DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
National Cancer Institute
Bethesda, Maryland 20892

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To: Office of Management and Budget (OMB)

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Subject: Generic Sub-study, **Refining and validating a theory of risk perceptions** under "A Generic Submission for Theory Development and Validation (NCI)," (OMB No. 0925-0645, Expiry Date 12/31/2014)

Background/ Need and Use for Information

The National Cancer Institute's (NCI) Behavioral Research Program (BRP) is within the Division of Cancer Control and Population Sciences (DCCPS). The goal of BRP is to increase the breadth, depth, and quality of behavioral research in cancer prevention and control. BRP conducts varying programs of formative research to develop and validate cancer-related behavioral theories. **This project will build upon previous approved research (OMB No. 0925-0645 sub-study #6), which involved data collection to validate a novel risk perception questionnaire. This project involves refining our cancer risk perceptions theory by administering a revised version of the survey.** This NCI office is requesting that OMB review this sub-study, which describes a voluntary, low-burden, non-controversial, formative behavioral research project related to theory development and validation. Data collection for this project is authorized under 42 USC *§* 285 and 285a-1 (Section 410 and 412 of the Public Health Service Act).

The previous research involved validating a theoretical framework characterizing perceived risk of cancer (as compared to perceived risk of two other prominent diseases). Data collected from that study supported the theoretical framework, and provided empirical information about ways in which the scale could be refined to better capture risk perceptions.

The current formative research builds on that data collection by refining the theoretical framework and measurement, as well as by preliminarily examining the predictive validity of

a theory on the nature of cancer risk perceptions. This theoretical framework disentangles deliberative, affective, and intuitive components of these risk perceptions.

- Deliberative components refer to those that are derived more "cognitively" (e.g., whether people think their risk of cancer is high or low or the numeric probability a threat will occur).
- Affective components refer to those that are derived more "emotionally" (e.g., emotional response to a threat such as whether people are worried about cancer).
- Intuitive components refer to those that reflect an overall "gut-level" belief about their risk (e.g., a gut-level feeling about how vulnerable people feel to cancer).

Our primary aims are to: 1) to refine our measurement of these three types of cancer risk perceptions, using results from data collected under the previous sub-study; and 2) to examine whether there are factors that modify whether the scale predicts cancer preventive behavioral intentions. That is, Aim 2 is to examine whether the tripartite risk perception theoretical framework better predicts behavioral intentions for some groups of individuals that for others (e.g., individuals can better regulate their emotions; individuals who have high motivations to engage in cognitive problem-solving). Identifying factors that strengthen or weaken the associations between components of theoretical frameworks and outcomes is a critical step in theory development and refinement, because it helps to shed light on when those predictors are important to consider when trying to understand why individuals engage in cancer-related behaviors, as well as for whom and in what contexts interventions designed based on a theory will be most effective. Additional data needs to be collected to execute both Aims 1 and 2.

The questionnaire (**Attachment 8A**) is designed to assess three aspects of cancer risk perceptions (deliberative, affective and intuitive risk perception). Outcomes that might be associated with these types of risk perception (including avoidance of risk information and intentions to engage in preventive behaviors) are also assessed. Factors that may modify the predictive validity of the scale, such as emotion regulation, health orientation, and need for cognition, are also assessed. These moderating factors were carefully selected based on a review of the literature to examine the types of affective and cognitive factors that may affect reliance on affective, cognitive, or intuitive risk perceptions in making behavioral decisions (s**ee Attachment 8B for selected readings**). Measures of these factors have been empirically validated and were selected by reviewing empirical literature and consulting the Grid-Enabled Measures Database (http://cancercontrol.cancer.gov/brp/gem.html) to identify measures deemed "gold-standard" by the research community.

It is anticipated that intuitive risk perceptions will be most correlated with avoidance of risk information and intentions to engage in preventive behavior (compared to affective and deliberative risk perceptions). We anticipate that the correlations between affective risk perceptions and intentions will be highest among those with a high need for affect, whereas the correlation between deliberative risk perceptions and intentions will be highest among those with a high need for cognition and/ or with better emotion regulatory capacity.

Participants, Methodology, and Research Instrument

As was done in the previously approved sub-study, an internet sample (N = 500), will be

drawn from Amazon mTurk (https://requester.mturk.com/). mTurk is an internet service that allows researchers to gather survey data (mTurk also supports other purposes related to "crowd-sourcing"). Data collection through mTurk is generally high quality, and the data collection process is quick, likely because participants are motivated to participate because they find the tasks and surveys to be interesting (see selected readings, **Attachment 8A**). No recruitment materials are required; the survey will be listed on the mTurk website by title (Cancer Risk Perceptions Questionnaire). No PII will be collected. Participants will complete a survey about cancer risk perceptions (**Attachment 8B**).

Analyses will involve correlations among the factors and outcomes. Findings will be disseminated to relevant audiences –health psychologists/ public health researchers who examine risk perceptions.

Other Considerations

No personally identifiable information will be collected. Participants will receive $1 incentive for this study. mTurk is an internet "crowdsourcing" platform, and incentivizing respondents is required to use the service (see https://www.mturk.com/mturk/welcome). In addition to being a requirement for using mTurk to collect data, empirical evidence indicates that incentives improve survey response and data quality across all survey modes (**Attachment 8B**). Thus, providing a very modest incentive through Amazon mTurk will lessen the need to recruit additional respondents to obtain high quality data. Moreover, $1 is a relatively modest amount for survey incentives.[1] Incentives are commonly used when surveys ask sensitive questions (e.g., about weight) and to engender good will when there is evidence that cooperation is deteriorating (e.g., when questions seem repetitive, which is often necessary to empirically validate psychometrically reliable scales of psychological constructs),[2] both conditions that apply to the current sub-study.

A $1 incentive is consistent with the amount of incentive issued to generate high-quality data in the previously approved sub-study, and was selected based on a review of empirical literature examining best practices for collecting data through mTurk (**Attachment 8B**).

This project has been deemed exempt from human subjects approval by the NIH Office of Human Subjects Research Protection (**Attachment 8C**).

Burden

A total of 500 participants will complete the study, which has an anticipated length of no more than 30 minutes (an estimate generated based on the time participants took to complete the previous sub-study, which was adjusted for the number of items in the currently proposed sub-study). Thus, the total burden is estimated to be 250 hours. This effort will account for less than 31% of the total burden hours granted in the full generic OMB clearance package.

1 Reviews of NIH-funded research indicate that surveys of general households have an average incentive rate of $26.82 per hour, which is substantially lower than our effective rate of $2 per hour (and only 34% of incentivized surveys provide an incentive less than $10, the lowest denomination threshold that was included in the review).

2 See http://www.copafs.org/reports/providing_incentives_to_survey_respondents.aspx#incentives

To date, a total of 1,859 burden hours have been used of the 6,000 hours that were requested. Estimated cost to the Federal Government is $1,500 for staff (estimated based on 3 FTE hours per week for 10 weeks) and $500 for participant incentives, for a total of $2,000.

Estimates of Burden Hours					
Form Name	Types of Respondents	Number of Respondents	Number of Responses Per Respondent	Average Burden (in Hours)	Total Hour Burden
Survey	General Public	500	1	30/60	250

List of Attachments

8A: Survey
8B: Selected Readings
8C: OHSRP Exemption