment of the requirements of the BSc Psychology degree, Reykjavík University, this thesis is presented in the style of an article for submission to a peer-reviewed journal.

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Abstract - English

Educational- and decision aids (ED-DA) have been developed to assist patients with their health related decisions but these interventions do not address patients´ distress. As distress can affect learning processes it is important to incorporate intervention into ED-DA that reduces distress. Mindfulness meditation (MM) has been found to reduce distress. The aim of the present study was therefore, to explore the impact of MM in affecting retention of medical information and examine the potential mediation role of distress and the moderating role of trait-mindfulness. Participants (N= 41) were randomly assigned to a MM group (N = 26) or CG (N = 15). Both groups received information about skin cancer and following that, they completed a questionnaire assessing their retention of the information. Results revealed that participants in the MM group retained significantly more of the health related information than the CG ($p < .05$). However, the intervention did not decrease distress and, therefore, the impact of the intervention on retention could not have been mediated by distress. Participants high on trait mindfulness did not have higher retention of the information than participants low on trait mindfulness. The results suggest that incorporating MM into existing ED-DA intervention might improve their effectiveness in assisting individuals with making an informed decision regarding their health and/or treatment decisions.

Abstract - Icelandic

Fræðslu- og ákvörðunartól (FOÁ) hafa verið þróuð í þeim tilgangi að aðstoða sjúklinga við að taka heilsutengdar ákvarðanir. Slík tól hafa hinsvegar ekki gert ráð fyrir að sjúklingar upplifi streitu þegar heilsutengd ákvörðun er tekin. Streita getur haft mikil áhrif á nám og minni og er því mikilvægt að bæta við inngripi í FOÁ sem dregur úr streitu. Núvitundar ástund (NÁ) er inngrip sem hefur dregið úr streitu. Þar af leiðandi var markmið rannsóknarinnar að skoða hvort NÁ hefði áhrif á varðveislu heilsu tengdra upplýsinga, sem og að skoða áhrif mögulegra miðlandi áhrifa af streitu og temprunar áhrif af núvitundar eiginleikum þátttakenda. Þáttakendur (N = 41) voru valdir að handahófi í NÁ hóp (N = 26) eða viðmiðurnarhóp (N = 15). Báðir hópar fengu upplýsingar um húðkrabbamein og svöruðu þar á eftir minnisprófi tengdu upplýsingunum. Niðurstöður sýndu að þátttakendur í NÁ hópi mundu meira af heilsutengdu upplýsingum en viðmiðunarhópur ($p < 0,05$). Samt sem áður dró inngripið ekki úr streitu og gátu því áhrif inngripsins á minni ekki verið miðluð af streitu. Þátttakendur sem mældust með háa núvitundar eiginleika skoruðu ekki hærra á minnisprófinu en þeir sem mældust með lága núvitundar eiginleika. Niðurstöður rannsóknarinnar gefa til kynna að NÁ innlimað í FOÁ gæti aukið jákvæð áhrif FOÁ með að aðstoða einstaklinga með að taka upplýsta ákvarðanir tengdar heilsu.

Keywords: health psychology, mindfulness, educational- decision aid, skin cancer, retention

Incorporating Mindfulness Intervention into Health Related Educational Intervention: Does it help?

During the last decades, the importance of involving patients in the decision-making process regarding their health has increased (O'Connor et al., 1996). Therefore, the importance of informing patients about their possible options has become greater. To that end, several health related educational interventions or decision aids (ED-DA), have been developed and tested (Stacey et al., 2014).

ED-DA have been used on a wide array of patients with good results (Green M.J., Peterson S.K., Baker M., & et al, 2004; Hack, Degner, Watson, & Sinha, 2006; O'Connor et al., 1996; Stacey et al., 2014). In a recent review of the literature by Stacy et al (2014) it was reported that patients that used ED-DA expanded their knowledge, had better understanding of the harms and benefits of their decisions and had more realistic expectations of their treatment. However Stacy et al (2014) also noted some limitations regarding ED-DA, in particular ED-DA seem to do no better in reducing anxiety and depression than comparison conditions or usual care (Bekker, Hewison, & Thornton, 2004; Murray et al., 2001; Stacey et al., 2014; Whelan et al., 2003). As discussed below, this limitation may affect the effectiveness of ED-DA as anxiety and depression can affect memory and decision processes (Klein & Boals, 2001; Leykin, Roberts, & DeRubeis, 2011; Segerstrom & Miller, 2004; Stacey et al., 2014).

Making a treatment decision can be challenging for patients and can increase patients distress (Gwede et al., 2005). Additionally, many patients that use ED-DA have recently been diagnosed with their disease (Stacey et al., 2014) and high percentages of newly diagnosed patients report being highly distressed (L E Carlson et al., 2004). These finding suggest that users of ED-DA, treatment seekers and newly diagnosed patients, can be distressed both before and while using ED-DA. Several studies have shown that both distress (Kessels, 2003;

Klein & Boals, 2001; Segerstrom & Miller, 2004) and depression (Leykin et al., 2011; Stacey et al., 2014) can affect memory, the decision process and the retention of medical information presented to the patient. For instance, individuals with high depression symptoms are thought to make less productive decisions (Leykin et al., 2011). Additionally, highly stressed participants have been found to perform worse on working memory tasks than control groups (Klein & Boals, 2001) and retain less information regarding medical information than control groups (Kessels, 2003). Moreover, findings have shown that learning under stress can weaken memory (Schwabe & Wolf, 2010). These findings suggest that it is important to incorporate interventions that decrease distress into the ED-DA.

One intervention that has been found to decrease distress under diverse conditions is mindfulness meditation (MM) (Davis & Hayes, 2011). MM refers to meditation practice that trains awareness of the present moment (Ludwig, 2008). The main goal of mindfulness is to maintain awareness from one moment to another and allowing beliefs, thoughts and emotions to pass without judgment or strong attachments. One of the main focus of MM is developing a greater sense of balance in well-being and emotional regulation (Ludwig, 2008). MM has been found to have positive effects on a variety of factors, such as decreased distress (Brown & Ryan, 2003; Linda E. Carlson, Speca, Faris, & Patel, 2007; Carmody & Baer, 2009) and to boost cognitive abilities (Chambers, Lo, & Allen, 2008; Chiesa, Calati, & Serretti, 2011; Davis & Hayes, 2011; Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010), such as attention and memory (Chiesa et al., 2011). Furthermore, researches have shown that MM practice can improve working memory and emotional regulation (Jha et al., 2010). There is an ongoing debate over the required time period or number of MM intervention sessions necessary to be successful (Carmody & Baer, 2009). The majority of studies suggest that MM has to be practiced for eight weeks for it to have an affect (Linda E. Carlson et al., 2007; Grossman, Niemann, Schmidt, & Walach, 2004; Hölzel et al., 2011). However, it has been found that

shortened versions of MM training, brief mindfulness trainings (BMT), can also be effective (Creswell, Pacilio, Lindsay, & Brown, 2014; Dickenson, Berkman, Arch, & Lieberman, 2012). Studies have revealed that BMT sessions as brief as 10 minutes can be effective (Dickenson et al., 2012).

It has been suggested that mindfulness is a trait, in other words mindfulness is assessed as a general tendency to be mindful in daily life (Lau et al., 2006). It has been concluded that the level of trait-mindfulness can predict the success of a mindfulness treatment (Cousin & Page, 2015; Shapiro, Brown, Thoresen, & Plante, 2011). Findings propose that individuals higher in trait-mindfulness benefit more from mindfulness in terms of an increase in well-being and decrease in stress (Shapiro et al., 2011). Furthermore individuals low on trait-mindfulness are thought to need longer or more severe forms of therapy to get the same outcomes from mindfulness training as individuals that are high in trait-mindfulness (Cousin & Page, 2015).

The aforementioned literature suggests that ED-DA are a promising way of increasing a patient´s knowledge, however ED-DA have not been found to reduce distress which is of concern as distress does not only affect quality of life it can also have a negative impact on memory and learning. To address this limitation, the present study will examine if MM will increase the effectiveness of ED-DA on increasing retention of medical information and reducing distress particularly among those high on trait-mindfulness. The goal was, thus, to examine the effects of MM on retention of medical information and examine through which mechanisms these effects occur and for whom the intervention is most effective. Based on previous literature it was hypothesized that: 1) Participants in the intervention group will retain more of the medical information presented to them, a test covering information about skin cancer, than the control group; 2) Distress will decrease in the intervention group but not in the control group; 3) The beneficial effects of the intervention on retention of the

information will be mediated by its positive effects on distress: 4) The intervention will be more effective for individuals high on trait-mindfulness, than for individuals low on trait-mindfulness.

Method

Participants

Fifty-one university students volunteered to participate in the current study. They were recruited from a participant pool that was made up of first and second year undergraduate psychology students in Reykjavík University, Iceland. For their participation they were offered a predetermined amount of course credits. Of these 51 students 10 were not included in the final sample. Thereof, five students did not attend the second day of the study, one student did not complete the questionnaires and four participants met the exclusion criteria. Of those that met the exclusion criteria two had hearing/sight problems and two suffered from panic disorders.

Forty-one students (14.6% males, 85.4%; females) were enrolled in the final sample. The mean age was 23.9 years (SD = 4.2,) and ranged from 19 to 38 years. Participants were randomly divided into either the experimental group (N= 26) or the control group (CG) (N=15).

Measures and Materials

Background measurements. A six-item questionnaire was used to gather background information (see Appendix A). The background questionnaire included questions concerning exclusion criteria, age and gender.

Mindfulness Attention Awareness scale (MAAS). Trait-mindfulness was assessed with the MAAS (Brown & Ryan, 2003). The MAAS consists of 15 items that reflect mindfulness and mindlessness in everyday life (see Appendix B). The assessment included attention to actions, awareness, thoughts and emotions. Items were rated on a six point Likert

scale from 1 (almost never) to 6 (almost always). Scoring the MAAS involved calculating the mean score of the 15 items where the lowest possible outcome was one, representing low mindfulness, and the highest outcome was six, suggesting greater mindfulness. The MAAS is thought to be a valid and reliable questionnaire with good internal consistency ($\alpha = 0.82$ to 0.87) (Brown & Ryan, 2003). Internal consistency was also good in this study ($\alpha = 0.81$). The MAAS was assessed before the intervention.

The Positive and Negative Affect Schedule (PANAS). The PANAS (see Appendix C) is a brief 20-item self-report measure where each item describes different positive or negative feelings or emotions (Watson, Clark, & Tellegen, 1988). Participants were asked to respond to the questionnaire regarding their current emotional state on a 5-point Likert scale, from (1) very slightly or not at all to (5) extremely. Ten items assessed positive affect (PA) that measured the participants' report of e.g. feeling happy, energized and active. Additionally, ten items assessed negative affect (NA) that measured for e.g. guilt, fear and general distress. Participants were asked to rate the extent of their emotional state at the particular moment in which they answered the questionnaire. The scale is scored by adding up the items so the scores for both NA and PA can range from 10 to 50 points. The reliability of the scales have been found to be acceptably high (PA: $\alpha = .86$ to .90, NA: $\alpha = .84$ to .87) (Watson et al., 1988). Internal consistency for this study was; PA: $\alpha = .90$, NA: $\alpha = .87$, and therefore evaluated acceptably high. In the present study the PANAS was administered before the intervention.

Acute Distress Measurement (ADM). The measurement used to measure acute distress was a modified version of a scale developed by Valdimarsdottir, Agustdottir, Zakowski, Bovbjerg and Zacchira (2014) (see Appendix D). The scale consisted of seven questions about emotions. Participants were asked to reply to the items considering their current emotions in the precise moment when they answered the questions. The items were

rated on 5-point Likert scale ranging from (1) very slightly or not at all to (5) extremely. The questions were all added up to a total score. However, to calculate a total score, positive emotions such as feeling relaxed, happy and mindful were reverse-coded. Therefore, a higher number symbolized acute distress and a lower number well-being. Internal consistency for the measurement in this study was acceptable, $\alpha = .72$ (for measure before intervention) and $\alpha = .68$ (measured after intervention). The ADM was administered before and after the intervention.

Intervention – Brief Mindfulness Training. For the mindfulness intervention, a brief mindfulness training (BMT) created by Margrét Bárðardóttir (Bárðardóttir, n.d.) was used. The BMT was a nine minute long task, where participants practiced focus breathing and body scanning, two of the many techniques of mindfulness practice. The CG participants listened to an audiobook of similar length.

Retention Test. A retention test was conducted to measure participants' retention from the skin cancer presentation (see Appendix E). Researchers constructed the test and built the questions based on the material from the skin cancer presentation. The test contained 10 multiple-choice questions and 20 true or false questions. The score of the 30 questions was added to a total score of retention. The highest possible score on the test was 30 points and the lowest possible score was 0 points, where a higher score indicated more retention and a lower score indicated less retention.

Skin-Cancer Presentation. The presentation was mainly based on information gathered from a pamphlet issued by The Cancer Society in Reykjavík (Mooney, 1999). The pamphlet discusses in great detail causes, risk factors and consequences of skin cancer. Furthermore it addressed different kinds of skin-cancer and which symptoms to be aware of. The presentation was made in PowerPoint and contained pictures and text regarding the

material. The text was read out loud so participants would not miss any part of the presentation.

Procedure

A few days before the study, participants received information, through email, regarding the study (see Appendix F). The information informed the participants what was expected of them and what consisted in their participation. Participants were not informed of which group they belonged to (control or intervention), the study hypothesis or the main purpose of the study. The information was withheld from participants to prevent bias in the results. After the study was conducted participants were debriefed about the purpose of the study (see Appendix G), as were participants in CG informed that they could receive the BMT if they desired.

The study was performed in a computer classroom in Reykjavík University. Each student was seated in front of a computer and given headphones. Between every computer were dividing walls so participants would be isolated from each other, and would not be interrupted by other students. The study was conducted on two consecutive days. On both days, participants received instructions regarding the experiment through computers, which minimized the interference from a researcher.

During the first session participants began by reading and signing an informed consent form (see Appendix H). Thereafter participants answered questionnaires including a background questionnaire, the MAAS, PANAS and ADM. After completing the questionnaires participants listened to either a BMT (intervention group) or an audio book (CG).

During the second session, participants listened to the same BMT or audio book depending on which group they belonged to after which they watched the skin cancer

presentation. After the completion of the skin cancer presentation participants answered the retention test and ADM.

Ethical issues

There was a possibility that the study could evoke discomfort in the participants or even distress in some cases as the study dealt with a sensitive issue, skin cancer, and participants answered personal questions about their emotions and background. When the participants signed the informed consent they were reminded that they could withdraw from the study at any given time. The study was reported to the Data Protection Authority in Iceland and was given approval from the BSc Psychology committee at RU before the study was conducted.

Design and data analysis

The study design was a randomized control trial with one intervention group that practiced BMT and one CG that did not practice BMT. Statistical calculations and analyses were conducted using SPSS software version 20.

Descriptive statistics were calculated to obtain information about participant´s characteristics and for study variables. Moreover, Pearson's correlation was conducted between study variables. To examine if the intervention affected the retention score, an independent t-test was performed between groups. To address if acute distress would decrease after the intervention a 2 (groups: intervention and control) by 2 (time: before and after the intervention) repeated ANOVA was conducted. A 2 (groups: intervention and CG) by 2 (MAAS: high- and low MAAS) ANOVA was used to examine if the benefit of intervention differed between groups low- and high on the MAAS. Participants were divided into high- and low MAAS groups based on a median split. The level of significance was set at $p < .05$ in all analyses

Results

Descriptive Statistics

Table 1 shows number of participants, highest- and lowest range, mean score and standard deviation across the MAAS and ADM. There was not a significant difference between CG and the intervention group for the MAAS, $t(38) = -.13$, $p > .05$, or the ADM administered before the intervention, $t(39) = .91$, $p > .05$. However, there was a significant difference between groups in the ADM after the intervention, $t(31) = .56$, $p < .05$.

Table 1

Descriptive Statistics for MAAS and ADM

Variable	Mean	*SD*	Highest range	Lowest range
MAAS				
Control group	3.8	0.5	4.6	2.6
Intervention group	3.8	0.7	5.3	2.6
ADM				
Control group				
Before intervention	15.7	3.9	23.0	9.0
After intervention	13.5	3.4	21.0	8.0
Intervention group				
Before intervention	15.5	3.9	24.0	10.0
After intervention	14.2	4.1	22.0	8.0

Table 2 reveals inter correlation between study variables administered before the intervention, the MAAS, ADM and the PANAS. As expected there was a significant positive correlation between the MAAS and PANAS positive ($r = .28$, p (one tailed) < .05) and significant negative correlation between the MAAS and PANAS negative ($r = -.30$, p (one tailed) < .05). The ADM was not significantly correlated with the MAAS or the PANAS.

Table 2

Inter Correlation between Study Variables

	MAAS	ADM	PANAS Positive	PANAS Negative
MAAS	-	-.19	.28*	-.30*
ADM	-.19	-	-.01	.22
PANAS Positive	.28*	-.01	-	-.02
PANAS Negative	-.30*	.22	-.02	-

Note. * p (one tailed) < .05

Outcome measures

To test the hypothesis that the intervention group would retain more information from the skin cancer presentation than the CG, an independent t-test was performed. Mindfulness practice was significantly related to participants' retention of the skin-cancer information,

$t(39) = -2.1, p < .05$. Participants in the intervention group retained on average more information, of the skin cancer information, than the CG (see figure 1).

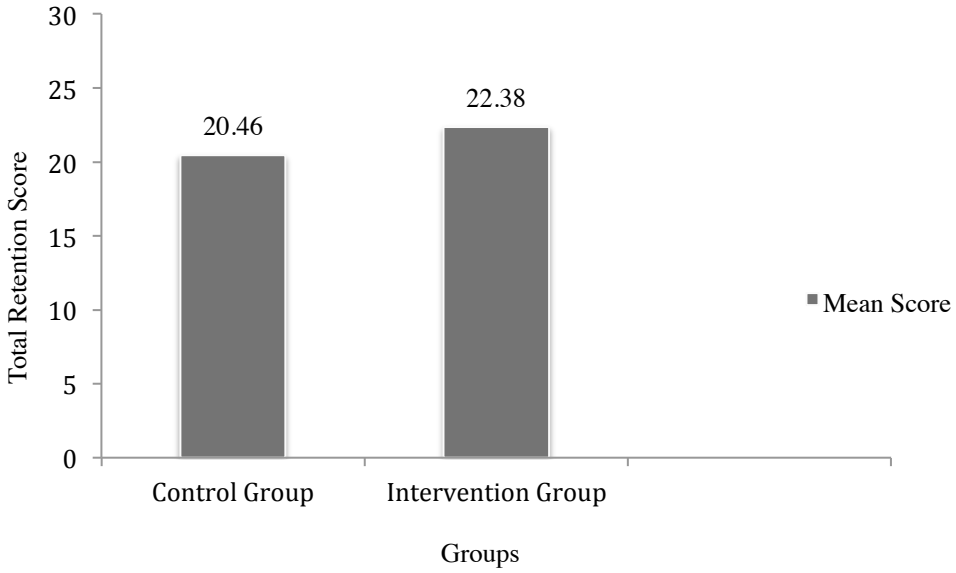

Figure 1. Average retention score, of skin cancer information, among the CG and the intervention groups.

Repeated ANOVA was conducted to examine if acute distress decreased after the intervention in the intervention group, but not in the CG. The main effect for time was significant, $F(1,39) = 18.7, p < .05$. However, the main effect for group was not significant, $F(1,39) = 1.5, p > .05$, and the interaction between group and time was not significant, $F(1,39) = .9, p > .05$. As seen in figure 2, acute distress decreased in both groups after the intervention. Given that the MM intervention did not affect distress, the hypothesis that the beneficial effects of the intervention on retention of the information would be mediated by distress could not be tested, as the basic assumption of the mediation model is that the interventions affect the mediator or distress in this case.

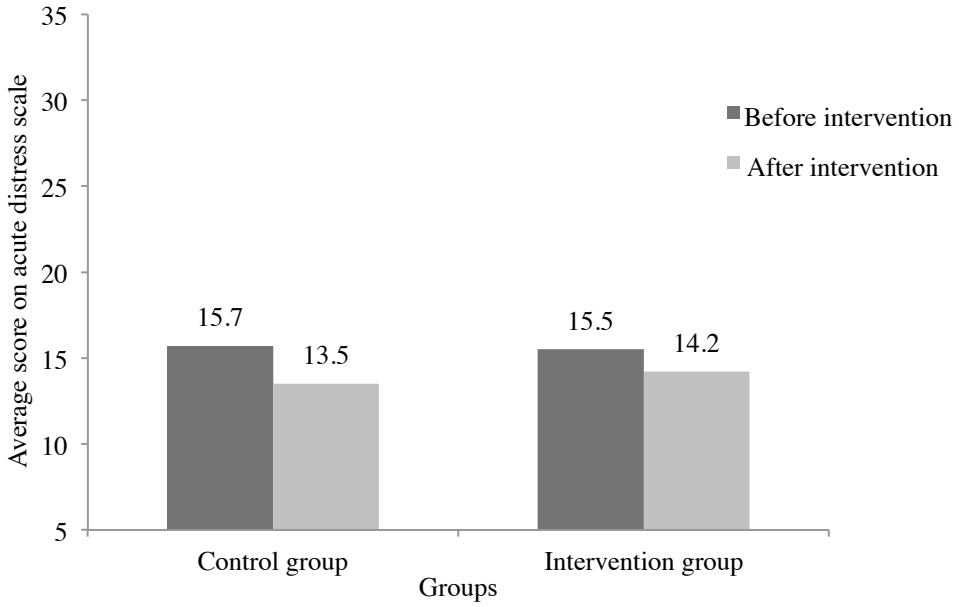

Figure 2. Average score on acute distress scale between groups, before and after intervention.

To examine the hypothesis that the intervention would be more beneficial for those high on trait-mindfulness, than low on trait-mindfulness, a 2 (groups: intervention group and CG) by 2 (MAAS group: low- and high on MAAS) multiple ANOVA was computed. For retention of skin cancer information the results revealed that the main effects for intervention group, $F(1,36) = .34$, $p > .05$, and MAAS group, $F(1,36) = .90$, $p > .05$, were not significant. However, the interaction between the intervention group and the MAAS group was significant, $F(1,36) = 11.5$, $p < .05$.

For further examination of this interaction, t-tests were computed separately for the intervention groups and CGs, between the MAAS groups and a mean retention scores. The analysis for the intervention group showed that there was no difference in retention between high- and low MAAS groups $t(23) = 1.96$, $p > .05$. The CGs, on the other hand, differed significantly in retention between high- and low MAAS groups $t(13) = -2.7$, $p < .05$. As shown in Figure 3, the CG participants that reported low levels of trait-mindfulness retained less information of the skin cancer information than the intervention group that reported high levels of trait-mindfulness.

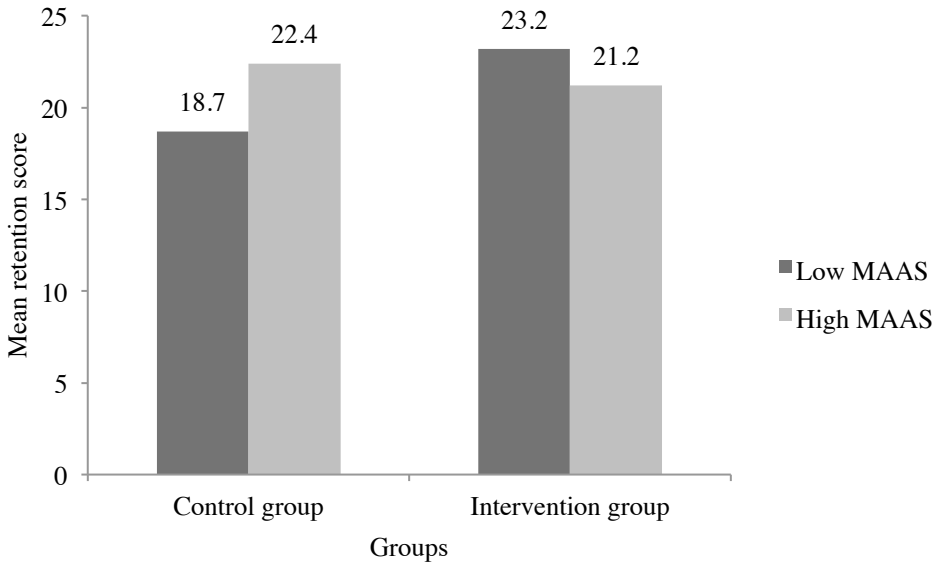

Figure 3. Repeated Measures ANOVA with Interaction Between Group and Score on MAAS in Mean Retention Score.

Discussion

The main goal of the present study was to examine if mindfulness (MM) practice could increase participants retention of medical information as well as to examine the potential mediating role of distress and moderating role of trait-mindfulness. The results showed that participants that did practice mindfulness, before they were presented with the health related information, had better retention of the information than the CG. Mindfulness did not reduce distress, thus the hypothesis that distress would mediate the beneficial effects of MM on the retention of health related information was not supported.

High trait-mindfulness was not associated with the retention of health related information. Results indicated that low trait-mindfulness was associated with a lower retention score of information in the CG, while there was no difference in the retention of information between low and high trait-mindfulness groups in the intervention group.

The finding that participants in the MM group retained more medical information than the CG is consistent with the study hypothesis and is in agreement with existing studies

that found that MM increases cognitive abilities such as memory and attention (Chambers et al., 2008; Chiesa et al., 2011; Davis & Hayes, 2011; Jha et al., 2010).

Inconsistent with previous studies (Brown & Ryan, 2003; Linda E. Carlson et al., 2007; Carmody & Baer, 2009), MM in the present study was not associated with lower levels of distress. One possible explanation is that in the present study, distress was assessed with a modified version of distress measurement (Acute Distress Measurement) rather than a standardized measurement. Therefore, it is possible that the measurement used to measure distress in the present study was not sensitive enough to capture the effects of MM on distress.

The hypothesis that one of the mechanisms underlying the effectiveness of MM on the retention of information is reduction in distress following MM intervention could not be tested, as the mediation analysis requires that the groups differ in distress.

The findings revealed that the MM intervention was not more effective for individuals high on trait-mindfulness. That is not parallel to previous findings, were participants high on trait-mindfulness were more likely to increase their ability than controls (Cousin & Page, 2015; Shapiro et al., 2011).

While trait-mindfulness was not associated with the retention of the skin cancer information in the intervention group, it was related in the CG with individuals with low trait-mindfulness retaining less information than the CG participants with high levels of trait-mindfulness. In fact results showed that individuals that did not get intervention and were low in trait-mindfulness had the lowest retention scores of all groups. This is consistent with studies that have shown that mindfulness is associated with higher cognitive abilities (Chambers et al., 2008; Chiesa et al., 2011; Davis & Hayes, 2011; Jha et al., 2010). Moreover, it is also possible that those low on trait-mindfulness were more distressed based on a correlation between the MAAS and positive and negative affect as measured by

PANAS. The correlation between the measurements indicated that participants low on trait-mindfulness (MAAS) were more likely to express higher negative affect and lower positive affect. The correlation between the MAAS and the PANAS were consisted with previous findings (Brown & Ryan, 2003). Unlike participants in the CG, the participants in the intervention group that were low on trait-mindfulness did not retain less information than those high in trait-mindfulness. These findings suggest that the mindfulness intervention helped those with low trait-mindfulness to retain information. The overall findings suggest that mindfulness practice can help participants increase their retention of information about skin-cancer and may be particularly effective for individuals low in trait mindfulness.

The major strength of this study was how well structured the research condition was. All participants obtained the same information from a screen and other components of the research were practically the same for every participant.

There were several limitations to the present study. An obvious limitation was the small and homogeneous sample size. Hence, it is not possible to generalize the results to other university students of to the general population. Although the study structure was viewed as the strength of the study, the structure of the study differed between groups in several ways. For example, the study was conducted at different times in a week. The CG participated in the study earlier in the week than the intervention group. That difference could possibly have an effect on participants' motivation and physical condition to engage in the mindfulness training as well as the whole study. Furthermore, more participants were present in the research room when the intervention group performed the study, compared to when the CG performed the study. It is thus possible that the intervention group suffered from more disturbances from other participants, than the CG. A non-standardized measure (The Acute Distress Scale) was used to assess distress. The Acute Distress Scale had rather low internal consistency in the present study. Other questionnaires had high internal consistency despite

their translation were not standardized. Moreover, the questions in the retention test to the skin cancer information were overly homogenous, that reflected the participants' high total retention score. Moreover, validity and reliability of the retention test can be argued. Future studies should emphasize better settings of the study, using standardized measurements and most importantly use distress measurement with higher validity. Physical measurements, such as blood pressure and heart rate, could also be used to measure distress. Furthermore, future studies should aim to include larger and more diverse samples.

Despite these limitations, the findings of the present study suggest that incorporating mindfulness training into existing ED-DA might increase their effectiveness in assisting patients with making informed decisions about their health and treatment.

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Appendix A

Background Questions

Leiðbeiningar: Vinsamlega svaraðu eftirfarandi spurningum eftir bestu getu með því að KROSSA í viðeigandi reit eða SKRIFA á línurnar. Krossaðu aðeins í EINN REIT við hverri spurningu.

a) Hvert er kyn þitt?

- ☐ Karlkyn
- ☐ Kvenkyn
- ☐ Annað

b) Hver er aldur þinn? _____

c) Hvert er þitt fyrsta tungumál? _____

d) Ert þú greind(ur) með felmtursröskun (*panic disorder*), sértæka fælni (*specific phobia*) við sjúkdóma eða nálar eða aðra geðröskun sem gæti haft áhrif á þátttöku þína í rannsókninni?

- ☐ Já
- ☐ Nei
- ☐ Veit ekki

e) Ert þú greind(ur) með sjón- eða heyrnarskerðingu sem gæti haft áhrif á þátttöku þína í rannsókninni?

- ☐ Já
- ☐ Nei
- ☐ Veit ekki

f) Hversu litla eða mikla reynslu hefur þú af núvitund (mindfulness) og/eða öðrum hugleiðsluaðferðum?

- ☐ Mjög litla eða enga
- ☐ Frekar litla
- ☐ Í meðallagi
- ☐ Frekar mikla
- ☐ Mjög mikla

Appendix B

Mindful Attention Awareness Scale (MAAS)

Leiðbeiningar: Hér fyrir neðan eru fullyrðingar um upplifanir þínar í daglegu lífi. DRAGÐU HRING um eina tölu á kvarðanum 1 til 6 sem segir til um hversu oft eða sjaldan þú upplifir það sem fullyrðingarnar lýsa. Svaraðu eftir því hver upplifun þín er í raun og veru en ekki hvernig þér finnst hún ætti mögulega að vera. Svaraðu hverri fullyrðingu óháð öðrum fullyrðingum á listanum.

1 Næstum alltaf	2 Mjög oft	3 Frekar oft	4 Frekar sjaldan	5 Mjög sjaldan	6 Næstum aldrei

1.	Það kemur fyrir að ég upplifi einhverja tilfinningu og verði ekki meðvitaður/meðvituð um hana fyrr en nokkru síðar.	1	2	3	4	5	6
2.	Ég brýt hluti eða helli niður vegna kæruleysis, eftirtektarleysis eða af því ég er að hugsa eitthvað annað.	1	2	3	4	5	6
3.	Mér finnst erfitt að halda einbeitingu við það sem er að gerast á líðandi stundu.	1	2	3	4	5	6
4.	Ég hef tilhneigingu til að ganga hratt þangað sem ég ætla að fara, án þess að veita því athygli sem ég upplifi á leiðinni.	1	2	3	4	5	6
5.	Ég hef tilhneigingu til að taka ekki eftir tilfinnigum svo sem líkamlegri spennu eða óþægindum fyrr en þær verða mjög greinilegar.	1	2	3	4	5	6
6.	Ég gleymi nafni manneskju nánast um leið og mér hefur verið sagt það í fyrsta skipti.	1	2	3	4	5	6
7.	Það er eins og ég sé „á sjálfsstýringu“ án mikillar vitundar um það sem ég er að gera.	1	2	3	4	5	6
8.	Ég flýti mér með viðfangsefni mín án þess að vera eftirtektarsamur/ eftirtektarsöm um þau.	1	2	3	4	5	6
9.	Ég einblíni svo á markmiðið sem ég vil ná að ég missi tengslin við það sem ég er að gera í augnablikinu til að ná því.	1	2	3	4	5	6
10.	Ég sinni verkefnum mínum eða vinnu á sjálfvirkan hátt, án þess að vera meðvitaður um hvað ég er að gera.	1	2	3	4	5	6
11.	Ég stend mig að því að hlusta á einhvern með öðru eyranu, gerandi eitthvað annað á sama tíma.	1	2	3	4	5	6
12.	Ég keyri á stað líkt og „á sjálfsstýringu“ og velti því síðan fyrir mér hvers vegna ég fór þangað.	1	2	3	4	5	6
13.	Mér finnst ég bera upptekin(n) af framtíðinni eða fortíðinni.	1	2	3	4	5	6
14.	Mér finnst ég gera hluti án þess að hafa athyglina við það.	1	2	3	4	5	6
15.	Ég fæ mér snarl án þess að gera mér grein fyrir að ég sé að borða.	1	2	3	4	5	6

Appendix C

Positive and Negative Affect Schedule (PANAS)

Leiðbeiningar: Eftirfarandi listi samanstendur af 20 orðum sem lýsa ólíkri líðan eða tilfinningum. Vinsamlegast lestu hvert atriði og gefðu til kynna hvernig þér líður í AUGNABLIKINU með því að merkja í EINN reit í HVERJUM lið. Vertu hreinskilin(n) í svörum þínum og reyndu að dvelja ekki of lengi við hvert atriði.

	Mjög lítið eða ekkert	Lítið	Nokkuð	Mikið	Mjög mikið
a) Áhugasamur/áhugasöm	☐	☐	☐	☐	☐
b) Stessaður/stressuð	☐	☐	☐	☐	☐
c) Eftirvæntingarfull(ur)	☐	☐	☐	☐	☐
d) Í uppnámi	☐	☐	☐	☐	☐
e) Kraftmikil(l)	☐	☐	☐	☐	☐
f) Sakbitin(n)	☐	☐	☐	☐	☐
g) Hrædd(ur)	☐	☐	☐	☐	☐
h) Óvinveitt(ur)	☐	☐	☐	☐	☐
i) Full(ur) af eldmóði	☐	☐	☐	☐	☐
j) Stolt(ur)	☐	☐	☐	☐	☐
k) Pirraður/pirruð	☐	☐	☐	☐	☐
l) Vökul(l)	☐	☐	☐	☐	☐
m) Skömmustuleg(ur)	☐	☐	☐	☐	☐
n) Innblásin(n)	☐	☐	☐	☐	☐
o) Taugaóstyrk(ur)	☐	☐	☐	☐	☐
p) Ákveðin(n)	☐	☐	☐	☐	☐
q) Athugul(l)	☐	☐	☐	☐	☐
r) Óróleg(ur)	☐	☐	☐	☐	☐
s) Virk(ur)	☐	☐	☐	☐	☐
t) Óttaslegin(n)	☐	☐	☐	☐	☐

Appendix D

Acute Distress Measure

Leiðbeiningar: Hér á eftir eru nokkur orð sem lýsa tilfinningum fólks. Vinsamlegast DRAGÐU HRING um töluna sem best lýsir styrk hverrar tilfinngar miðað við það hvernig þér líður NÚNA.

	Mjög lítið eða ekkert	Lítið	Nokkuð	Mikið	Mjög mikið
u) Afslöppuð/afslappaður	☐	☐	☐	☐	☐
v) Kvíðin(n)	☐	☐	☐	☐	☐
w) Óörugg(ur)	☐	☐	☐	☐	☐
x) Glöð/glaður	☐	☐	☐	☐	☐
y) Áhyggjufull(ur)	☐	☐	☐	☐	☐
z) Pirruð/pirraður	☐	☐	☐	☐	☐
aa) Athugul(l)	☐	☐	☐	☐	☐

Appendix E

Retention Test Covering Skin Cancer Information

Leiðbeiningar: Próf þetta byggir á efni upplýsingatextans um húðkrabbamein og er í tveimur hlutum. Hluti I inniheldur fjölvalsspurningar og hluti II inniheldur satt/ósatt spurningar. Vinsamlegast svaraðu prófinu eftir bestu getu en ekki dvelja of lengi við hverja spurningu.

HLUTI I: Fjölvalsspurningar.
Hér fyrir neðan eru 10 fjölvalsspurningar um húðkrabbamein. Svaraðu hverri þeirra með því að DRAGA HRING um bókstafinn við hlið svarsins. AÐEINS EINN svarmöguleiki er réttur við hverri spurningu.

1) Hversu margir sólbrunar í æsku auka áhættuna á húðkrabbameini síðar meir um 80%?
    A. 5
    B. 7
    C. 8
    D. 10

2) Hvað af eftirtöldu var nefnt sem forvörn við því að fá húðkrabbamein?
    A. Forðast sjó eða sundlaugar í sólskini
    B. Nota lítið af sólarolíu við sólböð
    C. Forðast sól um miðjan daginn
    D. Nota sólarvörn að styrkleika 15

3) Hjá hvaða hópi hefur orðið mest aukning í tíðni sortuæxla undanfarin ár?
    A. Ungum konum
    B. Börnum
    C. Eldri konum
    D. Eldri körlum

4) Hversu margir greinast með sortuæxli að meðaltali á ári samkvæmt Krabbameinsskrá Íslands?
    A. 40 manns
    B. 45 manns
    C. 50 manns
    D. Enginn svarkostur réttur

5) Hver eftirtalinna staðhæfinga um sortuæxli er rétt?
    A. Sortuæxli getur dreift sér í önnur líffæri og valdið dauða
    B. Því dýpra sem krabbameinið vex, því verri eru horfurnar
    C. Lækningartíðni grunnfrumukrabbameina er 95%
    D. Allir svarkostir eru réttir

6) Mikil útfjólublá geislun í skamman tíma getur orsakað:
    A. Grunnfrumukrabbamein
    B. Flöguþekjukrabbamein
    C. Sortuæxli
    D. Bæði A og C er rétt

7) Húðkrabbamein eru algengari hjá fólki sem er með:
    A. Blá, grá eða græn augu
    B. Ljósa húð
    C. Bæði A og B er rétt
    D. Hvorki A né B er rétt

8) Hver eftirtalinna staðhæfinga er rétt varðandi tíðni sortuæxla undarfarna fimm áratugi?
    A. Nýgengi og dánartíðni meðal kvenna hefur aukist
    B. Nýgengi og dánartíðni meðal karla hefur aukist
    C. Nýgengi hefur aukist en dánartíðni haldist stöðug
    D. Enginn svarkostur er réttur

9) Á hverju byggist greining húðkrabbameina og óreglulegra fæðingarbletta?
    A. Læknisskoðun
    B. Sjálfsskoðun
    C. Blóðrannsókn
    D. Bæði A og C eru réttir

10) Hvert eftirtalinna húðkrabbameina myndar ekki meinvörp?
    A. Flöguþekjukrabbamein
    B. Sortuæxli
    C. Grunnfrumukrabbamein
    D. Enginn svarkostur er réttur

HLUTI II: Satt/ósatt spurningar

Hér fyrir neðan eru 20 fullyrðingar um húðkrabbamein. Lestu hverja fullyrðingu vandlega og gefðu til kynna hvort þær eru SANNAR eða ÓSANNAR með því að merkja í viðeigandi reit fyrir aftan hverja spurningu.

	Satt	Ósatt
1) Sólbruni eykur áhættuna á húðkrabbameini, en aðeins meðal barna og unglinga.	☐	☐
2) Jöfn og stöðug útfjólublá geislun yfir langan tíma getur orsakað flöguþekjukrabbamein.	☐	☐
3) Sólarvörn með UVB og UVA að styrk 15 minnkar áhættu á sortuæxlum um 50%.	☐	☐
4) Einstaklingar með óreglulega fæðingarbletti eru í áhættuhópi fyrir því að greinast með sortuæxli, en aðeins ef fjölskyldusaga um sortuæxli er til staðar.	☐	☐
5) Óreglulegir fæðingarblettir hafa alla jafna óreglulegar og óljósar brúnir og eru oft stærri en 5 mm að þvermáli.	☐	☐
6) Fullorðið fólk hefur að meðaltali yfir 100 fæðingarbletti dreifða um allan líkamann.	☐	☐
7) Algengast er að óreglulegir fæðingarblettir séu staðsettir á bakinu en þá má einnig finna fyrir neðan mitti og í hársverði.	☐	☐
8) Tíðni sortuæxla á Íslandi hefur þrefaldast undanfarinn áratug.	☐	☐
9) Sortuæxli er næstalgengasta krabbameinið hjá ungum konum á Íslandi.	☐	☐
10) Á Íslandi greinast að meðaltali 60 manns með illkynja húðæxli önnur en sortuæxli.	☐	☐
11) Á Íslandi deyja að meðaltali 9 Íslendingar á ári af völdum sortuæxla, þar af fleiri konur en karlar.	☐	☐
12) Lækningartíðni sortuæxla er ávallt um 95%, jafnvel þegar það hefur vaxið djúpt niður húðina eða í fituvef.	☐	☐
13) Ef vefjarannsókn leiðir í ljós að um sortuæxli er að ræða þarf oftast að framkvæma útvíkkaða skurðaðgerð til að fjarlægja allt meinið.	☐	☐
14) Flöguþekjukrabbamein er algengasta húðkrabbameinið í hvítu fólki á Vesturlöndum.	☐	☐
15) Grunnfrumukrabbamein birtist oftast sem upphleyptur dökkbrúnn blettur á höfði eða hálsi.	☐	☐

16) Sortuæxli hafa ríka tilhneigingu til að dreifa sér til ýmissa líffæra og eru hættulegasta tegund allra húðkrabbameina vegna þessa. ☐ ☐

17) Sortuæxli eru yfirleitt ósamhverf, þ.e. annar helmingurinn er ekki spegilmynd hins. ☐ ☐

18) Litur sortuæxla er breytilegur frá ljósbrúnu í dökkbrúnt eða svart og stundum má sjá rauð, hvít og/eða svört svæði. ☐ ☐

19) Allir sem hafa einn eða fleiri óreglulega fæðingarbletti ættu að láta lækni fjarlægja þá alla. ☐ ☐

20) Mole Micropathic skurðaðgerð er oft notuð til að fjarlægja mein sem hafa vaxið djúpt niður í húðina. ☐ ☐

Appendix F

Information Regarding the Study

Hvað felst í þátttöku:
Þeir þátttakendur sem bjóða sig fram verða beðnir um að mæta í tvö skipti sinn hvorn daginn. Við gerum ráð fyrir að rannsóknin taki um *tvær klukkustundir* í heildina, 45 mín. fyrri daginn og 75 mín. síðari daginn.

Þátttakendum verður skipt í tilraunahóp og viðmiðunarhóp sem munu fá ólík inngrip, en eðli þeirra verður útskýrt nánar að rannsókn lokinni. Að öðru leyti felst þátttakan aðallega í svörun *spurningalista* og meðtekt *upplýsinga* af tölvuskjá.

Fyrir þátttöku í rannsókninni fá nemendur 2 klst. af þeim 5 klst. sem þarf til að fá *10%* af einkunn í námsskeiðunum E-215-HSKY og E-313-SATI. Einnig fá allir þátttakendur að kynnast inngripinu sem notað verður í tilrauninni. Þá verður boðið upp á *kaffi* og léttar *veitingar*.

Ef þú hefur áhuga á að taka þátt í þessari rannsókn vinsamlegast sendu upplýsingar um *fullt nafn þitt, símanúmer* og *tölvupóstfang* á arnargud12@ru.is sem fyrst. Í næstu viku mun nánari tímasetning verða tilkynnt með tölvupósti. Hámarksfjöldi er á þátttakendum sem verða teknir inn, en ef fjöldi áhugasamra er umfram hámarksfjöldann verður aðeins þeim fyrstu boðið að taka þátt.

Trúnaður:
Þátttaka þín í rannsókninni er *sjálfviljug* og ekki er krafist þess að þú takir þátt. Ef þú hins vegar ákveður að taka þátt hefur þú ávallt rétt á að draga samþykki þitt um þátttöku til baka, á hvaða stigi rannsóknarinnar sem er. Slíkt hefur engar neikvæðar afleiðingar í för með sér fyrir þig og þú þarft ekki að gefa sérstaka ástæðu fyrir ákvörðun þinni. Ef þú ákveður að hætta þátttöku í miðri rannsókn, mun aðeins sá tími sem þú lagðir til gilda upp í þær 5 klst. sem þarf til að fá 10% af einkunninni.

Allar upplýsingar sem þátttakendur veita í rannsókninni verða meðhöndlaðar samkvæmt siða-reglum um trúnað og nafnleynd. Þá verður farið að íslenskum lögum varðandi persónuvernd og vinnslu og eyðingu frumgagna. Rannsóknin hefur verið tilkynnt Persónuvernd og samþykkt af siðanefnd Háskólans í Reykjavík.

Ábyrgðarmaður rannsóknarinnar og leiðbeinandi nemenda er *Heiðdís B Valdimarsdóttir*, prófessor við Háskólann í Reykjavík, heiddisb@ru.is.

Með þökkum,
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Appendix G

Summary Report

Aðstandendur rannsóknarinnar vilja byrja á að þakka þér fyrir að hafa gefið þér tíma að taka þátt í rannsókninni.

Inngangur

Rannsóknin er forrannsókn á sviði heilsusálfræði og kannar notagildi núvitundaræfinga við eftirtekt og úrvinnslu heilsutengds efnis í gagnvirkum ákvörðunartólum (*interactive decision aids, IDAs*). Gagnvirk ákvörðunartól hafa mikið verið notuð að undanförnu til að aðstoða sjúklinga við að læra um sjúkdóm sinn og taka ákvörðun um næstu skref meðferðar. Rannsóknir hafa hins vegar sýnt að margir notendur slíkra tóla finna til kvíða og streitu sem skerðir gagnsemi slíkra tólanna við upplýsingamiðlun og aðstoð við ákvörðunartöku.

Núvitund hefur verið mikið rannsökuð að undanförnu og hafa niðurstöður þeirrar vinnu sýnt að núvitund hefur víðtæk jákvæð áhrif á líðan og virkni fólks. Sér í lagi eykur núvitund tilfinningastjórn og styrkir hugræna úrvinnslu, t.d. athygli og vinnsluminni. Hugsanlega mætti nýta þessi jákvæðu áhrif núvitundar sem hluta af gagnvirkum ákvörðunartólum og þannig auka gagnsemi þeirra.

Tilgangur og niðurstöður

Tilgangur þessarar rannsóknar var að gera forprófun á því hvort núvitund geti aukið eftirtekt og úrvinnslu heilsutengdra upplýsinga. Þar sem rannsakendur höfðu aðeins aðgang að úrtaki háskólanema var reynt að velja heilsutengd efni sem gæti höfðað til þessa hóps og varð húðkrabbamein fyrir valinu. Tilraunahópurinn hlustaði á 10 mínútna núvitundaræfingu hvorn daginn og samanburðarhópurinn hlustaði á jafnlangan hluta úr hljóðbók.

Spurningalistar voru lagðir fyrir sem mældu þekkingu þátttakenda um húðkrabbamein bæði fyrir og eftir áhorf upplýsingatexta sem og tilfinningar og viðhorf þátttakenda til þessa sjúkdóms. Þá voru ýmis önnur mælitæki notuð; Depression Anxiety Stress Scales (DASS), Positive and Negative Affect Schedule (PANAS), Mindful Attention Awareness Scale (MAAS) og Toronto Mindfulness Scale (TMS). Í grófum dráttum voru niðurstöðurnar þessar:

- Tilraunahópurinn skoraði að meðalltali hærra á spurningalistanum sem mældi þekkingu um húðkrabbamein eftir áhorf upplýsingatexta en samanburðarhópurinn.
- Ekki var munur á streitu á milli hópa, og því ekki hægt að meta hvort tilraunarhópurinn mældist hærri á þekkingu vegna minnkaðra streitu áhrifa.
- Þeir einstaklingar sem mældust lágir á MAAS og stunduðu núvitudar æfingu skoruðu hæst á spurningarlista sem mældi þekkingu.

Að lokum

Hafir þú verið í samanburðarhópi og hefur áhuga því að kynnast núpvitundaræfingunni sem notuð var í rannsóknninni stendur þér til boða að hafa samband við aðstandendur rannsóknarinnar og fá hana senda.

Með einlægum þökkum,
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Appendix H

Informed Consent

_____ _____

Kennitala þátttakenda Nafn þátttakanda í prentstöfum

Með undirskrift minni hér að neðan staðfesti ég að hafa fengið bæði munnlegar og skriflegar upplýsingar um rannsóknina.

Ég staðfesti að hafa fengið og skilið upplýsingar um markmið, tilgang, tímalengd, fyrirsjáanlegar afleiðingar og til hvers verður ætlast af mér í þessari rannsókn, að svo miklu leyti sem hægt er að upplýsa um slíkt að svo búnu.

Einnig hef ég verið upplýst(ur) um ávinning og áhættu rannsóknarinnar, sem og að ég hef fengið tíma og tækifæri til að spyrjast fyrir um rannsóknina og fengið fullnægjandi svör við þeim spurningum.

Ég geri mér grein fyrir að ég megi hætta þátttöku hvenær sem er í rannsókninni, án þess að gefa upp ástæðu þess og án þess að það muni hafa neikvæðar afleiðingar í för með sér.

Ég samþykki að taka þátt í rannsókninni. Ég samþykki skráningu og varðveislu ópersónugreinanlegra upplýsinga sem tengjast rannsókninni, úrvinnslu þeirra og geymslu.

_____ _____

Dagsetning Undirskrift þátttakanda

_____ _____

Dagsetning Undirskrift rannsakanda