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The role of current affect, anticipated affect and spontaneous self-affirmation in decisions to receive self-threatening genetic risk information

Rebecca A. Ferrer¹, Jennifer M. Taber¹, William M. P. Klein¹, Peter R. Harris², Katie L. Lewis³, and Leslie G. Biesecker³

¹Behavioral Research Program, National Cancer Institute, National Institutes of Health, Bethesda, MD, USA

²School of Psychology, University of Sussex, Sussex, UK

³Medical Genomics and Metabolic Genetics Branch, National Human Genome Research Institute, National Institutes of Health, Bethesda, MD, USA

Abstract

One reason for not seeking personally threatening information may be negative current and anticipated affective responses. We examined whether current (e.g., worry) and anticipated negative affect predicted intentions to seek sequencing results in the context of an actual genomic sequencing trial (ClinSeq[®]; $n = 545$) and whether spontaneous self-affirmation mitigated any (negative) association between affect and intentions. Anticipated affective response negatively predicted intentions to obtain and share results pertaining to both medically actionable and non-actionable disease, whereas current affect was only a marginal predictor. The negative association between anticipated affect and intentions to obtain results pertaining to non-actionable disease was weaker in individuals who were higher in spontaneous self-affirmation. These results have implications for the understanding of current and anticipated affect, self-affirmation and consequential decision-making and contribute to a growing body of evidence on the role of affect in medical decisions.

Keywords

Anticipated affect; Current affect; Self-affirmation; Defensiveness; Information seeking; Information avoidance

Correspondence should be addressed to: Rebecca A. Ferrer, Behavioral Research Program, National Cancer Institute, National Institutes of Health, Bethesda, MD, USA. ferrerra@mail.nih.gov.

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Supplementary material

Supplementary material is available via the 'Supplementary' tab on the article's online page (<http://dx.doi.org/10.1080/02699931.2014.985188>).

Individuals tend to be defensive towards information that is threatening to the self (Steele, 1988), which can instigate decisions not to seek (or passive avoidance of) such information (Sweeny, Melnyk, Miller, & Shepperd, 2010). This phenomenon persists even in high-stake contexts, such as health, including when the information is personally relevant and may have important consequences (Howell & Shepperd, 2012). Although motivations to seek or avoid threatening information vary, affective influences may be one motivation for this type of decision-making (Peters, Laham, Pachter, & Winship, 2013; Sweeny et al., 2010). That is, individuals may decide not to seek threatening information to prevent or alleviate negative affective states such as anxiety (K szegi, 2003).

There are two distinct categories of affective influence on choice: *current* and *anticipated* affect (Loewenstein & Lerner, 2003). Current affect refers to presently experienced affective states that result from thinking about a future decision outcome. For example, worry experienced when thinking about obtaining genomic sequencing results that imply increased risk for disease is a *current* affective experience. In contrast, anticipated affect refers to predictions about future emotions. Predicting that one will be upset or distressed by obtaining genomic sequencing results is an example of an *anticipated* affective response. The key difference is whether the affective state is a *current* experience, or whether it is a less affectively laden acknowledgement that the affective state could be experienced in the future. Of note, current affect, or worry, is conceptually and empirically distinct from general or trait anxiety (e.g., Muller & Cameron, 2014).

Both current and anticipated affect are important predictors of health decision-making. For example, both worry (current affect) and anticipated regret about the flu can independently motivate decisions to vaccinate (Chapman & Coups, 2006). However, substantially less attention has been paid to examining whether current and anticipated affect concurrently predict independent variance in decisions to seek or avoid threatening information in a health context. Examining how current and anticipated affect predict consequential health decisions is important, given that both are robust and independent predictors of risk-related outcomes in other contexts (i.e., monetary risks; Schlösser, Dunning, & Fetchenhauer, 2013).

Genetic risk variants are one type of self-threatening health information for which affective responses may be relevant (Peters et al., 2013). Although genetic susceptibility is ostensibly uncontrollable, individuals with genetic variants can report feeling guilty or stigmatised, and can be blamed by others for possessing the variant (e.g., James, Hadley, Holtzman, & Winkelstein, 2006), suggesting that learning about genetic susceptibility to disease may be threatening not only to health but also to self-identity. Importantly, in addition to the possibility that they will avoid affectively threatening genetic information, individuals may be less likely to disclose such information to family members (Julian-Reynier et al., 2000), an important outcome given that disclosure can increase social and emotional support in addition to alerting family members about genetic variants they themselves could carry (Hughes et al., 2002). Because personalised health susceptibility information is becoming increasingly available via the health care system and in direct-to-consumer formats (McBride, Wade, & Kaphingst, 2010), understanding affective determinants of decisions to obtain results is critical. Moreover, genomic sequencing provides an ecologically valid

context for understanding affective dynamics that contribute to information seeking or avoidance.

Here, we examined how current and anticipated affect may predict intentions to obtain sequencing results in an actual genomic sequencing trial and intentions to share these results with family members. In the trial, participants' genomes were sequenced to pilot methodology for identifying genetic variants associated with disease risk, and participants were informed they could be offered the option to learn results. We examined intentions to receive and share results separately for medically actionable (e.g., heart disease) and non-actionable diseases (e.g., Huntington disease), given that psychological reactions to threat can vary depending on whether the outcome can be changed. For example, threats perceived as controllable can instigate more problem-focused coping or regulatory strategies (e.g., problem-solving or situation modification), whereas those perceived as uncontrollable can instigate more emotion-focused or reappraisal-based strategies (e.g., cognitive or positive reappraisal of affective experiences; DeSteno, Gross, & Kubzansky, 2013; Folkman & Lazarus, 1988).

In addition to examining the association of current and anticipated affect and subsequent decision-making, we also examined whether spontaneous self-affirmation might modify the association between these types of affect with consequential decision-making. Self-affirmation involves reflecting on one's values or strengths as a means to maintaining beliefs about self-integrity—that one is a moral and competent person (Steele, 1988). Individuals' defensiveness against information that is threatening to their self-identity can be lessened by self-affirmation (see Cohen & Sherman, 2014). Indeed, self-affirmation has been linked to seeking threatening information (i.e., feedback about personalised risk for Type-2 diabetes; van Koningsbruggen & Das, 2009; feedback about susceptibility to a fictitious disease; Howell & Shepperd, 2012). Moreover, although self-affirmation generally does not influence mood, it may buffer against the negative effects of stress (see Cohen & Sherman, 2014). Although self-affirmation is often experimentally induced (see Cohen & Sherman, 2014), emerging evidence suggests that tendencies to spontaneously self-affirm in the presence of threat may be an individual difference associated with outcomes similar to induced self-affirmation (Harris, Napper, Griffin, Schütz, & Stride, in press; Pietersma & Dijkstra, 2012). Thus, spontaneous self-affirmation may serve as a resource to mitigate negative current and anticipated affective responses to threatening information, or may render information less threatening to the self.

We predicted that negative current and anticipated affective responses to receiving threatening sequencing information would be negatively associated with intentions to obtain and share results. These associations were expected to be particularly prominent when results pertained to medically non-actionable disease because information about these conditions is likely to be more threatening than information about medically actionable disease risk, given that there is no action that can be taken to mitigate the threat of disease and thus personal control is low.

We also hypothesized that self-affirmation tendencies would mitigate the negative association of negative current and anticipated affective responses and these outcomes.

Because the threat to self-identity is likely to be greater when no action can mitigate the threat, we expected that the moderating role of self-affirmation would be more prominent for intentions to obtain results pertaining to non-medically actionable disease. This prediction is in line with frameworks suggesting that uncontrollable threats may require less problem-focused strategies and more psychological resources for coping (Folkman & Lazarus, 1988).

METHODS

Participants and procedures

Nine-hundred ninety-eight community residents were recruited from the Washington, D.C. area to a study on genetic sequencing (ClinSeq[®]; Biesecker et al., 2009). The main purpose of the ClinSeq[®] study was to pilot the use of genomic sequencing as a means to identify variants related to heart disease. Thus, participants did not necessarily enrol to learn something about their own genomes; indeed, equal numbers of participants in the ClinSeq[®] study endorsed (in open-ended responses) both altruistic motives and personal health benefits as motivation to participate in the study (Facio et al., 2011). Participants were informed that there may be an opportunity during the study to learn sequencing results (pertaining to heart disease or other diseases). There was no financial compensation for participation.

As a component of ClinSeq[®], 962 participants who had not yet received a sequencing result were invited to complete the questionnaire from which items used in this study were drawn.¹ Five-hundred ninety-four survey responses were received from August 2012 through May 2013. A subset of 545 participants completed items necessary for inclusion in the present analyses ($M_{\text{age}} = 60.94$, $SD_{\text{age}} = 5.51$, 44.5% female). The sample was 93.0% White, 78.2% earned \$100k or more per year, and 87% had a college degree. Seventeen per cent reported they had received a genetic testing result at least once prior to enrolling in the study.²

Measures

Descriptive statistics and correlations among study items are in supplementary online materials (Tables S1–S2). Correlations among study scales are in Table 1. Current and anticipated affective responses were operationalised in ways consistent with literature on basic decision-making (Schlösser et al., 2013). Current affective response was assessed with two Likert scale items, which were averaged: “On a scale from 1–7, how worried are you about the following outcomes? That your genes put you at an increased risk for developing a common chronic disease like cancer or heart disease; That you already have a health condition that was caused primarily by your genes” (*1 not at all worried–7 extremely worried*; $r = .78$). Anticipated affective response was assessed with two Likert scale items,

¹The sample size for this study was determined based on the number of participants who responded to the invitation to participate in this ancillary study; there were no data exclusions except when participants did not answer items included in the study; there were no experimental manipulations; and although the complete list of study items is not listed due to the size of the survey, it is available upon request.

²Participants were asked whether they had previously received any result from a genetic test, which did not specify the type of genetic test result. It is largely unknown whether or how receiving one genetic test result might influence how threatening a subsequent but different result would be. As such, we retained the full sample for analyses. However, the pattern of results did not differ when these 17% were excluded.

which were averaged: “If I found out that my genes put me at high risk for a fatal disease, I would be devastated” and “I don’t think I would be able to cope with finding out that my genes put me at high risk for a fatal disease” (1 *strongly disagree*–7 *strongly agree*; $r = .48$).

To ensure discriminant validity between the two affective scales, correlations were examined and an exploratory factor analysis was undertaken. A relatively low correlation ($r = .36, p < .001$) supports discriminant validity. Moreover, principal component analysis with varimax rotation on these items (extraction based on eigenvalues rather than a fixed number of factors) yielded two factors. The anticipated affect items loaded onto one factor (loadings: .78, .83), and the current affect items onto a second (loadings: .62, .80).

Spontaneous self-affirmation was assessed with two Likert scale items from a larger scale (Harris et al., in press), which were averaged: “When I feel threatened or anxious I find myself thinking about my strengths” and “When I feel threatened or anxious I find myself thinking about what I stand for” (1 *strongly disagree*–5 *strongly agree*; $r = .70$).

Intentions to receive sequencing results regarding medically actionable disease were assessed with two items preceded by the introduction: “By participating in the ClinSeq[®] study and having your genome sequenced you could learn about a gene variant that *predisposes you to a disease that can be prevented or treated*”. Participants were then asked: “I intend to learn such a result (1 *definitely no*–5 *definitely yes*)” and “How likely is it that you will choose to learn about such a result (1 *extremely unlikely*–7 *extremely likely*)”. These items were standardised and averaged ($r = .26^3$). Intentions to receive sequencing results regarding medically non-actionable disease were also assessed with two items, which were identical to the items above except the question introduction referenced “*a disease that cannot be prevented or treated*”. These items were standardised and averaged ($r = .70$). Log transformations were applied in an attempt to normalise the skewed distribution of scores.⁴

Intentions to share results for medically actionable diseases with family members were assessed with two items: “By participating in the ClinSeq[®] study and having your genome sequenced you could learn about a gene variant *that predisposes you to a disease that can be prevented or treated*. I intend to share such a result with family members” (1 *definitely no*–5 *definitely yes*) and “How likely is it that you will share such a result with your family members?” (1 *extremely unlikely*–7 *extremely likely*) ($r = .82$). These items were also asked for “*a disease that cannot be prevented or treated*” ($r = .87$).

³The low variance in the items may contribute to the low correlation. The pattern and significance of results did not differ when these items were analysed as two separate outcomes.

⁴Original preventable intentions scale kurtosis: 2.48, skewness: –1.68; transformed preventable intentions scale kurtosis: –.198, skewness: –1.087; Original non-preventable intentions scale kurtosis: 2.08, skewness: –1.58; transformed non-preventable intentions scale kurtosis: –.583, skewness: –.876. These items also appear as outcomes in separate papers examining the role of individual differences in information avoidance on intentions to receive sequencing results (Taber et al., in press-a) optimism and risk perceptions on intentions to receive sequencing results (Taber et al., 2014), and ambiguity-related constructs and optimism on intentions to receive and share sequencing results (Taber et al., in press-b). Ancillary analyses including predictors from other manuscripts as covariates did not change the pattern of results.

RESULTS

Analyses

We first examined whether socio-demographic variables (age, sex, race, education, income and prior receipt of a genetic test) were significantly associated with each outcome at the univariate level. All analyses controlled for socio-demographic predictors that were significant or marginally significant ($p < .10$) at the univariate level. Demographic predictors that were significant at the univariate level but did not remain significant when included with the main predictors were excluded from the final regressions (and excluding these variables did not change the pattern and significance of results; see online supplementary materials Table S3 for regression results with all socio-demographic control variables included).

We performed a series of separate analyses regressing outcomes (intentions to obtain sequencing results for medically actionable and non-actionable disease; intentions to share medically actionable and non-actionable results with family) on current and anticipated affective response and spontaneous self-affirmation. After the main effects were assessed, in a series of regressions, we examined whether the influence of current and anticipated affective responses was moderated by spontaneous self-affirmation. To examine the moderation hypotheses, we centred all predictors and crossed the centred anticipated and current affect variables with spontaneous self-affirmation to create two interaction terms, which were included simultaneously with the centred variables as main effects. Because of the large sample, a threshold of $p < .01$ was adopted to ascertain statistical significance.

Main effects

Full statistical analyses for regressions predicting intentions to obtain and share results can be found in Table 2.⁵ Anticipated affect negatively predicted intentions to obtain results pertaining to medically actionable disease ($\beta = -.159, p = .001$), but current affect did not. Both current ($\beta = -.109, p = .015$) and anticipated ($\beta = -.280, p < .001$) affect predicted intentions to obtain results pertaining to medically non-actionable disease, although only anticipated affect was significant at the $p < .01$ level.

Anticipated affect negatively predicted both intentions to share results pertaining to actionable ($\beta = -.119, p = .012$) and non-actionable disease risk ($\beta = -.194, p < .001$), although it only significantly predicted intentions to share non-actionable results at the $p < .01$ level. Current affect was not a significant predictor of intentions to share medically actionable or non-actionable disease results.

Moderating role of spontaneous self-affirmation

Spontaneous self-affirmation moderated the negative association of anticipated affective responses and intentions to obtain results pertaining to medically non-actionable disease (β

⁵Self-affirmation was included as a predictor in these analyses, and univariate associations among self-affirmation and outcome variables are presented in Table 1. However, we do not highlight these main effects in the discussion, as they are ancillary to our hypotheses. The association between self-affirmation and intentions to obtain medically actionable/non-actionable results is also presented as ancillary to main analyses in a separate manuscript (Taber et al., under review).

= .119, $p = .008$), such that the association between anticipated affect and intentions was attenuated among those higher in spontaneous self-affirmation. However, spontaneous self-affirmation did not moderate the association between current or anticipated affect and other outcomes, with the exception of an interaction between current affect and self-affirmation predicting intentions to share non-actionable results, which approached significance in the expected direction ($\beta = .093$, $p = .046$).

DISCUSSION

As predicted, *anticipated* affective responses were robust negative predictors of intentions to obtain and share sequencing results for disease risk that is medically actionable, as well as disease risk that is not medically actionable. However, *current* affect only approached significance as a negative predictor of any outcome related to obtaining and sharing results (and in particular, was a marginal predictor — $p = .015$ —of intentions to obtain non-actionable results, even when controlling for anticipated affective responses). Thus, low negative anticipated affect appeared to be the stronger predictor of intentions to obtain sequencing results.

One potential reason for the emergence of anticipated affective responses as the stronger predictor concerns the motivational nature of current affective responses; worry may both motivate information seeking (as a means of alleviating anxiety if no variants related to disease are identified) and information avoidance. Thus, worry-related motivation to seek information may somewhat attenuate the negative association between current affect and intentions to obtain sequencing results that would result from worry-related motivations to avoid information. This possibility deserves future examination.

We also found that (for only intentions to obtain results pertaining to non-actionable disease) spontaneous self-affirmation may mitigate the negative association between anticipated affective response and intentions to seek sequencing information. It is possible that spontaneous self-affirmation serves as a resource for coping with negative anticipated affective responses that hinder information seeking, or for dealing with the threat itself. However, it is also possible that spontaneous self-affirmation renders sequencing information less threatening. Spontaneous self-affirmation did not moderate the association between anticipated affect and intentions to obtain results pertaining to actionable disease. This is consistent with a conceptualisation of spontaneous self-affirmation as a more emotion-focused—and less problem-focused—resource, which may be less appropriate when controllable actions can mitigate a threat.

Moreover, results concerning the overall role of spontaneous self-affirmation as a coping resource were equivocal, as no interactions between self-affirmation and current affective responses were significant. Although future research is necessary to elucidate reasons that spontaneous self-affirmation does not mitigate the effects of current affect, one possibility is that self-affirmation facilitates flexible thinking processes (Correll, Spencer, & Zanna, 2004), which may be more suited to buffering a cognitive representation of affect (anticipated affect) than a current experience of affect.

Beyond having implications for our understanding of current and anticipated affect and decision-making, this study contributes to a growing body of evidence on the role of affect in medical decisions. Because of the robustness of the effects of anticipated affect on decision-making, as well as the fact that estimates of anticipated affective responses tend to be biased towards exaggeration, examining its dynamics within a high stakes health decision-making context such as genetic testing is imperative (Peters et al., 2013). Understanding factors that contribute to learning about results pertaining to medically actionable disease is important, because individuals who receive information about strong genetic predispositions to disease tend to increase performance of preventive behaviours (Aspinwall, Taber, Kohlmann, & Leachman, 2013). Moreover, genetic findings can point to the need for medical action yielding potentially life-saving results (Johnston et al., 2012) and understanding how negative affective responses contribute to information seeking (or avoidance) in this context is critical. However, avoiding information about disease risk that is not medically actionable or deciding not to share such information is not necessarily a negative outcome. Indeed, non-actionable results may increase distress, and family members may prefer not to receive such information, so avoidance and non-disclosure may actually be protective. Regardless of whether these outcomes are beneficial, understanding when individuals will seek out and share non-actionable disease risk information can help health professionals to deploy adequate coping or knowledge resources.

This study has a number of limitations, including the cross-sectional nature of the design, and the use of intentions as a primary outcome. Additionally, the low reliability of the intentions scale creates a potential validity issue, which is somewhat attenuated by the fact that results do not change when intentions measures are analysed as separate outcomes. Moreover, the sample had relatively high SES, potentially limiting the generalisability of the results. However, we note that the participants were recruited from an area with a high cost of living, suggesting that the sample's income was substantially higher than if the study been conducted elsewhere. Finally, because the target of the assessed anticipated (fatal disease) and current (cancer, heart disease, unspecified condition) affective reactions differed, a comparison of the two should be made with caution. Future research should allow for more direct comparisons of the influence of current and anticipated affective reactions, use longitudinal designs to examine the role of such factors over time, and link these affective reactions to actual decisions to obtain or avoid sequencing results.

These limitations are also offset by a number of strengths, most notably the use of a community sample and a design in the context of a real sequencing trial (McBride et al., 2010). Intentions to obtain and share results are not hypothetical, but likely reflect real and thoughtful choices that may translate to action in the future of the trial. As such, this study offers important insights into how current and anticipated affect may function to motivate consequential health decision-making, as well as how spontaneous self-affirmation has the potential, in some instances, to mitigate the tendency to avoid threatening information that is associated with negative anticipated affect.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

References

- Aspinwall, LG.; Taber, JM.; Kohlmann, W.; Leachman, SA. Psychological aspects of hereditary cancer risk counseling and genetic testing. In: Carr, BI.; Steel, J., editors. Psychological aspects of cancer. New York, NY: Springer; 2013. p. 31-64.
- Biesecker LG, Mullikin JC, Facio FM, Turner C, Cherukuri PF, Blakesley RW, Green ED. The ClinSeq Project: Piloting large-scale genome sequencing for research in genomic medicine. *Genome Research*. 2009; 19:1665–1674.10.1101/gr.092841.109 [PubMed: 19602640]
- Chapman GB, Coups EJ. Emotions and preventive health behavior: Worry, regret, and influenza vaccination. *Health Psychology*. 2006; 25:82–90.10.1037/0278-6133.25.1.82 [PubMed: 16448301]
- Cohen GL, Sherman DK. The psychology of change: Self-affirmation and social psychological intervention. *Annual Review of Psychology*. 2014; 65:333–371.10.1146/annurev-psych-010213-115137
- Correll J, Spencer SJ, Zanna MP. An affirmed self and an open mind: Self-affirmation and sensitivity to argument strength. *Journal of Experimental Social Psychology*. 2004; 40:350–356.
- DeSteno D, Gross JJ, Kubzansky L. Affective science and health: The importance of emotion and emotion regulation. *Health Psychology*. 2013; 32:474–486. [PubMed: 23646831]
- Facio FM, Brooks S, Loewenstein J, Green S, Biesecker LG, Biesecker BB. Motivators for participation in a whole-genome sequencing study: Implications for translational genomics research. *European Journal of Human Genetics*. 2011; 19:1213–1217. [PubMed: 21731059]
- Folkman S, Lazarus RS. The relationship between coping and emotion: Implications for theory and research. *Social Science & Medicine*. 1988; 26:309–317. [PubMed: 3279520]
- Harris PR, Napper L, Griffin DW, Schuz B, Stride C. Developing a measure of spontaneous self-affirmation. (in press).
- Howell JL, Shepperd JA. Reducing information avoidance through affirmation. *Psychological Science*. 2012; 23:141–145.10.1177/0956797611424164 [PubMed: 22241812]
- Hughes C, Lerman C, Schwartz M, Peshkin BN, Wenzel L, Narod S, Main D. All in the family: Evaluation of the process and content of sisters' communication about BRCA1 and BRCA2 genetic test results. *American Journal of Medical Genetics*. 2002; 107:143–150. [PubMed: 11807889]
- James CA, Hadley DW, Holtzman NA, Winkelstein JA. How does the mode of inheritance of a genetic condition influence families? A study of guilt, blame, stigma, and understanding of inheritance and reproductive risks in families with X-linked and autosomal recessive diseases. *Genetics in Medicine*. 2006; 8:234–242. [PubMed: 16617244]
- Johnston JJ, Rubinstein WS, Facio FM, Ng D, Singh LN, Teer JK, Biesecker LG. Secondary variants in individuals undergoing exome sequencing: Screening of 572 individuals identifies high-penetrance mutations in cancer-susceptibility genes. *The American Journal of Human Genetics*. 2012; 91(1):97–108. [PubMed: 22703879]
- Julian-Reynier C, Eisinger F, Chabal F, Lasset C, Noguès C, Stoppa-Lyonnet D, Sobol H. Disclosure to the family of breast/ovarian cancer genetic test results: Patient's willingness and associated factors. *American Journal of Medical Genetics*. 2000; 94:13–18. [PubMed: 10982476]
- K szegi B. Health anxiety and patient behavior. *Journal of Health Economics*. 2003; 22:1073–1084. [PubMed: 14604561]
- Loewenstein, GF.; Lerner, JS. The role of affect in decision making. In: Davidson, R.; Scherer, K.; Goldsmith, H., editors. Handbook of affective science. New York, NY: Oxford University Press; 2003. p. 619-642.
- McBride CM, Wade CH, Kaphingst KA. Consumers' views of direct-to-consumer genetic information. *Annual Review of Genomics and Human Genetics*. 2010; 11:427–446.10.1146/annurev-genom-082509-141604
- Muller C, Cameron LD. Trait anxiety, information modality, and responses to communications about prenatal genetic testing. *Journal of Behavioral Medicine*. 2014; 37:988–999. [PubMed: 24481564]
- Peters SA, Laham SM, Pachter N, Winship IM. The future in clinical genetics: Affective forecasting biases in patient and clinician decision making. *Clinical Genetics*. 2013; 84:312–317. [PubMed: 23952534]

- Pietersma S, Dijkstra A. Cognitive self-affirmation inclination: An individual difference in dealing with self-threats. *British Journal of Social Psychology*. 2012; 51(1):33–51. [PubMed: 22435845]
- Schlösser T, Dunning D, Fetchenhauer D. What a feeling: The role of immediate and anticipated emotions in risky decisions. *Journal of Behavioral Decision Making*. 2013; 26:13–30.
- Steele, C. The psychology of self-affirmation: Sustaining the integrity of the self. In: Berkowitz, L., editor. *Advances in experimental social psychology*. Vol. 21. New York, NY: Academic Press; 1988. p. 261–302.
- Sweeny K, Melnyk D, Miller W, Shepperd JA. Information avoidance: Who, what, when, and why. *Review of General Psychology*. 2010; 14:340–353.
- Taber JM, Klein WMP, Ferrer RA, Biesecker BB, Lewis KL, Biesecker LG. Dispositional optimism and perceived risk interact to predict intentions to learn genome sequencing results. *Health Psychology*. 2014 Advance online publication, October 13, 2014.
- Taber JM, Klein WMP, Ferrer RA, Lewis KL, Harris PR, Shepperd JA, Biesecker LG. Information avoidance tendencies, threat management resources, and interest in genetic sequencing feedback. (in press-a). Manuscript submitted for publication.
- Taber JM, Klein WMP, Ferrer RA, Han P, Lewis KL, Biesecker LG, Biesecker BB. Perceived ambiguity as a barrier to receipt of genome sequencing results. (in press-b). Manuscript submitted for publication.
- van Koningsbruggen GM, Das E. Don't derogate this message! Self-affirmation promotes online type 2 diabetes risk test taking. *Psychology and Health*. 2009; 24:635–649. [PubMed: 20205017]

Table 1

Correlations among scales

	1	2	3	4	5	6
1. Current affect						
2. Anticipated affect	.356**					
3. Spontaneous self-affirmation	-.064	-.211**				
4. Intentions to obtain actionable results	-.148**	-.189**	.081			
5. Intentions to obtain non-actionable results	-.206**	-.316**	.081	.558**		
6. Intentions to share actionable results	-.084	-.151**	.097*	.170**	.211**	
7. Intentions to share non-actionable results	-.174**	-.259**	.127**	.195**	.336**	.579**

* $p < .05$;
** $p < .01$.

Table 2

The direct and interactive associations among current and anticipated affect, spontaneous self-affirmation and intentions to receive and share medically actionable and non-actionable results

	β	t	p	d	R^2
<i>Intentions to obtain medically actionable results^a</i>					
Spontaneous self-affirmation	.033	0.76	.449	0.07	.06
Anticipated affective response	-.159	-3.38	.001	-0.29	
Current affective response	-.085	-1.83	.067	-0.16	
Anticipated $\times$ self-affirmation	-.025	-0.54	.592	-0.05	.06
Current $\times$ self-affirmation	.042	0.90	.368	-0.08	
<i>Intentions to obtain medically non-actionable results^b</i>					
Spontaneous self-affirmation	.020	0.46	.644	0.04	.12
Anticipated affective response	-.280	-6.12	<.001	-0.52	
Current affective response	-.109	-2.43	.015	-0.21	
Anticipated $\times$ self-affirmation	.119	2.65	.008	0.23	.14
Current $\times$ self-affirmation	-.042	-0.94	.350	-0.08	
<i>Intentions to share medically actionable results with family members</i>					
Spontaneous self-affirmation	.069	1.56	.119	0.13	.03
Anticipated affective response	-.119	-2.51	.012	-0.22	
Current affective response	-.027	-0.57	.569	-0.05	
Anticipated $\times$ self-affirmation	.026	0.55	.583	0.05	.04
Current $\times$ self-affirmation	.062	1.32	.189	0.11	
<i>Intentions to share medically non-actionable results with family members^c</i>					
Spontaneous self-affirmation	.089	2.03	.043	0.17	.10
Anticipated affective response	-.194	-4.05	<.001	-0.35	
Current affective response	-.088	-1.90	.057	-0.16	
Anticipated $\times$ self-affirmation	.014	0.31	.760	0.03	.11
Current $\times$ self-affirmation	.093	2.00	.046	0.17	

Note: All analyses controlled for socio-demographic variables that were significant predictors of the outcome at the univariate level (see subsequent notes for specific socio-demographic control variables included in each analysis).

^a Analyses controlled for ever having received a genetic test result.

^b Analyses controlled for college education.
^c Analyses controlled for sex and college education.

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