

An Interactive Resource for Behaviour Change

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Bringing together Internet technology and stages of change theory helps consumers tackle lifestyle challenges.

Undiagnosed and untreated hypertension (high blood pressure) is an enormous public health issue throughout North America. According to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, the risk of death from heart disease and stroke (cardiovascular disease) begins to rise at blood pressures as low as 115/75. Data from the Third National Health and Nutrition Examination Survey (NHANES III) suggests that the proportion of American hypertensives who are treated and controlled is as low as 25%. In Canada, the proportion is believed to be even smaller – 13%.

In 2002, my company (Corinne S. Hodgson and Associates Inc.) was asked to develop online resources for a new blood pressure initiative of the Heart and Stroke Foundation of Ontario (HSFO). This resource would form the cornerstone of the Foundation's efforts to improve the diagnosis and management of hypertension as part of a multi-year, multi-faceted stroke initiative in collaboration with Ontario's Ministry of Health and Long-Term Care.

The web-based resource my company built for the HSFO contains lay-language information on the prevention, diagnosis and management of hypertension (see Figure 1), as well as a number of interactive tools.

Interactive Risk Assessment

The "heart" of the website is an interactive risk assessment that allows consumers to test their risk of cardiovascular disease and obtain personalized health action plans. There are a number of scientifically credible risk assessments on the Internet (e.g. the 10-year coronary heart disease calculator developed by the Framingham investigators at <http://hin.nhlbi.nih.gov/atp/iii/calculator.asp?usertype=prof> or the PROCAM Risk Calculator at <http://www.chd-taskforce.com/>). However, these instruments require inputs such as total

cholesterol, high density lipoprotein level, and systolic blood pressure – information that some people may not possess. Whereas there are inexpensive means by which users can obtain their blood pressure readings (e.g. machines in pharmacies), cholesterol testing could be a barrier to participation. The HSFO also wanted an assessment that would address modifiable (lifestyle) risk factors for cardiovascular disease.

In reviewing existing resources, my company identified an important gap that opened the door to a new approach in the use of interactive media for health promotion. The gap was simply this: existing resources simply told users what they needed to change. They did not give the user guidance on how to make change. They also did not take into account individual differences in the readiness to make change – both between users and within users in regard to different lifestyle factors.

Integrating the Stages of Change

The risk assessment my company designed integrated the Transtheoretical Model of Change in order to personalize information to the user's readiness to change. The Transtheoretical Model is based upon the idea that there are different stages of change (see Chart 1). The goal of health promotion is to support the individual in moving towards making and maintaining change. However, it is important to also accept and normalize the fact that relapses are common. You do not want people who have relapsed to become demoralized and unable or unwilling to make any further attempts to change.

As well as asking people about their non-modifiable risk factors for cardiovascular disease (age, gender, family history of CVD and ethnic background), the assessment covers:

- Smoking
- Physical inactivity
- Body Mass Index greater than 25 (an online BMI calculator was provided)
- The consumption of high-salt foods
- The consumption of high-fat foods
- Alcohol consumption exceeding the low-risk drinking guidelines (in Canada, defined as 1-2 drinks per day to a weekly maximum of 14 for men and 9 for women)

Users who report being diagnosed with hypertension, high cholesterol or diabetes are asked if they have made, or are making, lifestyle changes in order to better manage their condition(s). Those who respond “no” are categorized as having the condition as a risk factor.

Staging must be quick and easy for the user. For each reported modifiable risk factor, the user is presented with a follow-up question asking when they would be willing to make lifestyle changes in that area. Response options are “within the next month,” “within the next 6 months” and “not for at least 6 months.” Someone who indicates he/she is willing to make lifestyle changes within the next month is categorized as being in the preparation stage; “within the next 6 months” in the contemplation stage; and “not for at least 6 months” in the pre-contemplation stage.

Report and Action Plan

At the end of the risk assessment, a final report is generated that gives the user not only a list of his/her nonmodifiable and modifiable risk factors, but for each modifiable risk factor provides information and practical tips geared to his/her stage of change. Let’s take, for example, someone who reports he is inactive, overweight and smokes. Perhaps he’s willing to start thinking about an exercise program within the next month (preparation stage), but is less ready to do something about losing weight (contemplation stage) and is unwilling to think about stopping smoking (pre-contemplation stage). That person receives a report that is individualized to his needs, with practical ideas and tips geared to his readiness to change in each area.

To ensure the content accurately reflects the science of the stages of change, two

psychologists were consulted in its development. Sometimes, the copy flies in the face of the client’s standard messaging. For example, standard messaging for the HSFO on smoking includes strong statements about its harmful effects. Such negative messages are counter-productive to the stages of change approach. Pre-contemplators, for example, don’t need to be scolded; the goal at this stage is to develop rapport and gently raise doubt (see Chart 1). To do this, the messaging must be supportive rather than didactic.

Positive Feedback

Was the innovation worth the extra work it involved? Perhaps the results speak for themselves. During 2002/03 fiscal year, there were almost 40,000 unique visitors who started a risk assessment. (Although this number may appear small, remember that Canada has one-tenth the population of the U.S.) Eight out of ten (83%) of those who started the risk assessment completed it. An online survey conducted in February, 2004, found three-quarters (732/1017) of those who participated rated the risk assessment as good or excellent. Out of 1022 respondents, 873 (85%) reported the information had helped them to consider making lifestyle changes.

Of course, even the best resource cannot be effective unless people know it is there. Promotion among your target audience is critical to the success of an online resource. Traffic-building tactics utilized by the HSFO have included magazine advertisements, newspaper inserts, mail drops, digital Internet ads, and mailings to primary care providers.

This is not the end of the story. Currently, my company is working with the HSFO to develop an ongoing email service for those who want continuing support for their change plans.

Chart 1: The Stages of Change

| Stage | A person in this stage is: | The goal of intervention is to: | When would you be willing to consider change? |
|-------------------|---|--|--|
| Pre-contemplation | <ul style="list-style-type: none"> • Reluctant (lack of knowledge) • Rebellious (resistant to being told what to do) • Resigned (lack the energy to make change) • Rationalizing (have rationalized their behavior to be comfortable with it) • Not considering change | <ul style="list-style-type: none"> • Develop rapport (acceptance, understanding, avoid being judgmental) • Raise doubt (gently increase his/her perception of risk and the importance of change) | <ul style="list-style-type: none"> • Not for at least 6 months |
| Contemplation | <ul style="list-style-type: none"> • Ambivalent about changing behavior (“I’d like to lose weight but....”) | <ul style="list-style-type: none"> • Tip the balance between the reasons for change and the risks of not changing • Strengthen person’s sense of self-efficacy for change | <ul style="list-style-type: none"> • Within the next 6 months |
| Preparation | <ul style="list-style-type: none"> • Actively getting ready to change (e.g. information seeking, developing a plan of action, some behavior change) | <ul style="list-style-type: none"> • Offer choices • Help the person determine the best course of action • Encourage the person in their quest for change | <ul style="list-style-type: none"> • Within the next month |
| Action | <ul style="list-style-type: none"> • Busy making changes | <ul style="list-style-type: none"> • Help the person take specific steps towards change • Support him/her and enhance adherence | <ul style="list-style-type: none"> • Now; have started making changes |
| Maintenance | <ul style="list-style-type: none"> • Behavior change has become a normal way of life (“new normal”) and is ingrained in personal lifestyle • Still vulnerable to relapse | <ul style="list-style-type: none"> • Help the person identify and use strategies to maintain the change | |
| Termination | <ul style="list-style-type: none"> • Resolved of all temptations to engage in the old behavior <p>This is an end goal reached by few.</p> | | |