Using Analogies to Communicate Information About Medical Treatments and Screenings

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Materials for Difficult Tasks (Medical Treatments)

a) Introduction

1) Control (no analogy) group

These participants received the following introduction before answering two questions testing accuracy of understanding information about medical treatments (Gritagrel–Stroke and Zendil–Gum Inflammation):

Please read the following information carefully. It will help you answer the questions that follow. [new paragraph] We often hear in the media that a certain medicine will reduce the chance of getting some disease by, for example, 50%. To understand how useful this drug could be, it would be good to know how high the risk of getting this disease is in the first place.

2) Analogy: Preventive Treatment–Disease : Aspirin–Heart Attack

Participants received an introduction, as in the control group, and in addition:

Similarly, to determine how useful taking aspirin is for reducing the risk of a heart attack, it would be good to know how high the risk of having a heart attack is in the first place.

3) Analogy: Preventive Treatment–Disease : Flu Vaccine–Flu

Participants received an introduction, as in the control group, and in addition:

Similarly, to determine how useful a flu vaccine is for reducing the risk of getting the flu, it would be good to know how high the risk of getting the flu is in the first place.

4) Analogy: Preventive Treatment–Disease : Fire Insurance–Bankruptcy

Participants received an introduction, as in the control group, and in addition:
Similarly, to determine how useful it is to buy fire insurance to reduce the risk of bankruptcy in case of fire, it would be good to know what the chance is of such bankruptcy occurring in the first place.

5) Analogy: Preventive Treatment–Disease : Broccoli–Cancer

Participants received an introduction, as in the control group, and in addition:

Similarly, to determine how useful daily consumption of broccoli is for reducing the risk of cancer, it would be good to know how high the risk of getting cancer is in the first place.

b) Questions to test accuracy of understanding

All participants answered the following two questions. The order of questions, and of response options within each question, was randomized:

1) Gritagrel–Stroke

Imagine that you see the following advertisement for a new drug:

Gritagrel—50% reduction of strokes. Gritagrel is a new pill meant to prevent strokes. People taking Gritagrel had half as many strokes as people taking a placebo (i.e., a sugar pill).

Which one of the following pieces of information would best help you determine how much a person could benefit from Gritagrel?

* The risk of stroke for people who do not take Gritagrel

The risk of stroke for people who take a different drug for the same purpose

How many people there were in the group taking a placebo (sugar pill)

How old the people who participated in the study were

How much a weekly dose of Gritagrel costs
Whether Gritagrel has been recommended by a doctors’ association for this use
* correct answer

2) Zendil—Gum Inflammation

Imagine that you see the following advertisement for a new toothpaste:

Zendil—50% reduction in occurrence of gum inflammation. Zendil is a new toothpaste to prevent gum inflammation. Half as many people using Zendil developed gum inflammation as people using a different toothpaste.

*Which one of the following pieces of information would best help you determine how much a person could benefit from using Zendil?

*The risk of gum inflammation for people who do not use Zendil

The risk of gum inflammation for people who use a different brand of toothpaste for the same purpose

How many people there were in the group who used a different toothpaste

How old the people who participated in the study were

How much a weekly dose of Zendil costs

Whether Zendil has been recommended by a dentists’ association for this use
* correct answer
Materials for Easy Tasks (Medical Screenings)

a) Introduction

1) Control (no analogy) group

These participants received the following introduction before answering two questions testing accuracy of understanding information about medical screening (Mammography–Breast Cancer, and PSA Test–Prostate Cancer):

Please read the following information carefully. It will help you answer the questions that follow. [new paragraph] One often hears that medical screenings can help in the early detection of diseases. However, getting a positive result from a screening test does not always mean you have the disease.

2) Analogy: Screening Test–Disease : Cough–Pneumonia

Participants received an introduction, as in the control group, and in addition:

Similarly, not all people who cough have pneumonia.

3) Analogy: Screening Test–Disease : Stomach Pain–Ulcer

Participants received an introduction, as in the control group, and in addition:

Similarly, not all people with stomach pain have an ulcer.

4) Analogy: Screening Test–Disease : Car Alarm–Car Theft

Participants received an introduction, as in the control group, and in addition:

Similarly, not all activated car alarms mean that somebody is trying to steal that car.

5) Analogy: Screening Test–Disease : Metal Detector–Weapon

Participants received an introduction, as in the control group, and in addition:
Similarly, not all activated metal detectors mean that somebody is carrying a weapon.

b) Questions to test accuracy of understanding

All participants answered the following two questions. The order of questions, and of response options within each question, was randomized:

1) Mammography–Breast Cancer

Mammography screening is an X-ray of breasts that can help discover breast cancer. A positive result on the mammography screening does not always mean that a woman has breast cancer.

*Which one of the following questions would best help you determine how much a woman can profit from mammography screening?*

- How many women who have breast cancer get a positive mammogram?
- *How many women who get a positive mammogram actually have breast cancer?*
- What percentage of women go to mammography screening?
- How much does mammography screening cost?
- Is mammography screening recommended by doctors’ associations?

* correct answer

2) PSA Test–Prostate Cancer

The PSA test is a blood test for a certain antigen that might indicate prostate cancer. A positive result on this test does not always mean that a man has prostate cancer.

*Which one of the following questions would best help you determine how much a man can profit from having a PSA test?*

- How many men who have prostate cancer have a positive PSA test?
*How many men who have a positive PSA test actually have prostate cancer?

What percentage of men have a PSA test?

How much does a PSA test cost?

Is a PSA test is recommended by doctors’ associations?

*correct answer