mHealth for health behaviour change

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Johanna Nurmi
GFMER

Health – the result of personal, interpersonal and environmental factors

Health systems

- Complex - Rooted in the history, socio-economic, educational, and cultural environment.
- Depend on policies and the structure of the society and current human interactions

Health behaviours

- Strongly affected by the personal experience, perceptions, and capacities of an individual.
- Taught to us by our social environment

Prevention of health problems

- **Lifestyle, life choices and behaviour**

Adverse consequences ----- Beneficial effects on health

- **Promoting and encouraging the adoption of beneficial health choices**
- **Changing the underlying cause of risky behaviours**
- **Adoption and acceptance of healthy life choices**

Image: WHO, 201

Prevention

- far reaching health benefits
- not immediately visible
- improves the quality of life
- socially and economically beneficial to families and communities

Image WHO, 2013

The prevention in the field of Sexual and Reproductive Health:

- Maintaining health: Prevention of sexually transmitted infections and HIV.
- Managing already existing diseases.
- Avoiding irreversible harm: Prevention of Female Genital Mutilation, a cause for various severe complications.
- Prevention of other sexual violence.

} Prevention of deaths and unnecessary suffering through maternal and new born healthcare.

Most often the prevention consists of change in health related behaviour.

- Maintaining health: empowering people to protect themselves and others by refusing unprotected sex.
- Managing pre-existing conditions: HIV – supporting adherence to antiretroviral therapy.
- FGM: changing the harmful practices by e.g. giving new significances and choices for transfer into adulthood.
- Sexual violence: influencing the social environment, attitude and behaviour change of individuals and communities.
- Maternal and new born health: enabling a better parenthood by providing the necessary information, resources and support.

What do we know about behaviour change?

- Education alone is insufficient for people to change their health behaviours (WHO 2003).
- Programs based on a behavioural change theory are more likely to succeed than those that have no model behind.
  - Interventions designed with a theory are more efficient. (Peters, Overall, Ten Dam, Buijs, & Paulussen, 2009)
  - The better they follow a theory, the bigger impact the interventions have. (Webb, Joseph, Yardley, & Michie, 2010).
  - The success or lack of success of programs with behavioural change theory can also be explained more easily (King, 1999).

Psychological models of behaviour change

Theory of Planned Behaviour

1) Attitude toward behaviour

- beliefs about certain behaviour, is it beneficial or harmful.

2) Subjective norm

- Subjective norm is the perceived social pressure to engage or not to engage in a behavior.

3) Perceived behavioural control

- ~ self-efficacy

(Ajzen, 1991)

1) Attitude toward behaviour

- Positively or negatively valued self-performance
- Desirability of an act
- Cognitive - affective

2) Subjective norm

My husband wouldn't want me to use contraception.

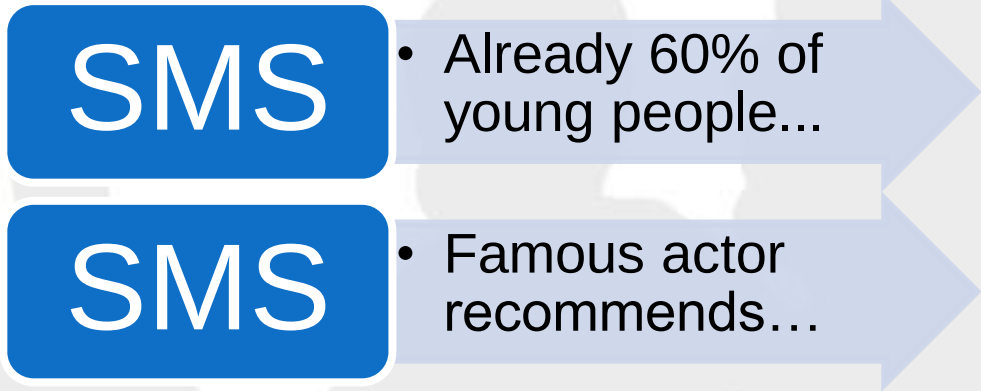
My mother-in-law wants me to breastfeed the baby.

My mother and my grandmothers have given birth home and they want me to respect the tradition.

My friends don't want to marry a girl who has suffered the FGM and they wouldn't encourage me to do that either.

2) Subjective norm

- Role-models (Bandura, Social-cognitive theory)
  - People learn by imitating others
- Marketing
  - Health behaviour marketed by people who have power – doctor as a champion



2) Subjective norm

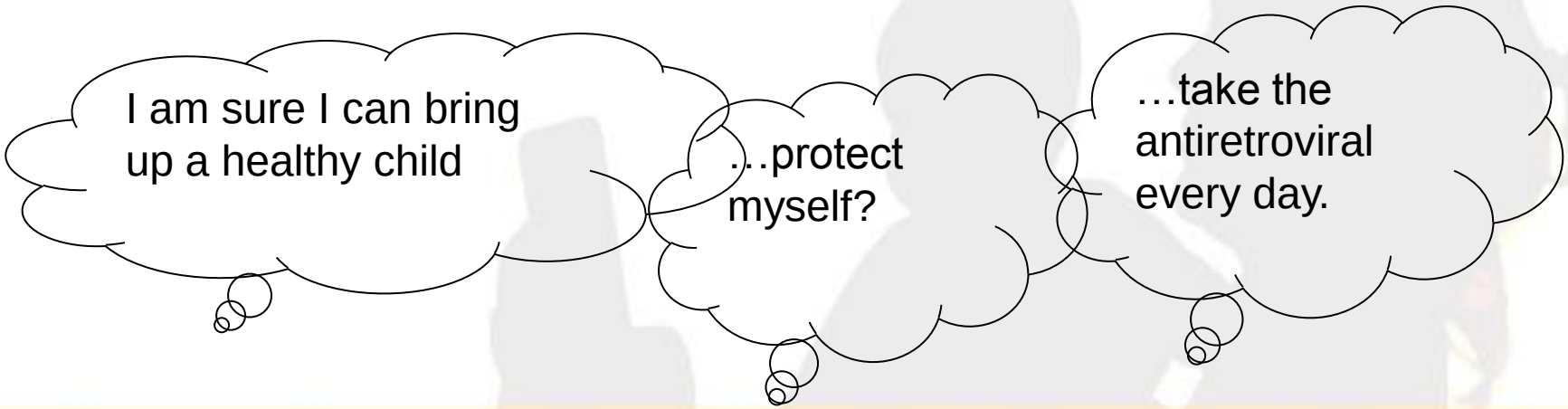
Dynamics of decision-making and change in the practice of female genital mutilation in the Gambia and Senegal (WHO, 2010)

http://whqlibdoc.who.int/hq/2010/WHO_RHR_HRP_10.16_eng.pdf

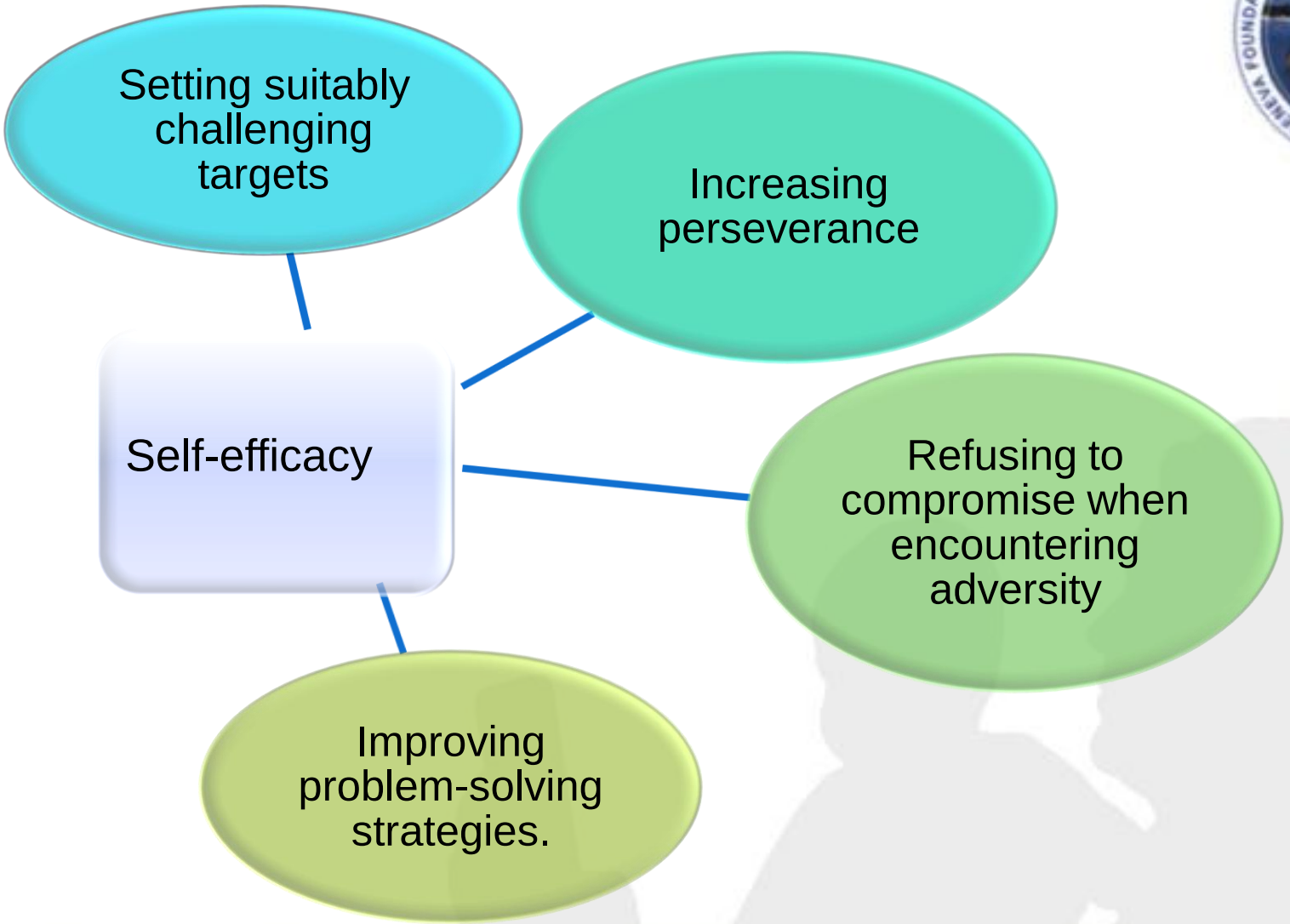
3) Perceived behavioural control

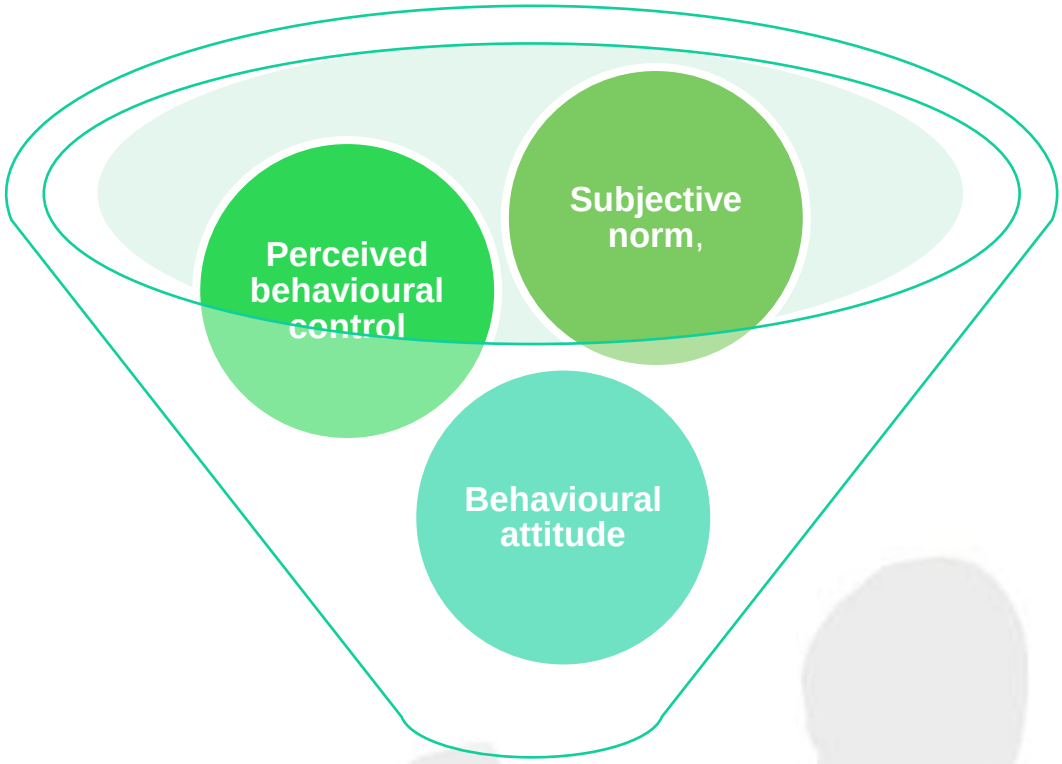
~ Self-efficacy, the sense of one's ability to carry out a desired behaviour change.

Self-efficacy = "I am sure I can…?"



3) Perceived behavioural control





Behaviour intention & implemention

In practice

Behavioural attitude	convincing the participants of the usefulness, worth, and advantages of the proposed behaviour
Subjective norm	Providing social support
Perceived behavioural control	Encouraging and empowering the participants to feel capable of implementing the change

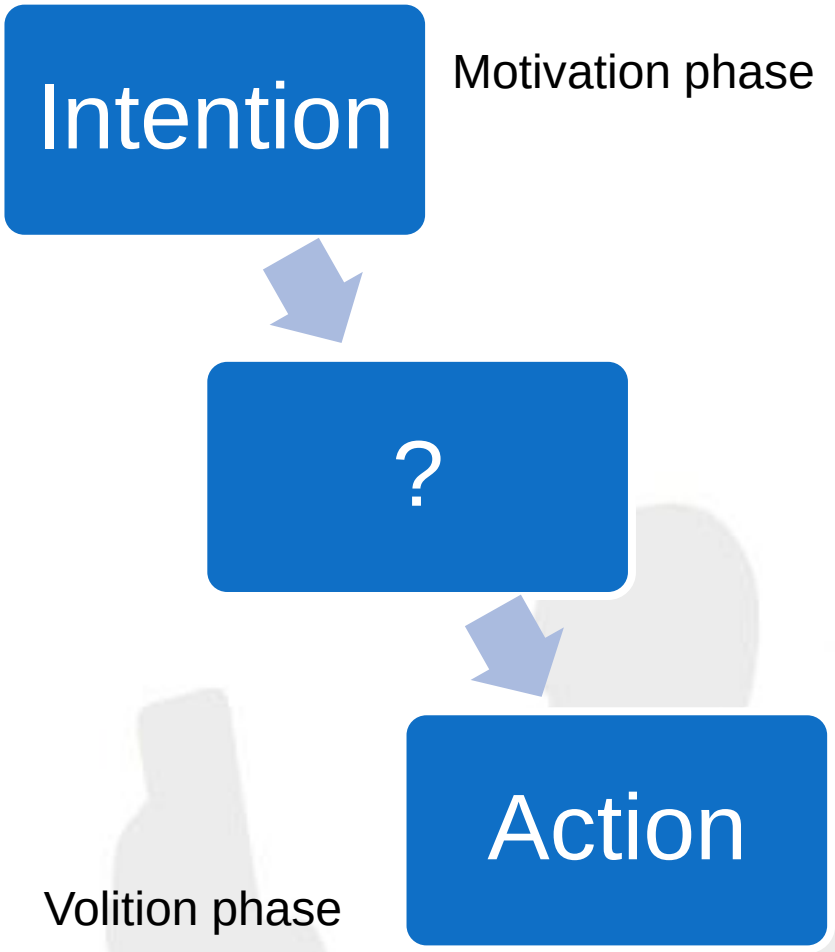
SMS Behavioural attitude	• “Using condom can save your life. It is the only contraceptive that protects you from HIV.”
SMS Subjective norm	• “More and more young people use the condom and stay HIV-free. A famous actor/sportsman/singer recommends it too.”
SMS Self-efficacy	• “You are the one who decides about your future. You can decide to stay HIV-free by using condom. You can do it!”

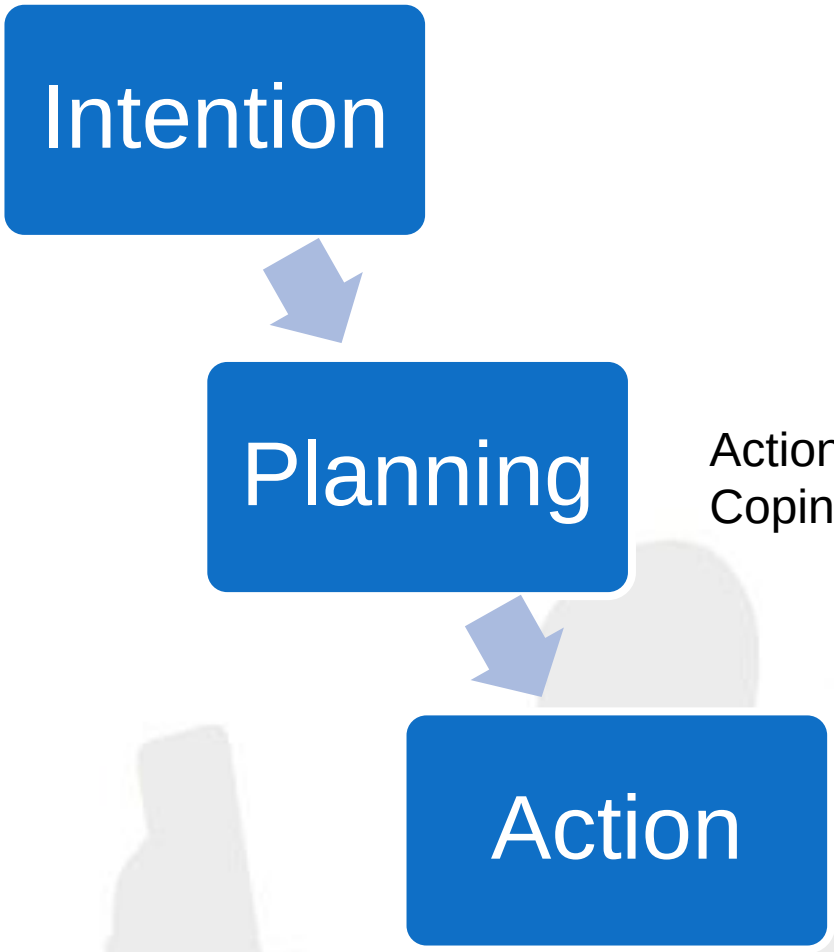
The Health Action Process Approach

(Schwarzer, 2008)

A behaviour change requires first *a behaviour intention*.

The Health Action Process Approach (HAPA)





Action planning
Coping planning.

The Health Action Process Approach (HAPA)

Action planning

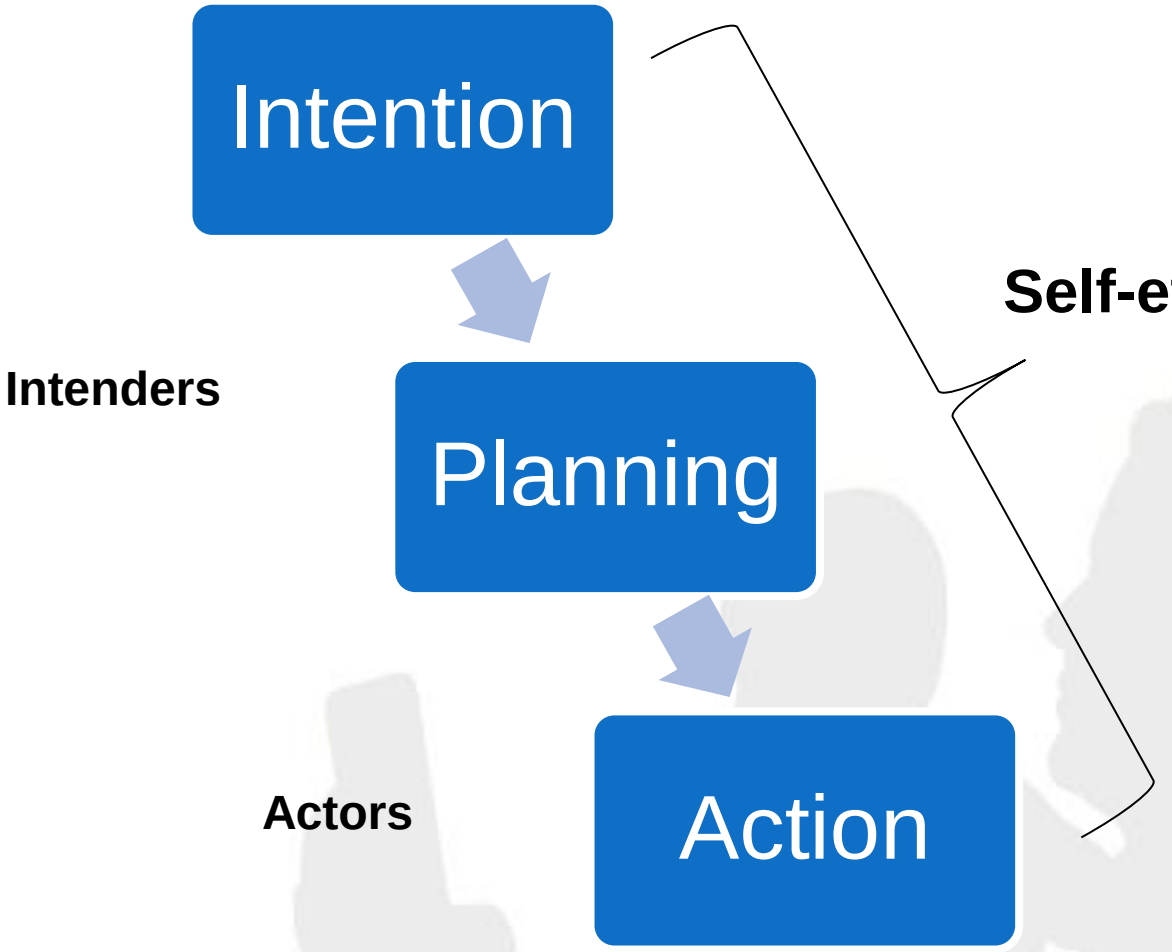
When, where and how to do an intended action.

"I will take the birth control first thing every morning, after I turn my alarm off."

Coping planning

"What if" – anticipation of barriers and the planning of emergency actions that help to attain one's goals despite of surprising situations.

"I will keep the birth control pill also in my wallet in case I forget to take it in the morning."


Non-
intenders
Intention
Self-efficacy
Intenders
Planning
Actors
Action

Self-efficacy

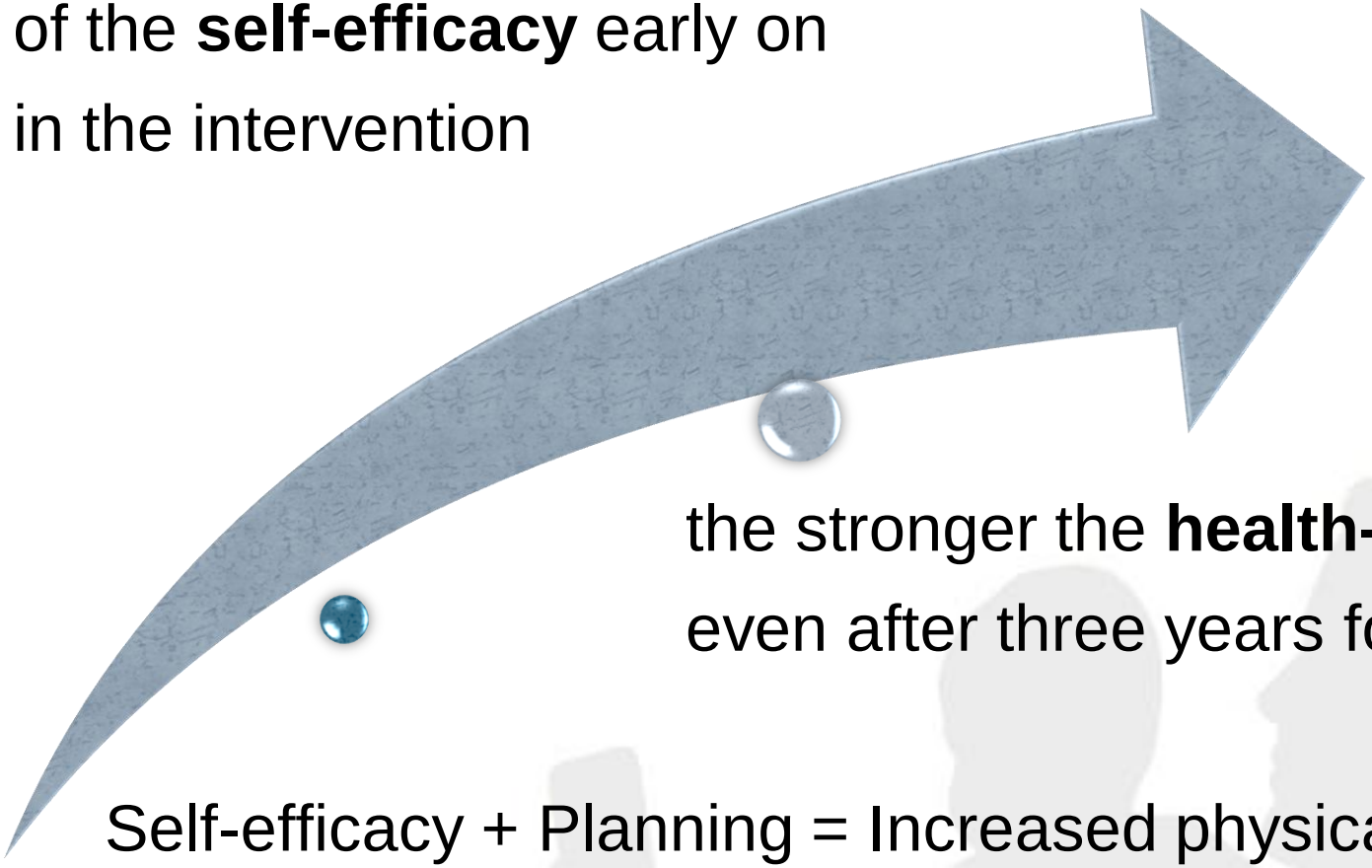
1) Non-intenders – pros and cons of a critical behaviour.
E.g. professional risk communication

2) Intenders – Planning. Providing necessary skills.

3) Actors – Support in stabilising newly adapted health behaviours by relapse prevention strategies.

(Schwarzer, 2013)

The stronger the improvement of the **self-efficacy** early on in the intervention



the stronger the **health-outcomes** even after three years follow-up.

Self-efficacy + Planning = Increased physical activity

(Hankonen, 2011)

Intervention tools

Improvement of the **SELF-EFFICACY**

Self-determination theory:

INTERNAL MOTIVATION

leads to action that is more permanent and of better quality than external motivation

ENCOURAGEMENT

EMPOWERMENT

- What is not covered very well by the models presented earlier is that human behaviour and choices aren't always rational.
- As it is proved with tobacco: even though we know today the harms of cigarettes, young people still start to smoke. This brings us to

Implicit theories

- Young people's smoking is much better predicted by asking <u>situation</u> related questions than just asking about the general intention to smoke.

The mechanism is the same in sexual behaviour.

Would you accept to have sex without condom if your loved one says that he/she hates condoms?

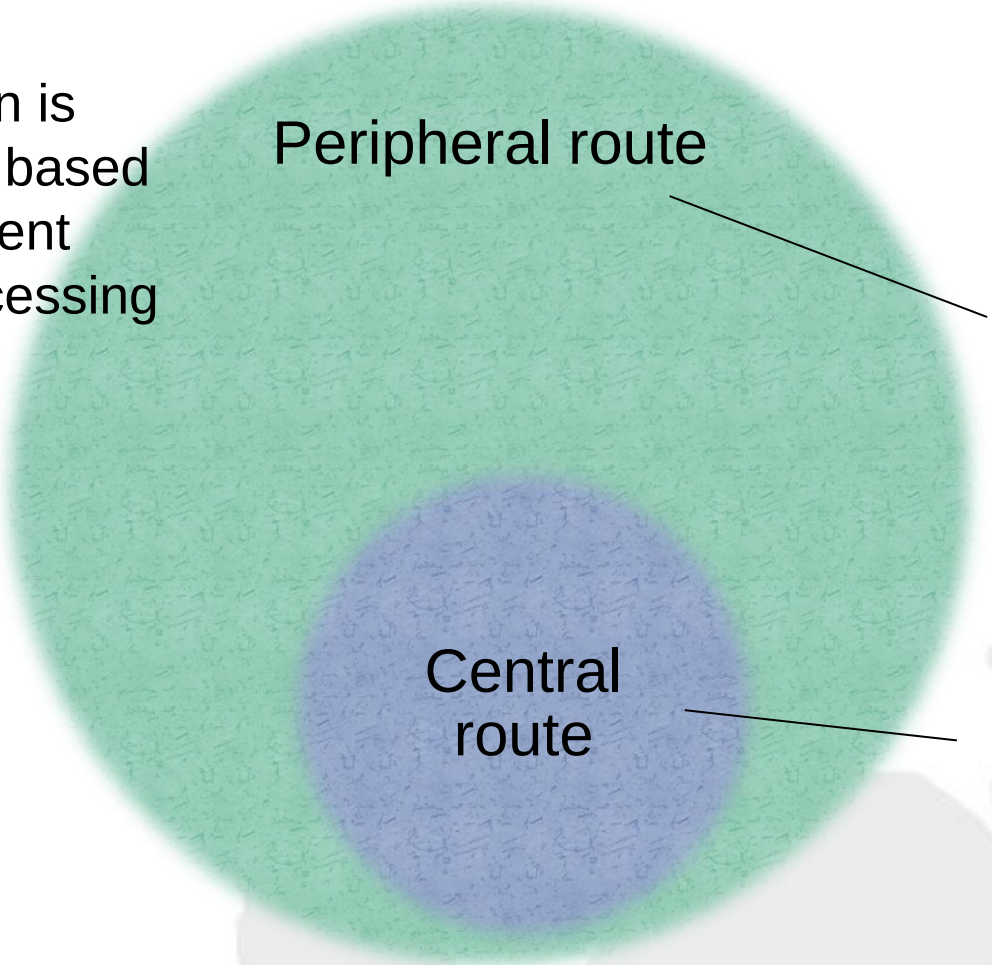
…you have lost the condom?

…it is only once and a very special occasion?

Another good predictor is the attitude for other people who perform the action: ”Do you think a condom user is intelligent / responsible/ boring / accepted…?”

Implicit theories: Information processing

This variation is theoretically based on two different ways of processing information:



Situational hints, emotional state

Reflecting the decision based on facts

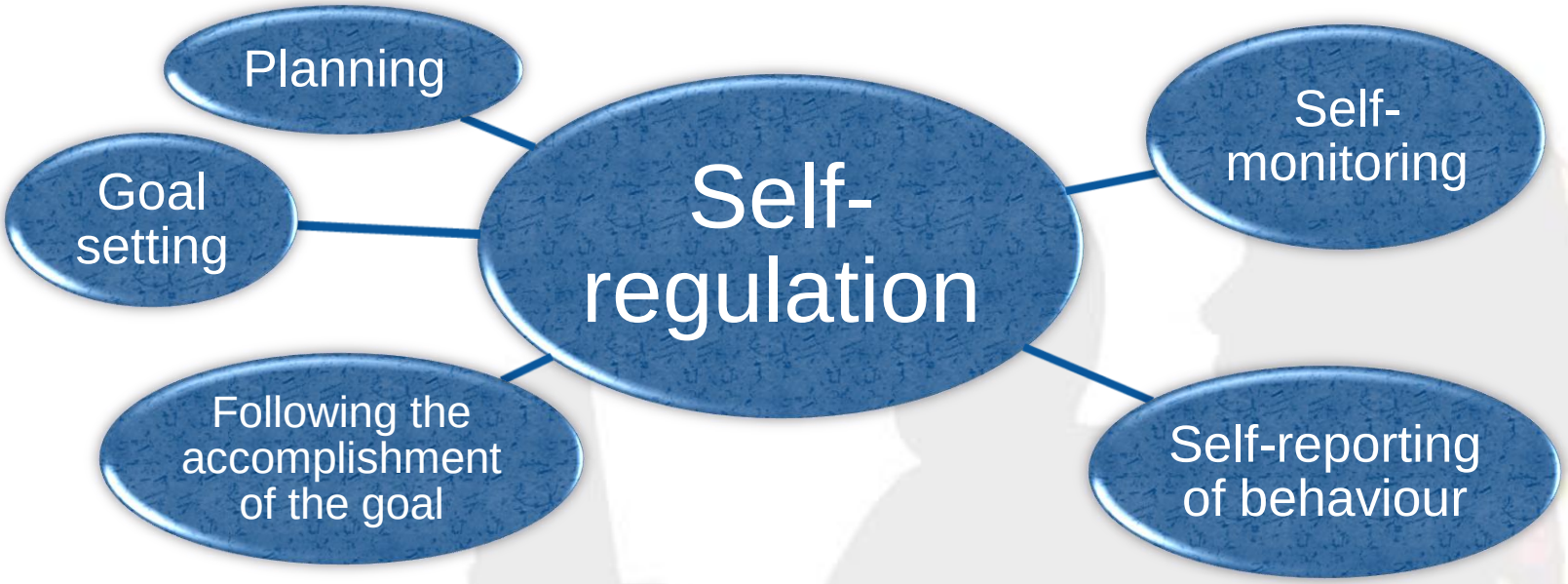
- having behaviour change at scope, the most efficient technique is to support the individual in creating plans that help them through situations of risk

Image: WHO, 2013

– reinforce the self-regulation skills.

Self-regulation is the key component of the health behaviour change.

Even tailored professional instructions don't have an influence without the commitment and active planning of the participant.



(Michie, Abraham, Whittington, McAteer, & Gupta, 2009)

- This brings us back to planning

Implementation intention formation

(Gollwitzer, 1999)

- if-then plans that help people turn their intention into action by enforcing goal-oriented behaviour in a critical situation.

(Hankonen, 2011; Schwarzer, 2013)

Implementation intention formation

- an efficient health behaviour change tool that can be converted to mHealth.
- In the field of sexual and reproductive health, has e.g. reduced consultation for emergency contraception and pregnancy testing among teenage women (Martin et al., 2009).

Implementation intention formation

- can be supported by text messages or toll-free voice calls that help forming behaviour plans for risky situations. Participants can also be connected so that they can receive plans and encouragement messages from each other.
- pregnant mothers smoking cessation, healthy eating, child care
- HIV adherence, family planning

- The power of self-regulation is that the participant as an individual has the keys to the success. The challenge is to provide the support and the empowering with mobile phones.
- ”participant engagement and retention are critical factors in successful behavior change research”. Fjeldsoe, Marshall & Miller (2009)

Can the social support be transmitted through technology?

- Experience of presence in information and communication technology
- Being in social interaction through technology

  (Initiatives as PASION, MEC: Presence).

(Tamminen, Raita, Lehtinen, Silfverberg & Rajava, 2012)

1) Spatial presence

(Biocca, Harms & Burgoon, 2003; Wirth et al , 2007)

- a perceptive illusion of a transmitted experience being non-transmitted.

(Lombard & Ditton, 1997)

- **Our emotional and physiological reactions can be similar as in real interactions.**

2) Social presence

Impression of being with someone else

- co-presence, feeling of being in the same place
- psycho-behavioural interaction which consists of shared attention, emotional influence and feeling of mutual understanding.

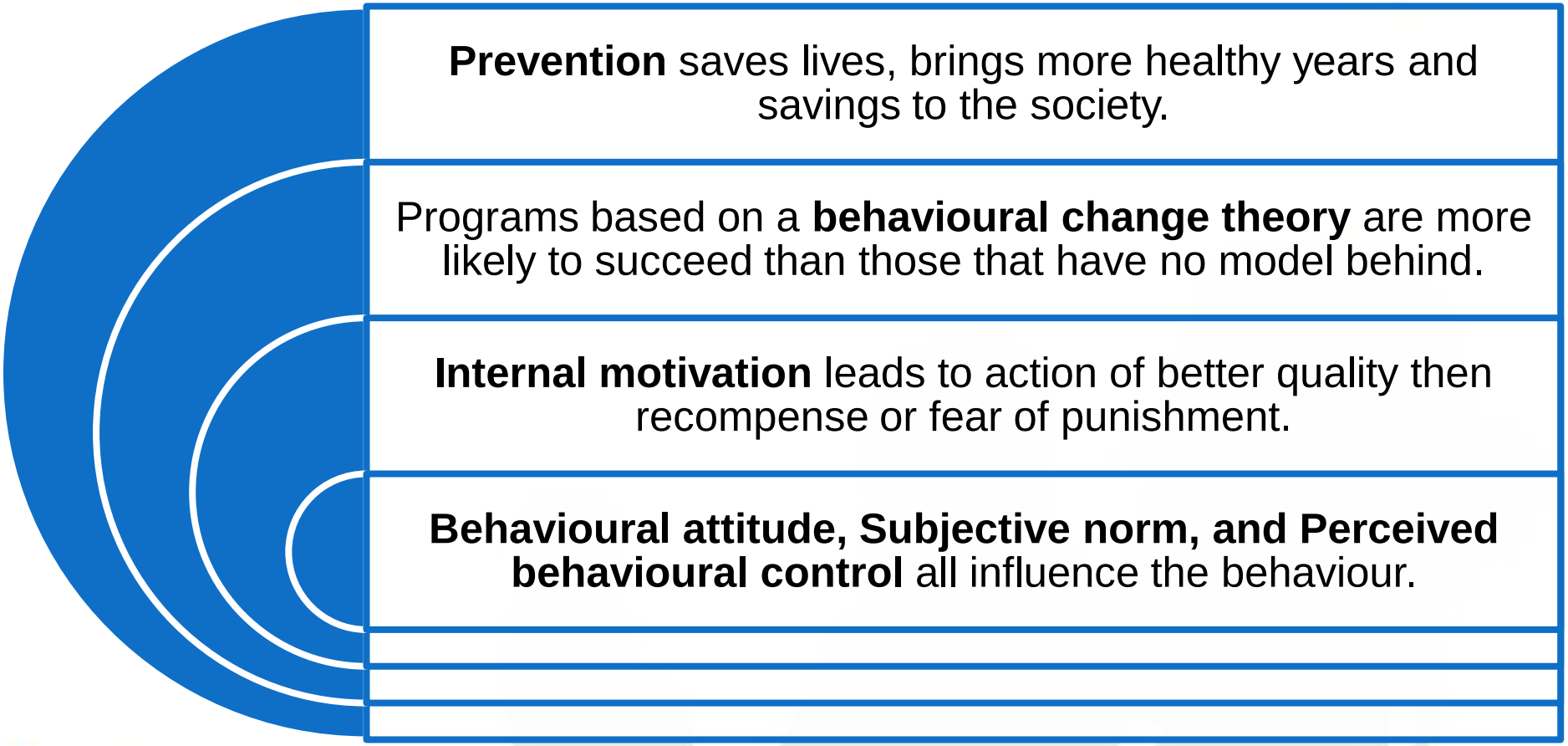
The social identity (sense of group belonging) of a person can be even accentuated in interaction transmitted by technology. (Lea and Spears, 1992)

Possible factors of success in mHealth

- SMS dialogue initiation (researcher or participant)
- tailoring of SMS content
- interactivity

(Fjeldsoe, Marshall & Miller, 2009)

Conclusion



Prevention saves lives, brings more healthy years and savings to the society.

Programs based on a **behavioural change theory** are more likely to succeed than those that have no model behind.

Internal motivation leads to action of better quality then recompense or fear of punishment.

Behavioural attitude, Subjective norm, and Perceived behavioural control all influence the behaviour.

Self-regulation is the most efficient factor in behaviour change. With mobile phones one can support e.g. goal setting, following the accomplishment of the goal, and self-reporting of behaviour.

Self-efficacy, the belief in one's capability, is a strong moderator of change.

Action planning, coping planning and Implementation Intention Formation turn intention into action and help individuals through risky situations.

Social support is important and can be experienced through technology.

- Change is not easy. It might demand adapting a new identity. This has been seen in the research about smoking: adapting the identity of “ex-smoker” is helpful and often necessary for the change.

A life change is most probably achieved by the person who develops the strongest beliefs in accomplishing his/her goals even though meeting obstacles. This person plans ahead the actions that supports the goal. This person makes “in case of” plans. He/she gets support from close persons.

Thus the health professionals should do their best to reinforce their patients’ self-efficacy. It is the self-efficacy that has the best repercussions on the health related behaviour and life quality in general.

A woman who says “no” to sex without condom is taking a step towards seeing herself as a strong individual who has right to good health, right to decide about her offspring, and worthy enough to take care of herself. This can mean change in her whole being. But change can start from a little step; being able to say “no” once can introduce a change into whole self-perception.

Thank you!

Image WHO, 2010

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