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QUALITATIVE EXAMINATION OF SATISFACTION WITH THREE EXPERT
SYSTEM INTERVENTIONS TO REDUCE CANCER

BY

JENNIFER M. DOUCET, M.A.

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN
PSYCHOLOGY

UNIVERSITY OF RHODE ISLAND

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Abstract

Expert Systems are computerized population programs that can provide tailored interventions for behavior changes. These systems have been used in various population samples throughout the United States, however, no one has qualitatively examined the experiences of participants. In this research, participants had three cancer risks (i.e. poor diet, sedentary lifestyle and smoking) and were provided interventions in one of three types of Expert Systems (i.e. Telecommunications, Modular or Integrated). The experiences and satisfaction of 56 participants across the United States using these Expert Systems were examined, with special attention given to demographic differences. Qualitative methodologies were employed to design and administer structured telephone interviews. Data were transcribed and analyzed using the qualitative management program, NVivo 7 and complimentary quantitative data were analyzed using SPSS. Eight themes were drawn from the data representing participants' experiences including: Reasons to Participate, Expectations, Likes, Style, Reaction to Feedback, Trust, Satisfaction and Suggestions. While participant data revealed pros and cons of participating in each Expert System, the Integrated group displayed greater levels of behavior change and higher rates of satisfaction. This information not only provides evidence of the positive experiences of participants in the Integrated Expert System, but helpful suggestions in making the other Systems more appealing to future participants. It is hoped these data and interpretations will be valued and utilized for improving Expert systems for behavior change in the future.

Acknowledgements

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Statement of the Problem

Population-based Expert System intervention research conducted at the University of Rhode Island has shown promising results in the area of disease prevention. Researchers have aided populations across the United States in areas of smoking cessation, stress management, dietary improvements, UV protection and condom use, all of which are helpful strategies in minimizing the risks of diseases like cancer. Expert Systems for behavior change have gained increasing popularity in the last twenty years, especially when compared to the traditional disease prevention strategies in the medical field (i.e. one-on-one interaction, family interventions).

Since there is limited data in the literature describing participants' experiences with these Expert Systems (e.g. what made it easy or difficult to utilize, what aspects of the experience contributed to a sense of satisfaction). An in-depth examination using qualitative methods to obtain a better understanding of participant experiences was warranted. This examination can ultimately provide valuable information regarding the future use of Expert Systems.

Justification for and Significance of the Study

Cancer Prevention

According to the Centers for Disease Control and Prevention, the top ten cancer sites include: prostate, female breast, lung and bronchus, colon and rectum, urinary bladder, non-Hodgkin lymphoma, melanomas of the skin, kidney and renal pelvis and ovary (2005). The majority of these cancers can be prevented (Shibuya, et al., 2002) by minimizing unhealthy behaviors such as smoking, eating fatty foods, leading a sedentary lifestyle and access UV exposure.

The field of cancer prevention has progressed from individual (i.e. one-on-one physician interventions, family interventions) to population-based interventions (i.e. community interventions, research). This evolution was based in part on evidence indicating behaviors that increase risk (i.e. socio-cultural, economic and environmental) for diseases are not merely individual, but exist in entire populations (Bernstein et al., 2002; Pienta & Esper, 1993; Ward, et al., 2004). Therefore, population-based preventions efforts require that interventions reach significant percentages of populations at risk (Fendrick et al., 1999; Janz et al., 2003; Prochaska, et al, 2005).

Improvements in a variety of technologies have made the dissemination of population-based interventions more feasible. Population cancer prevention strategies now include, but are not limited to, telephone, mail and computer-based technologies. Computer-based technologies allow providers to administer assessments and interventions while maintaining high fidelity to theory or content, which is often difficult for health care providers to deliver with consistency and accuracy. In addition, these types of interventions can be accessed by individuals from practically anywhere they have internet access. Research suggests population-based interventions have been helpful in reducing rates of cancer overall, but disparities still exist between Whites and ethnic minorities (Edwards, et al., 2005).

Health Disparities. As population-based cancer prevention programs were made more readily available in the last twenty years, there was an increase in attention to health disparities. According to Braveman (2006), a health disparity is defined as:

. . . a particular type of difference in health or in the most important influences on health that could potentially be shaped by policies, it is a difference in which disadvantaged social groups systematically experience worse health or greater risks than more advantaged groups.

Disparities in cancers between Whites and Blacks include differences in: risks of getting cancers, prolonged period prior to treatments, stage of diseases at diagnosis and poorer survival rates with Blacks suffering considerably more than Whites (Wong, et al., 2009) even when all intuitive demographic variables are equivalent (i.e. education, age, gender). There are several hypotheses as to why these disparities exist including: style of interaction of the provider, utilization of services, satisfaction with previous services, access to services, cost of services, and perceived trust in health care provider (Alesina, A & Ferrera E.L., 2000; Corbie-Smith et al., 2002; Doescher, M.P. et al., 2000; Hulka, et al., 1975; Johnson & Nies, 2005; Mutchler, J.E. & Burr, J.A., 1991; Richman et al., 2007). It is important to continue to examine the sources of health disparities, especially where the largest gaps exist.

Expert Systems

In recent years, remarkable improvements have been made in the use of computer technologies, some of which are Expert Systems. Expert Systems are sophisticated computer programs that mimic reasoning and problem solving of human experts with more consistency and accuracy. The decision making of the Expert System utilizes a combination of empirical data and a theoretical framework for intervention purposes. The Expert System is just as effective at providing an intervention and sometimes more so than a human expert. Expert System research has revealed successful tailored interventions for individuals whom endorse a variety of at risk behaviors including: smoking, diet, exercise, diabetes management, UV protection, alcohol consumption, condom use, and mammography screening (Evers et. al, 2006; Johnson et al., 2006;

Jones, H. et al, 2003; McCabe, S.E., 2006; Prochaska et.al., 2001; Velicer et. al., 1993; Velicer & Prochaska, 1999).

Expert Systems for behavior change can operate in variety of ways. In general, Expert Systems include some type of assessment and feedback to the individual that is guided by decision rules codified in a computer program. An individual is assessed for a particular behavior such as smoking. This assessment can include (but is not limited to) frequency of behavior, context of behavior, and willingness to change behavior. This information is analyzed based on a theoretical framework (i.e. Transtheoretical Model). The information is then reprioritized (i.e. which behavior is easiest to change or which behavior will have the largest impact on overall health) and an intervention with feedback is delivered to the individual. This feedback can be tailored both theoretically and empirically and can also include suggestions or ideas for the individual to modify the identified behavior(s). Expert Systems interventions for behavior change are provided through a variety of mediums including print materials, automated feedback via telephone, and internet interventions via computer.

Expert System interventions can potentially reach more individuals than healthcare professionals, are comparatively cost effective, and can work with a variety of behaviors simultaneously. Due to the promising benefits of Expert Systems, there has been an increase of research in the area.

Transtheoretical Model (TTM). Expert Systems for behavior change at the Cancer Prevention Research Center are based on the theoretical framework of the Transtheoretical Model (Prochaska, et al, 1992; Prochaska, et al, 1994). The core construct of the Model is Stages of Change. There are five Stages of Change in this

model that categorize an individual's readiness to change including: Precontemplation-no intention to change, Contemplation-thinking about change, Preparation-intentions to change, Action- actively engaged in change and Maintenance-maintaining change for a prolonged period of time with relapse prevention. Outcome variables in Expert Systems for behavior change include: decisional balance (pros and cons of change), self-efficacy (confidence to change), temptations and behavior specific concerns. Expert System interventions then attempt to encourage participants' use of change Processes that will lead to progression through the stages toward successful behavior change and maintenance of that change.

Project HEALTH: Computerized Population Programs for Three Cancer Risks¹

Project HEALTH was a population-based cancer prevention program administered from the Cancer Prevention Research Center at the University of Rhode Island. The major objectives of Project HEALTH were to implement and assess Expert System interventions on populations of individuals with multiple risk factors for cancer. Project HEALTH provided one of three Expert System interventions (i.e. Telecommunications, Modular and a newly developed Integrated intervention) for participants that were at concurrent risk² for cancer by: smoking, having poor diets and leading sedentary lifestyles³. Participants in Project HEALTH represented a select sample (only 10 to 12%) of the total United States population as they engaged in three known behaviors that put individuals at risk for cancer. Because this total sample is small,

¹ *Computerized Population Programs for Three Cancer Risks*, Grant #: R01CA85807-01A2. Principal Investigator: Wayne Velicer, Ph.D.

² At Risk for cancer by three behaviors was determined by stage of change (see Transtheoretical Model) on each behavior. Participants had to be in Precontemplation, Contemplation or Preparation stages of change. Those in the Action or Maintenance stages were not eligible to participate.

³ Potential participants were excluded if they were not physically capable of exercise as the intervention included information about physical exercise.

recruitment of potential participants was challenging. Moreover, because the individuals in this select sample were engaged in unhealthy behaviors, they were more likely to be in the earlier stages of change, making the group more recalcitrant. While Expert Systems had been utilized at the Cancer Prevention Research Center in the past, the importance of Project HEALTH was to compare the type of Expert Systems simultaneously, specifically the newer type of Expert System, Integrated.

Participants were recruited using a random digit-dial methodology via telephone that reached individuals across the United States. Telephone surveys were administered at the beginning of Project HEALTH, at 6 months, 12 months for each participant. An additional assessment was conducted at the completion of Project HEALTH in month 24. These telephone surveys consisted of questions assessing key constructs based on the TTM Stages of Change Model. Questions included: behaviors pertaining to smoking, diet and exercise; TTM constructs of stage of change, decisional balance, situational self-efficacy/temptations and processes of change. Participants in both the Telecommunications and Modular completed telephone surveys that averaged 45 minutes in length, whereas the Integrated group completed a briefer survey that averaged 20 minutes in length. Responses to these questions were translated into tailored feedback for participants.

Participants were randomized to one of four groups: Telecommunications Expert System, Modular Expert System, Integrated Expert System or the Control Group⁴. Each Expert System was different in the delivery method, organization and format of the feedback that was provided.

⁴ The control group did not receive an intervention and therefore will not be discussed here.

Participants in Telecommunications group were invited to call an automated system to receive interventions on the three targeted behaviors. The feedback provided to participants during the call included: their stages of change, pros and cons of behavior change, strategies for change (i.e. overcoming temptations, getting support, making a commitment) and a summary for each unhealthy behavior. On average, each call took 20 minutes to complete. Participants could call into the system on a weekly basis and receive additional information on the targeted behaviors. The system was designed so that the overall feedback was not able to be delivered to a participant in one telephone call (on average, it took 5 to 6 telephone calls to deliver the completed feedback). The perceived benefit of this Expert System is that the intervention simulated a human conversation, which may appeal to the general participant.

The Modular Expert System consisted of printed reports that were mailed to participants and provided tailored feedback on each of the three unhealthy behaviors. The printed feedback included detailed information on: their stages of change, pros and cons of behavior change, strategies for change (i.e. overcoming temptations, getting support, making a commitment) and a summary for each unhealthy behavior. A total of 9 reports (3 mailed packets including feedback on 3 behaviors) were delivered to participants over the course of 12 months.

The Integrated Expert System group received printed feedback on all unhealthy behaviors simultaneously. Rather than segmenting the feedback by behavior (as in the Telecommunications and Modular systems) the feedback in this system was integrated around themes to aid participants in learning about change processes that are similar across behaviors. Thus, the feedback materials were shorter in length compared to the

other two systems. Participants in the Integrated group received printed feedback reports through the mail with information including: their stage of change, pros and cons of behavior change, strategies for change (i.e. overcoming temptations, getting support, making a commitment) and a summary for their overall health. There were a total of 3 reports delivered to participants over the course of 12 months. If participants in this newer Expert System performed similarly or better than the other systems, this feedback format would retain several advantages that would argue for future approaches being integrated.

Outcome measures for Project HEALTH primarily consisted of progress or change in the central constructs of the TTM including: stages of change for overall health, smoking (i.e. prolonged abstinence rates), diet (i.e. decrease in fatty foods, increase in fruits and vegetables) and exercise (i.e. increase in physical activities); decisional balance, confidence and temptations.

At the time this research was being conducted, a total of 1574 participants were enrolled in Project HEALTH which increased to 1601 participants enrolled in the study by its completion in 2009. These participants were recruited from a pool of 12,205 potential participants from a national sample.

Satisfaction

Research in consumer satisfaction has been abundant in the literature since the 1960's. Many theories of satisfaction exist (e.g. Job satisfaction theory, Affect theory, Dispositional theory, Two-Factor theory) with little consensus due to the multiple contexts where satisfaction has been studied (e.g. product consumption, health care, job satisfaction, etc.). In an attempt to address this dilemma, Giese & Cote (2000) suggested

a newer theory of satisfaction based on previous research. They found most theories of satisfaction included: an emotional or cognitive response; focus of response (e.g. expectations, experience) and that the response occurred after the service or product was consumed. Hence, this newer theory has face validity in that incorporates the commonalities of most theories of satisfaction.

While most theories contain these components, the way in which satisfaction is defined depends on the field of interest. For instance, in the marketing field definitions of satisfaction are often product-oriented. For example, satisfaction is the sense that the product met an individual's needs. In the social sciences, more emphasis is placed on the experiences of the consumer in the definition. Thus, satisfaction is the positive experience an individual had while using a service. While the theoretical underpinnings are similar, definitions remain divergent, which alludes to the complicated nature of assessments to study satisfaction.

Literature suggests at least two overarching components of satisfaction. Some researchers have found that satisfaction is directly linked to outcome measures (Ennew, et al., 1999; Spreng, et al, 1996). Outcome measures can vary also depending on the field of research. These can include, but are not limited to: stages of change, timeliness of service, if the expected product was provided. Other researchers found that satisfaction is directly correlated with the perception of value/quality placed on the service or product (Fornell et al., 1992; Hallowell, 1996). It appears both of these ideas are valuable components to consider when examining satisfaction.

Given the inconsistencies in definitions, how reliable are satisfaction data? Sitzia (1999) found of the 195 studies that examined satisfaction, the majority displayed little

evidence of reliability or validity. Avis et al. (1995) argues the construct of satisfaction is not grounded in the values and experiences of the consumer. This dismissal creates an imbalance of power as consumers are considered less in planning and evaluation of services. Concluding, not only are the definitions of satisfaction inconsistent, but measures to assess satisfaction can often be weak as they fail to incorporate the experiences or values of the consumer.

Given the limitations, satisfaction is an important concept to examine as it is often used in a variety of ways such as for professionals to guide programs or for consumers to choose products. It is important to understand the concept from a consumer perspective. In considering components of satisfaction, McKinley et al. (1997) facilitated focus groups to develop a patient satisfaction questionnaire. These researchers discovered the following aspects: interpersonal interactions, quality of care, outcome of care and access all important in overall satisfaction. This attempt to develop a measure based in qualitative methodologies provided some confirmation of the commonalities found in theories of satisfaction and an example of the depth in components of satisfaction. Meuter et al., (2000) studied satisfaction with technology-based service encounters and found several factors leading to satisfactory evaluations by customers. They identified the main

satisfaction is “a complex system” that incorporates both the experience and perceptions of consumers.

This researcher adheres to the integrated definition of satisfaction as suggested by Giese & Cote (2000). Therefore, satisfaction is defined as an evaluation of services based on the experience and perceptions of an individual. With a clear definition, developing a measure to assess satisfaction is warranted. Because the components of satisfaction were not clearly understood for participants utilizing Project HEALTH Expert Systems (as they had not been thoroughly assessed prior to this research), qualitative methodologies were employed in an attempt to understand participants’ experience and ultimately understand their definition of satisfaction.

Methodology

The primary aims of this research were to examine the experiences and levels of satisfaction among participants in three Expert Systems. The secondary aims were to investigate any differences in levels of satisfaction among differing demographics (e.g. gender and race). The information gathered from this research will hopefully be used in the future to improve the three Expert Systems.

Research Questions

The research questions for this research were: (a) What goals lead individuals to participate in the program?, (b) What expectations do individuals have prior to participating in the program?, (c) What are individuals' levels of satisfaction among the three treatment groups?, (d) How do the levels of satisfaction vary among demographic variables (e.g. male and female; Black and White)?, (e) What is the experience for an individual participating in the program? (f) What aids individuals in an increased level of participation?, (g) What hinders individuals from participating more?, (h) What is the level of trust individuals have in the information provided?, and (i) How does the individuals participation in the program influence their future behavior?

Mixed Method Research Design

In order to answer the research questions, a mixed method design was selected. This type of design contains elements of qualitative and quantitative approaches (Tashakkori & Teddlie, 1998). While a mixed method design was chosen, this researcher still maintained a qualitative stance in designing the interview guide, coding, analyzing and interpreting the data.

Lincoln & Denzin (2000), well-known qualitative researchers, indicate there are several activities that define the qualitative research process. These include how a researcher approaches the world, a framework (theory, ontology) that specifies a set of questions (epistemology) which then influences the approaches a researcher uses to answer these questions (methodology, analysis). The overarching term that encompasses ontology, epistemology and methodology is paradigm (Lincoln & Denzin, 2000). There has been, and continues to be, a great deal of debate regarding the relative importance of maintaining congruence between a researcher's ontology, epistemology and methodology in qualitative and quantitative research. Other scholars, often referred to as pragmatists, assert that qualitative and quantitative research are compatible (Brewer & Hunter, 1989; Datta, 1994; Howe, 1988; Tashakkori & Teddlie, 1998) and can be used to complement each other in research studies. According to pragmatists, both approaches are useful and the decision to use one or both are based on what will work best to answer the research questions. Pragmatists believe that it is the research questions that are most important, not the researcher's worldview, and "pragmatism is the best paradigm for justifying the use of mixed methods (Tashakkori & Teddlie, 1998).

Pragmatism served as the philosophical orientation for this research. Purposive sampling techniques were used to select a sample that could best address the phenomena being studied. Since the primary aim was to elicit information related to the experiences of participants (i.e. How did you experience Project HEALTH? including expectations, satisfaction, likes, style) semi-structured telephone based interviews were determined to be the best method for data collection. The interview questions were based on the literature review and this researcher's values and interests. The types of questions asked

by this researcher were primarily 'hows' as opposed to 'whys.' Analysis of the data was conducted using both qualitative and quantitative approaches. This researcher gathered information about the participants' experiences of Expert Systems and then made generalizations about each group.

In qualitative research, establishing trustworthiness is imperative to ensure the best quality of research and to minimize limitations. The researcher bears the responsibility to demonstrate the findings of an inquiry are credible. Lincoln & Guba (1985 & 1994) developed criteria and strategies that can be combined to address trustworthiness. A number of these strategies were used in this study including prolonged engagement, reflexive journaling, informal member checks, dependability audit and triangulation.

This researcher was engaged with the data over the course of one year. The interviews were conducted and by this single researcher over the course of six months. Transcription of the interviews over the course of four months, development and refinement of codes over the course of one year allowed this researcher to be immersed in the data (prolonged engagement). The participants were informed that all of their opinions were valued. Throughout the interviews, responses given by participants were validated by the researcher (member checking). Memos were kept throughout the study and recorded methodological decisions which were discussed with faculty (reflexive journaling). Informal consultation with faculty throughout the research process, allowed for a dependability audit which examined all of the decisions made from the beginning of the research study to the analysis and interpretation of results. Lastly, the quantitative

analyses were used to validate the qualitative data specifically related to participant satisfaction ratings (triangulation).

When conducting a study that is purely qualitative or incorporates a significant qualitative component, it is important to discuss any qualities of the researcher that could possibly influence the research process. This researcher is a Black female who has been interested in the topic of health disparities for several years, specifically between Whites and Blacks. This researchers race seemed to be helpful in developing the interview protocol as cultural factors like style of interactions were thoroughly considered. Race, however, did not seem to be a concern when conducting the interviews. This may have been due to the fact the interviews were conducted over the telephone; the results may have been different if the interviews were conducted in person. It is clear race influenced the conception of the research, but it likely did not influence participant's experiences when conducting the interviews.

Participants

A total of 1574⁵ participants had completed or were enrolled in Project HEALTH when this research was being conducted. Based on preliminary findings of a query conducted by the Survey Center, approximately 475 individuals (TLC=109, M=150, I=216) were listed as potential participants for this research. At this point, three grouping variables were implemented to recruit the most appropriate individuals based on the research questions (purposive sampling). The first grouping variable was group assignment (i.e. Telecommunications, Modular or Integrated). The aim was to administer

⁵ Descriptives: TLC=391, M=390, I=388, Control=393 and 12 participants had not been assigned a group. Gender: Male=537, Female=1037; Age Range: 22-75, M=48.03, SD=13.81; Race: White=1502, Black=56.

10 interviews in each group for a total of 30 interviews⁶. The second grouping variable was level of participation. This researcher hoped to speak with individuals that had low or high levels of participation. Level of participation was determined by an individuals' response to Utilization questions (see Appendix B) included in their 24 month telephone survey. For participants in the Telecommunications program, a report of 0 to 3 calls were labeled as low participators and those reporting 4 to 12 calls were labeled as high participators. For participants in the Modular and Integrated programs, a response of 1 or 2 were labeled as low participators and those responding with 3 to 5 were labeled as high participators. The last grouping variable was race. Based on the research questions, this researcher was only interested in speaking to White⁷ and Black⁸ participants because the largest gap in health disparities exist between these two groups. The aim was to conduct 3 to 5 interviews with Black participants per group, with the remainder of participants being White. Finally, because participant memory was a vital aspect of retrieving valuable data, participants that had completed Project HEALTH more than 12 months prior to the interview administration period were not contacted.

Over 260 individuals were contacted via telephone to request their participation in this research over the course of a six month period. A total of 58 interviews were conducted, which constitutes 22% of the individuals contacted. There were a variety of

⁶ Sample size is relevant to statistical power in quantitative research, but has less relevance in qualitative research (Camic, et al, 2003). This researcher believed the sample of 30 would provide adequate representation of the experiences of participants.

⁷ The terms Caucasian and White have been used interchangeably in the literature. The term White has been used more often in research in the last few years, therefore, I will be using this term for the remainder of this document.

⁸ The terms African American and Black have also been used interchangeably in the literature. I believe the term Black is more descriptive than African American when describing individuals of the African Diaspora. Therefore, the term Black will be used throughout the remainder of this document.

dispositions which prevented the remaining 200 individuals from participation⁹. These included (but were not limited to): no recall of the study, gatekeeper refusal and participant refusal. Of the 58 completed individual interviews, 18 participated in the Telecommunications group, 29¹⁰ participated in the Modular group and 11 participated in the Integrated group. Of the 58 interviews, 2 were removed from the analyses due to lack of information provided (R19)¹¹ and an inaudible recording (R29)¹². There were 7 additional interviews which were incomplete for various reasons (i.e. desire to discontinue and lack of recall regarding feedback), but were included due to the valuable information provided.

Of the 56 participants, 22 were men (40%) and 34 were women (60%). The age range was from 26 to 75 with a median age 52 years old. The majority of participants (52) identified as White (93%), and 4 participants identified as Black¹³ (7%) (see Tables 1, 2 and 3). There were 18 participants in the Telecommunications group (M Age=51.33 with SD=10.30, age range of 30 to 70, Women=7, Men=11, White=17, Black=1, Level of participation: Low=14, High=4) [see Table 1]. There were 27 participants in the Modular group (M Age=51.37 with a SD= 13.13, age range of 26 to 75, Women=18, Men=9, White=24, Black=3, Level of participation: Low=11, High=16) [see Table 2]. There were 11 participants in the Integrated group (M Age=55.36 with SD=13.87, age range of 28 to 72, Women=9, Men=2, White=11, Level of participation: Low=7, High=4) [see Table 3].

⁹ It is unclear which dispositions were most common as these were not recorded.

¹⁰ The number of recruitment calls this researcher made, were similar for each group. It remains unclear why more individuals from the Modular group participated in this research.

¹¹ Upon speaking with this participant, he disclosed his mother read all the information to him. When asked about the project, his responses included "Yes," "No" and "I don't know." Because there was a lack of information provided, I felt it was appropriate to exclude this interview.

¹² At the completion of this interview, the recording did not have sound. Technical support from the Survey Center was provided, but the recording was unable to be recovered. Due to the lack of data to transcribe, I felt it was appropriate to exclude this interview.

The Black sample¹⁴ included 4 participants, which made up less than 7% of this research sample. These participants were all women, 3 of whom were in the Modular group and 1 was in the Telecommunications group. Their age range was from 47 to 64, with a mean age of 54.

Procedures

All procedures of this research were approved by the Internal Review Board at the University of Rhode Island.

Confidentiality. Participants signed a consent form as a part of Project HEALTH (see Appendix A). The Principal Investigator, Wayne F. Velicer, Ph.D. indicated this form provided consent to this research as well. The consent states: “You will be asked to participate in several telephone surveys during the next two years. The number of telephone surveys will depend on the group you are assigned to...” This research was considered a part of conducting one of these telephone surveys.

This researcher complied with procedures of confidentiality on the consent form, which states:

All data will be coded with a number and will be scored on password-protected computers, separated from your name. Only authorized researcher will have access to any identifying information. There will be no reports remaining that identify you as an individual project participant. Information linking to your name will not be released to anyone outside the research group.

As a part of the research team, this researcher was able to access the name and contact information of an individual via computer system, but no paper records were kept

¹⁴ A total of 56 Black participants and 1502 White participants were enrolled or had completed Project HEALTH at the time this research was being conducted. It is possible the sample size for Black participants was too small and the proposed goal of recruiting 3 to 5 participants was not realistic for this research.

including this identifying information. After data were collected, access to this information ceased.

When participants were contacted, they were informed of: their confidentiality, their decision to not participate or quit at anytime and provided with a contact number where they could receive additional information about their rights or to file a complaint (see Appendixes A and D). In addition, they were notified their participation may not directly benefit them, but their participation would provide valuable information in designing future programs, which may benefit others. They were further informed the purpose of this recorded call was to examine their experience and satisfaction (see Appendixes C and D).

Project HEALTH participants were recruited using a random digit dial telephone methodology to contact individuals across the United States. Due to the wide area in which participants resided, it was deemed most appropriate to conduct semi-structured interviews via telephone.

A list of approximately 450 identification numbers with the three grouping variables (i.e. group assignment, level of participation, and race) were provided by the Survey Center. A purposive sampling technique was utilized in hopes of obtaining an equivalent number of participants in each of the grouping variables. As a part of the research team, this researcher was able to access the Survey Center computer system to get participant contact information. Since the sample was from various parts of the United States, careful consideration was given to time of day and time zones were confirmed using an area code finder prior to calling.

Over 260 individuals from this list were contacted via telephone and asked to participate. Participants were informed of the purpose of this research and aspects of confidentiality. They were provided with an opportunity to ask questions and/or express concerns (see Appendixes C and D). If individuals were agreeable at this point, they were asked permission to conduct the interview at that time and the recording was started. If individuals were agreeable, but were not available at that time, they were asked for an appropriate time to complete the interview and called at that time.

Data Collection and Measures

Demographic Data. Archival data from the Survey Center provided demographic information including gender, age and race. Group assignment, level of participation and stages of change were also provided by the Survey Center. No additional information was requested from participants.

Interview Guide. A semi-structured interview guide was developed to address the primary and secondary aims of the research (see Appendix E). The interview guide was carefully reviewed and revised after continuous consultations with Ginette G. Ferszt, expert in qualitative methods; Mark L. Robbins, expert in clinical interviewing and Wayne F. Velicer, expert in measure development. In developing the interview guide, careful consideration was given to: types of questions, time frame of questions, sequencing of questions, and possible follow-up questions.

According to Patton (1987), there are six basic types of interview questions which include: experience/behavior; opinion/belief; feelings; knowledge; sensory; demographics. This interview guide contained each type of question with the exception of demographics questions (as explained above). Experience or behavior questions

include descriptions of experiences, behaviors, actions, and activities. The majority of questions in the interview guide consisted of experience and behavior questions since this was the primary aim of the research. Opinion/belief questions provided this researcher with an understanding of the cognitive and interpretative processes of the individuals, which was important in how they viewed the Systems. Feeling questions were specifically directed at the participants' level of satisfaction because this represents their emotional response to their experiences and thoughts. Emotional responses are thought to be an important aspect of satisfaction and participation (Liljander & Strandvik, 1997). Knowledge questions assessed familiarity with the Systems and gave this researcher a better sense whether the participants grasped the information in a manner consistent with original Investigators intentions. Lastly, sensory questions allowed the individual an opportunity to describe the stimuli, in this case, the type of Expert System to which they were exposed. This provided a sense of the experience of interacting with each of the Systems. The time frame of questions addressed past, present and the future behaviors, thoughts and feelings; specifically, past experiences with the System, current impressions of the system, and future health behaviors. Recommendations from Depth Interviewing (Patton, 1987) were followed with regard to the sequencing of questions. Non-controversial present behaviors were asked first, then interpretations, opinions and feelings about behaviors. The last section of the interview was devoted to future-oriented behaviors.

Opportunities were allotted for potential follow-up questions to elicit more information or clarify the information presented by the participant. Some follow-up questions were detail oriented and others were clarification probes. For instance, "I want

to make sure I understood what you said correctly. What I got from that was . . . Is that correct?” There was also time allotted for probing questions. For instance, “Tell me more about that” or “Would you be more specific.” A sample interview is provided in the appendix for review (see Appendix F).

The interview was designed to take approximately 10 minutes to administer. However, variations in length of interviews were expected based on the nature of the participant (e.g. talkative versus quiet). Interviews for this research varied in length from 5 minutes to 55 minutes. The interviews were conducted in English, which was the primary language of the majority of participants from Project HEALTH.

Analytical Procedures

Qualitative. Interviews were recorded electronically using resources provided by the Survey Center at the Cancer Prevention Research Center (CPRC). The Survey Center has private acoustic paneled enclosed workspaces and desks. Each workspace has a headset telephone for hands-free telephone interviewing. The interviews were recorded electronically using the UBS Blast system (Version 1.94) and transferred to a Universal Serial Bus (USB) Flash Drive, where they were stored in a locked cabinet on the CPRC premises.

Each interview was transcribed verbatim by this researcher. Each transcription of the interview was thoroughly examined for formal and informal identifiers (e.g. name, place of employment, place of residence), which were removed to protect the privacy of participants. The transcription process took approximately four months to complete.

The data were analyzed using a qualitative analysis and management program (NVivo 7). NVivo 7 allowed this researcher to search and assess relationships of text

with the ability to mark specific items for analyses. These data were organized using the process of coding or with nodes. A code or node is a collection of references about a specific theme, place, person or other area of interest (NVivo 7 Manual, 2006). This researcher coded complete sentences, paragraphs and larger sections of the interviews to provide a context. A tree node or a catalog of nodes was then used to organize the data for easy comparisons (see Figure 1). As a result of the tree node, this researcher was able to organize the data with overarching themes as well as specific parts of that theme. While rare, some participants' had multiple nodes within the same overarching theme. For example, one participant indicated they participated in the program to help others as well as to improve his health.

The coding process was completed over the course of one year and involved two distinct phases. First, this researcher organized the data by coding according to the interview questions (i.e. Tell me how the program met/did not meet your expectations?). This type of coding is closely related to topic coding, in that there are preconceived topics and data is coded according to those. As the coding based on the 18 questions progressed, other codes began to emerge from the data (i.e. helping others, suggestions) and these were coded as well. During the second phase, the participants' group was utilized as an overarching code. At this point, the coding closely resembled descriptive coding which identifies the individuals or groups. This second phase was helpful in the process of comparing group experiences and satisfaction. At various points throughout the coding process, this researcher informally consulted with colleagues, however, no one was directly involved in the coding in NVivo.

Quantitative. Quantitative data were analyzed using Statistical Package for the Social Sciences (SPSS), Version16.0. SPSS is an advanced mathematical and statistical software program used for analyses. These data, that provide support to the qualitative data, are presented throughout the results section and referred to in the discussion section.

Results

Themes

The major topical headings from the interview guide served as a framework in examining themes (Reasons for Participation, Expectations, Likes, Style, Experience¹⁵, Reaction to Feedback, Trust, Satisfaction and Suggestions). Therefore the results section was separated by these themes. Within each of these overarching themes, frequencies of codes and appropriate exemplars of participant endorsements are provided. In addition, quantitative analyses are included under the satisfaction theme.

Reasons to Participate

Participants were asked their reasons for participating in Project HEALTH. In general, participants Reasons for Participation (see Figure 2) fell into one of four areas: an interest in changing their behavior (n=16), helping others or research (n=19), general interest in the topics (n=9) or no reasons (n=23). A number of individuals recalled a desire to change their unhealthy behaviors and described their overall health: “Well, I think it was primarily because I was, you know I am getting on in years and I was concerned for my health (R16).” Others were interested in changing a specific behavior, for instance: “Um, I was thinking about quitting smoking (R57)” and “Uh, it gave me a chance of the dieting and ways of quitting to smoke (R49).” Other participants were motivated to help others: “I thought it would be a good learning experience and also turn around and be able to help other people (R52).” A number of individuals reported a general interest in the program: “I just thought it was an interesting study and you know

¹⁵ The theme of Experience was not included because the information coded was replicated in other themes, where the information was better explained.

there was always a chance of bettering yourself (R36).” Still others indicated they had no reasons or could not recall reasons of why they participated.

Expectations

Participants were asked about their expectations with Project HEALTH and how those expectations were or were not met. Responses were coded into 3 categories (see Figure 3) including: behavior change (n=17), helping others (n=3) and no expectations or basic project expectations (n=38) across the 3 groups. This participant described her expectation of changing behaviors:

I: Before you began to participate in the program, tell me some things you expected to happen? For instance, some people say they expected to be smoke-free or to have a better diet or exercise program.

R33: Uh, pretty much all of it (laughs).

I: Okay. So, you expected everything to improve.

R33: Oh, definitely.

I: Tell me how the program met or did not meet your expectations with regards to this.

R33: Well, I am smoke-free five months as of Wednesday.

This participant said she had specific expectations of behavior change:

R43: Possibly change my eating habits.

I: Okay, anything else that you expected.

R43: Um, no.

I: Okay. Tell me how the program met or did not meet your expectations with regards to your eating habits?

R43: It did meet my expectations and I did change some of my eating habits.

Of the 17 participants that expected behavior change, 11 indicated they changed one, two or all three behaviors (i.e. eating habits, exercise habits, decrease in smoking). Of the participants that stated they expected change, some (n=6) reported no behavior changes. Of the participants that did not report changes, over half (n=4) indicated Project HEALTH did provide helpful information. For instance, a Modular group participant stated:

I think it met my expectations just fine. I probably expected a little more of myself that I was actually going to do but that was also because I was hoping to be having another child during that time and that didn't happen yet and we decided to wait. So, I was expecting myself to get healthier than I actually did, but um . . . still with just the new knowledge and having all the new literature to look through and you know, keep tabs on myself. It's something I can still utilize in the future and something I will be aware of (R36).

One participant in the Telecommunications group acknowledged her lack of participation as an explanation for her expectations of behavior change not being met:

I: Can you tell me how the program met or did not meet your expectations with regards to these?

R48: Um, it didn't, because I didn't participate enough I think. You know what I mean?

I: Right, and you were invited to call the automated system. And were you able to do that at all.

R48: I don't think I ever did, no.

Participants that fell into the category of 'no expectations' or 'basic project expectations' (n=38) reported expectations like: receiving telephone calls, receiving feedback, etc. The following statement is an example of basic project expectations in the Modular group.

R16: ... no, I had no expectations other than to participate and then get some feedback as to how I compare to other people in the country, I guess.

Several participants (n=3) alluded to the desire to help others through their participation. For example: “I just kind of one of those things, it was cancer research and that’s always a good thing so I am always one to help out (R14).”

Likes

Participants were asked what they liked about the program and if these ‘likes’ had an influence on their level of participation. The category of likes (see Figure 4) was coded across the 3 groups into 5 codes including: feedback (n=23), helping others (n=5), interactions with staff (n=10), the telephone surveys (n=8), none (n=10) and 1 participant in the Integrated group indicated she enjoyed participating because it “it was easy (R50).”

Several participants in the Modular (n=14) and Integrated (n=5) groups described their enjoyment of the feedback reports. For instance: “The report you would get after every telephone call. Because just in case you didn’t remember all the questions, you got to read and see if you made any progress or not (R45)” and “...when I did receive the progress reports, that was nice actually to just to be able to see on paper where you are starting from and where you may be and um . . . then the little calls, the check-ins (R36).” Only a few people (n=4) in the Telecommunications group mentioned they enjoyed the automated feedback. For instance:

I: So, it was realistic in giving suggestions?

R51: Well, sure. I don’t remember what exactly those suggestions were, but it was like substituting this for that. I guess it was a suggestion, what are the white meats or whatever.

Several participants (the majority in the Telecommunications group) noted their enjoyment of the telephone surveys. This participant liked the questions: “I thought it was, I thought that some of the questions were right down to earth and seemed to apply

whereas some of the other questions you know (alluding to feedback), were not really things I would do (R52).” Other participants stated the telephone surveys served as a reminder for behavior change: “. . . the little calls, the check-ins. They probably could have done that more frequently. I mean, maybe the people would stay on it a little better, those of us that need that shove (R36).”

A couple of people in each group indicated their interaction with staff (especially during the telephone survey) was pleasant and were motivated to continue participating. For example: “The people that called were real nice. And if I didn’t have time to talk, they would call me back later (R24);” “Nothing in particular, except that you guys were polite and always very forthright in everything that you said and asked. That’s why I kept going with it (R32);” “The people were real courteous (R35)” and “Well, I liked the fact that they weren’t calling you every week (both laugh). And they were very polite and patient (R43).”

A couple of participants stated their desire to help others made their participation worthwhile: “Well, I felt like I was contributing to something (R37).”

Style

Because the nature of feedback differed for each group, the style was examined separately for each group. However, the data revealed an overlap in codes.

In the Telecommunications group, codes (see Figure 5) were divided into 5 categories, including: confusing questions (n=2); irrelevant (n=2); repetitive questions (n=2); time consuming (n=2) and no difficulties (n=17). It should be noted when responding to the style question, the majority of participants referred to the telephone survey as opposed to the feedback or interactions with staff.

In the Modular group, participant responses fell into one of 7 codes (see Figure 5), including: confusing questions (n=5); infrequent contacts (n=2); irrelevant (n=2); repetitive questions (n=3); time consuming (n=7); too much information (n=1) and no difficulties (n=18). Similar to the Telecommunications group, the majority of participants referred to the telephone survey when discussing their perception of style. Two participants felt an increase in contact would have helped their behavior change: “If it was more contact than 3 months apart or however often it was. You know, I might have been *might* is the key word, have been a little more diligent (R05).” In addition, another participant indicated he received the telephone surveys, but not the written feedback:

I guess to be honest I probably had a chance to take part in something that was pretty good, but I never realized it because I didn't have any of the materials to know what it was that I was supposed to be trying to correct or curve. I mean obviously eating and smoking habits, that type of thing. But, I . . . I don't know. I guess without knowing what the materials were, I don't know how much more benefit I could have gotten out of that ...(R38).

On the opposing end, this participant indicated she felt there was too much information in the printed feedback. She says:

R02: After the first one, then I saw what it was, I looked at it and thought “Oh okay I'll get to this to this later.” And that's basically how I did it.

I: Okay, so because there was so much information there, it was hard to go through a second and third time.

R02: Right.

In the Integrated group, the data was divided into 4 codes (see Figure 5) including: confusing questions (n=8); repetitive questions (n=1); infrequent contacts (n=1) and no difficulties (n=8). When responding to this question, the majority of participants referred to the telephone survey as opposed to the feedback or interactions with staff. Below is an example of a participants' description of confusing questions.

R11: No . . . A lot of the questions were very vague and broad though . . . there no clear-cut answers on a lot of the questions, I guess is what I mean.

I: So it seems like some of the questions were a little vague and unclear?

R11: Yeah, some of them. You find yourself just saying "Yeah, okay." . . . Yeah, cause you are not quite sure. They repeat a lot of the questions, just in different ways. I felt anyway.

Of the 4 Black participants, 2 indicated they had 'no difficulties' with the style of the program and the other 2 participants (R03-TLC & R17-M) indicated they were unable to fully participate in the program, due to difficulties (i.e. not receiving information about calling into the automated system & not receiving mailed materials due to change in residence while participating). The number of Black participants was too small to make comparisons of style to White participants.

Reaction to Feedback

Participants were asked about their general reaction to the feedback and how they would compare this feedback to others, specifically to a health care provider. In examining the Telecommunications group, there were a variety of comments about reactions to feedback. Below is an example about receiving feedback:

I: Were there any times of the day that you typically called?

R25: No, it was just out of convenience. You know, a couple of times I forgot my password.

R50: I didn't really do anything, I just answered questions. . . . That's the only thing I did.

I: Were there some specific reasons regarding that? Like some people, say they were too busy or they forgot their password.

R50: That's pretty much it, I am usually busy.

I: So, it wasn't convenient for you to do that.

R50: No.

The majority (n= 14) of participants in the Telecommunications group had low levels of participation and many reported not accessing their feedback via automated system.

When comparing the feedback to that of a health care provider in the Telecommunications group, 2 participants stated the feedback was better from Project HEALTH (i.e. “no pressure” and “...you went into more detail”) and 2 stated it was better received from their health care provider. For instance, this participant indicated his health care provider did not have time to provide feedback:

And at the time, it was more or less trouble at hand. And these people, although very dedicated, their business is pretty much a business to make money. And you know, they'd like to help you (Laughs) but there is only so much that you can do (R25).

In examining the Modular group, participants gave various comments about their reactions to the printed feedback. For instance, 1 participant described the feedback as a reiteration of things he already knew:

R05: Well, as I recall in reading them. You know, I read them all. They are all telling me that I need to quit smoking for my health. And I need to lose weight for my health and you know basically its telling me all the things that I know I should do, but not really giving me a way of doing it. And I'm not saying that they can give away what would be right for everybody that's not what I'm saying. You know I realize that that's, that's not feasible. I need somebody, I need a personal trainer to make me do everything. Not just, exercise, you know, I just need somebody to motivate me. I have no motivation.

I: So it sounds like some of the things you read were kind of repetitive and things you knew. How did it feel when you were reading that?

R05: Well, I think it depressed me. And I mean not because what they were saying was untrue, not because, but because I know I should do those things and I know I said I was trying to do those things. And I did try in good faith. But I just have no . . . I keep blocking the word . . .

I: Motivation?

R05: Yeah, that's the word. I just have no motivation to do it.

Another participant talked about reading the feedback. She said:

Well, mostly I would read through everything. I am a really fast reader so I would just skim through everything. And I noticed that it's kind of like the things that I kind of realized while taking the survey. Like hey, it's a lot better to eat better, I really need to start doing that. I really need to start exercising. One of these days I will quit smoking. It was more of a reminder, it was something that was there that when . . . I would keep it by my computer, so when I got free time I would just glance at it, you know I mean just try to pick up what they were trying to get across (R14).

While almost all participants could not recall specific statements from the printed feedback, they were able to remark on the helpfulness of the feedback across the three behaviors. For instance:

I: In what ways were the statements about your behavior useful, besides getting your attention?

R09: Actually, it kind of motivated me to improve, to do better. You know, to just make up my mind that I need to do this for my own health and do it. . . . well I found that if I get up and do more exercises in the evenings for instance I don't have to run around the block or go to a health place. I can do as many exercises here at home. I just get up and do them. If I don't get up and do anything but a few stretching exercises or you know something to that effect.

The level of participation was split in the Modular group, with 11 labeled as low and 16 labeled as high. It should be noted that 2 participants (R17 & R38) indicated they did not receive the print feedback materials.

When examining responses of the Modular group with the feedback comparison question, the 20 participants that responded fell into one of four codes including: better with Project HEALTH (n=5), better with health care provider (n=3), no differences (n=8) and no feedback/health care provider (n=4). This participant described the differences between the types of feedback, alluding to their sense that Project HEALTH was more valuable:

R05: Well, I think your program was more of an evaluation and theirs was just a statement saying . . . and I guess they're both. They didn't really evaluate, my doctor didn't really evaluate, he just said "This is the fact." And you all were taking an evaluation and a lifestyle survey and I mean he did go into to my lifestyle. To what I eat, you know, how much I exercise I get, that kind of thing. You all asked those kinds of questions, my health care provider does not.

I: So how was that for you? So how was that helpful or not helpful for you?

R05: Well again, I think it's just awareness. Every time I take one of these calls, I become more aware. When I hang up, I will probably change clothes and go take a walk. I mean it's that kind of thing you know. I mean I don't expect my doctor to call me and say "Have you taken your walk today." And I don't expect you all to do that either. But maybe if I knew you were calling next week to say, "How many times did you walk?" I might think about it. You know what I am saying?

This participant described why the feedback from Project HEALTH was more effective to her.

I: So, how is it different or similar receiving that information from your insurance agency as opposed to our program?

R45: Well, because yours was specifically for me.

I: So, it was tailored to you. And how did you react to both of them.

R45: Well, it hit home a little harder.

I: Okay. So, being tailored specifically for you made it hit home.

R45: Yeah, it wasn't like reading like fifty percent of the people do this. You know, it was saying "*You* do this."

Lastly, participants in the Integrated group provided comments about the feedback received. For example, this participant talked about his initial reaction:

R32: Probably the smoking. I think I knew right from the very beginning, I knew that, that was one bad habit that you people addressed in a healthy living that I wasn't likely to change. And I am still probably not, even though I know it's not healthy, I have always known it's not healthy. I don't know, I just have no interest.

I: So it sounds like one of the statements that stuck out, was about smoking.

R32: Absolutely.

Eight participants that responded to the feedback comparison question in the Integrated group, which fell into 3 codes including: better with Project HEALTH (n=3), no difference (n=3) and no health care provider/feedback (n=2). This participant described the similarities of feedback and how he felt about them:

R32: Well, I guess it comes down to, I don't know if there was a whole lot of difference. It's just, you know sometimes it's like that nagging mother. You know you should do it and your mother keeps nagging at you to do it (laughs). It's just, you know these little voices in your head that tell you, "You know you should be doing this anyways.

I: So it sounds like you got a consistent reminder from your health care provider and . . .

R32: More persistent and more consistent. Mother was persistent (laughs).

I: Well, how did that work for you? Was one way more effective, or what would you say about that.

R32: Just, uh . . . I don't know, maybe it was timing. There again I don't know if I could put my finger on any of this. The only thing that comes to mind is possibly the timing. Uh, I needed to be reminded of these things and I needed it even more so and more often. So, between my doctors and healthcare providers and you guys I got enough remembering . . . reminding (laughs).

I: So it was a nice combination with our program and . . .

R32: Yes . . . yes.

Trust

There were several ways in which trust (see Figure 6) was examined including: if participants would recommend the program to others, if the participants would participate again in this project or a similar one and how believable was the information provided by the program. Of the 51 participants that answered the question regarding the recommendation of Project HEALTH, 42 stated they would recommend the program to

others (i.e. family member or friend). Forty-five participants stated they would participate in this or a similar program again and 6 indicated they would not. Of the 6 individuals that stated they would not participate again, 2 also stated they would not recommend the program to a friend.

Of the 16 participants that responded to this question in the Telecommunications group, 12 indicated they would participate in a similar program again and 13 would recommend the program to family or friends. This participant described why he would recommend Project HEALTH to others:

Well the program brings an awareness that I think people might not necessarily consider . . . when they are trying to quit smoking or if there are smoking. Umm, you know just some of the adverse effects that effect your lifestyle when you are smoking and . . uh what can be done to curtail or get rid of smoking completely (R10).

The individuals that would not recommend Project HEALTH to others gave the reason of time commitment as the primary factor. For instance, this participant stated he would recommend the program to others “If they had the time (R55).” The individuals that would not participate in Project HEALTH again stated several reasons including: time consuming; didn’t believe it was a program (R28); and lack of taking into consideration health concerns of the participant (R56).

Twenty participants¹⁶ in the Modular group indicated they would participate in a similar program. Four stated they would not participate with reasons including: waste of time and time consuming. The same 20 participants indicated they would recommend Project HEALTH to others. For instance, this participant stated she would recommend Project HEALTH:

¹⁶ One participant was not asked this question due to the interviewer oversight, but was asked if she would recommend Project HEALTH to others.

Because I see family and friends who are vastly overweight and they don't have any physical limitations and they don't seem to be doing anything about it. But I think when they realize where their health score is or where they are healthy wise, I believe they would take into consideration the fact that you need to do something and you need to do it now. And a lot of the family members that I see they are much younger than I am. So if they start now, just think how healthy they would be in a year or two (R09).

Five participants indicated they would not recommend the program for various reasons, including: don't remember the project to recommend it (R02); friends are too old to participate (R04); time consuming (R15); and one stated he does not (as a general rule) recommend anything to others (R26).

All of the participants in the Integrated group (n=10) indicated they would participate in a similar program again and would recommend the program to others.

When asked why she would recommend the program to others, R07 said:

It did give you some ideas about what roads to take to change, you know your eating habits, exercise, and I am trying to think what other questions were on there. Eating habits, exercise . . . Oh, cancer prevention. Um, it just made you aware.

The majority of participants in the Telecommunications group did not doubt the truth of feedback statements (n=4), but several mentioned the difficulty in implementing some of the suggestions due to their environment. For instance:

I am going to group with that and with the smoke thing, it's hard to take up a buddy that doesn't want to smoke and stick to that, cause I don't know him. Find somebody that doesn't want to smoke and hang out together. I suppose I could do that, but I keep running into people that smoke. I don't live in a smoke-free environment, so that was a tough one (R51).

The majority of participants in the Modular group also did not doubt the truth of feedback statements (n=15) and similarly mentioned the difficulty in implementing some of the suggestions due to their environment. For instance: "Well some of the things they

would say, like with smoking or eating did I find it harder if I was at parties or around people. I mean that didn't really apply to me (R15)." And:

Well, I am sure all the statements are true and they were all for my good and benefits. I just, in fact this [indicates where he lives] where I am living now, we have this clubhouse over there with an exercise room and a swimming pool outside. And I've been there twice. I just, I just can't get into it (R44).

In the Integrated group several individuals responded to this question (n=8) and the responses were split, as in half doubted the statements and the other half did not. One participant describes how she slowly learned to trust the statements. She says:

Well, I would say in the beginning, yeah. Again, it still goes down to the, you still find excuses, you find all kinds of reasons why that's not right . . . or whatever. Even like with the smoking, for the longest time I was like "I gotta quit, I gotta quit." But, you know what, I've just got too much stress and it's all excuses. It's not real fact, it's not really keeping you. I don't have time to exercise, you only need five or ten minutes. It may take longer that way, but that's all you really need. Nobody can say they don't have or can't find five or ten minutes. You know, the isometrics now, you can do things while you are sitting at your desk at work. I mean, I just don't . . . it's just excuses, that's what it is (R33).

Another participant described his doubt in the statement about finding a friend to exercise with. He says: "It's highly unlikely that I would find somebody to work out with and stuff like that. But, then again, I never always had to have that anyway. I was able to do either. But, yes, they are beneficial (R32)."

Of the 4 Black participants, 2 participants (R03-TLC & R17-M) indicated they did not receive feedback, so they were unable to comment on the trustworthiness of the statements. Three of these participants indicated they would recommend the program to others and would participate in a similar program in the future. The other participant was not asked these questions in part because she had not accessed her feedback through the

TLC automated system. The number of Black participants was too small to make comparisons of trust to White participants.

Satisfaction

Participants were asked two questions related to their satisfaction with Project HEALTH. They were asked to describe their satisfaction in their own words (see Tables 4, 5 and 6) and to rate their overall satisfaction on a scale of 1 to 10 (see Tables 1, 2, and 3). Fifty-one participants responded to this question with a range in scores of 1 to 10 [$M=7.63$, $SD=2.08$, $Mode=8$]. Of the 5 participants with no scores, 4 did not complete the interview and one participant felt she was unable to answer this question stating: “Uh, not applicable. I wasn’t dissatisfied and I wasn’t satisfied, it was just like it didn’t matter. I don’t know how to answer that on a one to ten (R28).”

Satisfaction ratings were examined within each of the 3 groups. Due to the unequal and low numbers of participants in each group, a statistical comparison of satisfaction scores consisting of all 3 groups was not appropriate. Instead, these were examined independently in each group.

In the Telecommunications group [$n=16$, $M=7.34$, $SD=2.05$, $Mode=8$, $Min.=1$, $Max=10$], the majority of participants were satisfied (see Table 4) with their experience in Project HEALTH. When asked to describe his satisfaction in his own words, R53 said: “It was a unique experience; it enlightened my mind with a few things...” While other participants acknowledged their lack of participation: “I guess I was somewhat satisfied. Like I said, I really did not participate. I didn’t call in because I don’t even have the number...I didn’t participate really at all, other than answering the questions (R50).”

Of the 25 participants that gave satisfaction ratings in the Modular group [$M=7.40$, $SD=2.24$, $Mode=8$, $Min.=1$, $Max=10$], overall, they reported a high level of satisfaction (see Table 5) as found in this response:

I guess I could say that I was very surprised that it was as long as it was, I was expecting it more to be a month or something. It was really cool that it was a long progressive thing. You know if it was just once or twice, it wouldn't have made any kind of effect what so ever. I am not saying that it made a drastic change in my life, but it wouldn't have made any type of effect what so ever. But, the fact that it was such a long program that you guys did do um, correspondence through the mail and everything like that. It was just, it was a good reinforcement so, I'd be very satisfied with it (R14).

In the Integrated group [$n=10$, $M=8.65$, $SD=1.53$, $Mode=10$, $Min.=6$, $Max=10$], participants seemed the most satisfied (see Table 6), however, it fact this was the smallest group should be taken into consideration. One participant remarked:

I am very satisfied with it. I am even more satisfied with it because it made me really look at myself. You know, I am able to run around with my son more and able to play with him more, you know a lot more energy and hopefully if I keep up with it you know, it will be even more so. So, I think it really just brought full circle and right up to the surface how important it is to um . . . at least try to stay healthy in the world of fast everything. Just if for nothing else, you know obviously for yourself, but if for nothing else just for our kids so we can at least give them a good basis and they can learn from positive role models. And they may not make the same crumbly choices that got us all chunky and you know, unhappy as a lot of people are because unfortunately the heavier you get you know you just get unhappy and miserable with yourself. And you know, that's why I think these kinds of programs can be helpful and they are beneficial to everybody whether they take it at the time or whether they learn after the fact (R36).

Of the 4 Black participants, the satisfaction ratings were 1, 8, 9 and 10. The score of 1 was given by a woman in the TLC group whom was unable to access her feedback through the automated system. The 3 remaining participants were in the Modular group. The number of Black participants was too small to make comparisons of satisfaction to White participants.

The rating of satisfaction was then examined in relation to the overall level of participation. An independent-samples t-test was conducted to compare the satisfaction scores for Low (n=32) and High (n=24) levels of participation for the total sample. There was no significant difference in scores for Low ($\underline{M}=7.29$, $\underline{SD}=2.44$), and High [$\underline{M}=8.07$, $\underline{SD}=1.43$; $t(49)=-1.42$, $p=0.16$]. Due to the unequal number of participants in each group, t-tests were conducted for each group, revealing no significance for satisfaction and level of participation within each group.

Satisfaction ratings were also examined in relation to participants' Stage of change. Participants' Stages of Change were transformed into a Change Score because this researcher was interested *if* the participants changed and less so in *how* they changed. The Change Score was calculated by assessing changes in stage from Baseline to 24 months. There were three possible Change Scores which include: -1, representing a decline in stage; 0, representing no change in stage, and 1 representing an improvement in stage. Participants in the Telecommunications & Modular group received a Stage of Change at Baseline and 24 months (i.e. precontemplation, contemplation, preparation and action) for three behaviors (i.e. smoking, diet and exercise), therefore, in this research each participant was given three Change Scores. Participants in Integrated group received one stage of change at Baseline and 24 months; therefore, each participant received one Change Score. As a compliment to the Change Scores, exemplars of participant responses to the questions: How has the program been helpful in changing your behavior, if at all? and How has the program been not helpful in changing your behavior? For instance, some things may have stayed the same or gotten worse? were

added here. Changes in behavior included small changes like “I stopped frying everything” to larger changes “I quit smoking (R28).”

A series of Pearson correlations were conducted in the Telecommunication group to determine the relationship of satisfaction scores with Change Scores for smoking, diet and exercise. There was a small, negative correlation between the satisfaction and smoking stage variables ($r=-0.23$, $n=16$, $p=0.38$), with higher levels of satisfaction associated with a low Change Score on the smoking variable. There was a small, negative correlation between satisfaction and diet stage variables ($r=-0.24$, $n=16$, $p=0.37$), with higher levels of satisfaction associated with a low Change Score on the diet variable. There was a small, positive correlation between satisfaction and exercise stage variables ($r=0.16$, $n=16$, $p=0.56$), with higher levels of satisfaction associated with an improvement in Change Score on the exercise variable.

A series of Pearson correlations were conducted in the Modular group to determine the relationship of satisfaction scores with Change Scores for smoking, diet and exercise. There was a small, positive correlation between the satisfaction and smoking stage variables ($r=0.31$, $n=25$, $p=0.15$), with higher levels of satisfaction associated with higher Change Scores on the smoking variable. There was a large, significant positive correlation between satisfaction and diet stage variables ($r=0.59$, $n=25$, $p=0.002$), with higher levels of satisfaction associated with high Change Scores on the diet variable. There was a very small, positive correlation between satisfaction and exercise stage variables ($r=0.03$, $n=25$, $p=0.87$), with higher levels of satisfaction associated with higher Change Scores on the exercise variable.

A Pearson correlation was conducted to determine the relationship between satisfaction scores and Change Scores in the Integrated group. There was a significant, negative correlation between satisfaction and stage ($r=-0.74$, $n=10$, $p=0.01$), with low levels of satisfaction related to low Change Scores.

Suggestions

Participants were provided with the opportunity to provide suggestions with the idea of making the Project HEALTH better in the future. Several types of suggestions were directed at the project overall, while participants in the Modular and Telecommunications group provided suggestions specific to the interventions. Suggestions for the overall project included: a desire for shorter telephone surveys ($n=5$), revision of telephone survey questions ($n=5$), variety in the interventions ($n=1$) and more tailored feedback ($n=3$). For instance, this participant talked about the length of calls and questions:

Actually, I found them calling me and being on the phone for a half an hour and them asking me a hundred questions and all the same types of questions, over and again. It was a lot and I told them, I would probably never do it again. I mean we are on the phone sometimes for 45 minutes and I have to do a scale of 1 to 10, 1 being this, 10 being that. It was like, then I couldn't remember what 1 or 10 was because they would change it. It was very difficult for me, I had a hard time with it. With the overall questioning on the phone all the time (R15).

This participant suggested a way the telephone surveys could be shorter. She said:

Well, basically like I said it would be easier if they sent the survey to me in the mail. And I could do a little at a time and read it, but it would be easier for me to do it that way than be on the phone for 30 minutes and you know, and stuff like that. That would definitely help out (R15).

Three participants talked about incurring a physical disability or injury while participating in the program that limited their ability to fully engage in changing behaviors like their exercise. While participants were deemed ineligible if they had a

preexisting condition that made it difficult for them to exercise, Project HEALTH did not take into account if a participant received an injury during participation. Therefore, provided feedback as if participants were able to engage in physical activities. One participant stated:

R09: Ummm, sometimes your questions I think might interfere with the persons physical limitations. So, when you are talking to a person I think if you would find out up front if this person had some physical or medical issues that would not allow them to do whatever. I know its questions and surveys and the follow-ups, but there are certain people that you call like me that at one point had limited physical mobility. So I had to, I had an injury. And there is a lot sometimes, when you have an existing injury that you cannot do. And my injury well it's lasting, it's something that I am going to have from now on.

I: So taking more consideration into how people are living and what's going on in their lives.

R09: Right, right.

Within the Telecommunications group, suggestions included: difficulties with the password (n=2), repetitive feedback (n=1), receiving or making more contacts (n=2) and possibility of receiving feedback through the mail (n=2). One participant talked about the password, he said:

Well, the password thing got to be terrible. Because after a while of having so many things to think about in life, the password seemed to complicate matters. That was the only criticism I could give. But, like I say it's hard to criticize somebody who is really honest about what they are doing (R25).

Another participant made a suggestion of dealing with password difficulty, he said:

It might have helped, I don't know what the expense would be on it, but to send us a card, a wallet-sized card that we could keep that would have the phone number and the basic information on it (R52).

One participant made a comment about the automated feedback:

The tapes, you know how you go on your tapes and the questions come in? You just go back over it . . . it's like one of them . . . it would be like I already heard that tape... the smoking, the other one, something on diet too. It was like; it

reminded me of a computer. It's like you hit that button and it goes back and repeats what that button says (R53).

Within the Modular group, suggestions included: making the printed materials shorter (e.g. bullet-points or highlights) (n=2), adding telephone check-ups to the project (n=1), providing an overall report for the group (n=2), possibly adding an on-line survey (n=1) and minimizing the time from telephone survey to receiving the printed materials (n=1). This participant talked about having a shorter feedback report:

No, but I did see they did have helpful hints and guides or whatever to help you to get to places I guess, to get to a place to quit smoking. But, I didn't happen to read them so . . . cause there was a lot of other stuff in there with it and so it was like reading a letter instead of . . . I'd rather just read a list and go real quick, you know (R02)?

This participant talked about the timing of when she received the feedback materials:

"Uh, you know when they called for the questionnaire. It seems like it was a long time before I got the feedback. And then a couple times I went 'Oh, yeah I remember that!' It just seemed like it was a long period in between (R24)."

Discussion

The aim of this research was to qualitatively examine the experience and satisfaction of participants in three Expert Systems. To gain a broad perspective, a variety of participants were recruited using a purposive sampling technique. The themes found in this research (i.e. Reasons to Participate, Expectations, Likes, Style, Reaction to feedback, Trust, Satisfaction and Suggestions) were not surprisingly similar to the underlying factors considered when developing the interview guide. However, this researcher did not identify the codes within each theme prior to conducting the research; rather these codes emerged from the data.

Themes

In general, Reasons to Participate were consistent across the three groups. Participants were generally interested in the topics, changing their behaviors or displayed a sense of altruism. While these codes may appear simplistic, these results provide important information for future investigators. These data confirm the underlying goals of Project HEALTH: to aid individuals in changing unhealthy behaviors and to add to the knowledge base of multiple behavior change. Future participants could ask, why should I participate and the response would be: “In research like this, individuals have participated in hopes of changing their unhealthy behaviors and to help others in similar struggles.”

When we look at the theme of Expectations, several individuals expected to change their behaviors and only a couple expected to help others. Participants who expected behavior change did not necessarily change more or less than those with no expectations. The conclusion of this theme suggests that expecting behavior change does not guarantee change. As with any change, the desire or expectation is not enough; there

must be environmental support, interpersonal support and internal motivation. More than once a participant remarked on the difficulty of quitting smoking while their friends or family members still smoked (i.e. lack of interpersonal and environmental support).

Due to the length of time from individuals consenting to participate in Project HEALTH to this interview (i.e. 2 to 3 years), participants often had difficulty recalling their reasons for taking part in the project or expectations of it. Participants replied: “I don’t know, I think it was because Or I think I wanted to” Considering this limitation, the themes of expectations and reasons to participate provided limited data as the majority of individuals reported no expectations. It might be helpful in the future if these questions are asked shortly after the consent process in order to obtain more reliable self-reports of these themes.

The theme of Likes provides valuable information on the aspects of Project HEALTH that aided in retention rates. The majority of participants believed their likes (i.e. feedback and interactions with staff) encouraged continued participation. It is helpful for Investigators to know that participants valued the feedback. Even though changes in the target behaviors may have been small, overall participants still appreciated the underlying messages in the feedback. Many participants remarked about the courteousness and friendly nature of the staff. This provides valuable feedback for the Investigators as Survey Center staff represented the largest interpersonal interactions of Project HEALTH to participants.

Style of interaction has been cited in the literature as a contributing factor in health disparities. However, this research revealed no differences in the perceived Style of Project HEALTH between Black and White participants. This researcher believes that

there were too few Black participants in this satisfaction study (i.e. Black participants=4 & White participants=52) to be able to meaningfully make comparisons on the key variables by race. In addition, the phrasing of the style question was considered as a possible explanation for the lack of differences. In health disparity research, the operational definition of style consists of a face-to-face interaction between two people. The interventions in Project HEALTH were provided outside the context of a hospital setting or an office, therefore the style (i.e. interactions with staff) was very limited and restricted to telephone interactions. It would have been helpful to consider alternate definitions of style to make the question more sensitive. Health disparities between Whites and Blacks in this country continue to exist and we need clearer definitions of what these gaps consists of. Two ways to address this issue is to recruit more Black participants in studies such as Project HEALTH and the current research project to clearly define the known contributing factors in health disparities.

There were an astonishing number of comments made about the telephone surveys. Some individuals enjoyed the telephone survey and utilized it as a reminder to make changes in their behaviors. But, for the majority of participants, the telephone survey was lengthy and consisted of confusing and repetitive questions. From the perspective of the Investigator, the number of questions in the survey was appropriate to gather the necessary information for staging and tailored feedback on unhealthy behaviors. From the participants' perspective, being on the telephone for lengthy periods of time was not always desirable. One participant commented he would have preferred to provide this information for Project HEALTH through a mailed survey. While this may have been convenient for the participant, the additional financial burdens and questions

of retaining psychometric characteristics (e.g. participants may not complete the survey in one sitting and over time their responses may be influenced by a host of factors) would be substantial. Some revisions in the telephone survey, however, may be helpful in retaining participant engagement. Future Expert System intervention research may need to find ways to minimize the respondent burden of the assessment process.

Given the unique characteristics of participants in Project HEALTH, the meta-message ‘You need to change,’ was not a novel theme as many have heard direct exhortations to change their unhealthy behaviors from family, friends and health care professionals. It was interesting how participants responded to feedback from Project HEALTH about their behaviors compared to other sources. Some felt the face-to-face interaction with their physicians or other health care providers was most effective in addressing their unhealthy behaviors as they were being held accountable, which they felt was motivating. Others felt the detailed information provided in the Project HEALTH feedback was more effective as it provided information on the benefits of change and helpful suggestions on how to change. There were no noticeable differences between those that preferred feedback from their provider and those that preferred feedback from Project HEALTH (e.g. felt pressured to change, stages of change, etc.), it just appeared that individuals had their own beliefs of how change would most likely be sustained. While receiving the same messages from multiple sources is optimal in successful behavior change, the current health care climate (where physicians may interact with patients for 15 minutes once a year) calls for more opportunities to deliver efficient tailored information as evidenced in Expert Systems.

Overall, the reaction to feedback (of those participants that received feedback) was positive, especially towards the beginning of the project. Participants noted their appreciation of Project HEALTH's assessment through the telephone surveys which provided tailored feedback. However, multiple remarks (especially within the Modular group) were made about the lengthy and repetitive nature of the feedback over the course of the program. This researcher wondered if the nature and form of the feedback could be altered over the course of an intervention to address these concerns, especially if a participant is at the same stage of change across assessments. For instance, the Modular group could receive more frequent feedback that is shorter in length or the Telecommunications group could receive briefer feedback over the telephone. It seems these types of approaches are needed to increase participant engagement that could increase participants' use of feedback materials as well as increased calling into an automated system.

The overwhelming majority of participants in all three groups indicated they would participate in a similar program again, and would also recommend Project HEALTH to a friend. These endorsements are exemplars of trust, which participants further attested to when asked about the believability of the feedback. The few instances (across all groups) when participants doubted the truth or that elements of the feedback did not apply to them in Project HEALTH, were minor when compared to the overall value of the feedback. For instance, a couple of participants doubted that working out with a friend would be helpful as their friends lived a great distance away or their friends were unable to work out. These instances suggest that gathering additional information (i.e. Does the participant have friends to work out with?) for more specific tailoring

would help engage more participants. So, there were instances when participants doubted the truth of a statement or an element of the feedback, but displayed trust in Project HEALTH by their willingness to participate again or recommend the program to others.

According to the participants in this research, satisfaction grossly consisted of: style, level of trust in Project HEALTH and if initial expectations were met. Satisfaction did not appear to be clearly related to whether a participant changed their unhealthy behaviors (outcome measures in Project HEALTH). While some participants mentioned their behavior changes when describing satisfaction, none of the participants that rated satisfaction low suggested their lack of change was related to their satisfaction. Furthermore, the quantitative analyses of satisfaction indicated only two relationships between it and other factors (i.e. Integrated Change Scores and Satisfaction; Modular Diet Change Scores and Satisfaction). Therefore, when utilizing these Expert Systems, it appears to be possible to be satisfied without making changes in one's behavior. This supports the idea that satisfaction was not linked to traditional outcome measures as some literature in satisfaction suggests. Satisfaction was mostly related to the quality of Project HEALTH.

One participant made the comment about Project HEALTH: "I think, deep down were kind of like planting that seed . . . (R33)." Meaning, behavior change may have not existed in the moment, but Project HEALTH provided the tools necessary for change. Moreover, participants said the feedback and telephone surveys made them think about behavior change. As we know, thinking about change is the first step (i.e. Contemplation Stage of Change). So, at minimum these Expert Systems may help move participants from Precontemplation to Contemplation for making health behavior changes.

Participant Profiles

In order to compare the groups, this researcher thought it was important to have a snap shot of the average participant before developing a group picture. This researcher used the corresponding data in each group to create a profile participant for each group. A profile may provide a better sense of individuals participating in these Expert Systems.

Based on these interviews, the typical participant in the Telecommunications group was a White male in his 50's who was interested in participating to help research. When he found out what the project had to offer, he decided this was a good opportunity to change his diet and smoking habits. He called into the automated system a couple of times, but lost his password. He found the telephone surveys helpful reminders to eat better and reduce his smoking, but soon after the call, he would resort to old habits. Given this profile, which is a conglomerate of statements and beliefs from participants in the Telecommunications group, how would improvements be made in this type of Expert System? While this profile participant was motivated to make changes, it might be helpful to provide him with periodic reminders over the telephone. The telephone reminders could be automated about once a month. In addition, the password system could be revised to make participation more convenient. One of the significant complaints in the Telecommunications group was difficulty with the password. After a participant experienced frustration with the password, they were less likely to engage in the interventions.

The typical participant in the Modular group was a White woman in her late 40's. She initially participated because it had to do with smoking cessation. She has been trying to quit smoking for some time now because she lacks the stamina to activity play

with her children. However, she did not have any expectations of changing going into the program. She enjoyed the printed materials as they resembled report cards. While she was disappointed at times with her progress, she liked the fact she could reread the materials and use them as a motivator. She wished the reports were shorter or had a list of bullet-pointed ideas. The suggestions were helpful although some did not apply to her, like exercising with a friend which was not feasible. She made a few changes including walking more, which helped decrease her nicotine intake. In the case of this profile, it might be helpful to revise the feedback materials slightly. The Investigators might consider a bullet-point style, which may exclude some important information. Another suggestion would be to send the same information in smaller increments so it is not as overwhelming for participants (e.g. an overview with bullet-points, specifics about smoking behaviors, diet behaviors, and exercise suggestions).

The typical participant in the Integrated group was a White woman in her mid 50's. She found the style of Project HEALTH helpful in supporting her efforts to improve her health overall. The questions asked during the telephone survey were similar to those of her health care provider, both of which were helpful reminders to continue making small changes. She would recommend this project to a friend because it was a good companion to other sources of support for healthy behavior change. Potential recommendations for improvement are very limited given this profile, which is likely due to the small sample size. However, based on the data available in the Integrated group, this participant profile could serve as an exemplar for using this type of Expert System.

Group Comparisons

Given these profiles and the data, how do the three Expert Systems compare?

Overall, the Integrated group seemed to have the most positive experience as participants in this group were likely to: rate their satisfaction high, experience positive behavior change and desire to recommend participation to others. Project HEALTH Investigators hypothesized the Integrated group would do well compared to other systems because it: was based on prior knowledge of successful intervention systems and provided integrated information (as opposed to information on each behavior) on behavior change which allowed participants to work at their own pace. It is also likely this group did better due to the reduced project demand as participants in this group received the least amount of feedback reports. We could hypothesize this intervention is less prescriptive than the others, potentially offering a gentler approach.

Modular versus Telecommunications. Both Modular and Telecommunications Expert Systems provided detailed feedback on each of the three targeted behaviors. In general, participants in the Modular had a higher level of participant and reported reading the feedback. Participants in the Telecommunications group found accessing the feedback difficult and when participants did access it, they found the feedback repetitive. It would appear that providing information on more than one behavior would be better received by participants if it was in printed form.

Integrated versus Modular. Both the Integrated and Modular Expert Systems provided printed feedback to participants. The difference was the Integrated Expert System provided overall information about health and the Modular system was detailed in each of the three targeted behaviors. Based on the data, it would appear presenting

overall information would be more well-received as the Integrated group yielded fewer complaints about the format, displayed more satisfaction and more healthy changes in behaviors. Although, this finding represents a comparison between the groups with the largest and smallest sample sizes and should be interpreted with caution.

Limitations

There are several limitations specific to this research. First, the timing of these interviews from the completion of the 12 month telephone survey was not consistent across participants, with the interview completion ranging from one month to twelve months. There was no evidence to suggest this variability in length of time from the 12 month survey until participation in this study had an impact on participant recall. However, it would be appropriate in the future to standardize a length of time to conduct interviews to help ensure dependability.

Second, the number of participants interviewed in the research was relatively small compared to the overall project (less than 4% of the total sample). Moreover, the lack of suitable representation of Black participants in this research was likely due to an ambitious sampling technique. At the time of this research, there were a total of 56 Black participants who had participated in Project HEALTH. It is possible the sample size for Black participants was too small and the proposed goal of recruiting 3 to 5 participants per group was not realistic for this research. However, for purposes of qualitative research, the number of participants has minimal relevance compared to the data gained. This researcher believes the information gained from the experiences of participants was substantial. While the information gained is valuable, generalizability of these findings to other Expert Systems should be considered with caution.

Third, individuals who participated in this research may possibly have had a more positive view of Project HEALTH than individuals who declined to participate in this satisfaction study. This concern about a positive or negative bias is often a limitation of research that cannot be entirely ruled out as an explanation for study results. Participants were provided with ample opportunities and encouraged to discuss aspects of Project HEALTH they liked as well as those they did not like as much. Given the number of negative remarks and constructive criticisms offered by participants, this researcher believes the participants in this sample were fairly representative of the typical participant who participated in Project HEALTH.

Lastly, a single researcher interviewed all participants, transcribed the data, coded and interpreted the data. A recommendation for strengthening future research studies includes the use of two or more coders in the analytic phase of the research, a confirmability audit to examine the product of the inquiry and the interpretations made by the researcher.

Future Directions

There are several changes this researcher would consider making to the interview guide prior to administering it again including: a revised question about experience and more sensitive questions to detect stylist difficulties. While the experiences described by participants were useful, this researcher was hoping to obtain more information about how and when participants utilized the feedback. For instance, a participant might have used Project HEALTH feedback as a guide when going to an annual health check-up, developing an exercise routine or using it as assistance materials for making changes to their diet. It is likely the lack of more specific data regarding use of the Project HEALTH

feedback was due, in part to the varied length of time since participation (1 month to 12 months) and the style of the telephone surveys. When participants spoke with Survey Center staff members, they were asked a series of questions with restricted responses (i.e. Likert scale); therefore participants may have expected that their responses in this satisfaction study should also be similarly confirmed. With regard to style, more explicit questions could be asked about race and trust since the literature suggest these are factors in health disparities (e.g. Did you think the person providing the suggestions was White or Black? How would receiving this information be different in person, with a White or Black professional?). Lastly, while it was evident they perceived Project HEALTH as helpful, it might be revealing to ask more specific questions about the type/level of helpfulness (e.g. Now that you have all this information, do you think you are more capable to dealing with health concerns?) These changes would possibly provide more in-depth information for future investigators to make improvements in these Expert Systems.

The purpose of this research was to gain a better understanding of how participants experienced one of three Expert Systems. This researcher believed this was achieved through the qualitative & quantitative analyses and interpretations. The valuable information gained can be utilized to inform and improve (i.e. participant retention, modified assessment techniques and revised feedback) future iterations of these Expert System interventions. Given the growing need to deliver efficacious and cost-effective interventions to help populations manage unhealthy behaviors, the results of this project can help to improve our efforts to deliver computer-based programs that can improve public health.

Tables

Table 1

Descriptive Information for Telecommunications Group

Participant	Gender	Age	Race	Level of Participation*	Satisfaction Rating	Smoking Change	Diet Change	Exercise Change
1	Male	38	White	Low	8.5	0	0	1
3	Female	50	Black	Low	1	1	1	0
6	Female	30	White	High	8	1	0	1
10	Male	41	White	High	8.5	-1	0	-1
12	Female	45	White	Low	8	0	0	1
25	Male	51	White	High	7.5	0	0	1
28	Male	48	White	Low	No Score	1	0	1
30	Female	46	White	Low	9	0	0	-1
31	Male	58	White	Low	7	0	0	-1
48	Female	59	White	Low	6	-1	0	0
49	Female	58	White	Low	8	0	0	0
50	Female	40	White	Low	7	-1	1	1
51	Male	52	White	Low	No Score	1	0	-1
52	Male	64	White	Low	8	0	1	1
53	Male	64	White	High	8	1	0	0
54	Male	57	White	Low	10	0	0	1
55	Male	53	White	Low	5	0	-1	0
56	Male	70	White	Low	8	0	0	1

* Level of Participation: Low=0-3 calls and High=4-12 calls in the last year.

Table 2

Descriptive Information for Modular Group

Participant	Gender	Age	Race	Level of Participation	Satisfaction Rating	Smoking Change	Diet Change	Exercise Change
2	Female	51	White	Low	1	0	-1	-1
4	Female	56	White	Low	8	-1	0	1
5	Female	52	White	High	8	-1	1	1
9	Female	56	Black	High	8	1	0	0
11	Male	39	White	Low	7.5	0	0	0
13	Female	47	Black	High	9	1	1	1
14	Male	26	White	High	10	0	1	0
15	Female	40	White	Low	4	0	0	0
16	Male	69	White	Low	7	-1	0	-1
17	Female	64	Black	Low	10	0	1	0
18	Female	75	White	High	7	0	0	-1
20	Male	40	White	Low	9	0	0	0
21	Male	61	White	High	9	0	0	0
23	Male	57	White	Low	8.5	0	0	0
24	Male	52	White	High	8	0	1	1
26	Female	26	White	High	3	-1	0	1
27	Female	43	White	Low	No Score	1	0	1
38	Male	37	White	Low	3.5	-1	-1	1
39	Female	69	White	High	8	1	0	0
40	Female	44	White	High	No Score	0	1	0
41	Female	56	White	High	7	1	0	0
42	Female	36	White	Low	8	0	-1	-1
43	Female	50	White	High	9	0	1	0
44	Male	63	White	High	8	-1	0	-1
45	Female	49	White	High	8	0	0	0
46	Female	74	White	High	7	0	0	0
47	Female	55	White	High	9.5	1	0	0

Table 3

Descriptive Information for Integrated Group

Participant	Gender	Age	Race	Level of Participation	Satisfaction Rating	Change in Stage
7	Female	35	White	Low	10	0
8	Male	67	White	High	8	1
22	Female	68	White	Low	6	1
32	Male	57	White	Low	9.5	0
33	Female	47	White	Low	10	0
34	Female	72	White	High	No Score	0
35	Female	56	White	High	10	0
36	Female	28	White	Low	10	0
37	Female	57	White	Low	7	0
57	Female	66	White	Low	7	1
58	Female	56	White	High	9	0

Table 4

Ratings and Verbal Descriptions of Satisfaction-TLC Group

Participant	Satisfaction Rating	Satisfaction as described by Participants
1	8.5	It was nice...anytime somebody called to talk they were always polite, patient... I didn't feel like I was bothering anybody, you know and they didn't make me feel like they was bothering me. So, it was nice.
3	1	Um, just need better follow up.
6	8	It provided information with the questions and it didn't take very long.
10	8.5	Very pleased, very courteous people, very knowledgeable . . . very informative.
12	8	Overall, it was okay. I have no problems with . . . any part of it. And I must not have because I kept doing it. And I have never, I have not continually done that before.
25	7.5	I enjoyed talking to people. They were all cordial with me, and like I say, I was impressed with their concern.
28	No Score Given	Real neutral. There was no satisfaction or dissatisfaction, it was a no factor.
30	9	I think it was fine. Like I said, if I would have paid more attention to it, I probably would have got more out of it.
31	7	It was pretty good really.
48	6	. . . let's say, I don't know, it was good, not bad.
49	8	I was satisfied.
50	7	I guess I was somewhat satisfied. Like I said, I really did not participate. I didn't call in because I don't even have the number.
51	No Score Given	None Given
52	8	I was fairly satisfied with it, I would like to get, like I said, now I'd like to get into it when I could really participate and work with it.
53	8	It was a unique experience; it enlightened my mind with a few things...
54	10	I love it.
55	5	Average, I guess.
56	8	I was satisfied with it.

Table 5

Ratings and Verbal Descriptions of Satisfaction-Modular Group

Participant	Satisfaction Rating	Satisfaction in their words
2	1	Not satisfied...whoever is funding that is probably really upset.
4	8	It was alright.
5	8	I would say that I was pretty satisfied.
9	8	My overall satisfaction with the program was very good.
11	7.5	I guess I was satisfied . . . but I was a little . . . I didn't really understand what they were trying to do to be honest with you . . .
13	9	. . . I was very satisfied. I was, overall I was very satisfied with it.
14	10	It was just, it was a good reinforcement so, I'd be very satisfied with it.
15	4	Um, I mean it was a little helpful that's all I can say.
16	7	I would say, just to review briefly, I think the program has merit. ...with some changes, it could be a very useful tool for people who participate.
17	10	Well, I enjoyed the questions and it had me thinking.
18	7	Well I think overall it was pretty comprehensive.
20	9	The people were nice and the surveys were easy to understand and I guess it would have been helpful if I applied myself more to it.
21	9	As far as the program, I think its fine.
23	8.5	Well, I'm pretty much satisfied with the whole work.
24	8	I was completely satisfied with it. I mean it's an eye-opener, you sit and think about it and read it, it kind of opens your eyes up.
26	3	Yeah, well the overall wasn't effective.
27	No Score Given	I don't remember anything.
38	3.5	I thought the whole time that I was participating in a study to see if . . . if my opinions had changed towards any of this. I had no idea that I was supposed to be really getting materials.
39	8	. . . it was pretty much, what I figured it was going to entail, but it and it was very informative and I enjoyed reading the paperwork and seeing how I could change things or what types of exercise and all this.
40	No Score Given	None Given
41	7	It was just fine...because it made me think about different things.
42	8	Oh, I thought it was great idea that they had something like this and there was a university that studied to bring awareness, to the general public about things that we abuse or take for granted.
43	9	I would say I was satisfied.
44	8	. . . it was a great program, but you know, I just didn't follow it.
45	8	I was very satisfied.
46	7	. . . well, I liked them telling me how bad I was and what I was lacking . . . and that. I can remember that part (laughs).
47	9.5	I was very satisfied, it was very educational and I am trying to live by it.

Table 6

Ratings and Verbal Descriptions of Satisfaction-Integrated Group

Participant	Satisfaction Rating	Satisfaction in their words
7	10	I thought it was pretty good.
8	8	Well, like I said, it benefits other people.
22	6	I think the programs alright, I don't have a real problem, except it has been inconvenient for me at times.
32	9.5	I think the program was okay and I think overall it was pretty good.
33	10	Obviously, definitely very, very happy with the whole thing. It's done a lot of good for me. Well, not only me but because I had the support group it's actually helped several members of my family.
34	No Score Given	None Given
35	10	Well, it's a very good program and I enjoyed participating in it.
36	10	I am very satisfied with it. Like I said, I am very, I am even more satisfied with it because it made me really look at myself.
37	7	Well, I would say I was satisfied because it wasn't horribly intrusive. It didn't take up a lot of time and it didn't seem like it was judgmental. Like when you said "Well, a little bit of progress is better than nothing."
57	7	Like, I have a lot of encouragement here, if I am going to change.
58	9	I was satisfied with it. I just didn't go along with all of it, by doing it.
		. . . I was very satisfied with it.

Figure 1

Themes and Codes

Figure 2

Reasons to Participate across All Groups

Figure 3

Expectations across All Groups

Figure 4

Likes across All Groups

Figure 5

Style-Codes for Each Group

Figure 6

Trust-Codes for Each Group

Appendix A: Consent Form

The University of Rhode Island
Cancer Prevention Research Center

Consent Form

Title of the study: Computerized Population Programs for
Three Cancer Risks

Principal Investigator: Wayne F. Velicer, Ph.D., University of Rhode Island

Subject Name: _____ **Date:** _____

You have been asked to take part in a research project described below. The researcher will explain the project to you in detail. You should feel free to ask questions. If you have any more questions later, Dr. Velicer, the person mainly responsible for this study (phone: in Rhode Island: (800) 555-2854; outside Rhode Island: (800) 777-3537), will discuss them with you. You must be at least 18 years old to be in this research project.

Description of the project:

The purpose of this research is to learn more about ways to help people change unhealthy behavior and to evaluate different ways to help people change unhealthy dietary behavior, smoking habits and sedentary lifestyle.

What will be done:

If you decide to take part in this study, here is what will happen. You will be asked to participate in several phone surveys during the next two years. You will be randomly assigned (like tossing a coin) to one of four research study groups. The number of phone surveys will depend on the group you are assigned to; at a minimum you will be surveyed again at 12 and 24 months after the initial survey. You may or may not receive materials that deal with keeping a healthy diet, quitting smoking or exercising. You may or may not be offered participation in an automated telephone counseling system called TLC that is designed to help you change your health behavior. If you are in this TLC group you will be required to make several (toll-free) phone calls to the system in order to get the information that is especially tailored to your needs. After two years, the study will be terminated and you will no longer receive survey questions or any materials.

Risks or discomfort:

The only discomfort or inconvenience associated with the study is that associated with the surveys and with the eventual effort involved in participating in one of the automated counseling programs.

Appendix A-continued: Consent Form

Expected benefits of study:

Participation in this research may help you make better decisions about your health. Even if there is no direct benefit to you for taking part in this study, your honest answers will provide valuable information in designing future health education programs, which may benefit others.

Confidentiality

Your participation in this study is strictly confidential. All data will be coded with a number and will be stored on password-protected computers, separated from your name. Only authorized researchers will have access to any identifying information. There will be no reports remaining that identify you as an individual project participant. Information linking to your name will not be released to anyone outside the research group.

Decision to quit at any time

The decision to take part in this study is up to you. You do not have to participate. If you decide to take part in this study, you may quit at any time. Whatever you decide will not penalize you in any way. If you wish to quit, simply inform Dr. Velicer (phone: in Rhode Island: (800) 555-2654; outside Rhode Island: (800) 777-3537) of your decision.

Rights and Complaints

If you are not satisfied with the way this study is performed, you may discuss your complaints with Dr. Velicer (phone: in Rhode Island: (800) 555-2654; outside Rhode Island: (800) 777-3537), anonymously, if you choose. In addition, you may contact the office of the Vice Provost for Graduate Studies, Research and Outreach, 70 Lower College Road, University of Rhode Island, Kingston, RI 02882 (phone (401) 874-2635).

Your signature below means that you understand the information and you agree to participate in this study. You have read this Consent Form and have no further questions concerning your participation in this project at this time. You understand that you may ask any additional questions at any time and that your participation in this project is voluntary. If you choose not to return this form signed, but participate in the project, you agree that your answers can be used without your signed consent.

Signature of Participant

Signature of Researcher

Typed/Printed name

Typed/Printed name

Date

Date

Appendix B: Utilization Questions

For Modular and Integrated Group participants:

3. After our most recent contact, we sent you some feedback from Project HEALTH in the form of a written report that described how your behavior compared with others and how you had changed. How much of the feedback report did you read?

1. None
2. A little
3. Some
4. Most
5. All
- 8. Refused
- 9. Don't Know/Not Sure

For Telecommunications Group participants:

5. After our first contact, you were invited to call the TLC system. How many TLC calls do you think you completed over the past year?

- 8. Refused
- 9. Don't Know/Not Sure

Appendix C: Interview Script

Hello, my name is Jennifer Doucet and I am calling about your participation in the Health Program called Computerized Population Programs for Three Cancer Risks. The reason I am calling is to talk with you about your satisfaction with the program. May I take a few minutes of your time to ask you some questions about your experience?

If no: *Would there be a better time I could call and ask you a few questions? Record time, and call.*

If yes: *We have received valuable information about improving the program from people like you that have participated for more than a year. So with your help, we would like to continue making improvements. The call should take at least 10 minutes to get through all the questions. Does this sound okay?*

If no: *Clarify any concerns they may have regarding their participation.*

If yes: *I would like to record our conversation so I won't miss anything we talk about. All the information we discuss will be confidential and it will not affect your participation in this program or future participation in our other programs. All of your personal information like your name and contact information will not be attached to your responses. Does this sound okay?*

If no: *Inquire as to reasoning for not wanting to continue. Clarify purposes of the call using the Question and Answer guide. If another time is better, record time and call. Thank them for continuing to participate in the program.*

If yes: *Do you have any questions or concerns before we begin today?*

If yes: *Answer anticipated questions using the Question and Answer Guide.*

If no: *Proceed with the questions listed below.*

Appendix D: Question & Answer Guide

	Potential Participant Questions/Statements	Interviewer responses
1	I already did the last survey.	Yes, and we really appreciate your participation. This call is concerning how you felt about the program so far, not an intervention. After participating in the program for 2 years we wanted to hear some of your experiences with the program because we are constantly looking for ways to improve the program.
2	Do I get paid for participating?	No, unfortunately you will not be paid for this call. We are constantly looking for ways to make our program better and we feel by hearing how participants like you feel about the program, we can do that. You would be helping future participants like yourself if you gave your input today.
3	Why are you calling me?	I am calling you to get a better idea of your experiences with the program and your level of satisfaction. We think you can provide valuable information to make our program better.
4	How long is this going to take?	It depends, but in the past it has usually taken at least 10 mins.
5	Who are you?	My name is Jennifer Doucet and I am a research assistant on the Computerized Population programs for three cancer risks.
6	What program is this again?	This program is called the Computerized Population Programs for Three Cancer Risks. The purpose of our program is to learn more about ways to help people change unhealthy behavior like smoking, dietary behavior, and sedentary lifestyle.
7	I don't remember giving out my information to be in this program.	This is the program that helps individuals deal with smoking, diet and exercise. You recently received a call that was your one-year follow up. Do you remember receiving a call?
8	When is my next call? When am I going to receive a package in the mail?	You should have recently received a one-year follow up call, so you should soon be receiving notification when you will be contacted. This call today will not affect your calls/packages that you will receive in the mail.
9	I didn't get my feedback last time, where is it?	I am sorry to hear that. I will have our program coordinator look into to that and contact you. Thanks for letting me know.
10	Are we almost done?	We are about halfway through and I think a lot of really important things are coming out of what you're saying.

Appendix D-continued: Question & Answer Guide

	Potential Participant Questions/Statements	Interviewer responses
11	I think the program was awful/wonderful.	I really appreciate your willingness to express your feelings about that. That's very helpful and that's exactly what type of information we would like to hear.
12	Will you be calling me again?	I will not be contacting again regarding your satisfaction in this program. However, you will continue with your participation in the program and someone else from the research team will be contacting you as usual.
13	What kinds of questions are included in this survey?	You will be asked questions about your views and experiences about the program. There are no right and wrong answers to these questions.
14	How will you protect my information?	All personal information provided in this call is strictly confidential. Your name and your responses are stored separately so that your information can't be linked back to you. We adhere to strict federal and state guidelines to ensure that individuals' rights, confidentiality and privacy remain protected.
15	Who can I contact to verify this study? Who is in charge?	If you have any questions about this survey, please contact the Principal Investigator, Wayne Velicer at the University of Rhode Island at _____. If you have questions about your rights as a participant, you may also contact Institutional Review Board 401-874-4328 Fax: 401-874-4814.
16	Will anyone know what my answers are?	The information you share during this call is completely confidential. Your responses are stored without any identifying information such as your name, address, etc. In this way, it is then grouped with other data and looked at this way.
17	Who are the members of the research team?	Primarily, they are research faculty at the Cancer Prevention Research Center at the University of Rhode Island who have their PhD's in health psychology.
18	Do I have to go anywhere for this interview?	No, this interview is going to be held over the phone.
19	I'm too busy. I don't have the time.	I understand that you are a busy person. We are trying to get as many different viewpoints as possible including people like you with busy schedules. We would like to accurately represent a wide range of views.

Appendix E: Interview Guide

	Questions
Q1	Tell me some reasons why you decided to participate in this program? For instance, some people participated because they wanted some help to quit smoking.
Q2	Before you began to participate in the program, tell me some things you expected to happen? For instance, some people say they expected to be smoke-free by the end of the program.
Q2a	Tell me how the program met/did not meet your expectations?
Q3a	Tell me some things you liked about the program. Was there anything in particular that you especially liked?
Q3b	You mentioned you liked _____, was this one of the reasons you continued to participate?
Q4a	Tell me some things about the program you didn't like as much?
Q4b	You mentioned you did not like _____, did this have something to do with the reasons you did not participate as much?
Q5	Do you remember the last time you received a call/feedback through the mail? <i>If yes</i> , I would like you to walk me through the process of the call/reading the feedback as if you were describing it to a friend. So, <u>when</u> did you receive a call/did you read the feedback, <u>why</u> did you decide to participate at that time, <u>what</u> were you doing prior to the call/reading the feedback, <u>how</u> did you feel about what you heard/read? <i>If no</i> , tell me what you remember about the feedback? It's possible that receiving the call/reading the feedback wasn't at a good time or maybe it was hard to keep track of the call times/report?
Q6	Tell me about the typical times when you either received a phone call/read the feedback? Did you find these times were convenient for you? <i>If no</i> , did you have the opportunity to tell someone what times were better for you?
Q7	As a part of the program, you received some statements about yourself. I would like you to recall a statement that you heard/read. What was that statement? For example, one statement may have been "You are still thinking about engaging in a proactive healthy lifestyle, you may not be too encouraged by your progress so far." What was it like for you to hear/read this statement about your behavior?
Q8	In what ways were the statements about your behavior useful? For instance, you may have heard/read that support from others is extremely helpful to meet your healthy lifestyle goals. As a result, you may have begun working out with a friend to help achieve your goals. Recall the statements that were useful and explain why they were useful?
Q9	In what ways may you have doubted the truth of the statements for you? For instance, you may have heard/read that support from others is extremely helpful to meet your healthy lifestyle goals. This may not be true for you because you find that working alone helps you achieve your goals more quickly. Recall the statements that you doubted and explain why they were doubtful for you?

Appendix E-continued: Interview Guide

	Questions
Q10	Have you ever received statements like the ones you described from a health care provider? <i>If yes</i> , did you receive these types of statements before or after your participation in this program? In what ways was hearing similar information from a health care provider, different than receiving it in our program? <i>If no</i> , were there any statements provided by our program that you can recall that were similar to those you received by a health care provider? What were those statements? Did you receive these types of statements before or after your participation in this program? In what ways was hearing similar information from a health care provider, different than receiving it in our program?
Q11	Sometimes participants have difficulties with the style of the program, for instance the words may be difficult to understand. Describe for me any difficulties you may have had with the style of the program? Was it easy to understand? Were there parts that were unclear?
Q12	How has the program been helpful in changing your behavior? Tell me some ways that you have changed while participating in the program?
Q13	Tell me some ways in which the program has not been as helpful in changing your behavior? Tell me ways in which things have stayed the same or gotten worse.
Q14	I am wondering if there is anything that you would like us to do differently? Are there some things you would like to see more or less of?
Q15	If a family member or friend were in a similar situation, would you recommend they participate in this program? Tell me some reasons why?
Q16	If you were in a similar situation in the future, would you consider coming back to the program? What might be some reasons why?
Q17	Describe your overall satisfaction with the program?
Q18	On a scale of 1 to 10 where 10 is the most satisfied and 1 is the least satisfied, how would you rate your satisfaction with the program?

Appendix F: Sample Interview
R44: White male, 63 years old
Modular Group, High level of participation, Satisfaction rating=8

I: Tell me some reasons why you decided to participate in this program?

R44: Well, I thought it was a good idea at the time. I wanted to quit smoking and be more healthy.

I: Before you began to participate in the program, tell me some things you expected to happen?

R44: Well, I was hoping to quit smoking and I did stop for a while. But, I came back again. And of course, I work seasonally in the winter and through the summertime and I can't smoke at work, so I did cut down quite a bit on my smoking at work.

I: Oh, that's good. It's a difficult habit to habit to change.

R44: Just like eating.

I: Well, that's true too (both laugh).

I: Okay. Tell me how the program met or did not meet your expectations for that?

R44: Well, they had everything there. And I even had a . . . the smokers gum and I had a program from them, but I don't know, I just couldn't get into it. And my healthy diet, I have a cholesterol problem that I have had for years. I was exercising and no dairy foods for a year and all kinds of stuff and nothing seemed to work until I got this Lipitor pill. And then uh, my cholesterol went way down and I sort of threw my diet out the window. You know, I am 66 years old and all I got left is eating.

I: Can you tell me some things you liked about the program?

R44: Well, they had some good ideas on exercising and diet and they get a lot of people to do it. I guess I am just a loner and I just, just never really got into it.

I: Do you think because of the good ideas in the program, this was one of the reasons you continued to participate?

R44: Oh, yeah. I always wanted to do it and I said "Oh, maybe next week, I will start tomorrow." And you know, it just never happened.

I: Can you tell me some things about the program you didn't like as much?

R44: That I didn't like as much . . . Well, I guess it's like any other program, it wants you to change everything. And uh . . . I don't know, I just can't, I couldn't go along with

it. Some things I did, some things I didn't. I filled out the forms, I answered the phone calls and but once it was over, like when I hang up here, I'll forget about you for five months.

I: Okay, so do you think because there was so much that we were asking about changing, that maybe this was one of the reasons you didn't participate as much.

R44: Well, the change, and I just don't go along with the change. Like when I go to the doctors, they say "You gotta change this, you gotta change that." And I don't know, I guess I am just too set in my ways. That's the hardest part is the changing.

I: Yeah, yeah. And we recognize that. Yeah.

R44: Like look at Dr. Phil on TV, the first thing they want you to do is to change.

I: Right. Okay. Do you recall the last time you received feedback through the mail?

R44: I don't remember when it was, but I read all the mail, and I did all the forms, whatever I had to send back.

I: Okay, and what I'd like to do now is for you to kind of walk me through the process um, so when you received the feedback, did you read it right away, did you put it down a little while and maybe some thoughts and feelings about what you thought while you were reading the feedback reports.

R44: No, I read it right away within the day that I got it and like I say, it was always the same thing . . . They wanted you to change, and I just didn't. But, I did read it the day that I got it.

I: So, you were feeling that the information was kind of repetitive.

R44: Yes, it was.

I: Okay. As a part of the program, you received some statements about yourself. I was wondering if you could recall one of the statements or maybe a general message about the statement and I can read you one if that might jar your memory a little.

R44: Oh, the statement was about myself.

I: Yeah. One of them says, "You are still thinking about engaging in a proactive healthy lifestyle, you may not be too encouraged by your progress so far."

R44: Uh, I got those papers here somewhere. Well, it would take me two days to find them, but I know I got them.

I: Well, sometimes, participants can recall like the general behavior and remember some messages about the smoking or diet part.

R44: Well, it kept on me to keep trying it. You know, don't give up, and just try it and do it again. Start over again. And I have started over a hundred times and I am still at it.

I: Okay. So, in what ways were the statements about your behavior useful? For instance, one of the statements may have said that support from others is extremely helpful to meet your healthy lifestyle goals. And as a result, you may have started to work out with a friend to help achieve your goals.

R44: Well, they wanted you to do that, in all papers. They wanted you to get together with friends or a group or something. But, like I said, I am a loner up here. I got my son with his family a couple miles away and that's all I've got up here. I've got no family and like I say I am sort of a loner, I have met a few neighbors, but I really have no friends here. I have been up here in [named his state of residence] for a little over 2 years now.

I: Okay, so it's kind of isolating being there.

R44: My life did change, because I was in [names another state] and I lost my wife two years ago and that's one of the reasons that I moved up here. And my life did change quite a bit.

I: Were there any statements that helped you make that change, or like a generalized message that the program gave you.

R44: No, not really. Like I said, it was repetitious.

I: I am wondering in what ways you may have doubted the truth of the statements for you. For instance, with the same example, you mentioned that you know working out with a friend is not really feasible because people are so far away and you are kind of isolated there. So, those statements for you may have not been true. I am wondering if there were other statements like that that you were thinking "I can't really do that."

R44: Well, I am sure all the statements are true and they were all for my good and benefits. I just, in fact this [indicates where he lives] where I am living now, we have this clubhouse over there with an exercise room and a swimming pool outside. And I've been there twice. I just, I just can't get into it.

I: Okay. I am wondering if the statements that you received in our program are similar to the ones you have received from a health care provider, like a doctor or nurse?

R44: I got a lot of stuff from this uh, what do you call it, Nicorette gum company. I started to chew this gum and they had a lot of brochures in there and they sent me some stuff too, to try to quit smoking. You guys kept sending me these little gifts, things for my heart (coughs) and basically the gum company did the same thing. They sent me

letters of encouragements and don't give up and try it again. They got a daily form to follow, that . . . I just, I don't know, I guess I am just lazy.

I: So, it sounds like the information that you received from the Nicorette company and our program was very similar. I am wondering in what ways was it different?

R44: What ways they are different? I don't think there was any differences. They wanted me to do the same things, exercise and change your eating habits.

I: So, you reacted the same to both?

R44: Actually, for the smoking, you have to change your whole lifestyle. You want to get out of the habits of what you were doing. And do something different.

I: Okay. Sometimes participants have difficulties with the style of the program, for instance the words may be difficult to understand. I am wondering if you had any difficulties with our style?

R44: No, I think I read everything and understood it all.

I: So, there weren't any parts that were unclear for you.

R44: No.

I: How has the program been helpful in changing your behavior overall?

R44: Well, really the only thing that has really changed is my smoking. I am smoke less. As far as my diet . . . well, I eat a lot more fruits than I used to. I always liked fruit, but my wife never did, so we didn't have it. So, since I am by myself, I eat quite a bit. I eat out about three times a week. I try to get fish every time.

I: Okay. Tell me some ways in which the program has not been as helpful in changing your behavior? So, give me an example of something that has either stayed the same or gotten worse.

R44: Well, they do want me to get out and exercise. I have a stationary bike and maybe every two weeks or so, I am on it. Not like I should be.

I: So, was that the same before you participated in the program. Like maybe getting on the bike a couple times a month.

R44: Yeah, that stayed the same. I didn't really do any extra exercise.

I: Okay. I am wondering if there is anything that you would like us to do differently? For instance, some things you would like to see more or less of that would make the program better in the future?

R44: Uh, I don't think you can do it any better. You just gotta get some people that are willing to participate in it. I think you did well.

I: If a family member or friend were in a similar situation, would you recommend they participate in our program?

R44: Oh sure, oh sure.

I: Can you give me a couple reasons why?

R44: Why? Well, my daughter-in-law's mother is on her fourth marriage and she could use some exercise and a different outlook on life.

I: Sounds like there are some people in your life where you could see that it would be beneficial.

R44: But, then again you know, us old people are pretty set in our ways and it's tough to change. This program maybe very good and I don't know what your results are, but it might be a lot better on some younger people.

I: Okay, that's some good feedback. If you were in a similar situation in the future, would you consider coming back to program like ours?

R44: Oh sure, if I get myself around to changing. I go to the doctor regularly, I got an internist and I got high blood pressure, some cholesterol problems, I am really in good shape though. I get a cold every once in a while, I got nothing drastically wrong and he says I am doing well.

I: Can you describe your overall satisfaction with the program?

R44: Well, like I said, it was a great program, but you know, I just didn't follow it.

I: Alright. And if I could put your satisfaction on a scale of 1 to 10 where 10 was the most satisfied and one was the least satisfied, where would I put your satisfaction?

R44: Oh, say the plan is great, I'd say a seven. If I follow the plan, it would probably be up there at nine.

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