The monitoring and evaluation of CycleOn – a system approach


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ABSTRACT (WORD COUNT 294)

Background

In the Netherlands, a new, innovative program was initiated in order to reduce the number of accidents with elderly cyclists: CycleOn. CycleOn aims to increase awareness amongst elderly cyclists about the risks of cycling, followed by instigating behavioural change. The aim of this study is to evaluate CycleOn using a system approach. Instead of solely focusing on the number of cycling accidents, the main aim is to assess changes in awareness and attitude of elderly cyclists. Additionally, to evaluate the program as a whole, we will examine the reach of the program and the level and quality of the implementation and adoption in four local settings.

Method

The evaluation of CycleOn is performed over the course of two years. A theoretical framework is created using desk research and interviews with experts. The reach of the program and the level of implementation are examined by administering questionnaires. Individual interviews with coordinators and focus group interviews with local CycleOn partners will be conducted in June 2020. Individual interviews with elderly cyclists will be performed in 2021, to assess changes in awareness, attitude and behaviour.

Results
The theoretical analysis of CycleOn, using the integrated change model, demonstrates that all aspects of behavioural change are addressed. The program is being implemented in 85 municipalities. Implementation is mostly still in a preparatory phase, but municipalities report high levels of commitment among local CycleOn partners.

Conclusions

CycleOn is an innovative program in increasing cycling safety in elderly. First results demonstrate that this new approach is theoretically well described and that local implementation is still in an early stage. In the summer of 2020, we are assessing which elements of the program are (most) effective and identifying facilitators and barriers in implementation. At ICSC 2020, these results will be presented.

Keywords: CycleOn, cycling, elderly, safety awareness, system approach.
1 INTRODUCTION (WORD COUNT 1501)

In the Netherlands, the number of elderly cyclists involved in accidents has been increasing since 2000 (Weiermars et al., 2018). To lower the number of accidents with elderly cyclists, and to keep them cycling safely for as long as possible, the Ministry of Infrastructure has initiated a new, innovative program, called CycleOn.

Based on the theoretical assumption that awareness is a central precursor to behavioural change (De Vries et al., 2003), CycleOn aims to increase awareness of safety concerns among elderly cyclists before aiming on behavioural change. CycleOn therefore focuses on increasing awareness first by making safety concerns and cycling safety open to discussion at places elderly regularly visit and in their own (trusted) network (e.g. in a gym class, at the bridge club, during the visit of a physician, when purchasing a bicycle). Here, the elderly are provided with information about safety concerns and will be able to participate in activities that make them aware of the risks. Then, in order to change the behaviour of the elderly and to eventually improve cycling safety, information and advice about how to cycle safely is provided, along with activities that allow the elderly to experience safe cycling.

After a successful pilot study, CycleOn officially started in The Netherlands in 2018. CycleOn is coordinated at a national level, but is implemented locally, in municipalities. The implementation of CycleOn in municipalities may differ as there are numerous activities and means of communication provided by the national organization that municipalities can choose to implement. Every municipality can implement the program in their own way, by using activities and means of communication provided by the national organization, or by creating their own. The program also provides the elderly a digital platform with practical resources, knowledge and support. Elderly can find exercises to improve coordination, muscle strength,
neck/shoulder flexibility, responsiveness and endurance and can fill in a selection guide that helps them choose which bicycle is suitable for them.

The aim of this study is to evaluate the whole implementation process of CycleOn and assess its outcomes using a system approach, as described by Rutter et al. (2017) and Kremers et al (2018). Following the RE-AIM model, we will assess the reach of the program, its effectiveness, the rate of adoption in local settings, the level and quality of implementation and the extent to which the program becomes institutionalized. We examine the effectiveness of CycleOn by examining changes in awareness and attitude of elderly cyclists using the integrated change model.

2 METHOD

The evaluation of CycleOn is performed over the course of two years. Data is collected using several qualitative and quantitative methods.

2.1 Program theory

First, desk research and interviews with experts in the field of behavioural strategy programs in elderly and cycling safety were performed in order to develop a program theory for CycleOn. A program theory is often formed using practical experiences (best practices) and knowledge from (scientific) research. CycleOn, however, was developed on the basis of behavioural insights (collected from behavioural experts) and in consultation with the target group.

Therefore, to form the theoretical base for this study, a program theory was formed first. A total of 8 interviews were conducted with a variety of experts on cycle safety: quartermasters, members of the national CycleOn organization, an implementation designer, an expert in road safety and a researcher in the field of fall prevention for the elderly. In these interviews the researchers addressed subjects such as the motives for the development of CycleOn, the intended strategies and theoretical substantiation of the program and expected results.
2.2 Local implementation

The reach of the program and the level of implementation are assessed by administering questionnaires to coordinators within the municipalities involved in the regional and local implementation. Additionally, individual interviews with these coordinators and focus group interviews with local CycleOn partners (such as bicycle retailers, sports clubs, etc.) are performed to further assess which elements are (most) effective and identify barriers and facilitators.

2.3 Elderly cyclists’ experiences

In order to explore how CycleOn is experienced by elderly cyclists and to assess changes in their awareness and attitude, approximately 30 individual interviews with participants will be conducted. In these interviews, qualitative and quantitative methods are combined using Q-methodology (Brown, 1993). The elderly are presented statements about their experiences with CycleOn to discuss. These statements will help identify participant typologies, to get a better understanding of the program’s target group.

3 RESULTS

3.1 Program theory

In order to reach the main aim of CycleOn, to lower the number of accidents with elderly cyclists, two sub-aims have been formulated: to create awareness about cycle safety and safer cycling behaviour. Behavioural change is complex and depends on many internal and external factors. In order to visualize this process, we used the integrated change model (I-change model) (De
This model shows that behavioural change is influenced by predisposition, knowledge, awareness, motivation, intention, abilities and barriers (figure 1).

Analysing CycleOn using this theoretical model, demonstrates that the large majority of aspects of behavioural change (knowledge, awareness, motivation, intention, abilities, barriers and finally behaviour) are addressed (see green plus-symbols in Figure 1). This is done by the provision of information about safety concerns (and the attention for appropriate channels and sources) and the availability of activities that make the elderly aware of the risks or targeting behavioural change. One aspect that was relatively underexposed was retaining behavioural changes on the long term (orange plus-symbol in Figure 1). More information about how CycleOn addresses these aspects of behavioural change is reported in the CycleOn operations manual (Ideate 2017).
Overall, these results show that it is theoretically plausible that participating in CycleOn leads to the intended increase in awareness and behavioural change.

### 3.2 Local implementation

10 of all 12 provinces in the Netherlands and 85 municipalities take part in CycleOn. The two remaining provinces have also shown their interest in CycleOn. A total of 40 coordinators of participating municipalities were invited to fill out the questionnaire, of which 18 agreed to participate. The results of the questionnaire show that during the time of assessment, the majority of municipalities were still in a preparatory phase of CycleOn, which means that they have not yet reached the implementation phase. In other words, no activities for the elderly have been carried out yet. Therefore, no data on the impact of the program on behavioural change are yet available. Nevertheless, the coordinators describe that they have established a partnership with many local CycleOn partners: community sports coaches, sports clubs, cycling unions, community centres and bicycle repair shops, among others. Coordinators were satisfied with the level of support they received from the national organization.

Individual interviews with coordinators and focus groups with local CycleOn partners will be conducted in June 2020. These interviews and focus groups will focus on coordinators’ and local partners’ experiences in implementing CycleOn, the reach of the program in the specific municipality, the cooperation between partners and maintenance of the program. At ICSC 2020, the first results of these interviews will be presented.

### 3.3 Individual Interviews elderly cyclists

Interviews with elderly cyclists will take place in 2021. These interviews will focus on the elderly’s experiences with CycleOn and experienced effects on changes in awareness and behaviour.
4 DISCUSSION

The implementation of CycleOn is still in its early stages. The majority of the surveyed municipalities are still preparing to carry out activities. This means that the results of the questionnaire about the reach of the program and the level of implementation are limited. Moreover, because of the COVID-19 pandemic and the measures taken by the Dutch government, the activities of the program in the spring and summer of 2020 cannot be continued as planned. However, first results show that municipalities have found new ways of implementing CycleOn, for example by providing information about safety concerns online. Almost all provincial authorities in the Netherlands have included CycleOn in their policy and implementation plans, and despite the COVID-19 pandemic, CycleOn is gradually being adopted and elaborated in the municipalities. Planned activities and communication means will in all likelihood be (perhaps in an adjusted form) implemented in the fall of 2020 and in 2021. This still shapes, however, the context for further results of this study.

5 CONCLUSIONS

CycleOn is an innovative program that aims to increase cycling safety among the elderly by focusing on increasing awareness before targeting behavioural change. First results demonstrate that this new approach is theoretically well described and is therefore likely to be effective in increasing awareness about cycle safety among elderly cyclists, encouraging behaviour change and therefore increasing cycling safety. During this study, most municipalities were still in a preparatory phase of CycleOn and had not yet implemented any activities for the elderly. The current study continues, slightly influenced by the COVID-19 pandemic, with a national evaluation of the program using a system approach that will provide results on the effectiveness, implementation and adoption of CycleOn. These results will be presented at ICSC 2020.
REFERENCES


