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Impact of Psychoeducational Content Delivered Online to a Positive Psychology Aware Community

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Abstract

Happiness-increasing interventions demonstrate significant variation in outcomes, suggesting that the people who use them might be as important as the interventions themselves to determine efficacy. In light of this, instructive interventions might not be necessary to increase happiness given a population with knowledge of happiness-increasing strategies. We recruited 270 participants with knowledge of positive psychology to receive six weeks of online psychoeducation. We explored participants' use of the website, reported use of happiness strategies, and changes in well-being. Those who spent more time on the website reported smaller changes in well-being than those who spent less time on the website. Conversely, those who reported employing more happiness strategies reported greater increases in well-being than those who used fewer strategies. This shows that for those already familiar with positive psychology, information, rather than instruction, might increase well-being. This has implications for studies evaluating the efficacy of happiness-increasing interventions more broadly.

Keywords

happiness; intervention; positive psychology; Internet

The desire to be happy is a ubiquitous aspiration (Diener, 2000; Diener, Suh, Smith, & Shao, 1995). Responding to this universal pursuit, researchers have developed cognitive and behavioral strategies that have been found to increase both happiness (Sin & Lyubomirsky, 2009; Parks & Biswas-Diener, 2013) and positive emotions (Diener, Sandvik, & Pavot, 1991; Urry et al., 2004) when practiced in daily life. These strategies have been a major research focus of positive psychology and the applied positive psychology community has adopted their use in various settings (e.g., schools, Seligman, Ernst, Gillham, Reivich, & Linkins, 2009; workplaces, Fromah, 2010; and even the US military, Reivich, Seligman, & McBride, 2011). While studies have shown that positive psychological interventions can reliably increase well-being and reduce depression (Sin & Lyubomirsky, 2009), significant

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variance in outcome exists across individuals, insinuating that more can be learned about increasing happiness with prescribed activities.

Many studies introduce positive psychological interventions to participants with the assumption that the strategies represent new knowledge, and when this knowledge is put into practice, in the form of cognitive and behavioral changes, it will lead to increased well-being. This may be true for some people; however, it is possible that others may have some pre-existing knowledge of these practices. Indeed, many of these strategies represent skills and wisdom that have been prescribed through the ages (Duckworth, Steen, & Seligman, 2005), with one estimation of at least one hundred positive psychological interventions suggested across the millennia spanning from “Buddha to Tony Robbins” (Duckworth et al., 2005, pg. 642). Furthermore, positive psychology has gained considerable public visibility through magazines, websites, and popular books. Therefore, it is a strong possibility that many people already know these strategies and not need instructional content.

Indeed, most evaluations of positive psychological interventions look at the average response to treatment. However, several investigations have demonstrated that characteristics of the individuals performing the interventions impact their efficacy (see Layous & Lyubomirsky, 2014, for a review). Examples include motivation and beliefs (Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011), effort (Layous, Lee, Choi, & Lyubomirsky, 2013), prior levels of well-being and depressive symptoms (Sergeant & Mongrain, 2011), and even the value people place on happiness (Mauss, Tamir, Anderson, & Savino, 2011). A key finding from Parks, Della Porta, Pierce, Zilca, and Lyubomirsky (2012) was that people actively seeking opportunities to increase their happiness are most likely to benefit from interventions. Thus, it is critical to understand more about the population recruited before one assumes that benefit is accrued through the acquisition and practice of new skills.

The aim of the current study was to determine if happiness-based educational content would be sufficient to increase happiness among self-help seekers from a population with pre-existing knowledge of positive psychology. We selected this sample, because it provides an interesting, albeit extreme, test of the hypothesis that instructional content is a necessary component of positive psychological interventions. We also sought to better understand how people might engage with and use this content. To address this question, we created a 6-week online intervention consisting of weekly lessons. These lessons were psychoeducational in nature and focused solely on the science of happiness while avoiding any mention of actual intervention strategies or suggestions of behavior change. We then measured time spent on the website and self-reported use of happiness-increasing activities each week. As this study was exploratory in nature, we had no hypotheses about increases in happiness scores.

METHODS

Participants

The sample included 270 participants (201 women and 69 men) from 35 different countries (42.2% from the United States, 11.2% from the United Kingdom, 17.2% from Australia, 6.3% from Canada, and 23.1% from other countries), who were recruited online through

advertisements posted on positive psychology and happiness blogs, listservs and websites. Mean age was 45.73 years old ($SD = 12.04$). No incentives were given to participate in the study other than access to a self-help happiness-boosting program for six weeks.

Procedure

Participants were emailed a link to a web-based lesson each week for six weeks. Each lesson focused on a different aspect of fostering positive emotions including meaning and purpose, strengths, work, mindfulness and savoring, gratitude and relationships, and hedonia versus eudaimonia. Each lesson contained videos, blog posts, and questionnaires with normative feedback. None of these lessons mentioned or provided instructions for specific happiness-increasing activities.

Measures

Primary outcomes targeted happiness and positive affect including the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), and the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988). Additionally, past work has suggested that happiness-seekers tend to be mild to moderately depressed (Parks et al., 2012) and that happiness-increasing interventions work better for individuals with elevated depression scores (Sin & Lyubomirsky, 2009); thus, we assessed depressive symptoms using the Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001). These measures were administered immediately before, weekly during, and after the 6-week intervention period.

Each week after the first lesson, participants reported on use of knowledge, “In the past week, how frequently did you use what you’ve learned so far from these lessons?” on a 5-point scale ranging from “Not at all” to “Multiple times a day.” Timers embedded in the online lessons recorded the amount of time participants spent on each page.

Time on website was calculated by combining the timing data from each week into three variables: time on informational material (e.g., introductory slides, videos, and blog posts), time on questionnaires (including the normative feedback provided), and total time. As this data was not normally distributed, time was log transformed and log time was used for subsequent analyses.

Results

Baseline Characteristics and Retention

Baseline scores were calculated for PHQ-9 ($M = 5.69$, $SD = 5.33$), positive affect ($M = 34.11$, $SD = 8.58$), negative affect ($M = 18.31$, $SD = 7.76$), and life satisfaction ($M = 23.10$, $SD = 7.39$).

Of the 270 enrolled in the study, 196 people completed Week 1, 171 people completed Week 2, 157 completed Week 3, 145 completed Week 4, 137 completed Week 5, 122 completed Week 6, and 122 people completed the post-test. Given the high dropout rate we wanted to ensure that no differences existed between dropouts and completers. Using an alpha level of .05, an independent-samples *t*-test was conducted to evaluate whether significant

differences existed in means of the baseline measures between those who dropped out and those who completed the intervention. No significant differences were found on any measure.

Change in Dependent Variables

Overall, it appears that those who completed the 6-week assessment reported significant changes in all dependent variables including increases in life satisfaction ($M = 3.92$, $t(121) = 8.50$, $p < .001$), positive affect ($M = 1.44$, $t(121) = 1.99$, $p = .049$), and decreases in negative affect ($M = -4.77$, $t(121) = 7.60$, $p < .001$) and depressive symptoms ($M = -2.27$, $t(121) = 5.83$, $p < .001$). As such, we were then interested in determining who changes the most and whether any of the information about time on the site or use of happiness-increasing behaviors could predict change in dependent variables over time.

Who Changes the Most?

In order to investigate this question, we conducted a series of multilevel models. Given that these analyses were conducted on the weekly data we were able to include all participants in the analysis who reported data at any time point. Specifically, we used mixed-models to explore if the trajectories of dependent variables were impacted by participant characteristics, baseline measures, time on the website, or practice of happiness-increasing behaviors. The only variable that emerged as significant was baseline negative affect predicting change in life satisfaction, with higher levels of negative affect at baseline related to greater increases in life satisfaction ($\beta = .09$, $SE = .03$, $p = .007$). Given the number of models run, this statistical difference most likely represents a spurious relationship rather than a meaningful finding. For models related to time on the website and practice of happiness-increasing behaviors, both variables were included in the models as time on website and reported use of behaviors were not correlated, $r(195) = .04$, $p = .54$, time spent on didactics and scales, however, were highly correlated, $r(195) = .33$, $p < .001$. Table 1 reports the coefficients for the Level 2 interaction terms.

In general, more time spent on the site corresponded to smaller increases in life satisfaction ($p = .02$) and positive affect ($p < .001$), and more reported use of happiness-increasing behaviors corresponded to greater, though not significantly so, increases in life satisfaction ($p = .09$), and significantly greater increases in positive affect ($p = .003$). No relationship was found for negative affect or depressive symptoms. Given consistency within the positive facets of well-being, it appears that time on website and reported use of happiness-increasing behaviors is an important predictor of who experiences increases in life satisfaction and positive affect. For life satisfaction and positive affect, we also explored whether time on information or scales was more predictive of changes. Although, for both values, time spent on scales showed a stronger relationship with decreases in outcomes ($\beta = -.69$, $p = .13$ for life satisfaction and $\beta = -.64$, $p = .18$ for positive affect) compared to time spent on information ($\beta = .003$, $p = .99$ for life satisfaction and $\beta = -.29$, $p = .48$ for positive affect) none of these variables significantly predicted the change by themselves. Due to these findings, we were interested if any of the pre-intervention characteristics corresponded to either time spent on the website or reported use of happiness-increasing behaviors. Table 2 displays these correlations. As can be seen, none of the participant characteristics predicted

the time people spent on the site; whereas, people with higher baseline levels of life satisfaction, positive affect, and lower levels of depressive symptoms, reported doing more happiness-increasing behaviors between the weeks in the website.

Discussion

This study found that even this psychoeducational intervention produced significant increases in well-being. However, consistent with past research, not all participants benefited. Instead, people who spent less time on the website and who reported more use of happiness-increasing behaviors in the week between the lessons, experienced greater boosts in life satisfaction and positive emotion. Furthermore, those people who were happier at baseline reported higher application of happiness-increasing strategies, suggesting that these people might have already had some idea of possible strategies, as these were not taught in the content. These results are congruent with previous findings that happiness seekers already employ a variety of happiness boosting techniques in their everyday lives (Parks et al., 2012) and suggest that people who have this knowledge going into such an intervention might be the ones most likely to succeed. Furthermore, these people might not need to spend as much time on the website, because they already know practical strategies to boost their happiness. In this group, the psychoeducational content delivered weekly might prompt people to use their pre-existing knowledge and engage in activities.

Along these lines, the content of the lessons provided covered information related to the components of well-being (positive relationships, meaning, etc.), and so the subgroup that benefited might have done so by being reminded of what areas of their life to focus on. Weekly e-mails and lessons might have made these concepts more salient, thus encouraging knowledgeable and motivated individuals to make changes in their life. Research has consistently that periodic prompts can effectively impact positive behavior change (Wantland, Bewick, & Palermo, 2009).

Those who spent more time on the lessons, however, did not seem to be familiar with happiness-boosting techniques. People who are new to self-help and happiness literature might be interested enough to spend more time on the site, but might require explicit instructions to perform these happiness-increasing behaviors. In practice, these are the people happiness-increasing interventions are designed for, those with an interest in changing but who are unsure of what to do. Due to the inverse nature of the relationship between time on the website and well-being, however, it cannot be ruled out that learning about happiness can be potentially harmful. Prior research on the negative effects of pursuing happiness has shown that people who greatly value and pursue happiness may have impossibly high expectations, and therefore are less likely to experience positive emotions (Ford & Mauss, 2013). However, if it were the case in this study that reading about happiness was detrimental to participants' well-being, we would expect to see a decrease in happiness after spending time on the site rather than marginal increases. Therefore, we can conclude that spending more time on the site was simply not as effective as applying the happiness strategies.

These results provide potential challenges for researchers and practitioners who are interested in designing and evaluating happiness-increasing interventions. If a subset of the population already knows and can apply many of these skills, and this subset is particularly interested in seeking out and participating in studies related to these interventions, then it may complicate the interpretation of results from studies. For example, if a person is recruited into a study for happiness-increasing interventions and gets assigned to a control condition of listing daily activities (e.g., Burton & King, 2004; Emmons & McCullough, 2003; King, 2001; King & Miner, 2000; Lyubomirsky et al, 2011; Sheldon & Lyubomirsky, 2006), then a motivated, savvy, happiness seeker, might only list out positive activities or things that went well that day. This is quite similar to the “three good things” or “three blessings” intervention widely used in this area (Emmons & McCullough, 2003; Seligman, Steen, Park, & Peterson, 2005). This could be evaluated if people’s responses are recorded and analyzed and researchers assess also what people are doing during the intervention period. In other words, to better understand the mechanisms of change, we need to evaluate the impact of an intervention on actual cognitive or behavioral strategies and ensure similar processes are not taking place in the control condition.

Furthermore, this study has implications for efforts to design and evaluate future happiness-increasing interventions. Researchers should understand the knowledge and behaviors of the target group prior to designing an intervention. Groups with pre-existing knowledge of happiness-increasing strategies might benefit more from reminders, reasons, incentives, or goals to apply these strategies. Other people might require more instructional content that teaches these strategies and supports them in applying them in their lives. In the evaluation of happiness interventions, researchers should better evaluate their conceptual model. If a researcher believes his or her intervention teaches participants a particular strategy, she should evaluate if participants know and use that strategy as it is, whether the intervention increases the use of that strategy, and whether increases in the use of the strategy correspond to increase happiness.

Lastly, this study raises interesting questions for further studies and suggests some design decisions that could be implemented along with positive psychological interventions to further understand how they work. For example, we used timing as an indicator of participant engagement. It would be worth knowing if participants are focusing on and absorbing the information or merely skimming material. Just as we suggest researchers asking about use of strategies, it might be worthwhile to embed knowledge checks within content to assess the comprehension and retention of information. It might also be worth selecting the included content to test hypotheses about whether certain content (e.g., meaning and purpose) is more helpful than other content. We believe this study suggests several possible avenues for future investigations.

One important limitation of this study is the sample. While we intended for the participants in this study to represent the average happiness seeker, the venues through which participants were recruited -- primarily blog posts and listservs for people interested in positive psychology -- may have led to a biased sample with more knowledge about happiness strategies than, say, the average person reading a self-help book or searching online for a self-help site. It would also be interesting, in future work, to add an active,

instructional intervention group for comparison. Such a design could assess whether people who are already reasonably skilled at improving their happiness could still benefit from instructional content that is completely novel, or whether prescribing new activities would interfere with the activities they are already doing.

An underlying assumption of many of the happiness-increasing interventions to date seems to be that they should include instruction in new happiness-increasing activities to impact behavior change in a target population. As such, psychoeducation is assumed to be somewhat inert and used as a comparison condition in controlled trials. The results of this study suggest that they may not be the case. In light of these findings, researchers should be mindful of the control conditions they use and be mindful of measuring people's interaction with intervention material and their behavior after being exposed to it. Advancing the science of happiness-increasing interventions will require a more thorough understanding of how they impact behavior change.

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Table 1
Level-2 interactions between time on website and reported use of happiness strategies predicting outcome variables.

	Coefficient	Standard Error	t-ratio	df	p
SWLS					
Time on Website	-.60	.25	-2.37	121	.02
Reported Behavior	.35	.20	1.73	121	.09
PA					
Time on Website	-1.37	.30	-4.51	121	<.001
Reported Behavior	.72	.24	2.98	121	.003
NA					
Time on Website	.02	.28	.06	121	.95
Reported Behavior	.35	.22	1.56	121	.12
PHQ					
Time on Website	.22	.18	1.30	121	.20
Reported Behavior	-.19	.14	-1.36	121	.18

Table 2

Correlations between baseline measures of well-being and use of website

	SWLS	PA	NA	PHQ
Time on Website	.06	.01	-.03	-.11
Reported Behavior	.20 **	.31 ***	-.05	-.14 *

Note:

*
p < .05,**
p < .01,***
p < .001