BEHAVIOUR CHANGE

* a process

* individual perspective

* environmental perspective

BEHAVIORAL CHANGE: TWO PERSPECTIVES

1. Individual perspective

Focus: changing the behavior in individuals or in groups.

Assumption: Behavior is the result of individual cognitive and personality determinants: attitudes, social influences and self-efficacy, personality factors (neuroticism, etc).

Behavioral change is feasible if we change these individual factors.

Health education focuses on the cognitive factors.

2. Environmental perspective.

Focus: changing the environment.

Assumption: Behavior is the result of factors beyond individual control, such as social, economic, political, cultural and legislative factors.

Behavioral change can only be realized if we change these environmental factors.

Both perspectives provide a valid explanation.
Practitioners and politicians in health often merge the two perspectives.
A good understanding of the two perspectives is therefore essential.

BEHAVIORAL CHANGE

INFORMATION OF DETERMINANTS STUDY:

* information on the message that the target group needs,
  Method: compare groups with each other to find variable on which they differ.

* specific target group characteristics.

INFORMATION OF NEEDS ASSESSMENT:

* information on the preferred channels and methods for the target group and program providers

EDUCATIONAL GOALS.

goals attitude
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

goals social influence
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

goals self-efficacy
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

BEHAVIORAL CHANGE: FOUR PHASES OR STEPS

STEP 1: PROVIDING INFORMATION TO TARGET GROUP

impact of information is determined by four factors
1. receiver variables; 2. message variables
3. channel variables; 4. source variables

STEP 2: RECEPTION OF INFORMATION BY THE TARGET GROUP

- a clear reception is determined by:
1. attention; 2. comprehension; 3. evaluation

STEP 3: ENCODING OF INFORMATION

- goal: to stimulate the processing of relevant information (encoding)
- cognitive and affecting coding processes
- encoding determined by 1.attitudes, 2. social influences, 3. self-efficacy

STEP 4: BEHAVIORAL ACTIONS

- determined by:
1.skills, 2. barriers; 3. feedback; 4. attributions; 5. commitment —? *internal*

Providing information

* impact of information depends on:

1. <u>receiver variables</u>:characteristics of the target group

2. <u>message variables</u>: persuasive effects of messages

3. <u>channel variables</u>: characteristics of the methods

    * massmedia
    * interpersonal

4. <u>source variables</u>: characteristics of the person providing the message

    * different sources for different messages are often recommended   *eg doctors not good for 'refusal skills'*
    * a community approach uses both formal and informal networks and sources

BEHAVIORAL CHANGE: INFORMATION VARIABLES

Step 1: providing information and increasing the salience of already existing information that motivates individuals to change.

The <u>function of information</u>: 1. to arouse interest
2. to stimulate conscious decision making.

<u>Persuasive impact</u> of information: 4 types of information variables
1. receiver variables
2. message variables
3. channel variables
4. source variables

<u>Strategic planning of information variables</u> is essential to develop an effective program that will be received, understood, appreciated, and stimulate the target group to think about the information and to change the behavior.

who is doing, what for whom.

BEHAVIORAL CHANGE: RECEIVER VARIABLES

<u>Receiver variables:</u>

- characteristics of the target group that influence information processing
- what are important characteristics of the target group that we have to take in to account

- moderate levels of self-esteem

- age (9-12 years)   *Teens relatively easier*

- educational level   *— Type of language required ? by focus gp assessm*

- moderate levels of involvement   *extreme gps more difficult to work with*

- gender: sex differences due to different levels of involvement

- motivational level: precontemplators, contemplators, actors
  more difficult to keep interested

- cognitive/affective orientation

Requires more elaboration

TARGET GROUP IDENTIFICATION

target group stratification is feasible using various dimensions:

* physical dimension (e.g. gender)

* economical dimension (e.g. groups with low-incomes)

* risk dimension (those who will have a high risk of developing an increased risk; e.g. smokers who drink much alcohol; pregnant women; adolescents as a target group for prevention)

* motivational dimension: precontemplators
                                             contemplators
                                             actors
                                             maintainers
                                             relapsers

BEHAVIORAL CHANGE: MESSAGE VARIABLES

Message variables:
- characteristics of the message that influence information processing
- when will a message be persuasive?

- arguments
- clear
- repetition
- explicit conclusions
- discrepancy with opinions of target group
- should focus on the relevant beliefs
- fear arousal

Value systems
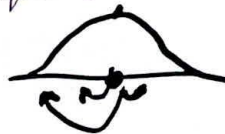
Message can focus on:
1. providing information: knowledge, attitudes, etc
2. modeling the "good" behavior via models
3. skills training
4. incentives
5. commitment techniques

Salience - relevant variables

Message variables:

* message:

1. content based on the analyses of determinants
2. clear and explicit conclusions
3. repetition

BEHAVIORAL CHANGE: CHANNEL VARIABLES

Channel variables:
- Channel variables refer to the means by which messages are delivered
- Which channels (methods) are most effective
- Massmedia, narrow cast media/individualized media approaches, interpersonal approaches

Media messages: 4 roles
1. primary change agent: primary or sole method
2. supplementary agent: in combination with other channels
3. promoting programs: familiarizing the target group with program existence
4. supportive: supporting new attitudes, norms and behaviors (e.g. via comedy)

1. Mass media information: television, newspapers
Results: increased knowledge on a particular behavior, attitudinal changes and changes in the perception of social norms.
Is probably sufficient for innovators who only need attitudinal information.
Not powerful enough to change behavior in individuals who do not have sufficient self-efficacy levels.

2. Narrow cast media: individualized approaches, specialized cable television, magazines and local newsletters, self-help materials.
provide information on a particular subject.
Results: if individuals have low self-efficacy levels.
More effective for late adopters. (Rogus - Diffusion theory)
Example: self-help materials or group courses: attention for skillstraining; social support, confidence and self-efficacy; feedback information from other models;

3. Interpersonal contacts: group courses, individual contacts:
Results: if individuals have very low self-efficacy levels (many relapses), if people need much social support and stimulating models.
More effictive for laggards who are isolated.

How to change attitudes?

1. enhance positive outcomes of the desired behavior

2. enhance negative outcomes of the undesired behavior

3. stress short-term advantages of the desired behavior

4. indicate alternatives

5. discuss anticipated negative experiences

How to change the impact of social influences?

1. change perceptions on norms about a behavior

2. change social norms

3. demonstrate direct and indirect social influence processes

4. increase awareness of healthy models

5. inoculation strategy

6. assertiveness training

7. mobilize social support for healthy behavior

How to change self-efficacy expectations?

1. learning experiences

   --> practice (skills training)

   --> realistic & challenging goals

2. learning from observations (vicarious learning)

3. persuasion

How to stimulate performance and maintenance?

1. skills training

2. commitment techniques

3. feedback

4. repetition

5. reattribution processes

ELABORATION LIKELYHOOD MODEL

Petty & Cacioppo:

*   people do not always process information
    carefully and intensively
*   two basic ways of processing information:
    1. via a cognitive way
    2. via a peripheral/affective way
*   behavioral change is more enduring if it is
    processed cognitively
*   cognitive processing is dependent on:
    1. motivation (relevancy, need for cognitions)
    2. abilities
*   two-step approach: first affective information,
    followed by cognitive information

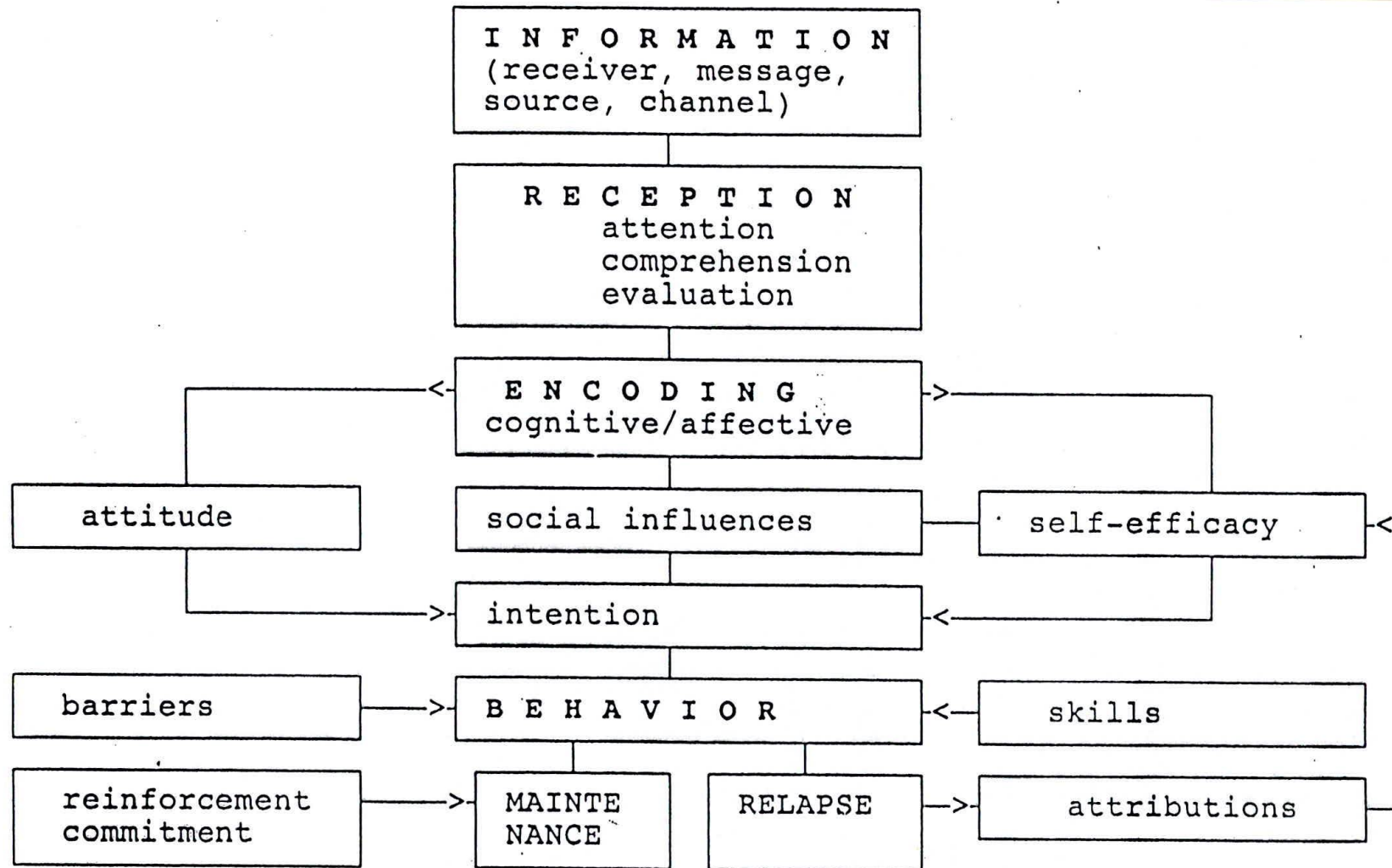figure 2.1: model on behavioral change

BEHAVIORAL CHANGE: REALISTIC EXPECTATIONS

1. Behavior is not always partly under invividual control

    --> changing the environment may be possible

    --> 1. creating Health Promotion Facilities

    --> 2. developing Healt Promoting Policies

2. Adoption is a process that takes time.
Changing the majority will take more time than convincing innovators.

3. Behavioral change and relapse go hand in hand.

PROGRAM MATRIX

* *2 important goals*

-> 1. for program development:

    a. what does the target group need?

    b. which messages do we have to develop?

    c. which methods might be effective for which message?

    d. which sources can be used for which message?

-> 2. as a checklist:

    a. to analyze existing materials

    b. to verify whether all goals of the intended program are being accomplished

* *2 important applications:*

    a. program development and analysis

    b. program evaluation

PROGRAM MATRIX

* utilization of the matrix

1. the matrix identifies 24 different cells

2. for each cell one can formulate specific
    questions regarding program development;
    these questions will help to identify the
    specific charateristics that should be adressed

    for instance:

    cell 1: which characteristic of the target group
    will influence the reception of information?
    cell 2: which messages may enhance the
    reception of the information of the program?
    cell 3: which channels may enhance the
    reception of the information of the program?
    cell 4: which sources may be needed to
    enhance reception?

PROGRAM MATRIX

* utilization of the matrix (continuation)

3. for each cell one can formulate specific questions regarding program evaluation

for instance:

cell 1: did the receiver pay attention to the message?

cell 2: did the messages attract attention? (e.g. were the messages attractive?)

cell 3: did the channels attract attention? (e.g. were the methods of the program attractive?)

cell 4: did the source attract attention? (e.g. did the persons who were presenting the program?)

cell 5: did the receiver comprehend the message?

cell 9: did the receiver change his attitude?

PROGRAM MATRIX

program matrix has two important goals:
1. for program development: identification of the major issues relevant for program development and planning.
2. checklist: to analyze program or existing materials to check whether they address all relevant issues.

utilization of matrix:

The matrix identifies 24 different cells.
For each cell one can formulate specific questions.
These questions help to identify the specific characteristics that should be addressed.

CELL 1: which characteristics of the target group may positively or negatively influence the reception of information.
CELL 2: which messages may enhance reception
CELL 3: which channels may enhance reception
CELL 4: which sources may be needed to enhance reception

Similar questions can be identified for the cells representing the encoding phase (cells 9-20).

CELL 9: which characteristics of the target group are important with respect to the attitude; which messages (cell 10), channels (cell 11) and sources (cell 12) may be utilized to enhance a positive attitude towards the desired behavior?

Similar questions can be raised with respect to the other cells.

Completion of the questions for all cells identifies the relevant characteristics and issues that need attention in a particular program.

The program matrix (De Vries, 1989)

phase	receiver	message	channel	source
attention	1	2	3	4
comprehension	5	6	7	8
attitude	9	10	11	12
social influence	13	14	15	16
self-efficacy	17	18	19	20
behavior	21	22	23	24

THE PROGRAM MATRIX: QUESTIONS TO BE ASKED	
Phase	Questions:
attention	1. which characteristics of the targetgroup will (positively or negatively) influence the attention for the message (cell 1)? 2. which (characteristics of the) message will stimulate/distract the attention for the message (cell 2)? 3. which channel will stimulate/-distract the attention of the targetgroup (cell 3)? 4. which sources will attract/distract the attention of the targetgroup (cell 4)?
compre- hension	5. which characteristics of the targetgroup will (positively or negatively) influence the comprehension for the message (cell 5)? 6. which characteristics of the message will stimulate the comprehension of the message (cell 6)? 7. which channels will (not) stimulate comprehension of the message (cell 7)? 8. which sources will (not) stimulate comprehension of the message (cell 8)?

	THE PROGRAM MATRIX: QUESTIONS TO BE ASKED
attitude	9. which characteristics of the targetgroup will stimulate/distract creating a positive attitude towards the healthy behavior (cell 9)? 10. which characteristics of the message will stimulate/distract creating a positive attitude towards the healthy behavior (cell 10)? 11. which channels will stimulate/distract creating a positive attitude (cell 11)? 12. which sources will stimulate/distract creating a positive attitude (cell 12)?
social influences	13. which characteristics of the targetgroup will stimulate/distract creating a positive social norm towards the healthy behavior (cell 13)? 14. which characteristics of the message will stimulate/distract creating a positive social norm towards the healthy behavior (cell 14)? 15. which channels will stimulate/distract creating a positive social norm (cell 15)? 16. which sources will stimulate/distract creating a positive social norm (cell 16)?

	THE PROGRAM MATRIX: QUESTIONS TO BE ASKED
self-effi-cacy	17. does the targetgroup has low/high levels of SE to perform the healthy behavior (cell 17)? 18. which messages will stimulate/distract high levels of SE (cell 18)? 19. which channels will stimulate/distract creating high levels of SE (cell 19)? 20. which sources will stimulate/distract creating high levels of SE (cell 20)?
behavior	21. which characteristics of the targetgroup will stimulate/hinder perfor-mance of the healthy behavior (cell 21)? 22. which messages will stimulate/hinder performance of the healthy behavior (cell 22)? 23. which channels will stimulate/hinder performance of the healthy behavior (cell 23)? 24. which sources will stimulate/hinder performance of the healthy behavior (cell 24)?

Table I: the program matrix (De Vries, 1989)

PHASE	TARGET GROUP: *which characteristics of the target group will influence the effectiveness of the program?*	MESSAGE: *which message does the program have to contain?*	CHANNEL: *which channels (access points and methods) can be used to reach the target group?*	SOURCE: *which persons are a credible and acceptable to give information?*
attention	cell 1: which characteristics of the target group will stimulate or hinder attention for program?	cell 2: which messages will stimulate attention?	cell 3: which channels can be used to raise attention for the program?	cell 4: which sources will stimulate attention of the target group for the program?
comprehension	cell 5: which characteristics of the target group will stimulate or hinder comprehension of program?	cell 6: which messages will stimulate comprehension?	cell 7: which channels can be used to stimulate comprehension of the program?	cell 8: which sources will stimulate comprehension of the program?
attitude	cell 9: which characteristics of the target group will influence the attitude?	cell 10: which messages will create a positive attitude:	cell 11: which channels can be used to create a positive attitude?	cell 12: which sources will stimulate creating a positive attitude?
social influences	cell 13: which characteristics of the target group will influence perceptions of social support?	cell 14: which messages are needed to create (perceptions of) social support?	cell 15: which channels can be used to create (perceptions of) social support or resistance?	cell 16: which sources can be used to create (perceptions of) social support?
self-efficacy	cell 17: which characteristics of the target group will influence their levels of self-efficacy?	cell 18: which messages are needed to create high levels of self-efficacy	cell 19: which channels can be used to create high levels of self-efficacy?	cell 20: which sources can be used to create high levels of self-efficacy?
behavior	cell 21: which barriers hinder behavioral change and maintenance, and which skills does the target group need to realize behavioral change and maintenance?	cell 22: which messages are needed to remove barriers and to stimulate acquisition of skills for behavioral change and maintenance?	cell 23: which channels can be used to remove barriers and to stimulate acquisition of skills for behavioral change and maintenance?	cell 24: which sources can be used to remove barriers and to stimulate acquisition of behavioral skills for behavioral change and maintenance?

Table 3. The program matrix applied to the development of a smoking prevention program (De Vries, 1989)

PHASE	TARGET GROUP:	MESSAGE:	CHANNEL:	SOURCE:
attention	-low motivation -selectivity	-attractive -brief	-schools -video-peer-led activities -manual	-adolescents -peer leaders -students -cartoons
comprehension	-educational level	-clear conclusions -active learning -repetition	-video -manual -activities -non-smoking poster	-adolescents -students -cartoons -peer leaders
attitude	-focus on short-term effects -experimentation is not bad -smoking has a function	-enhance short-term risks of smoking and experimentation, and short-term benefits of non-smoking -enhance knowledge about alternatives for smoking	-demonstration on video and cartoons -activities to stimulate awareness of risks and alternatives -manual	-expert -adolescents -cartoons -students
social influences	-vulnerability to social pressures -no distinction between direct/indirect pressure	-indicate pressures, direct/indirect pressures -raise resistance	-modeling and inoculation by video;	-adolescents -students
self-efficacy	-low SE to cope with pressure -low SE to find alternatives	-raise SE towards coping pressure -raise SE towards finding alternatives to smoking	-modeling on video -role-plays to raise levels of SE	-adolescents -peer leaders -students
behavior	-low levels of refusal skills -need for feedback -need for responsibility -low commitment	-enhance refusal skills provide feedback; -enhance responsibility and commitment	-modeling on video -practice in role-plays -public poster -badge	-adolescents -students

Table 4. A program matrix to plan the adoption of a smoking policy at Dutch worksites

PHASE	TARGET GROUP	MESSAGE	CHANNEL	SOURCE
attention	-moderate motivation -little time for health issues -compliance with ARBO law	-clear messages on advantages for policies	-discussions -small group meetings	-the policy team
comprehension	-prior involvement -preference for easy language -dislike for complexity	-concept-plan to help to outline the basic strategy -no jargon	-concept plan -discussions -small group meetings	-the policy team
attitude	-doubts about advantages -sensitive to non-smoking employees' health -sensitive for work worksite image	-indicate the advantages of policies for the smoking and non-smoking employee, and for the worksite and its image	-discussions -small group meetings	-the policy team
social influences	-support for policies -need for clear non-smoking norms	-indicate and reinforce social support -stress the advantages of a social norm about smoking/non-smoking	-discussions -small group meetings	-the policy team
self-efficacy	-low SE towards implementing new policies -low SE towards how to achieve consensus at worksite	-explain how policies and consensus can be achieved -stimulated active problem solving	-concept plan -guidelines -small group meetings -brainstorming activities	-the policy team -the management
behavior	-concern about time and financial resources	-discussion of time resources	-small group meetings -brainstorming activities	-the policy team

A program matrix to plan and map a smoking cessation program for pregnant women and their partners (De Vries, Bakker & Klip, 1994)

PHASE	RECEIVER: which characteristics of the targetgroup will influence the impact of the program?	MESSAGE: which message does the program have to give?	CHANNEL: which methods can be used, and where to reach the targetgroup?	SOURCE: which persons are a credible and acceptable to give information?
ATTENTION	-low/moderate motivation to quit: other issues than smoking are important -more LSES	-worthwhile quitting for baby's health -you can stop smoking -do we need to focus on other issues relevant for pregnancy?	-posters at GP/midwife -personal communications -video -cover self-help manual	-pregnant women -GP -midwife
COMPREHENSION	-low/moderate educational level	-brief easy messages	-posters, video	-pregnant women from same SES-group
ATTITUDE	-not convinced of advantages of NS -not convinced of disadvantages S for them -unaware of risk for passive smoking	-pros NS for baby -pros NS for mother -risks of passive Smoking for children	-personal communications -video messages -tailored letters -posters?	-pregnant women -GP -midwife
SOCIAL INFLUENCES	-Smoking behavior of partner -level of partner support? -support midwife and GP? -support of social environment?	-S-partner should quit -NS-partner can help mother -social environment should help	-personal communications? -cessation self-help manual for mother -partner booklet? -video -how to reach the S-father?	-pregnant women -husbands who have quit and support -friends
SELF-EFFICACY	-low levels of SE towards quitting -lower levels of SE to maintain quitting postnatal	-you can cope with the barriers: (social/personal)-> discuss and show ways of coping -how to set goals	-video and SH-manual to model general ways of coping -tailored letters to give personalized suggestions -personal communications?	-pregnant women -husbands who have quit and support -friends
BEHAVIOR: change	-need skills to refrain from smoking -need alternatives for smoking	-practice skills to cope with barriers	-SH-manual and tailored letters to give exercises	-pregnant women and husbands -midwifes and GP? -experts/University.?
BEHAVIOR: maintenance	-need skills to refrain pressure to start again -need skills to motivate partner to continue non-smoking	-continuation of cessation is important: passive smoking, parents' health -how to make issue more personal and appealing for parents?	-post-delivery booklet -self-help cessation guide -consults of midwifes -consultation office?	-pregnant women and husbands -midwifes/GP's? -experts/University?

Table 2. The program matrix identifying evaluation questions for program and effect evaluation

PHASE	TARGET GROUP: -attended? -comprehended? -changed?	MESSAGE: -sufficient quality? -achieved its goal? -implemented (planned/dosage)? -appreciated? -costs?	CHANNEL: -implemented? -quality? -appreciated? -costs?	SOURCE: -trained? -competent? -appreciated? -costs?
attention	-paid attention to the program and its elements?	-raised attention?	implemented? appreciated?	-attractive? -appreciated?
comprehension	-understood the program?	-easy to understand?	implemented? facilitated comprehension?	-easy to understand? -appreciated?
attitude	-obtained more knowledge? -obtained a more positive attitude?	-addressed pros and cons of the healthy and unhealthy behavior?	implemented? appreciated?	-competent? -appreciated?
social influences	-experienced more support and more favorable social norms? -experienced changes in other persons' behavior?	-addressed the relevant social influences?	implemented? appreciated?	-competent? -appreciated?
self-efficacy	-became more self-efficacious?	-addressed how to become more self-efficacious?	implemented? appreciated?	-competent? -appreciated?
behavior	-learned new skills? -changed intentions? -changed behavior?	-addressed the skills needed to change behavior?	implemented? appreciated?	-competent? -appreciated?

Table 5. A program matrix summarizing the evaluation of the Dutch Smoking Prevention Project

PHASE	TARGET GROUP	MESSAGE	CHANNEL	SOURCE
attention	- target group received program	- no problems reported	- implementation: Yes	two introducers: positive
compre-hension	- target group understood program	- no problems reported	- implemented as intended - comprehensibili-ty: good for vocational schoo-ls; too simple for 6yr track of high schools	two introducers: positive
attitude	- changes in knowledge - changes in attitudes	- short & direct effects: positive - alternatives: positive	- implemented as intended - video: positive - manual: positive - activities: positive	adolescents in video: positive

social influences	- no changes	- peer group pressure: positive - indirect pressure: positive	- implemented as intended - video: positive - manual: positive - activities: positive	teacher: positive
self-efficacy	- lower levels of self-efficacy	modeling: positive skills: positive	- mostly implemented as intended - video: positive - manual: positive - activities: positive	peer leader: neutral to positive; some peer leaders in vocational schools needed assistance
behavior	- less regular smoking in experimental condition	skills: positive commitment techniques: positive	- mostly implemented as intended - video: positive - manual: positive - activities: positive	adolescents in video: positive