

# Research for implementing health promotion regarding non-communicable diseases for elderly people

Organized in community health centre 'Pudak Payung' in Semarang, Indonesia



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## Preface

This research proposal is part of a two-year study and is about health promotion regarding non-communicable diseases for elderly people in the community centre 'Pudak Payung'. Writing a research proposal is an important part of the bachelor thesis from the Faculty of Nursing of the Hanze University of Applied Sciences in Groningen, the Netherlands. We are Evelyn van der Kooi and Femia Koopmans, the researchers, and we have finished this two-year study. We have experienced the collaborating during writing the research proposal as pleasant and we complement each other very well.

We want to thank Unie and the head and staff from the Faculty of Nursing, Diponegoro University in Semarang for arranging all the necessary things. We also want to thank all the lecturers helping us with our research at Diponegoro University, and in particular Mr. Muin, for all the support and aid. We want to thank all the staff of the puskesmas, in particular Ms. Fitri and Mr. Revo, for all the help given when conducting the interventions and for making time for the interviews. We want to thank all the students and volunteers at the puskesmas to be able to join them on their activities and observe. Last but not least we want to thank Sanne Heinen, our client, for providing all the information we needed to start this research and Hyllan Weijer, our teacher supervisor, for all the valuable feedback and support.

We hope this research will benefit the Community Health Centre 'Pudak Payung', its community, the Diponegoro University and the Hanze University.

Evelyn van der Kooi & Femia Koopmans

## Table of contents

Preface .....	2
Summary .....	5
Introduction .....	6
1. Defining concepts, objectives and research questions .....	9
1.1 Objectives .....	9
1.2 Research question.....	9
1.3 Research subquestions .....	9
1.4 Defining concepts .....	9
2. Research design.....	11
2.1 Design and methods.....	11
2.1.1 Research design and method.....	11
2.1.2 Research population.....	11
2.1.3 Sampling.....	11
2.1.4 Data collection .....	12
2.1.5 Data analysis .....	14
2.2 Research quality.....	15
2.2.1 Dependability.....	15
2.2.2 Validity .....	15
2.2.3 Generalizability .....	16
2.2.4 Usability .....	16
2.3 Circumstances research site .....	16
2.3.1 Cultural aspects .....	16
2.3.2 Language barrier .....	18
2.4 Ethics .....	18
3. Results.....	19
3.1 Subquestions phase 4.....	19
3.2 Subquestion phase 5.....	23
3.3 Subquestions phase 6 .....	24
4. Discussion .....	27
4.1 Essential results and interpretation .....	27
4.2 Strengths and limitations .....	27
4.3 Implications for future research .....	28
5. Conclusion .....	29
6. Recommendations.....	30
Bibliography .....	31
Attachments.....	34
Attachment A: Timetable .....	34
Attachment B: Plagiarism statement .....	35
Attachment C: Interview guide (for subquestions in phase 4&6). .....	36

Attachment D: Interview guide (for subquestions in phase 5).....	38
Attachment E: Informed consent form.....	39
Attachment F: Observations.....	40
Attachment G: Codebook.....	44
Attachment H: Plan of implementation.....	48
Attachment I: Supporting brochures of the interventions.....	55
Attachment J: Feedback forms of the presentation and interventions.....	60

## Summary

**Occasion** – The Hanze University and Diponegoro University started a collaboration in 2015, focusing on community health centre ‘Pudak Payung’. It became clear that there is a need for knowledge and experience, relating to health promotion, which focuses on non-communicable diseases (NCD’s) in the community health centre. Therefore, three couples of bachelor students from the Hanze University travelled to Semarang to conduct a study and implement health education, during a two-year period. This particular research is the last part of this two-year study.

**Introduction** – An epidemiological transition is taking place in Indonesia. This has led to a shift in the leading causes of diseases and death and is characterized by a transition from communicable diseases to non-communicable diseases. Therefore there is need for an approach to tackle these NCD’s and health promotion is an useful tool to decrease and manage NCD’s. Health promotion can be described, according to the World Health Organisation as a wide range of interventions that are designed to benefit and protect individual people’s health and quality of life by addressing and preventing the root causes of ill health, not just focusing on treatment and cure. The Precede-Proceed method is used to design a health promotion plan.

**Aim of the research** – The overall aim of the two-year study is using the Precede-Proceed method, to improve the health promotion regarding NCD’s for the elderly people in the community health centre ‘Pudak Payung’. The aim for this particular research is applying phase 4, 5 and 6 of the Precede-Proceed method to provide a suitable plan of implementation for a health promotion plan and implement a part of this health promotion plan regarding NCD’s for elderly people in the community health centre ‘Pudak Payung’.

**Research question** – Which suitable interventions towards health promotion, can be implemented, based on the outcomes of phase 1 to 5 of the Precede-Proceed method regarding NCD’s, for the elderly people in community health centre ‘Pudak Payung’ in Semarang, Central Java, Indonesia.

**Method** – The data have been collected by using qualitative research methods. To answer the research question semi structural interviews and non-participant unstructured observations are used. All the collected data are used to make a plan of implementation.

**Results** – The results show that there are several already existing health promotion activities, such as prolanis and poksila. To give health promotion there are several chances and barriers to consider. Chances are: dedication of the staff, communication between the staff, use of social media and the use of volunteers. Barriers are: lack of money, facilities and staff, collaboration between the community health centre and other stakeholders, lack of knowledge of the staff about evidence-based practise working and knowledge of the volunteers and low participation at the organised health promotion activities. Interventions to be implemented must be focussing on lifestyle choices, like a healthier diet, lack of motivation of the patients, family support and setting up health promotion for specific diseases like dementia. Important government policies to consider are: the use of the Germas (government) program, the decentralization of many task of the government and the shift from preventive towards a more curative focus. Suitable interventions and topics for implementation are: measuring waist circumference during and arranging healthy snacks at the health promotion activities, extent health promotion talks, more use of various media to give health promotion, making the health promotion activities more attractive and use of motivational interviewing for unmotivated people.

**Discussion** – This research was conducted at only one community health centre, therefore the generalizability is low. Furthermore, the language barrier has to be considered. A translator was not present at all observations and there are many translations made when interviewing people. Due to limited time the plan of implementation and interventions cannot be evaluated.

**Conclusion** – The results of this research suggest that interventions bettering the existing health promotion activities, focusing on the most common NCD’s, who are easy and do not cost a lot of money and energy are most suitable to implement. Implemented is bettering existing health promotion activities for people with or at risk of diabetes. Interventions are adding the measurement waist circumference and training the students and volunteers to do this at existing health promotion activities, arranging healthy snack boxes at the activities and giving a supportive health promotion talk to explain these interventions.

**Recommendations** – More research is recommended to better the health promotion regarding NCD’s. Research about focussing not only on the elderly people, but also on the younger generations. Research about the task and education of the volunteers and research about evidence-based practise working of the staff.

## Introduction

The demographics of the world are changing. The current world population is 7.6 billion people and is expected to reach 9.8 billion people in the year 2050 (United Nations, 2017). One of the reasons for the global growth in the population is the increasing life expectancy. This increasing life expectancy is leading to an increase in the number of elderly people. Between the year 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12% to 22%. In 2050, 80% of elderly people will be living in low- and middle-income countries according to the World Health Organization (2018). Indonesia is a middle-income country and will be facing these major changes. In 2015 the population in Indonesia was 266 million and is expected to reach 321 million in the year 2050. With this large growth of the population, the population of elderly people in Indonesia is likewise rising (Kohler, Berhman & Ariantio, 2015).

Due to a higher social-economic status and a greatly improved health care, the life expectancy has increased in Indonesia. This development has also lead to a shift in the leading causes of diseases and death and is characterized by a transition from communicable diseases to non-communicable diseases (World Health Organization, 2010). Non-communicable diseases (NCD's), also known as chronic diseases, are long in duration and have generally a slow progression. Communicable diseases include infectious and transmissible diseases. The high proportion of NCD's is primarily driven by four major risk life style factors: tobacco use, physical inactivity, harmful use of alcohol and unhealthy diets (World Health Organization, n.d.).

Through the combination of a large elderly population and major risk life style factors there is an increasing group of people suffering from NCD's. Present day, in middle-income countries, as Indonesia, 82% of all people who die before the age of 70 can be attributed to NCD's (World Health Organization, n.d.). Therefore, there is a great need for an approach to tackle these diseases. The most effective way to prevent NCD's and avoid unnecessary disability is through a combination of a structured community-based approach and individual-focus interventions for risk reduction. This means not only to target the community for behavioural change, but also empowering and encouraging the community to use its own resources for action (Krishnan et al., 2010). In other words, the answer lies with the communities and health promotion (Dobe, 2012).

The Indonesian government launched in 2014 a National Health Insurance Programme, called Jaminan Kesehatan Nasional (JKN). This program aims to provide a Universal Healthcare Coverage (UCH) for all Indonesians by 2019 (Clearstate, 2015). This JKN programme is based on a primary health care concept. To execute primary health care, in Indonesia, there are over 9700 community health centres, called 'Pusat Kesehatan Masyarakat' (puskesmas). Every puskesmas is under the oversight of the Ministry of Health and is part of a hierarchical system (WHO, n.d), displayed in figure 1. Every sub-district has one community centre and is headed by a doctor. This community centre is linked to several sub-centres, headed by two nurses. These puskesmas are supported by many volunteers or nursing students (De Jongh & Voogd, 2017). Trough decentralization of government functions more autonomy is given to regional administrations. The government now shares power with the reginal governments of the 97 cities and 414 districts (EIBN, 2014).



Figure 1 Healthcare hierarchy

The primary role of a public health centre is providing health services and particularly promotive and preventive aspects (Nadya, Arya & Alam, 2016). Health promotion is enabling people to increase control over their own health. It covers a wide range of interventions that are designed to benefit and protect individual people's health and quality of life by addressing and preventing the root causes of ill health, not just focusing on treatment and cure' (WHO, 2016). It is an important factor to reduce the suffering from NCD's (Dobe, 2012). Every puskesmas is headed by two nurses and often by several nursing students, who have contact with the community. Therefore, managing health promotion is an important role for the nurses working at the public health centre.

The focus of this study is about community health centre 'Pudak Payung' in Semarang, Indonesia. Semarang is the tenth largest city in Indonesia and has a population of 1.228 million people (World Population review, 2018). Pudak Payung is a sub-district of Semarang City, close to Semarang

District. Semarang City is one of the six cities/districts of Semarang Metropolitan Area (Mulyana et al., 2013).

The Hanze University and Diponegoro University started a collaboration in 2015. It became clear that there is a need for knowledge and experience, relating to health education, which focuses on NCD's in the community centres. Therefore, three couples of bachelor students from the Hanze university travelled to Semarang to conduct a study and implement health education, during a two-year period.

In 2016 the first couple of bachelor students from the Hanze University started a pilot-study to evaluate the current health education considering NCD's diseases for all ages in the community health centres in Semarang. It became clear that the health professionals working at the community health centre 'Pudak Payung' are not using a specific model or method during the health promotions. The government develops the program, but because of the high work pressure, there is a lack of employees to implement it. Other weaknesses are the lack of research regarding to health promotion about NCD's and the frequency of the workshops organized by the health department. The lack of training and research can affect the professionalism and competences of the health professionals. In addition to the health professionals, students from the Diponegoro University also provide information about NCD's. The students are performing research in books, journals and the internet to ground their information and to make these findings suitable for the elderly. According to these students there is a lack of trust towards the students from the elderly. They prefer to trust professionals or doctors rather than nursing students. The students from the Hanze University of Applied Sciences concluded that there is a need to implement a method or model regarding to health promotion in the community health centre 'Pudak Payung'. They suggested to use the Precede-Proceed method to optimize the current health promotion. It fits with the community health centre 'Pudak Payung' because the method is focused on increasing the quality of life rather than behavioural change. This is according to the research conducted by the first couple, one of the main objectives of the health promotion offered by health professionals in the community health centre 'Pudak Payung' (De Jongh & Voogd, 2017).

The Precede-Proceed method, displayed in figure 2, can be used to design and evaluate a health promotion plan (Azar, Solhi, Nejhaddadgar & Amani, 2017). Precede exists of five assessment and planning stages to guide the health professionals in selecting the problem to address, examining its underlying causes, planning and intervention. Proceed includes four implementation and evaluation phases (Porter, 2016).

The second couple of bachelor students from the Hanze University of Applied Sciences started their research in 2017. They started using the Precede-Proceed method and the aim of their research was to apply the first three phases of this method. The result of the first phase suggest that the experienced state of health of the elderly people living in the community 'Pudak Payung' does not

affect their experienced quality of life. However, considering the results of the focus group interview with the health professionals and the epidemiological diagnose, there is an actual health problem and threat for the elderly population in the community centre. The Epidemiological diagnosis shows 71% of the elderly in 'Pudak Payung' have one or more NCD's, which is a significant high amount and is mostly associated with a low quality of life, high healthcare costs and increased mortality. The most common NCD's in the community of 'Pudak Payung' are high blood pressure, diabetes, rheumatic disorders and arthritis. The result of the behavioural & environmental diagnosis shows that tobacco use, consuming too much fat, salt and sugar and physical inactivity are the most common modifiable risk factors of NCD's in the elderly population. The elderly people are also consuming too little vegetables, too little fruit and most of the meals do not contain enough nutrients. Most of those risk



Figure 2 Precede-proceed model 1 (Weiss, 2015)

factors are to be found by people with a low educational level and economic position. Considering the results of the first three phases, the researchers assume there will be a higher prevalence of cancers, respiratory disease and cardiovascular disease. Many people are not diagnosed with those diseases and are going to a doctor when they are already in the last stage of the disease. The researchers suggest focussing the interventions for the health promotion program on the most common NCD'S, like the lack of knowledge due to no or low education level, the amount of tobacco use, unhealthy diets, marketing and promotion of unhealthy products, availability of healthcare and second-hand smoking (Bijsterbosch & Veenma, 2017).

The researchers, Evelyn van der Kooi and Femia Koopmans, are the third couple going to Semarang to finish this study. They will focus on the health promotion regarding NCD's diseases for the elderly people of the community health centre 'Pudak Payung'. The focus is on the elderly people because after a discussion with the head of the community health centre conducted by the first couple of students, it became clear there was a need to focus on the elderly people. The second couple started using the Precede-Proceed method focussing on the elderly people. Therefore, the last couple of students continues the study focussing on the elderly people. Phase 4, 5 and 6 of the Precede-Proceed method will be conducted. In consultation with the head of the community health centre 'Pudak Payung' the focus will be on the implementation phase. The health centre stated that there is high need for implementation. During phase 6, the data of the three theses will be used to create an implementation plan. Because of limited time, in consultation with the Hanze University and the puskesmas 'Pudak Payung' phase 4 and 5 will be worked out briefly.

# 1. Objectives, research questions and defining concepts

## 1.1 Objectives

The overall aim of this two-year study is:

- Using the Precede-Proceed method, to improve the health promotion regarding non-communicable diseases for the elderly people in the community health centre 'Pudak Payung' in Semarang Central Java, Indonesia.

The aim for this part of the research is:

- Applying phase 4, 5 and 6 of the Precede-Proceed method to provide a suitable plan of implementation for a health promotion plan and implement a part of this health promotion plan regarding non-communicable diseases for elderly people in the community health centre 'Pudak Payung' in Semarang, Central Java, Indonesia.

## 1.2 Research question

The overall study question of this two-year study period is:

- How can the outcomes of Precede-Proceed method be implemented, to improve the health promotion regarding non-communicable diseases for the elderly people in the community health centre 'Pudak Payung' in Semarang, Central Java and what is the effect of the implementation of the method?

The research question for this particularly research is:

- Which suitable interventions towards health promotion, can be implemented based on the outcomes of phase 1 to 5 of the Precede-Proceed method regarding non-communicable diseases for the elderly people in community health centre 'Pudak Payung' in Semarang, Central Java, Indonesia.

## 1.3 Research subquestions

The research subquestions for phase 4 are:

- What is the organization and structure of the puskesmas and the health promotion given there for the elderly regarding non-communicable diseases in community health centre: 'Pudak Payung'?
- What are organisational barriers and chances that might affect the implementation of a health promotion plan regarding non-communicable diseases for elderly people in community health centre 'Pudak Payung'?
- What are good practices and sources for interventional design regarding health promotion about non-communicable diseases for elderly people in community centre 'Pudak Payung' considering the outcomes of phase 1, 2 and 3 of the Precede-Proceed method?

The research subquestion for phase 5 is:

- Which policies should be considered by creating a plan of implementation about health promotion regarding non-communicable diseases for elderly people in community health centre 'Pudak Payung'?

The research subquestions for phase 6 are:

- What interventions are suitable, necessary and have a high chance to succeed in a plan of implementation about health promotion regarding non-communicable diseases for elderly people in community health centre 'Pudak Payung'?
- What intervention is most suitable for implementation and how can this intervention be implemented for the elderly people in community health centre 'Pudak Payung'?

## 1.4 Defining concepts

- **Elderly people:** the definition of elderly people in Indonesia, in this research, is 50 years and older, this was determined by the previous researchers (De Jongh & Voogd, 2017).
- **Non-communicable diseases:** also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors. the main types of NCDs are cardiovascular diseases, cancers, chronic respiratory diseases and

diabetes. NCDs disproportionately affect people in low- and middle-income countries where more than three quarters of global NCD deaths occur (World Health Organization, 2018).

- **Pusat Kesehatan Masyarakat' (puskesmas):** puskesmas are community health centres over all of Indonesia. They provide primary health care for all people. The primary role of a Public Health Centre is providing health services and particularly promotive and preventive aspects (Nadya, Arya & Alam, 2016).
- **Phase 1, 2 and 3: social, epidemiological, behavioural and environmental diagnosis:** these are the first three phases of the Precede-Proceed method. Phase 1 identifies the populations priorities in improving their lives (Green & Kreuter, 2005). Phase 2 analyses community problems. (Johnson, Pintauro, Brock. & Bertmann, 2018.). Phase 3 uncovers behavioural and environmental determinants that stand in the way of achieving the goals (Health Behavior and Health Education, n.d.).
- **Phase 4: Educational and organizational diagnosis:** this is the fourth phase of the Precede-Proceed method. It identifies the best practices and other sources for intervention design. In this phase the results of the first three phases will be used and the organisational barriers will be taken into account, such as staff members, organizational culture, structure and procedures that might have an impact on the actual intervention (Johnson, Pintauro, Brock & Bertmann, 2018). An organizational strategy will be developed that can be used to streamline the planning and implementation. On this point the predisposing, reinforcing and enabling factors will be used (Crosby & Noar, 2011).
- **Phase 5: Administration and policy diagnosis:** the fifth phase of the Precede-Proceed method focuses on administrative, regulation and policy issues that can influence the implementation in phase 6.
- **Phase 6: Implementation:** this phase is the actual design, conducting and implementation phase. An implementation and interventions have been devised (Johnson, Pintauro, Brock & Bertmann, 2018). Due to limited time a plan of implementation will be made with several options for interventions and three interventions will be conducted by the researchers. The staff members of the puskesmas can use this plan of implementation to conduct other interventions.
- **Phase 7, 8 and 9: Process, impact and outcome evaluation:** those are the last three phases of the Precede-Proceed method. In this phase will be determined whether the interventions are actually taking the actions intended, are having the intended effects on behaviours and environment and if the interventions bring the improvements in quality of life identified by the community 'Pudak Payung' as its desired outcome (Johnson, Pintauro, Brock & Bertmann, 2018). These phases won't be conducted by the researchers due to limited time.

## 2. Research design

### 2.1 Design and methods

#### 2.1.1 Research design and method

This research is part of a two-year study conducted by three couples of students. This research is the third part, conducted by the third couple of students and has built on the first two parts of this two-year study.

The aim of this research consists of two parts, a descriptive and a prescriptive part. In the descriptive part, the characteristics of the subject are mapped to answer the subquestions of phase 4 and 5. In the prescriptive part measures or guidelines are developed and executed in a plan of implementation to answer the research questions of phase 6. The data has been collected by means of qualitative methods, because the collected data consist of experiences or expectations of the subjects. This can only be done through qualitative research. Furthermore, qualitative research is conducted in this research, because it is important to really get the information the staff of the puskesmas think is important, to create support for the plan of implementation (Verhoeven, 2018). The research is a cross-sectional research because there is only one measurement moment (Bakker & van Buuren, 2014). The data is collected by means of interviews and observations. The first part of the research has an observational design. In this design the researchers limit themselves to making non-participant observations and interviews (Bakker & van Buuren, 2014). The implementation part of the research has an experimental design, because a new intervention is being implemented according to the model of Grol & Wensing (2014). In this research, the effect won't be measured, due to limited time. This can be done by the staff of the puskesmas 'Pudak Payung'.

#### 2.1.2 Research population

There are 24 health workers consisting of nurses, doctors and others at the puskesmas (Bijsterbosch & Veenma, 2017). There are always approximately 10 bachelor or master students working at the puskesmas. In the first two parts of this two-year study, conducted by the first two couples of students, this source was also used. The conclusions and recommendations of those researches have been used for the plan of implementation in phase 6. In this research this source has been used to answer the subquestions of phase 4, 5 and 6.

The plan of implementation focuses on the elderly people in the puskesmas. The focus is on the elderly people because after a discussion with the head of the community health centre conducted by the first couple of students, it became clear they had a need to focus on the elderly people. The second couple started using the Precede-Proceed method focussing on the elderly people. Therefore, the last couple of students continues the study focussing on the elderly people. In this particular research, health promotion activities are observed where elderly people have been present. No other information has been gathered from this source. The first two couple of students conducting research, also used this source. This research uses their findings and results. The community centre serves approximately 30.000 members, including 3.000 elderly people, according to the puskesmas (Profil Puskesmas Pudakpayung, 2018).

#### 2.1.3 Sampling

In this research, for the interviews, purposive sampling is used. Purposive sampling is working towards a specific composition of people, to try and select a combination of people that are expected to yield much information (Migchelbrink, 2016). As much people as needed have been interviewed to reach a saturation point (Bakker & van Buren, 2014). The staff of puskesmas 'Pudak Payung' have been interviewed to gather the information needed for implementation. The criteria for selection people in phase 4 are:

- People with varying functions: for example volunteers, doctors, nurses and nursing students. This is because support must be developed by all the staff of the puskesmas who deal with health promotion, to create a successful plan of implementation (Grol & Wensing, 2014).
- People who are representative for their discipline or function. Of every function only one person has been asked, they had to represent all the other people in this function. Therefore at least one-year experience in the puskesmas and at least working two days a week at the puskesmas was

necessary, so this person has enough knowledge of the health promotion in the puskesmas. The head of the puskesmas has been asked about this, because she knows which persons are representative for their function.

A lecturer at Diponegoro University and a staff member of the puskesmas have been interviewed, to gather information in phase 5. The selection criteria are:

- A person with specific knowledge about laws and policies concerning health promotion and education and with knowledge of policies that might influence a plan of implementation. In discussion with the head of the puskesmas a staff member of the puskesmas has been selected, because the head knows what people have knowledge about this subject. The lecturer from the Diponegoro University who is guiding the researchers, has been asked which person from the university has also knowledge of this subject, because he knows the staff working there.

In qualitative research the number of subjects is mostly small, because the method of data collection is much more intensive, and the information content is more important than the size of the sample (Verhoeven, 2018). To reach the saturation point, nine interviews have been conducted. Six interviews about phase 4 and 6 and three interviews about phase 5.

In this research for the observations maximum variation sampling is used (Baarda, et al. 2013). The observations have been chosen at a later point in this research, when it became clear that there was more information needed than the interviews could give, see heading 'Observations'. With maximum variation sampling, observation units have been chosen that have a maximum of variation, so that the range of observation units is well covered (Baarda, et al., 2013). To cover the whole range of observations units, of every health promotion activity regarding NCD's for the elderly an observation is made. In this particular research nine observations have been conducted. The only selection criteria that has been used, is that every activity has only be observed once. The priority is getting a maximum of variation and not repeating observations. No further selections have been made, every activity is observed. The observations have taken place in the puskesmas and some observations haven taken place in the community of 'Pudak Payung', depending on where activities normally take place.

## 2.1.4 Data collection

### Interviews

The interview is a widely used data collection technique in practice-oriented research. The researchers determine the subject for the interview and select the respondents. Interviews can be conducted individually and in groups (Migchelbrink, 2016). To answer the subquestions of phase 4 and 5, individual interviews are held, because individual interviews are useful to collect information based on experiences, insights and opinions of the respondents (Dassen et al, 2012). These interviews have been held face-to-face, so the interviewers were able to ask for clarifications from the responses. Especially if there is a language barrier and there are cultural differences. The interviews are recorded with recording equipment on a mobile phone. On beforehand a topic list has been made. These topics have been used to make interview questions in an interview guide. This requires a good preparation, because there are language and cultural barriers. The interview questions have been translated prior to interviewing and the questions have been asked in a cultural sensitive way. It is very important to not ask very direct questions, because in Indonesia a collective culture prevails and the people here communicate in an indirect way. Asking the participants direct questions can make them feel uncomfortable (Nunez et al., 2017). Other cultural differences that have been considered are: awareness of communication in high context cultures, power distance and polychromic culture, see heading 'Cultural aspects' and 'TOPOI model'. A pilot interview has been conducted with a supervisor at Diponegoro University, to gain feedback and adapt questions in a cultural sensitive way if necessary. The cultural aspects can influence the validity and dependability, see heading 'Validity' and 'Dependability'. The interviews are semi-structured. With a semi-structured interview, all head and subquestions and topics are written down in advance, to provide structure, but there is room for questions and important topics that have been overlooked (Baarda et al., 2018). The interview guides consist of topics, questions, and probes to guide the interview (displayed in attachment C and D). Probes have been used to ask follow-up questions, when a response is not fully understood, answers are vague and ambiguous or more specific or depth- information needs to be obtained (Baarda et al, 2018). Two different interview guides have been made, one for phase 4 and one for 5. The interviews are done by two researchers. One researcher leads the interview and the other one observes and notes what is being said. The interviews in phase 4 have taken place in the puskesmas and the interviews in phase 5 have both been held at the puskesmas and the university. Because of the

language barrier, a translator has been hired to translate the interviews beforehand and translate when conducting the interviews.

In phase 4 and 5 must be looked at micro and macro level, to search for aspects that can influence the implementation (Glanz, Rimer & Viswanath, 2008). There are no existing topic lists, questionnaires or interview lists to follow, so the topic list has been made up of all the aspects and topics phase 4 and 5 of the Precede-Proceed method. At micro level, phase 4, the focus is on individual, staff, volunteers, students, and others who can influence health promotion. Here must be asked what chances and barriers there are at an organizational level and what best practices towards health promotion are already being applied (Johnson, et al., 2018). Important are predisposing, reinforcing and enabling factors (Glanz, et al., 2008). In the following topic list, all the aspects mentioned above have been described:

- Organization and structure of the puskesmas;
- Staff involved in health promotion;
- Health promotion activities;
- Organizational barriers;
- Organizational strengths & chances;
- Implementing new ideas;
- Areas of need to change;
- Suitable interventions (Johnson et al., 2018).

In phase 5 aspects on macro level have been researched. Important is to look at government regulations and policies that can influence the plan of implementation (Glanz, et al., 2008). In the following topic list, all the aspects mentioned above have been described:

- Important government laws and policies;
- Chances and barriers (Johnson et al., 2018).

### **Observations**

Observation is a data collection technique in which researchers systematically observe and note people's behaviour, actions and interactions. By using this method, researchers obtain a detailed description of the social setting and people's behaviour within their own socio-cultural context. This needs to happen, as much as possible, without violating the behaviour of the activities of the investigated. Observation in research can be beneficial in different ways. This data collection technique has been added to the research later, because the researchers found out that they couldn't get enough information by only conducting interviews. They chose to conduct observations because of the following three reasons: to provide context to a study by observing the social setting, to complement other methods of data collection and to provide a contextual understanding to the findings of other research methods (Hennink, Hutter & Bailey, 2011).

The method of observation has many variants. In this research is chosen for an unstructured observation, because the researchers didn't know in advance what information they could expect and what would be important. In this type of observation, the researchers are only focused on some themes. To gain a complete picture of the activity, the researchers chose to use the Five Ws method to decide on which themes they wanted to focus (Donk & Lanen, 2014). The themes of the observations are:

- who performs the activity;
- what is it about;
- where does it take place;
- what is the purpose of it;
- what are the strengths and;
- what are the weaknesses of it.

The themes strengths and weaknesses of the activity have been added, because this is topic of phase 4 of the Precede-Proceed method. The strengths and weaknesses mentioned in the interviews, can be confirmed or denied by using observations. Certain subjects did not appear in the interviews, but were observed. So, by adding observations to the interviews, the reliability is strengthened (Migchelbrink, 2016). Besides that the observation is not structured, the observation is non-participant. This means the researcher has remained outside the research situation as much as possible. They have not participated in the activities and did not interfere with the participants (Migchelbrink, 2016). For this kind of observation has been chosen, to observe as much as possible an activity as it would usually go. In reality this is very difficult because researchers are often part of the situation they observe and may influence the situation by their presence. Especially in smaller groups, people are

more aware of the presence and influence the researchers have on the setting. That's why it was important to build rapport with the institution. The researchers made themselves less visible by trying to blend into the setting by the way they dressed and appeared and they tried not to disturb the activity by sitting in a corner alone (Hennink, Hutter & Bailey, 2011).

### **Plan of implementation**

In phase 6 a plan of implementation has been made. Several good, suitable and necessary interventions have been written down in this plan of implementation and three interventions have been chosen to implement. This plan combines both the previous researches and the current research in one plan of implementation. The implementation plan is worked out according to the model of Grol & Wensing (2014). The implementation model of Grol & Wensing is chosen for various reasons. The model is about optimization of patient care, so it is about quality care and the implementation of improvements. The emphasis is on improving the primary care process provided by doctors, paramedics and nurses, and the teams in which they operate. Changes in the organization or practices can be very important, but these changes have to contribute to improving direct patient care, because the patient is central in this model. In this model, the reason for implementation can be either the availability of new scientific insights, valuable working methods or the experiences on the work floor about a particular care process that is not effective, efficient or patient-friendly. This research is a qualitative research, based on the experiences of the health workers in the puskesmas about health promotion for the elderly. This corresponds to all points mentioned above and therefore this model is very suitable to use for a plan of implementation (Grol & Wensing, 2014). This model consists of the following sections.

- 1: development for proposal of change;
  - 2: analysis of actual care, concrete goals for improvement;
  - 3: problem analysis, target group, setting;
  - 4: development and selection of interventions strategies;
  - 5: development, testing and execution of the plan of implementation;
  - 6: integration in routines;
  - 7: evaluation and adjustment of the plan of implementation (Grol & Wensing, 2014).
- The first six sections have been conducted in this research. Section seven could not be conducted by the researchers due to limited time and can be conducted by the workers of the puskesmas.

### **2.1.5 Data analysis**

After the interviews and observations have been conducted, they must be analysed. The following steps will be followed in analysing the data:

- transcribing;
- reading data,;
- encoding;
- organizing;
- interpreting;
- testing.

This is a cyclical process in which the steps can be repeated after every interview, to adjust certain topics, to be better able to design the conceptual framework and to write more accurate questioning (Baarda et al, 2018). When no new information is collected after conducting more interviews the saturation point is reached (Bakker & van Buren, 2014). The first step in analysing the data is transcribing all the interviews who are recorded into transcripts. Thereafter writing all the observations down in a systematic schedule, displayed in attachment F. In qualitative analysis texts are the basic material from which further analysis is possible (Migchelbrink, 2014). All the recordings from the interviews have been verbatim transcribed, because it captures the information in the participant own words, which provides much valuable detail. The observations have been written down as objective as possible to provide reliable details (Hennink, Hutter & Bailey, 2011). The second, third and fourth steps are reading, encoding and organizing the data. This has been done by using Atlas.ti. Atlas.ti is a widely used and reliable programme. It is very suitable for qualitative research analysis and thus for analysing interview transcripts and observations (Verhoeven, 2018). The codes are kept in a codebook, because it is essential to provide a central reference for all codes in the research and because two different researchers are analysing the same data a codebook is useful for maintaining the consistency. Codes have been inductive and deductive developed. They have been deductive developed to include all the data already collected, this is done from the topics of the interview guide, observation unit and from concepts of the first two researches conducted. Some codes have been inductive developed to ensure the opinion of the participant, this is done through reading the data

(Hennink, Hutter & Baily). In this research literal quotes, or thick descriptions, have been used, to present the result as concretely as possible and to lose as little as possible of the authenticity of the quotes (Willems & Van Zwieten, 2004). These quotes have only been adjusted to make them in readable and understandable English and only when necessary. The quotes displayed in the results are the most valuable quotes and they are mostly the most average representation of the interviews. Step five is interpreting the gained ideas and use them for further research. In this case for the plan of implementation (Bakker & van Buren, 2014).

## 2.2 Research quality

### 2.2.1 Dependability

Dependability in qualitative research is the extent random errors occur. Errors due to unexpected and unpredictable factors of the researcher, data collection method, research situation (Verhoeven, 2018). Important is the degree of repeatability, accuracy and care when researching (Migchelbrink, 2016). In this research, the dependability will be checked by:

- Standardization: by applying a system in the analysis and use of a reliable programme, Atlas.ti.
- Test interview: the interview made to answer the subquestions of phase 4 and 5, has been tested first on a supervisor of the Diponegoro University. In this way, the researchers are testing if the questions are comprehensible, cultural sensitive and whether the interview measures what needs to be measured.
- Peer feedback: a college researcher, who is also conducting her bachelor thesis in the nursing department and is not involved in this research, has been asked to look critically at the research and provide feedback.
- Audit trail: all research activities have been logged. In this log will all choices, progress, learning moments, adjustment made, circumstances that cause problems, things that go wrong and justification will be written.
- Intersubjectivity: the degree of agreement of the results between the researchers. The two members of the research team have each coded and summarised separately and then jointly compared and combined the data.
- Triangulation: to view a problem from multiple perspectives. The results obtained has been checked by using a different method to increase the reliability. In this research the results of the individual interviews have been checked by observations.
- Iteration: observing, analysing and interpreting data and repeating these steps until the subquestion is answered. This meets partially the requirement of repeatability and has been done when interviewing individual people (Verhoeven, 2018).
- Data storage: all data has been stored on a hard drive, so the research can be discussed (Verhoeven, 2018). The data has been gathered anonymously, this has been discussed with the participants before conducting the interview, to create a safe and open atmosphere in which the participants hopefully give the least social desirable answers (Nunez et al., 2017).
- Member check: all interpretations and conclusions have been checked by the respondents (Verhoeven, 2018). The researchers may overlook important details, because the differences in high and low context culture (Nunez et al., 2017).
- Thick description: this makes the relationship visible between the raw data and interpretations, making it verifiable and possible criticisable. The research is more clearly displayed when the step from literal quotations to explanations is visible (Willems & Van Zwieten, 2004).

### 2.2.2 Validity

Validity is about how well a scientific test actually measures what it sets out to measure. This concerns the absence of systematic errors (Bakker & van Buuren, 2014). In qualitative research validity is more important than dependability, because qualitative researchers are actively involved in collecting data. As a matter of fact, they 'go along' with the participants to collect data and that is why neutrality is sometimes difficult to maintain (Verhoeven, 2018). In this research the validity has been monitored by:

- Spending a lot of time in the research situation. Experience shows that when you spend a longer time in a research situation, the health workers will rather see you as a colleague than as a researcher. This has resulted in fairer and more open information.
- The interpretations and conclusions have been verified and substantiated by literature research. This has strengthened the validity.

- Theoretical sampling: respondents have been very consciously selected, described under the heading 'Sampling', because they represent a certain group. A good justification of the selection of respondents based on the questions you want to answer, contributes to a better 'coverage' of the conclusions and thus promotes the quality of the analysis (Baarda et al., 2018).

Some measures to increase validity also increase dependability, these are described under the heading of dependability and are: data storage, peer feedback/debriefing, member check, triangulation and iteration/replication (Verhoeven, 2018). Monitoring validity has also been done by reckon with different kinds of bias. A measurement instrument with a lot of bias ensures little validity (Baarda et al., 2018). Different kinds of bias who can influence this research will be monitored through:

- Selection bias: will result when the selection of subjects into a study leads to a result that is different from results gotten from the entire target population, see heading sample. When selecting participants, the language barrier has been considered, see heading 'Language barrier'.
- Respondent bias: participants pretend a situation is better or worse than in reality or give socially desirable answers (Migchelbrink, 2016). To decrease socially desirable answers, a save and open atmosphere has been created during the interviews. This has been done by asking the participants whether to conduct the interviews at the puskesmas or at a place outside the puskesmas. So they could choose where they feel most comfortable. In addition, the interviews have been conducted in a room without other people.

### 2.2.3 Generalizability

Generalizability is how representative the research population is and the extent to which the results of a research are applicable to other persons or centres that are not involved in this research, a wider target group (Bakker & van Buuren, 2014). Because of this the acquired knowledge can be shared and used in a different setting. Under the heading 'Sampling', generalisability already is discussed about the research population. This research is also generalizable to a wider target group outside of this research to the following settings:

- This research has a low generalizability, because this research focusses only on puskesmas 'Pudak Payung'. Each puskesmas has its own characteristics, strengths and weaknesses, but there can be overlapping areas when conducting research about other puskesmas. Therefore this research is potential generalizable to the Indonesian population who are living in a city and have the same sociodemographic characteristics as the target population in this research.
- The community health centre 'Pudak Payung' is one of approx. 9.700 health centres in Indonesia (WHO, n.d.), and therefore potential generalizable to other community health centres. Considered must be that every puskesmas is unique and has their own weaknesses and strengths and this research focuses only on puskesmas 'Pudak Payung'(AHK, 2014).

### 2.2.4 Usability

An important aspect of practical research, and therefore of this research is the usability. The usability is independent of the dependability and validity. Regardless of whether reliability and validity are high or low, usability is a factor (Verhoeven, 2018). The usability of a research is high when the results are usable, and it is possible to apply the results at the research site. This research has a high usability because this research focuses entirely on puskesmas 'Pudak Payung' to better the health promotion there. To ensure a high usability of this research the following actions have been taken:

- Close contact with the clients, so it is clear what they need from this research.
- Orientate thoroughly and research existing knowledge on the research situation beforehand.
- Use of experts the client and research site have (Migchelbrink, 2016).

## 2.3 Circumstances research site

### 2.3.1 Cultural aspects

The Netherlands and Indonesia have many cultural differences. Collecting data in a very different cultural setting than the Netherlands, like Semarang, requires cultural sensitivity, adaptability and creativity. To conduct solid research cultural differences had to be considered. The key to manage cultural differences is using intercultural communication. This requires an intercultural sensitive attitude, knowledge of cultures and skills in chancing frame of reference (Nunez, Nunez Madhi & Popma, 2017) Therefore, in preparation the researchers have been reading about the cultural differences between the Netherlands and Indonesia. This research has used the TOPOI model to recognize and deal with the most important differences in intercultural communication, under heading

'TOPOI model'. This research has used the model of Hall and Hofstede to recognize and deal with the most important cultural differences that influence this whole research:

- Very important is the awareness of communication in high context cultures, as in Indonesia. This means little is explicitly transmitted in so many words, but much non-verbally (Nunez et al., 2017). Important is to start any interview with context and write down body language.
- People in a polychronic culture prefer doing lots of things at the same time, are more concerned with people than with planning and time is stretchable and adaptable to needs (Nunez, et al., 2017). Researchers doing similar research in Makassar experienced difficulties planning interviews; appointments could be cancelled at the last moment. Flexibility and readiness for sudden opportunities of the researchers was needed during the period of data collection. In the research population communication through WhatsApp was customary and this medium has been used to keep in contact with people (Feddema & Jansen, 2018).
- Power distance, how normal people think it is if power is unevenly distributed in relations, is very high in Indonesia. In Indonesia superiors, supervisors and elderly people, do have more power. Researchers must adapt to this difference in power distance and show respect to maintain good relationships with people and to be able to collect data (Feddema & Jansen, 2018). When people feel power distance, it is possible they give more social desirable answers. This can influence the validity and dependability (Hofstede, Hofstede & Minkov, 2016).
- In contrast to the Netherlands, a collectivist culture prevails in Indonesia. Important to consider is that criticism is given, only in a very subtle way (Nunez et al., 2017). This has been considered when conducting interviews or else important information will be missed. When analysing the interviews extra attention has been given to subtle criticism and when conducting the interviews asking about barriers or weaknesses often request to obtain all relevant information.

### TOPOI model

Described above under heading 'Cultural aspects' are general differences and aspects in culture, that are considered this whole research. When conducting the interviews and observation an additional tool is added to deal, more specific, with intercultural communication. The model that has been used for this is the TOPOI-model. This model distinguishes five areas in the communication, which can cause possible misunderstandings. The five areas this model uses are: tongue (language), order, person, organization and intentions & influence. Tongue is the language aspect of communication, verbal and non-verbal. Order is how each participant views, orders and organizes reality. Persons is about the relationship part of the conversation. Organization is the social and professional organizational context of communication. Intention and influence stands for aim and intentions of the conversation and participants (Nunez, Nunez Madhi & Popma, 2017). In table 1, the TOPOI model is displayed, specified for the interviews and observations of this research.

	Analysis	Interventions
<b>Tongue (Language)</b>	<ul style="list-style-type: none"> <li>- People speak in two different languages.</li> <li>- In different cultures people can have different meanings using different words.</li> <li>- Indonesia is an collectivist culture. Criticism is only given in an very subtle way.</li> </ul>	<ul style="list-style-type: none"> <li>-Translators are available for the people who do not speak English.</li> <li>- Request and check if everything is understood during the interviews by the researchers and participants.</li> <li>- Paying extra attention if subtle criticism is given and request often to obtain all relevant information.</li> </ul>
<b>Order</b>	<ul style="list-style-type: none"> <li>- Consider the different starting points of the researchers and participant.</li> <li>- Considering differences in norms and values. In Indonesia religion is very important and is practised several times a day.</li> <li>- Considering differences norms and values. In Indonesia it is of good hospitality to bring snacks at presentations and interviews.</li> </ul>	<ul style="list-style-type: none"> <li>- Asking more questions to get more context in the interviews.</li> <li>- Visit the research site often to get more the same starting point as the participants.</li> <li>- Showing interest in and respect their religion.</li> <li>- Dressing appropriately.</li> <li>- Bringing snacks at interviews.</li> </ul>
<b>Persons</b>	<ul style="list-style-type: none"> <li>- In Indonesia a high power distance prevails.</li> <li>- Complementary relationship take place during the research. People can feel a difference in authority.</li> </ul>	<ul style="list-style-type: none"> <li>- Show respect to the staff of the puskesmas, interviewees and people at the observation.</li> <li>- Addressing the people with the right title (such as miss or mister).</li> <li>- Making people feel at ease during the interview, for example by starting the interview with small talk.</li> <li>- Making people feel at ease during the observations, so people are not bothered that they are observed, like give an introduction.</li> </ul>

<b>Organization</b>	<ul style="list-style-type: none"> <li>- The researchers are not very familiar with Indonesian health care.</li> <li>- Consider laws and regulations of Indonesia.</li> <li>- Use of time. In Indonesia polychronic time prevails.</li> </ul>	<ul style="list-style-type: none"> <li>- Visit the research site often to gather more information about the health care.</li> <li>- Adding extra questions in the questionnaire, about the health care.</li> <li>- For every interview and observation permission is asked.</li> <li>- Calculating that appointments can be cancelled or rescheduled easily, by not keeping a too tight time schedule.</li> <li>- Calculating that people can come later than scheduled, for example by planning enough time for the interviews.</li> </ul>
<b>Influence &amp; Intentions</b>	<ul style="list-style-type: none"> <li>- Participants can think the observations and interviews are held for the other reasons.</li> </ul>	<ul style="list-style-type: none"> <li>- At the beginning of an interview or observation, explaining what the purpose is of the interview and what will be observed exactly.</li> </ul>

Table 1. TOPOI model

### 2.3.2 Language barrier

The researchers followed an online course Bahasa Indonesia before going to Indonesia. This course can help to understand the people a bit but is not enough to conduct the interviews in Bahasa. When the interviewee spoke reasonable English, the interviews have been held in English. In case the interviewee did not speak English, very little English or a person has difficulties to express him/herself in English, a translator has been used. The following measures have taken place to ensure the interviews went well:

- Supervisors and translators have been asked for advice on clarity and suitability of the questions and cultural acceptable word constructions before the interview is taken.
- If translators are used, they have been getting information about the subjects on forehand.
- A test interview has been performed with a supervisor to exercise the intercultural interviewing skills of the researchers and to check whether questions are comprehensible.
- The interview guide and consent form has been translated in Bahasa.

### 2.4 Ethics

To ensure that this research is ethically justified, the researchers adhere to the Gedragscode praktijkgericht onderzoek voor het HBO (Code of Conduct for practical research at higher education):

- researchers serve professional and social concern;
- researchers are respectful;
- researchers are careful;
- researchers act with integrity;
- researchers justify their choices and behaviour (Andriessen et al., 2010).

Beside the code of conduct several Dutch laws have been taken into consideration: Wet op de geneeskundige behandelingsovereenkomst (Law on the medical treatment agreement) and Wet medisch-wetenschappelijk onderzoek met mensen (Law medical scientific research with people).

Important for this research is:

- the researchers have permission to perform research in healthcare centres. They are supervised by an employee of these institutions;
- Participation in the research is voluntary;
- every participant will be informed, and consent must be given in a written consent form (displayed in attachment E);
- the results will be processed anonymous and are not traceable to the participants;
- interviews will be recorded in agreement with the respondents and after finishing this research the recordings will be deleted (WMO & WGBO, 2018).

The rules from the following Indonesian institutes must be followed: University Diponegoro and puskesmas 'Pudak Payung'. In advance, before arriving in Indonesia, the supervisor in Indonesia has been contacted about the laws and regulations that apply in our research. Upon arrival in Indonesia, further deepening has been conducted into what laws and regulations must be complied with, by asking the staff of the puskesmas about the regulations in the puskesmas and by conducting the interview for phase 5 of the Precede-Proceed method.

### 3. Results

In this chapter the results of the interviews and the observations executed by the researchers are described. The researchers have conducted in total nine interviews and nine observations. Six interviews were about phase 4&6, displayed in attachment C. Three interviews were about phase 5, displayed in attachment D. The nine observations are about different activities where health promotion was given, displayed in attachment F. Not all observations had a translator present. A schedule about the interviews and observations is displayed in table 2 and 3. The results are divided in phase 4, 5 and 6 of the Precede-Proceed method. Each phase consists of a few subquestions. Every subquestion is answered from the data of the interviews and observations. For answering the subquestions, quotes from the interviews are used. These quotes have been adjusted to be in readable and understandable English, only when necessary. The quotes are kept as much as possible in their original state, so that as little as possible of the authenticity of the quotes is lost (Bakker & van Buren, 2014). The quotes, displayed in the results, are the most valuable quotes and they are mostly the most average representation of the interviews.

Date	Interviewee	Location	Phase
16-10-2018	1. Master student	Diponegoro University, Nursing Faculty.	Interview 1 (Phase 4&6)
17-10-2018	2. Head of the puskesmas	Puskesmas 'Pudak Payung'.	Interview 1 (Phase 4&6)
17-10-2018	3. Head of the puskesmas	Puskesmas 'Pudak Payung'.	Interview 2 (Phase 5)
17-10-2018	4. Health promotor	Puskesmas 'Pudak Payung'.	Interview 1 (Phase 4&6)
18-10-2018	5. Nutritionist & epidemiologist	Puskesmas 'Pudak Payung'.	Interview 1 (Phase 4&6)
18-10-2018	6. Bachelor student	Diponegoro University, Nursing Faculty.	Interview 1 (Phase 4&6)
24-10-2018	7. Nurse	Puskesmas 'Pudak Payung'.	Interview 1 (Phase 4&6)
25-10-2018	8. Lecturer	Diponegoro University, Nursing Faculty.	Interview 2 (Phase 5)
25-10-2018	9. Lecturer	Diponegoro University, Nursing Faculty.	Interview 2 (Phase 5)

Table 2. Schedule interviews

Date	Observation	Location
10-10-2018	1. A presentation about and group discussion of master students ongoing thesis.	Puskesmas 'Pudak Payung'.
15-10-2018	2. Start of the seven weeks program for the bachelor students.	Puskesmas 'Pudak Payung' and its community.
15-10-2018	3. Health education given for the volunteers.	In the community of Pudak Payung.
19-10-2018	4. One hour morning exercise on music.	Puskesmas 'Pudak Payung'.
25-10-2018	5. Prolanis	Puskesmas 'Pudak Payung'.
30-10-2018	6. Master student implementation: supportive group & music therapy.	In the community of 'Pudak Payung'.
30-10-2018	7. Master student implementation: hope therapy.	In the community of 'Pudak Payung'.
5-11-2018	8. Poksila (posyandu lansia).	In the community of 'Pudak Payung'.
6-11-2018	9. Use of social media	Puskesmas 'Pudak Payung'.

Table 3. Schedule observations

#### 3.1 Subquestions phase 4

This is the fourth phase of the Precede-Proceed method. It identifies the best practices and other sources for intervention design.

##### **Subquestion 1: What is the organization and structure of the puskesmas and the health promotion given there for the elderly regarding non-communicable diseases in community health centre 'Pudak Payung'?**

This part of phase 4 answers the kind of organization, structure and health promotion the puskesmas has. The staff of the puskesmas consists of 24 people. The staff provides health care for two regions: 'Pudak Payung' and 'Gedawang'. Pudak Payung has 22.363 inhabitants and Gedawang has 8.220 inhabitants. In total provides the puskesmas health care for 30.583 people. The volunteers are supporting the staff. There are 168 volunteers in Pudak Payung and 60 volunteers in Gedawang. All year long, students are doing their assessment and support some activities in the puskesmas. In the community of the puskesmas there are 2.695 pre-elderly and elderly people. The puskesmas describes pre-elderly people aged 50-60 and elderly people aged 60+.

The profile or mission of the puskesmas is put every year in a mission document, to structure all the activities the staff must do. In this document are not only the inhabitants, demographics and facilities described, but also all the programs there are and every activity to do in 2018. For 2018 the focus point lies on these six main activities: health promotion efforts, environmental health efforts, mother

and child health efforts, community nutrition improvement efforts, efforts to prevent and eradicate communicable diseases and treatment efforts (Profil Puskesmas Pudukpayung, 2018). The health care is divided in public health care unit (UKM) for community care and individual health care unit (UKP). The UKM provides the health promotion activities in the community and the puskesmas, like prolanis and poksila (posyandu lansia). For this health promotion, the health promotor is responsible, but more staff is involved, like nurses, nutritionists or epidemiologists. Interviewee: *'I think that health promotion is not just my job, but their job too. The nurses or doctors or any other people in the puskesmas 'Pudak Payung'. It's their job too, to give health promotion. Actually, we have a big team in here, but maybe because they have a lot of other tasks too, their main job. The other staff can't help me optimally. They do not have enough time'*. Individual health care is given by nurses and doctors in the puskesmas and given when they do home visits in the community. They give individual health promotion to individual people, but do not use a specific model or tools. Health promotion for the elderly people regarding NCD's is integrated in a number of different activities and not an activity on its own. Every month there is a prolanis at the puskesmas. According to the interviewee: *'We have prolanis. It is a program for PTM (NCD's), non-infectious disease. There is hypertension, diabetic and others. Once a month the patients come here to check the blood glucose and then we give them information, health information, health promotion'*. The prolanis is only for people who already have a disease: diabetes or hypertension. Other diseases are excluded. In the prolanis the weight, blood pressure and blood glucose is measured and medicines for a month are given. Those activities are confirmed during the observation and it showed a five-minute health promotion was given and a brochure about hypertension was handed out during the prolanis. Another activity is the poksila. Poksila is for elderly people at the risk of NCD's. According to the interviewee: *'Poksila has a preventive and promotive function and not curative. If they have a non-communicable disease they can go to the puskesmas'*. The poksila is given in the community. One staff member of the puskesmas is present, supported by a number of volunteers. From the observation, it is clear every month weight, height and blood pressure will be measured and every three months blood sugar, uric acid and cholesterol will be measured. A third activity is weekly exercising for the elderly people. The observation showed, approximately 20 to 30 elderly people joined the exercise and it is given by volunteers. The duration of the exercise is one hour. During the interviews the staff said that after the exercise there is a health promotion in the waiting room, but this is not observed. To support the health promotion activities, the puskesmas uses media. There are three different kinds of media they use: social media, video's and brochures. Interviewee: *'For prevention and promotion we use social media. In the puskesmas we have Facebook and we have an Instagram profile'*. In collaboration with the Diponegoro University bachelor and master students are conducting assessment regarding health promotion in the community. An interviewee said: *'In the first week we look for health problems and then confirm with our lecturer and if the lecturer finds it is good enough we will implement it'*.

## **Subquestion 2: What are organisational strengths and barriers that might affect the implementation of a health promotion plan regarding non-communicable diseases for elderly people in community health centre 'Pudak Payung'?**

This part of the results answers the question about the organizational strengths of the puskesmas. The organizational strength that stands out most is dedication of the staff. Three interviewees mentioned 'Spirit' as the biggest organizational strength. Another strength is a good collaboration between the staff of the puskesmas. Interviewee: *'The strength of the organization is, have good teamwork. Like, with the health education program, we have to communicate with other program holders in the puskesmas, so they can do activities together and perform good teamwork'*. From the observation, it became clear there is also a good collaboration between the staff of the puskesmas and the students of the University Diponegoro. The students are helping the staff with performing measurements, like weight and blood pressure, during the prolanis and poksila. In return, the staff helps the students during their assessment. Every student is linked to the program holder of their subject and chosen interventions must be confirmed first by the staff before implementing. It has been noticed, all interventions the students used, are based on a method and evidence-based practise. During the presentation of the results of the students their assessment, there were facilities available like: a beamer, microphone and AC. The use of the facility social media is also a strength of the puskesmas. Interviewee: *'I will always, in the puskesmas or any other place in 'Pudak Payung', tell everyone about our social media: Facebook and Instagram, to get more followers'*. WhatsApp will be used to remember the elderly for instance to

check their blood glucose monthly and as a way for the community to ask questions to the staff of the puskesmas. Instagram and Facebook will be used to give health promotion. From the observations it became clear the puskesmas posts a lot on Instagram, about 35 posts a month. The social media is used as a prevention. Interviewee: *'Maybe it is not for the elderly people, but for productive people. But in 10 or 20 years they will become elderly people. That is why we try to prevent non-communicable diseases right now. And, I think the family will inform the elderly people about the social media posts'*.

Organizing health promotion in the community is another strength of the puskesmas. Interviewee: *'When we do health promotion in the community, for example about tuberculosis, more people will come to the puskesmas. There are coming more people now to the puskesmas than before, because the people know better what facilities there are. This is because of the health promotion. For example: the immunization, the attendance is much higher since we do health promotion in the community. More citizens are coming to the puskesmas to check their condition'*. The observation showed that the poksila was mixed with the posyanda. This is a strength because the elderly and mother and child can come together and there is less barrier for the elderly to reach the poksila.

The last organizational strength is the availability of volunteers. Interviewee: *'The volunteers are incredible, they work without payment. Sometimes we give them the information, health information, we teach them. And then we give them, information about the puskesmas and about health issues, about health in the community. And then they talk to their community, and then they collaborate with us, in many programs'*. The observation of the weekly morning exercise showed the volunteers are very enthusiastic and they prepare all the exercise. The music is in Bahasa Indonesia and tells the people what to exercise, this fits well with the elderly.

This part of the results answers the question about the organizational barriers of the puskesmas. When the interviewees were asked about the barriers, the following barrier were named. The organizational barrier that stands out most is lack of money. All the interviewees said: *'We missed from money'*. Derived from lack of money there are two other organizational barriers and one of them is: 'lack of staff'. Interviewee about lack of staff: *'Our weakness is, our people in 'Pudak Payung' puskesmas is not much. We have just 24 people in here. 'We can't pay more people. There is only one health promotion staff, that's not much. Because we have so many population in 'Pudak Payung' and Gedawang. We have 30.000 people'*. The other organizational barrier derived from lack of money is lack of facilities. Interviewee: *'We don't have a lot of facilities to give us information for health promotion. For example, a projector. Many people cannot read. We need a projector, to give promotion for older people, so they can watch the health promotion'*. During an observation at prolanis and an observation about health education for the volunteers the lack of facilities was showed. At prolanis a health education was given, but there was no projector or anything else available. The health promotor reads the brochure for the people coming there, because many elderly people cannot read. During the health education, no information on paper was given and there were no other tools available, other than talking.

Another organizational barrier is the lack of collaboration between the puskesmas and other stakeholders. Interviewee: *'Sometimes the biggest barrier come from us. I mean, we lack of coordination and collaboration. We look individually, sometimes I think it is the biggest barriers. If we do not communicate to other health care or other department, they will not know our problems. And then the second, the stakeholders here. Sometimes they think that health problem is our problem not theirs, but I think it is getting better now, we talk to them. It is not just my problem or puskesmas problem, but it is our problem'*.

Some aspects of the knowledge of the staff and volunteers can be an organizational barrier. The students learn to work evidence-based practise, but the staff has difficulties working like that. An interviewee said: *'Because not all of them usually read like a journal or like that. Mostly because of the limitation of the language, they cannot read the English text. It's very limited. But sometimes they read a journal, when they have education'*. The volunteers are a big asset for the puskesmas, but there is a barrier. They do not have a lot of knowledge about the health care. From the observations it is clear that the volunteer get trained twice a month, but the facilities are minimal. An interviewee said: *'I think it depends on when the volunteers give information, what subject. Because when they give information on society, sometimes in posyandu lansia, sometimes the volunteers tell not enough information. Is not enough for society'*.

The puskesmas organizes different health promotion activities, but the participation is not very high. They use social media to inform the people about the activities, but the people who follow social media is not much (only 256 followers on Instagram). From the observation of the poksila it showed that only twenty elderly people coming to the activity, but there are 78 elderly people in the area who could

come to the poksila. Interviewee: *'But the participation is not much'*. This is also a problem for the weakly exercise and all other activities. This could be partially due to lack of willingness of the people, but also due to lack of attractiveness of the activity, according to several interviewees and the observations. An observation of a poksila showed elderly just get measured height, weight and blood pressure and are done in five minutes every month. The attendance of the prolanis is higher, because in this activity, the elderly can get medicine. Interviewee: *'Yes, it's a way to attract the elderly when they get medicine. So that they will come and get the medicines and have activity for the health promotion. Like they have, health promotion about education, how to change their behaviour, about exercise, but it's very limited. But actually, in my experience with my students, they can attract the elderly with activities. Actually they can have the foot exercise for the diabetic'*. Another Interviewee: *'If they don't have a willing, they don't want to be healthy'*. A third problem is a difficulty to reach the puskesmas. Interviewee: *'I think they want to come here, but our driver staff, they have a to take them from their place to the puskesmas, he can't ring much people'*. Sometimes it is also difficult to reach the puskesmas due to the limited opening time it has. Most days the puskesmas is open from 7am to 4pm. For the working people these are very inconvenient times.

Another organizational barrier is the priority NCD's for elderly people have in the puskesmas. The puskesmas made a list of priorities to focus on, in collaboration with the government of Semarang, using a risk and priority assessment. The priorities are: tuberculosis detection, chronic energy deficiency by pregnant women, malnourished infants, low increase of weight by toddlers, consciousness of nutrition in families and low detection and location of dengue fever (Profil Puskesmas Pudukpayung, 2018). There is no priority about NCD's by elderly people. This is also noticed from the observations. There are only 13 poksila and 39 posyandu (for mother and child). The poksila is almost always combined with a posyandu. When choosing interventions regarding NCD's, it must be considered that there are other priorities to deal with.

### **Subquestion 3: What are good practices and sources for interventional design regarding health promotion about non-communicable diseases for elderly people in community centre 'Pudak Payung' according to the staff of the puskesmas and considering the outcomes of phase 1, 2 and 3 of the Precede-Proceed method?**

The first part of this subquestion is to find good practices regarding health promotion that can be used in phase 6, when an intervention will be implemented. Here will be looked at areas of strengths, considering the outcomes of phase 1, 2, and 3 of the Precede-Proceed method and other areas the staff think is really important.

A very good practise is the existence of the health programs for elderly people with NCD's, like prolanis, poksila and weakly exercise. For the people with the most common NCD's different activities are organized. Interviewee: *'The good thing from prolanis promotion is, it is for people with PTM disease, non-infectious disease. So we directly tell to them that they have to maintain their disease have to cure, and that they have to change their lifestyle. We help it not become worse, their condition, that they can do their job'*. Interviewee about poksila: *'It is for preventive and promotive activity. To prevent non-communicable disease in Indonesia. Our people, elderly people reach 60 up'*. However there are no programs for people with other NCD's. They can use individual care or join an independent organization: *'But some activity like diabetic promotion and some for dementia. There are associations for dementia. They will have their own organizations. But for dementia there is nothing from the government'*.

A good practise is the knowledge about NCD's that the community of the puskesmas has, because of the health promotion given by the puskesmas. Interviewee: *'I think it's our strengths is that many people have knowledge about non-communicable disease. They know about non-communicable disease'*. The community is getting more aware about certain NCD's.

The second part of this subquestion is to find sources and areas, to design and make interventions that can be used in phase 6, when an intervention will be implemented. Here is looked at important areas of need to change, considering the outcomes of phase 1, 2, and 3 of the Precede-Proceed method and other area's the staff think is really important.

All the interviewees said was: there is need for people to change their lifestyles into a healthier one. Interviewee: *'People in the community. They know about non-communicable diseases. But their lifestyle is not. They know, that they can do a better healthy life. But it's difficult, because our lifestyle is to eat more salty, more oily. Too many foods in Indonesia is with more salt and more oil'*. Another interviewee: *'To change bad lifestyle, to good lifestyle'*. Many of the areas on which to focus for an intervention are lifestyle choices, like tobacco use, food and exercise.

Tobacco use is an intervention the staff think is important and is also important to change considering the first three phases of the Precede-Proceed method. Interviewee: *'So the subject most necessary is tobacco use, but they know about tobacco use, they know about the negative of tobacco use. But they don't applicate it to their life'*. A lot of elderly people, mostly the men, use tobacco and therefore it is a big problem. But is it a very difficult problem to handle. One of the interviewees said this about the difficulty of smoking: *'The government has strict rules. They have more and more tight rules about tobacco use. But in other way tobacco is giving our country a lot of money too'*.

Another area both the staff think is important and considering the outcomes of the first three phases of the Precede-Proceed method is unhealthy foods. Interviewee: *'Nutrition, very important. To diet for elderly people. Because many elderly people have diabetes and hypertension and nutrition has a very important role'*. The food that the elderly people consume consist of a lot of salt, fat and has not enough fruits and vegetables. Interviewee: *'Because so many people in Java do not like vegetables and fruit. And the child we have, we have to introduce to vegetables and fruits. One day they become adults or maybe an elderly people and they do not eat vegetables and fruits regularly'*.

A third area that is important considering the results of the first three phases of the Precede-Proceed method is inactivity. The interviewees mentioned a lack of exercise, but they did not name this as one of the biggest priorities. Interviewee: *'They will not take the drugs, they will not go to the puskesmas, they don't exercise, and others'*. It is not clear if inactivity is a big problem for the elderly. However, there is a weakly exercise every Friday morning to decrease inactivity.

An area that is important to change the interviewees said, is the lack of willingness or lack of motivation. Interviewee: *'They do not have a willingness, their willingness to be healthy. We do anything and they still just not'*. Another interviewee: *'Sometimes, although they have a good education, but they sometimes don't care. But it is our job to give them the information'*. From one observation, at the hope therapy, it became clear that motivation is an important factor. One participant, with diabetes, did not want to take any medicine and eat according to a plan, even she is aware of the consequences. She did not like the taste of the diet food and said there were more people thinking the same way as she did.

The interviewees also told that family support is important to improve. Interviewee: *'But my homework too, that we want to give prolanis also for the family. Because if the club is only for patient, in the home patient not have a good support from their family'*. The staff of the puskesmas tries to get the family more involved, so the elderly can become more motivated and get support. Interviewee: *'I hope the family will get involved too'*.

The last area where health promotion is needed according to the staff is for specific diseases. Many people have diabetes or hypertension. More health promotion between food consumption and the disease is needed, but there is already a program for people with this disease. Interviewee: *'Many elderly people in puskesmas have problems, like diabetic, like hypertension. Give information for nutrition'*. An interviewee also mentioned health promotion for osteoporosis and dementia. There is no program or health promotion about these diseases. Interviewee: *'So the osteoporosis has been just once a subject in health promotion, just one, but dementia not even yet once. Prevention of dementia'*. Other diseases, mentioned in the research about phase 1, 2 and 3 of the Precede-Proceed method, like rheumatic disorders, arthrosis, cancer, respiratory disease and cardiovascular disease, are also important to focus on.

### 3.2 Subquestion phase 5

The fifth phase of the Precede-Proceed model focuses on administrative, regulation and policy issues that can influence the implementation in phase 6.

#### **Subquestion 4: Which policies from the government and other stakeholders should be considered by creating a plan of implementation regarding health promotion about, non-communicable diseases for elderly people in community health centre 'Pudak Payung'?**

The government offers health programs. Interviewee: *'The government have a Germas program. There are 11 indicators of the Germas program. Germas means: health society programs'*. The purpose of the Germas program is to create a healthy community. There are several sub health programs offered by the government. Interviewee: *'They have so many, it's not only for the non-communicable diseases. There are programs for communicable disease like tuberculosis, for the environment, nutrition, the adolescence and for the pregnant woman'*. Every puskesmas can choose a few of those programs and have some mandatory programs to execute in their area. Interviewee: *'As I know, every puskesmas must have prolanis, because it is one of the government their target to change'*. The prolanis is focussing on the most common diseases in Indonesia: *'Formerly the prolanis*

*is just for the hypertension, and five years later it was also for the diabetes and maybe it will change again about five years*'. The puskesmas must shape the activities like prolanis themselves. Interviewee: *'But they don't have like a standard, what they should do*'. The knowledge of the staff is refreshed by the government regularly. Interviewee: *'Some of them, most likely the program holders of the subject, will have regularly a refreshing about the information the government give. The government have routines for them and invite them to refresh their information*'. How often these trainings take place, depends on the program. Interviewee: *'For example the prolanis. It's maybe only twice a year because there are less information updates. The most frequent program is about the pregnant mothers, because the mortality of the pregnant woman is higher*'. The puskesmas is getting money from the government to organise a prolanis every month, but the government does not evaluate the implementation of the prolanis activity. Puskesmases hardly evaluate any of their programs.

A current trend of the government is decentralising some of their tasks: *'I tried to understand about Indonesian policies, because now we have decentralizations, you know. Each city has their own regulations. The government is at the top and makes regulations and policies. Every city has to decide how to implement it*'. This gives the local government and puskesmases more influence.

Another trend of the government is the shift from preventative towards curative. At the moment there are some healthcare levels: *'The first level is the puskesmas, so you cannot go to the hospital directly*'. It seems like the function of the puskesmas is changing: *'Now the paradigm of the puskesmas is not little, but very changed. Because the government wants the puskesmas to become a mini hospital and deliver patient care. This conflicts with the health promotions, the main function of the puskesmas*'. It's important for the researchers to realize this shift. The services the puskesmas offers, will probably become more curative in the future. That is why it is important to strengthen the health promotion activities that already exist.

The government in Semarang has also influence on the activities and priorities the puskesmas must take into account. The government of Semarang and the puskesmas made a sequence of problems based on priority:

1. The low number of cases of positive pulmonary tuberculosis case detection;
2. The still high number of malnutrition by pregnant women;
3. The high number of malnourished infants;
4. Still a low number of infants who increase in weight sufficiently;
5. The low level of knowledge and practice about healthy foods;
6. The low level of locating dengue hemorrhagic fever and dengue fever (Profil Puskesmas Pudakpayung, 2018).

NCD's aren't an priority from the government in Semarang and therefore not a priority of the puskesmas.

Apart from the government, there are other stakeholders that should be considered. Interviewee: *'Beside the government program, there are groups who organize activities like exercise or education. For example for the elderly with diabetic mellitus. There are also groups for people with other diseases. Those associations arrange their own activities, like exercise or education. They found each other because they are in the same hospital or puskesmas. Another important stakeholder is the health insurance company. The Indonesian government launched in 2014 a National Health Insurance Programme, called Jaminan Kesehatan Nasional (JKN). This program aims to provide a universal healthcare coverage (UCH) for all Indonesians by 2019 (Clearstate, 2015). Interviewee: 'So if the people want to get medical treatment and are in possession of an insurance, it's free. But if they don't have a health insurance, it's free too. However, the people who don't have health insurance, must pay for the laboratorian check' Some costs, like for the poksila will paid by social funding from the society in the district. Interviewee: 'For example in my district, Every family has to pay 5000 every month, for the elderly care'. For the people who can't pay for health insurance, the poor people, there is free health insurance. There are however people who do not want to pay for their health insurance: 'Not poor people. Poor people get a free health insurance from the government. Most people, who are not poor, just want everything for free. So when they don't have a health insurance, they don't want to spend their money to check their health'. When the researchers asked the interviewee if there are any laws or regulations they should consider during the implementation of a new intervention, the answer was: 'No, you can do anything what do you want'.*

### 3.3 Subquestions phase 6

This phase in the actual design, conducting and implementation phase. An implementation and intervention has been devised.

### **Subquestion 5: What interventions are suitable, necessary and have a high chance to succeed in a plan of implementation about health promotion regarding non-communicable diseases for elderly people in community health centre 'Pudak Payung'?**

In this subquestion is looked at what the researchers should consider to achieve a successful implementation.

An example of implementing new interventions is what the bachelor and master students do in the community. They look for health problems in individual families or community problems and make their own interventions and implement those, like hope therapy or supportive group therapy. When asked the staff and students if these interventions could continue after the students are finished with their assessment an interviewee said the following: *'We will discuss with the puskesmas and the volunteers if the program can continue after the students leave. I hope it can be continued. Sometimes remodelling an intervention makes it easier for the community to continue the intervention'*. Another interviewee said: *'I think it is no. Because most of the time, the intervention stops when the student leaves 'Pudak Payung'*. From the observations of the master students, it showed also that their intervention only consists of two or three sessions. A lot of these interventions cannot continue because it takes too much money, manpower or skills.

When the researchers asked the interviewees what to consider when doing an intervention that hopefully can last, they said the following: *'Whatever your innovation is, if you want it to continue, it's important to make the intervention easy, simple, without any money and without a lot of extra energy. Sometimes there is an intervention like creating an application, but this is too difficult to the community to continue. So, if you want the community to continue, try to get the intervention easy so it can be applied in every level of the community'*.

This part of the results answers what areas of and which interventions are necessary, suitable and have a high chance to succeed. Most interviewees mentioned tobacco use as the most necessary area of need to change: *'And then elderly people, they have to stop smoking, because smoking is not good for the lung. So you can make and apply an intervention that will decrease the use of tobacco for the elderly people'*. However, some interviewees also indicated that this area is difficult to change: *'Tobacco use is a very difficult thing, because our habit in Indonesia is very close with tobacco use. The health minister promotes about not to use tobacco, don't smoke etc., but on the other hand, we also have income from the tobacco in this country'*.

Most of the interviewees recommended the researchers to focus on the unhealthy diets. Interviewee: *'Unhealthy diet it is quite easier than tobacco use'*. Another interviewee: *'A lot of elderly people in the community have problems with hypertension and diabetes. If you want an intervention to be effective, you can better implement intervention with nutrition'*. There are several interventions that could be done for elderly with diabetes. Interviewee: *'In prolanis activity we can give them any snacks and we don't give them vegetables and fruits. Literally not vegetable and fruit, but maybe in next month, we can give them fruit and vegetables'*. The observation at the prolanis and most other activities showed also that there were only unhealthy snack boxes, with a lot of sugary foods. Another interviewee: *'Maybe you can give information about sugar and diabetic. You can also give information about sugar sweetener'*. In prolanis and poksila, the waist circumference is not measured, but is an important indication for risk of diabetes. Interviewee: *'In prolanis we have only activity like blood pressure check and disease weight and height check, but not this with stomach, waist line [shows Germas brochure]. We don't have this check in the prolanis'*. Next to this lack of measurement, there is no brochure available for diabetics and they suggested to learn people how to count their calories. Interviewee: *'But in the diabetic, I don't have any brochure'*.

Other interventions recommended on the area are of hypertension, dementia, osteoporosis and nutrition in general. Hypertension: *'For example, if you want to do something about hypertension, you must use diets. For example natrium chloride, baking soda and food preservatives. It's not good for people'*. Osteoporosis and dementia: *'You can give health education about osteoporosis and prevention of dementia'*. Interviewee about nutrition: *'Maybe you can learn about Indonesian food and Dutch food, and about healthy Indonesian foods. You can teach the elderly about food, Indonesian. Good, consumption, healthy'*.

### **Subquestion 6: 'What intervention is most suitable for implementation and how can this intervention be implemented for the elderly people in community health centre 'Pudak Payung'?'**

An area that is very suitable for implementation is about diabetes, because many staff gave recommendations about bettering health promotion for diabetes and nutrition and stated that this was

very important. The staff is motivated to help with bettering the health promotion. This intervention is also suitable because a program already exists for people with diabetes, and with the lack of people and money it is easier to better an existing program instead of creating a new one. Suitable interventions to improve the health promotion for elderly people with or at risk of diabetes are: Measuring waist circumference during every poksila and prolanis. These programs receive guidelines what period health checks should be executed to prevent NCD's. These guidelines are in the Germas program of the government. The purpose of Germas is to create a healthy society, and aspects of this program focusses on a healthier lifestyle. During the poksila and prolanis the waist circumference is not measured. Although this is a good indicator for risk of diabetes and a better indicator than the body mass index. Waist circumference measures abdominal fat. Abdominal fat can trigger diabetes and other diseases, like heart attacks and strokes (Vazquez, Buval, Jacobs & Silventoinen, 2007). The volunteers will be given a health education and training about the importance of measuring waist circumference and how to measure this, so the volunteers can perform this during the poksila. At the poksila are always enough volunteers present to do an extra measurement. At the prolanis the researchers will measure waist circumference once, and arrange with the staff that, at other prolanis, other students can measure this, because there are always students involved at prolanis. They now help with measuring weight and blood pressure and there are enough students to help with waist circumference measurements too.

Arranging healthy snack boxes after activities like, poksila, prolanis and weekly morning exercise. At every activity snack boxes are given. This is an Indonesian custom. Most of the time the snack boxes are filled with unhealthy snacks like, sweet cakes or fried food. For people with diabetes this is very unhealthy and healthier options can be given for these people. To give a good example of healthy food and for the people to try healthy foods. The researchers make a do's and don'ts list with snacks for people with diabetes or other NCD's for the staff of the puskesmas, so they can use this list when compiling a snack box.

Health promotion during the prolanis about a healthy lifestyle for people with diabetes. Chosen are subjects that have not been or hardly been discussed with the elderly people and subjects that are important for the elderly people. Subject are: focussing on foods, sugar and sugar sweeteners and explaining the healthy snack box to the elderly people. Sugar sweeteners will be discussed, because the many people have difficulties not using sugar and have a lack of motivation to use less sugar. Other subjects for health promotion can be: how to count calories and the importance of exercise. Making the poksila more attractive for the elderly people to come regularly. Now the poksila consist only of weight, height and blood pressure measurements. To make it more attractive, health promotion activities can be arranged such as, foot exercises for people at risk of diabetes or other physical activities and talking more with the elderly about lifestyle.

Making a brochure and use other media to provide information about diabetes. For some NCD's there is a brochure available, but not for diabetes. When making this brochure, taken into account must be the literacy and education level of the elderly people. When handing out a brochure, the brochure must be explained by a volunteer, student or staff of the puskesmas. The text of the brochure must be supported with pictures, so the elderly can remember what the brochure is about. Even better is the use of other media like spoken messages or movies, so the elderly do not have to read it but still gain the information.

Motivational interviewing (MI) for the group of people who lack motivation and willingness. There is a group of elderly people with diabetes who do not want to come to the puskesmas or want to get medication. To reach these people a different strategy is needed and MI is an approach designed for these people. Motivational interviewing is an approach to elicit behavioural change by helping the elderly people to explore and resolve ambivalence in a non-directive and patient-centered way (Miller & Rollnick, 2002).

Due to limited time only a few interventions will be selected to perform:

- Introducing, teaching and measuring waist circumference;
- Arranging healthy snack boxes at activities
- Health promotion at the prolanis about new subjects regarding diabetes.

These interventions are chosen because these can be performed in a very short time span, the staff also think is important and do not cost a lot of extra money or time. The other ideas or interventions are suggestions for the staff or students. A plan of implementation is made to describe how to implement the interventions successful and is displayed in attachment H.

## 4. Discussion

The aim of this research is applying phase 4, 5 and 6 of the Precede-Proceed method to provide a suitable plan of implementation for a health promotion plan and implement a part of this health promotion plan, regarding NCD's for elderly people in de community health centre 'Pudak Payung' in Semarang. To gather results observations and interviews have been conducted. With these results a plan of implementation has been made.

### 4.1 Essential results and interpretation

A big strength is the collaboration between the staff of the puskesmas and the planning and goalsetting, about what the goals and priorities of the puskesmas are, of the staff. This finding is contrary to previous studies which have suggested that there is little planning and organisation in the puskesmas (De Jongh & Voogd, 2017). The staff is also very dedicated to their job and they know what their priorities and goals are. Unfortunately, all the goals they set out cannot be realized because of the biggest barrier: lack of money and consequently lack of staff and facilities. Because of these reasons, most big goals cannot be realized, and there must be focused on smaller goals and strengthening existing activities where there are means for.

The current research found that a trend from the government is the change in function of the puskesmas towards a more mini-hospital setting. This suggest a shift form preventive to curative, and thus there will be likely less space for preventive activities in to future. Presently, there are already activities organized by the puskesmas with preventative factors, like prolanis and poksila. The findings, towards a more curative setting, suggest that it is important to strengthen the already existing activities, instead of creating new ones.

The puskesmas uses students and volunteers to support the staff. They are a big asset, however the use of students and volunteers can be improved. Students contribute an evidence-based practise approach, contrary to expectations beforehand (De Jongh & Voogd, 2017). The staff, on the other hand, do not work evidence-based practice most of the time, and therefore students can help the staff. There are always more than enough volunteers present at an health promotion activity, to strengthen and support the activities, by expanding their responsibilities.

An intervention is chosen about the topic of diabetes, because this current research found that the staff stated that prevention of diabetes is very important to improve. These results are in agreement with previous studies, that suggested care for diabetes for elderly people is important to improve (Bijsterbosch & Veenma, 2017). These results found that the measurement waist circumference is missing in the prolanis and poksila activity. Waist circumference is part of the Germas program from the government, which are guidelines for the puskesmas to use (Ministry of Health Republic of Indonesia, 2016). In the Germas program healthy food is being promoted, however during the activities of the puskesmas unhealthy snack boxes are used. A lot of topics about diabetes haven't been discussed yet during a health promotion activity and there are not brochures and other media available about the topic diabetes. The activities like prolanis and poksila are not very attractive at the moment. Adding more activities or health promotion can make it more attractive and can improve the motivation of the elderly people with or at risk of diabetes. Motivational interviewing can also be a suitable intervention to improve the willingness of the people to get treatment and change their lifestyle.

### 4.2 Strengths and limitations

In preparation of this research, a lot of literature research and the previous theses are read to gain as much information about the health care situation in general in Indonesia and in the puskesmas 'Pudak Payung'. However, because these preparations were in the Netherlands, the preparations were limited, because the actual research side could not be visited in advance. The researchers started the research with limited information, the interviews were therefore not only to gain information on phase 4, 5 and 6 of the Precede-Proceed method, but also to get a better context for the researchers. Nine interviews were conducted to reach a saturation point, however, to gain more information, observations were later added in the research after visiting the research site, so the setting could be observed too. In addition, the observations could be used to confirm the outcomes of the interviews (triangulation) and to observe the setting in which the interventions took place. Therefore the observations were used to improve the dependability and validity of this research (Verhoeven, 2018). The first part of this study was in collaboration with a previous head of the puskesmas. Three weeks before the researchers arrived, there was a change in head of the puskesmas. The topic of the two year study was determined in collaboration with the previous head of the puskesmas. Unfortunately the researchers couldn't discuss the topic with the previous head of the puskesmas. The new head of

the puskesmas had some different ideas. To ensure continuity throughout the two-year study, the researchers had a closer collaboration with the staff already involved during the whole two-year study. This research was limited to focus on group activities involving health promotion, instead of individual health promotion. The staff focussed in the interviews only on group activities and observations could only be made of group activities. For this reason no conclusions can be made about improving individual health promotion.

Due to lack of time, several parts of the research could not be executed. Only phase 4, 5 and 6 of the Precede-Proceed method could be conducted, there was not enough time to conduct the evaluation phases 7, 8 and 9. The interventions which were chosen for implementation, can also not be evaluated. Therefore, no statements can be made about the effect of the interventions. Another consequence of lack of time is the impossibility to member check. The plan was to send transcriptions of the interviews to the respondents, to check interpretations and conclusions. The implementation phase of this research was expected to take a lot of time, and thus not all interviews could be checked by the respondents. However the conclusions of the interviews were checked by some staff of the puskesmas. During the end presentation about the results, given at the puskesmas, the audience was asked if they heard any wrong conclusions. Unfortunately, not all interviewees could join the end presentation.

Conducting research in a very different culture requires additional preparation. Before conducting the interviews the questions had to be culturally sensitive adjusted. To do this, a test interview was conducted and the questions were checked by a lecturer from Diponegoro University. The questions were comprehensible and understandable for all the interviewees. When conducting the interviews, it was not always possible to use a private room with no other people disturbing the interviews. This might have influenced the answers.

To reduce any language barrier, the researchers asked the interviewees in advance if a translator was needed. Some of the interviewees could speak good English and the interview went very well. Some of the interviewees who said that no translator was needed had in hindsight difficulties to express themselves in English. From these interviews, not as much information was collected as needed. Additional interviews were held to still obtain a point of saturation. During most of the observations a translator was available, but at some observations no translator was available, due to lack of time. These observations provided less information. Another issue that affected some of the observations was that some people felt nervous when observed. Some of the activities observed turned out to be somewhat more chaotic. This could not be prevented, but is taken into account.

This research is part of a two-year study with two other couples of students. This research continues what the other two couples of students started. Therefore, the results from their research are assumed to be true. However, during the interviews there was some confusion about the number of people living in the community. In the previous studies it was stated there were only 3600 inhabitants, but official documents and staff of the puskesmas confirmed there are approximately 30.000 inhabitants. This might affect the usability of the results from the previous researches for this research. Another point of confusion was the definition of elderly people. In the previous researches the elderly people were described as 50 years and older. On the other hand, the puskesmas itself describes elderly people as 60 years and older. To ensure as much continuity as possible in this whole two-year study, this research uses the 50 years and older definition, but these points can have a negative effect on the validity of this research.

### 4.3 Implications for future research

This current research finishes a two-year study about health promotion regarding NCD's for the elderly in puskesmas 'Pudak Payung'. This two-year study is part of more researches in the puskesmas regarding NCD's. There are master students from Diponegoro University conducting their thesis on the same subject. In all these researches, different interventions are made to better the health promotion regarding NCD's. However, most interventions are only small or too big to continue after a research is finished. This research is very usable for the puskesmas and gives the puskesmas more insights in the organization. The interventions are not too big, easy and do not cost too much money to conduct. However, the interventions are only small and do not have a very big impact. To ensure lasting improvement, more research and suitable interventions are needed about NCD's.

This research has a low generalizability, because this research focus only on puskesmas 'Pudak Payung'. Each puskesmas has its own characteristics, strengths and weaknesses, but there can be overlapping areas when conducting research about other puskesmases.

## 5. Conclusion

The overall question of this two-year study is how the outcomes of the Precede-Proceed method can be implemented, to improve the health promotion considering NCD's for the elderly people in the community health centre 'Pudak Payung' in Semarang, Central Java and what the effect is of the implementation of the method. This particular research is the last part of this two-year study and provides an answer on which suitable interventions towards health promotion, can be implemented based on the outcomes of phase 1 to 5 of the Precede-Proceed method for the elderly people in community health centre 'Pudak Payung' in Semarang, Central Java, Indonesia.

The previous part of this two-year study has dealt with the first three phases of the Precede-Proceed method. The conclusions of that research, important to answer the overall question, and choosing an intervention to implement, are that the most common NCD's are high blood pressure, diabetes, rheumatic disorders and arthritis. The most common demographic risk factors are a low educational level and low income. Modifiable behavioural factors are tobacco use and unhealthy diets. Modifiable environmental risk factors were marketing and promotion of unhealthy products, availability of healthcare and second hand smoking (Bijsterbosch & Veenma, 2017).

This current research answers the subquestions of phase 4 and 5 and uses the information from phase 1 to 5 to answer the subquestions of phase 6.

The most important activities organized by the puskesmas to consider for implementing an intervention towards health promotion, are poksila, prolanis and weekly exercise. They are trying to use media to promote the activities and reach the people. These are good practices and strengths of the puskesmas. Other important strengths are the dedication of the staff, communication between the staff and the availability of volunteers. On the other hand, there are several barriers the puskesmas has to deal with and should be considered during implementation. The biggest barrier is lack of money and deriving from this are not enough facilities and staff to reach all the goals planned by the staff. The staff is quite knowledgeable, but they don't have the knowledge to use the evidence-based practise method. Another barrier to deal with is the low participation of health promotion activities, because of the low attractiveness.

Considering phase 1, 2 and 3 and what the staff think is very important, lifestyle areas such as diabetes and motivational changes are very important to change.

There are a few issues related to government policies that should be considered when implementing interventions. The first issue is a shift from preventive to a more curative one. So there will be less space for preventative and promotion activities. The government provides various programs for the puskesmas to use. One of them is the Germas program, which contains among others guidelines for preventing NCD's. Next to this there are no other laws or policies to include during the implementation phase.

Besides all the conclusions described above, too big interventions cannot last, because of manpower and must be avoided, interventions must be easy, simple without costing too much money and manpower.

For all these reasons the interventions chosen are to improve and strengthen the health promotion for elderly people with or at risk of diabetes. Suitable interventions are adding the measurement waist circumference, which is part of the Germas program, during the prolanis and poksila activity. Providing healthy snack boxes, which are at this moment very unhealthy, for all health promotion activities. Health promotion activities, about topics that haven't been discussed yet during prolanis, about a healthy lifestyle for people with diabetes. Making the poksila more attractive by adding more health promotion activities. The use of brochures and other media to give information about diabetes. No brochure and other information is available yet about this topic. Use of motivational interviewing for the large group of elderly people who lack motivation to come to the puskesmas to get treatment and make lifestyle changes. Due to limited time the measurement waist circumference, arranging healthy snack boxes and giving health promotion at prolanis are implemented. No conclusions can be made about the effectivity of the interventions implemented, because of lack of time.

## 6. Recommendations

From the results and conclusions, the following recommendations have been chosen considering suitability and applicability for future research and for puskesmas 'Pudak Payung'.

The first recommendations are interventions to strengthen the current health promotion for elderly people at risk or with diabetes, which could not be implemented during this research.

- Interventions about making the poksila more attractive for elderly people to come regularly. The poksila consist only of weight, height and blood pressure measurement.
- Interventions about the use of more media to inform and educate the elderly at risk or with diabetes. There is no written, spoken or video information available about diabetes at the moment.
- Interventions about using motivational interviewing to encourage and increase a large group of elderly people who lack motivation and willingness to come to the puskesmas to get treatment and make lifestyle changes.

The second recommendations have been chosen because there is need for more research in order to better the health promotion in the puskesmas.

- Research about health promotion regarding NCD's for the adolescents and adults. This research focuses on elderly people, but the younger generations have a similar lifestyle. The staff of the puskesmas told several times during the interviews that they thought this is important to focus on. Therefore, there is also an urgency to focus on the younger generations, to decrease the incidence of new cases of people with NCD's.
- Research about Alzheimer's disease and Osteoporosis. The staff of the puskesmas see patients with these diseases, but there is no health promotion activity or any other program to prevent and manage this.
- Research about the tasks, education and improving the use of the volunteers regarding health promotion about NCD's.
- Research about implementing evidence-based practise working for the staff of the puskesmas. Most of the staff of the puskesmas are not able to work evidence-based practise.
- Research about implementing more use of evaluation and use of a standard. The puskesmas do not has a standard for performing a health promotion activity and they do not evaluate a lot of their programs.
- Research about how to improve family support. Most of the elderly people do not have a good family support and the puskesmas wants to start including the family more.

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## Attachments

### Attachment A: Timetable

What	Who	Start/When	Finish	Location
Reading about the subject	Femia & Evelyn	01-05-2018	26-06-2018	Home
Meeting with Hyllan	Femia & Evelyn	26-06-2018, 14.00h		Hanze University
Reading about the subject	Femia & Evelyn	26-06-2018	11-06-2018	Home
Meeting with Hyllan	Femia & Evelyn	11-07-2018, 10.30h		Hanze University
Writing introduction & start research proposal	Evelyn	11-07-2018	23-07-2018	Home
Writing theoretical frame	Femia	11-07-2018	23-07-2018	Home
Meeting & writing research questions	Femia & Evelyn	24-07-2018	26-07-2018	Home
Hand in first research proposal so far	Femia & Evelyn	25-08-2018	03-09-2018	Hanze University
Meeting with Hyllan	Femia & Evelyn	03-09-2018, 14.00h		Hanze University
Writing research design	Evelyn & Femia	03-09-2018	13-09-2018	Hanze University
Meeting with Hyllan	Femia & Evelyn	13-09-2018, 13.30h		Hanze University
Finishing writing research design & improving research proposal	Femia & Evelyn	13-09-2018	21-09-2018	Hanze University
Hand in concept version of research proposal	Femia & Evelyn	21-09-2018		Hanze University
Feedback concept version cresearch proposal		25-09-2018		Hanze University
Improving research proposal	Femia & Evelyn	25-09-2018	28-09-2018	Hanze University
Hand in research proposal (1 <sup>st</sup> chance)	Femia & Evelyn	28-09-2018		Hanze University
Preparations visit Indonesia/ processing feedback	Femia & Evelyn	01-10-2018	8-10-2018	Home
Flying to Semarang	Femia & Evelyn	08-10-2018	09-10-2018	Indonesia
Exploring in Semarang	Femia & Evelyn	08-10-2018	15-10-2018	Indonesia
Skype meeting with Hyllan	Femia & Evelyn	12-10-2018, 18.30h		Indonesia
Start data collection	Femia & Evelyn	15-10-2018	02-11-2018	Indonesia
Analysis interviews/ literature research	Femia & Evelyn	15-10-2018	02-11-2018	Indonesia
Skype meeting with Hyllan	Femia & Evelyn	30-10-2018, 17.00h		Indonesia
Implementing intervention + plan of implementation	Femia & Evelyn	05-11-2018	23-11-2018	Indonesia
Skype meeting with Hyllan	Femia & Evelyn	13-11-2018, 15.00h		Indonesia
Skype meeting with Hyllan	Femia & Evelyn	22-11-2018, 17.00h		Indonesia
Presentation	Femia & Evelyn	23-11-2018		
Rest data analysis	Femia & Evelyn	23-11-2018	02-01-2018	Indonesia/Hanze University
Flying back to the Netherlands	Femia & Evelyn	18-12-2018		Indonesia
Conclusion and discussion	Femia & Evelyn	02-01-2019	09-01-2018	Hanze University
Meeting with Hyllan	Femia & Evelyn	08-01-2019, 11.30h		Hanze University
Handing in first concept version	Femia & Evelyn	09-01-2019		Hanze University
Writing and bettering whole thesis	Femia & Evelyn	17-01-2019	25-01-2018	Hanze University
Hand in thesis (first concept)	Femia & Evelyn	18-01-2019		Hanze University
Hand in proposition for defending thesis		28-01-2019		Hanze University
Defending thesis		04-02-2019		Hanze University
Grading		07-02-2019		Hanze University

## Attachment B: Plagiarism statement



### Anti-plagiarism statement

We hereby declare that we have made the enclosed research proposal independently and without the use of sources and resources other than those specified by us. All passages in the paper that have been reproduced literally or in terms of content from published and unpublished texts have been made known by means of notes. This workpiece has not yet been offered for assessment in this or similar form.

Date: 18-01-2019

Place: Groningen

Name student 1:  
Evelyn van der Kooi

Signature student 1:



Name student 2:  
Femia Koopmans

Signature student 2:



## Attachment C: Interview guide (for subquestions in phase 4&6).

### **Introduction**

First of all, we want to thank you for doing this interview and help us with this project. We are Femia and Evelyn, students from the Haze University of Applied Science in Groningen. Approximately 30.000 students are studying at the Hanze University. The University offers 120 different studies and we are studying nursing there. The university is in the city of Groningen, in the north of the Netherlands. The city Groningen has approximately 20.000 inhabitants and nearly 25% of the inhabitants are students, so the city is very active. We came from the Netherlands to Semarang to do a project here about health promotion in the puskesmas. We are the third couple of students coming here. You might have met the other couples already last year. We're finishing the projects they started. The purpose of this research is to implement an intervention about health promotion for the elderly people coming at the puskesmas 'Pudak Payung'. We are looking for an intervention which is suitable, necessary and have a high chance to succeed. We are conducting these interviews to find out what opportunities and barriers there are in the organisation of the puskesmas which can affect the implementation of an intervention. We did some literature research on forehand about possible interventions. We want to know if you have any recommendations and what your opinion is about the interventions we found. Important to know is that everything told here will be kept confidential. All the information you share with us will only be used anonymously. We want to know what you think is important, so everything can be said in this interview, there are no right or wrong answers. We are recording this interview on our cell phones, so we can use all the information in this interview. Is this okay for you? Is this information clear? And do you have any questions so far?

### **Background information**

First, we want to know something about yourself.

- What is your age?
- What is your education?
- Where did/do you study?
- What is your function in the puskesmas?
- How long have you worked in the puskesmas?
- Have you worked somewhere else before?

### **Health promotion activities**

- Can you tell us what health promotion is given in the puskesmas?  
Probe: frequency, for what people, who are giving it, how is it designed, how is it executed, examples.
- What are, in your opinion, areas you can improve and strengths regarding health promotion at the puskesmas?  
Probe: what exactly, ideas.

### **Organization and structure of the puskesmas & staff involved in health promotion.**

- What staff is involved in giving health promotion?  
Probe: different functions, what function has biggest role in health promotion
- How is the puskesmas organized?  
Probe: tasks, responsibilities, authorizations, policies.

### **Implementing new ideas**

- If a new idea / intervention is being implemented, how will this be done?  
Probe: give an example, how to create support.
- How long do new interventions last, when trying a new idea?  
Probe: reasons it won't or will last.

### **Organizational barriers & organizational strength//chances.**

- What are, in your opinion, organisational barriers, that may affect any new interventions regarding health promotion?

Probe: how take this in account, do have individual workers have right knowledge, do staff want new interventions, fixed routines, task division between different disciplines, important policies at puskesmas.

- What are, in your opinion, organisational strengths, that may affect any new interventions regarding health promotion?

Probe: how take this in account, do have individual workers have right knowledge, do staff want new interventions, fixed routines, task division between different disciplines, important policies at puskesmas.

#### **Areas of need to change & suitable interventions**

- Which subject regarding health promotion is most necessary to find a suitable intervention for?

Probe: lack of knowledge due to no or low education level, the amount of tobacco use, unhealthy diets, marketing and promotion of unhealthy products, availability of healthcare and second-hand smoking.

- Do you have ideas about which interventions would be suitable and have a high chance to succeed to implement in the puskesmas?

Probe: how to execute, barriers and changes for participants idea, why necessary.

#### **Closing questions**

- Would you, in the future, want a role in the area of health promotion in this or any other puskesmas?
- Are there any matters that we have skipped in this interview or are there other matters you want to address?

#### **Closing**

We want to thank you for your input and your time. We will summarize this interview, so you can check if our conclusions are right. After analysing and finishing this project we will delete the voice-recording of this interview.

## Attachment D: Interview guide (for subquestions in phase 5).

### Introduction

First of all, we want to thank you for doing this interview and help us with this project. We are Femia and Evelyn, students from the Hanze University of Applied Science in Groningen. Approximately 30.000 students are studying at the Hanze University. The University offers 120 different studies and we are studying nursing there. The university is in the city of Groningen, in the north of the Netherlands. The city Groningen has approximately 20.000 inhabitants and nearly 25% of the inhabitants are students, so the city is very active. We came from the Netherlands to Semarang to do a project here about health promotion in the puskesmas. We are the third couple of students coming here. You might have met the other couples already last year. We're finishing the projects they started. The purpose of this research is to implement an intervention about health promotion for the elderly people coming at the puskesmas 'Pudak Payung'. We are looking for an intervention which is suitable, necessary and have a high chance to succeed. We are conducting this interview to find out which policies should be considered by creation a plan of implementation concerning health promotion about, non-communicable diseases for elderly people in community health centre 'Pudak Payung'. We did some exploratory literature research on forehand. Important to know is that everything told here will be kept confidential. All the information you share with us will only be used anonymously. We want to know what you think is important, so everything can be said in this interview, there are no right or wrong answers. We are recording this interview on our cell phones, so we can use all the information in this interview. Is this okay for you? Is this information clear? And do you have any questions so far?

### Background information

First, we want to know something about yourself.

- What is your age?
- What is your education?
- Where did/do you study?
- What is your function in the puskesmas?
- How long have you worked in the puskesmas?
- Have you worked somewhere else before?

### Important government laws and policies

- The puskesmas receive guidelines from government institutes and this is done through laws and policies. What important laws, regulations and policies are there?  
Probe: available documents in English, politics, local government
- When implementing a new intervention regarding health promotion, which policies should be taken into account?  
Probe: how can we take this into account, differences between the puskesmas, external factors like: politics, local government

### Chances and barriers

- Have you ever experienced any difficulties or support from laws, policies or regulations when implementing health promotion?  
Probe: examples, recommendations.

### Closing questions

- Do you think that, in the future, much will change in the legislation concerning the puskesmas?
- Are there any matters that we have skipped in this short interview or are there other matters you want to address?

### Closing

We want to thank you for your input and your time. We will summarize this interview, so you can check if our conclusions are right. After analysing and finishing this project we will delete the voice-recording of this interview.

## Attachment E: Informed consent form

This research part of a two-year study, conducted by three couples of students. This part of the research is being conducted by the third couple of students. The purpose of this research is to implement an intervention about health promotion for the elderly people coming at the puskesmas 'Pudak Payung'. You are being asked to take part in a research because your experience can contribute to knowledge and understanding about health education regarding non-communicable diseases.

Before you decide to participate in this research, it is important that you read the following information carefully. Please ask if there is anything that is not clear or if you need more information.

The data gathered during this interview will be anonymised.

I, the undersigned, confirm that:

1.	I have understood the information about the project.	<input type="checkbox"/>
2.	I have been given the opportunity to ask questions about the project and my participation	<input type="checkbox"/>
3.	I voluntarily agree to participate in the project and I am free to withdraw myself at any time, without giving a reason.	<input type="checkbox"/>
4.	The procedure regarding confidentiality (anonymization of data) has been explained to me.	<input type="checkbox"/>
5.	The use of the data (audio recording) in research, publication, sharing and archiving has been explained to me.	<input type="checkbox"/>
6.	I understand that there is no compensation for participating in this project.	<input type="checkbox"/>
7.	I, agree to sign and date this informed consent form.	<input type="checkbox"/>

Participant:

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Researcher:

\_\_\_\_\_  
Name of the researcher

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## Attachment F: Observations

### Observation 1

Date: 10-10-2018

The researchers joined a kind of focus group of the nursing master students from Diponegoro University (UNDIP). There was no person who could translate. Only a few things were translated.

Who	What	Where	Purpose	Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- Master nursing students.</li> <li>- Different staff members of the puskesmas.</li> <li>- Lecturers of UNDIP.</li> <li>- Volunteers.</li> </ul>	<ul style="list-style-type: none"> <li>- A presentation about the epidemiologic results of the first part of their research.</li> <li>- Followed by a group discussion between the students and the volunteers, staff and lecturers. Not clear what task the staff and the lecturers had.</li> <li>- The students asked the volunteers about useful interventions regarding health problems to the master students choose to better.</li> </ul>	<ul style="list-style-type: none"> <li>- Puskesmas Pudak Payung.</li> </ul>	<ul style="list-style-type: none"> <li>- Searching for ideas to make a suitable health promotion program for the elderly and mother and child.</li> </ul>	<ul style="list-style-type: none"> <li>- Collaboration between the students and the staff of the puskesmas. Every student is linked to the program holder of their subject.</li> <li>- Lecturers came to the puskesmas to watch the discussion.</li> <li>- A lot of interaction between the students and the volunteers. Staff and lecturers.</li> <li>- Facilities were available, like a beamer to present the results.</li> <li>- The presentation was printed on paper for the volunteers, so they could make notes.</li> </ul>	<ul style="list-style-type: none"> <li>- No weaknesses could be found, due to the unavailability of a translator.</li> <li>- Unhealthy snacks were given.</li> </ul>

### Observation 2

Date: 15-10-2018

The researchers joined the start of the bachelor nursing students from UNDIP assignment. Some of the student could speak reasonable English and could translate.

Who	What	Where	Purpose	Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- Bachelor students of nursing.</li> <li>- Group of nine students.</li> <li>- Two students are followed in the community.</li> </ul>	<ul style="list-style-type: none"> <li>- Start of their assessment for the seven weeks program.</li> <li>- Preparation for the interviews at the puskesmas.</li> <li>- Interviewing families in the community, using the Precede-Proceed method.</li> <li>- Measuring blood pressure.</li> </ul>	<ul style="list-style-type: none"> <li>- In the community Pudak Payung.</li> <li>- Puskesmas Pudak Payung.</li> </ul>	<ul style="list-style-type: none"> <li>- Every student does assessment for one family, to do one nursing intervention, on lifestyle.</li> <li>- Whole group does intervention changing attitude and reducing the frequency of smoking.</li> </ul>	<ul style="list-style-type: none"> <li>- Using a specific model to do the assessment: the Precede-Proceed method.</li> <li>- Family centered attention.</li> <li>- Staff of puskesmas and UNDIP is involved.</li> </ul>	<ul style="list-style-type: none"> <li>- After the seven-week program, high chance, the intervention will not continue.</li> <li>- Limited number of families involved.</li> </ul>

### Observation 3

Date: 15-10-2018

The researchers joined a health education for the volunteers. There was no translator available.

Who	What	Where	Purpose	Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- 20/30 volunteers of the puskesmas.</li> <li>- Nurse working at the puskesmas, specialized in</li> </ul>	<ul style="list-style-type: none"> <li>- Health education for the volunteers given by a nurse.</li> <li>- The volunteers sitting on the floor in a circle.</li> <li>- The volunteers write notes.</li> </ul>	<ul style="list-style-type: none"> <li>- In the community of Pudak Payung.</li> </ul>	<ul style="list-style-type: none"> <li>- Educating the volunteers about non-communicable diseases.</li> </ul>	<ul style="list-style-type: none"> <li>- Interaction between nurse and group.</li> <li>- Opportunity to ask questions.</li> <li>- Microphone present, so all volunteers could</li> </ul>	<ul style="list-style-type: none"> <li>- No equipment available like a projector or computer.</li> <li>- No information on paper given.</li> <li>- Volunteers had to write notes but</li> </ul>

care for elderly people.				hear the health education.	weren't always paying attention. - All volunteers were given a box with unhealthy snacks. - Groups size was too big to fit in the building.
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#### Observation 4

Date: 19-10-2018

The researchers joined a morning exercise. Some nursing bachelor students from UNDIP joined the exercise too. They could answer all the questions asked.

Who	What	Where	Purpose	Strengths	Weaknesses
- 20/30 elderly people at risk of or with NCD's - Volunteers giving the exercise.	- One hour morning exercise on music. - Different songs are played, slow and fast numbers. - All the people are wearing sporting clothes.	- Puskesmas Pudak Payung.	- Stimulating elderly people to exercise more.	- The elderly participate all in a whole hour exercise. - Exercises are suitable for elderly people. - Volunteers are enthusiastic and prepare the exercise. - Music is in Bahasa and tells the people what to exercise. - Exercise is early in the morning, so it is not too hot.	- Small group of elderly join, in proportion with the whole community. - Elderly have difficulties coming to the puskesmas. Puskesmas has to arrange transportation. - Unhealthy snack after the exercise.

#### Observation 5

Date: 25-10-2018

The researchers joined a prolanis. The health promotor and some bachelor nursing students could speak English. They translated it for us and answered all the questions asked.

Who	What	Where	Purpose	Strengths	Weaknesses
- Mostly elderly people with hypertension or diabetes. - Staff of the puskesmas: doctor, health promotion worker, nurses. - Nursing students from two different universities.	- Prolanis, health check once a month. - Checks consist of: weight, blood pressure and blood sugar measurement, and blood labs works. - Health promotion talk and handing out brochures about hypertension. - Medical check up and medicine for a month from the doctor. - Exercise. - Writing the data in a file.	- Puskesmas Pudak Payung.	- Maintaining and controlling the disease and give education about the diseases.	- Students helping the staff with measurements: weighing and blood pressure. - Health promotion is given and brochures are handed out. - Health insurance covers the prolanis. - Many people coming together: social factor.	- Unhealthy snack boxes are given. - Many students have nothing to do, too many students present. - The building is too small for all the people. - Only brochure available about hypertension, not diabetes.

#### Observation 6

Date: 30-10-2018

The researchers joined an implementation of health promotion project, executed by nursing master students. Some students spoke reasonable English and could translate for us.

Who	What	Where	Purpose	Strengths	Weaknesses
- Master students of nursing. - Group of six students. - Supportive group: 4 elderly people, guided by one student.	- The implementation of their health promotion plans. - Supportive group & music therapy for the elderly with stress. - Talking about stress and stress management (reducing stress).	- In the community of Pudak Payung.	- To help elderly people with stress management. - For the students to pass their master program.	- The master student made a protocol for the therapy. - The protocol is evidence-based. - There are four sessions in this therapy.	- Only for four people (more people were invited). - After the four sessions the therapy will stop. - Unhealthy snacks. - The participants were nervous of us in the beginning and

<p>They all have different strategies for reducing stress.</p> <ul style="list-style-type: none"> <li>- They talk in Javanese language.</li> <li>- For 30 minutes relaxing traditional Javanese music is played.</li> <li>- They do breathing exercises while listening.</li> <li>- Second time this support group is.</li> <li>- Two persons are enjoying the music and relaxing (they smiley and hum)</li> <li>- Two person say that they are to stressed to relaxe good (due to elderly neglect, their families do not take care of them).</li> <li>- Before and after blood pressure measurements.</li> <li>- At the end of the session a small evaluation.</li> </ul>			<ul style="list-style-type: none"> <li>- Each session has an evaluation.</li> </ul>	<p>distracted by all the other master students siting there and watching.</p> <ul style="list-style-type: none"> <li>- A lot of photo's ad video's where made during the music therapy.</li> </ul>
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### Observation 7

Date: 30-10-2018

The researchers joined an implementation of health promotion project, executed by nursing master students. Some students spoke reasonable English and could translate for us.

Who	What	Where	Purpose	Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- Master students of nursing.</li> <li>- Group of six students.</li> <li>- Hope therapy: 4 elderly people, guided by one student.</li> </ul>	<ul style="list-style-type: none"> <li>- The implementation of their health promotion plans.</li> <li>- Hope therapy for elderly with diabetes.</li> <li>- Blood pressure measurements.</li> <li>- Eight people where invited, four people came.</li> <li>- Therapy is evidence based.</li> <li>- Three participants take their medicine and try to eat more according to their prescribed diet.</li> <li>- One participant, does not want to take medicine and eat according to the plan. She has knowledge of the consequences. She did not like the food from the diet and said there are more people thinking like her.</li> </ul>	<ul style="list-style-type: none"> <li>- In the community of Pudak Payung.</li> </ul>	<ul style="list-style-type: none"> <li>- Hope therapy (more positives attitude about living and managing diabetes) for elderly people with diabetes.</li> </ul>	<ul style="list-style-type: none"> <li>- The therapy is evidence- based.</li> <li>- People who do not want to come to the pukesmas come to this therapy.</li> <li>- A book was made with instructions on diabetes management.</li> </ul>	<ul style="list-style-type: none"> <li>- According to the literature the therapy consist of eight sessions, this program is only two sessions</li> <li>- Unhealthy snacks.</li> <li>- Only for four people, more people that where invited did not come.</li> </ul>

### Observation 8

Date: 5-11-2018

The researchers joined the combined poksila and Posyandu. There was no translator available. The questions asked where answered by using Google Translate.

Who	What	Where	Purpose	Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- One nurse</li> </ul>	<ul style="list-style-type: none"> <li>- Poksila (posyandu lansia) combined with</li> </ul>	<ul style="list-style-type: none"> <li>- In the community of Pudak</li> </ul>	<ul style="list-style-type: none"> <li>- Prevention and promotion for</li> </ul>	<ul style="list-style-type: none"> <li>- Relatively healthy snack given, the snack</li> </ul>	<ul style="list-style-type: none"> <li>- They did not measure height</li> </ul>

<ul style="list-style-type: none"> <li>- Six volunteers for the poksila.</li> <li>- Five volunteers for Posyandi.</li> <li>- Ca. twenty elderly people.</li> <li>- Mothers with children (0-5).</li> </ul>	<p>Posyandu (for mother and child).</p> <ul style="list-style-type: none"> <li>- First elderly get registrated.</li> <li>- Elderly get measured: weight, height and blood pressure.</li> <li>- Nurse measures blood pressure and has a small talk with the elderly.</li> <li>- Elderly walk in at any time when poksila is given.</li> <li>- On average twenty elderly come, but there ae 78 elderly people in the neighborhood.</li> <li>- Almost the same people come every month.</li> <li>- Every three months at the poksila there is cholesterol, uric acid and blood sugar measurements. Ca. 25-30 people come than. These separate tests cost between 10.000 and 20.000 IDR. The health insurance does not cover this.</li> <li>- Some people gave money (ca. 2.000 IDR). It is not clear if it is only for the mother and child or also elderly people.</li> <li>- Elderly got a snack when they left.</li> </ul>	<p>Payung/ Gudawang.</p>	<p>elderly people at risk of NCD's.</p>	<p>contained among other things vegetables and rice.</p> <ul style="list-style-type: none"> <li>- Poksila mixed with posyandu, so the elderly, mother and child can come together.</li> <li>- The volunteers are trained for the measurements for the elderly.</li> </ul>	<p>accurately (ca. 10cm).</p> <ul style="list-style-type: none"> <li>- Only three measurements every month, it is not attractive to come.</li> <li>- No health promotion is given.</li> <li>- Some elderly people where done in five minutes.</li> <li>- The elderly have to pay the three month test themselves, health insurance does not cover this.</li> <li>- Only 20 of the 78 elderly come every month.</li> <li>- Only 13 poksila in one month (posyandu has 39 in one month).</li> </ul>
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### Observation 9

Date: 6-11-2018

The researchers observed how social media is used through the health promotor and what social media there is.

Who	What	Where	Purpose	Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- Health promotor.</li> <li>- Followers of the social media accounts.</li> </ul>	<ul style="list-style-type: none"> <li>- Social media platforms: Instagram, Facebook and WhatsApp.</li> <li>- Activities posted on social media organized by the puskesmas.</li> <li>- 34 post on Instagram in October 2018.</li> <li>- No Facebook account could be found.</li> <li>- Different WhatsApp groups for health promotion acitivities like prolanis.</li> <li>- General WhatsApp number that can be contacted for questions.</li> </ul>	<ul style="list-style-type: none"> <li>- Puskesmas Puduk Payung.</li> </ul>	<ul style="list-style-type: none"> <li>- To inform the community about health promotion and other activities the puskesmas is doing.</li> </ul>	<ul style="list-style-type: none"> <li>- A lot of Instagram posts about health promotion.</li> <li>- Family informs the elderly about the posts on social media.</li> <li>- Social media is used as prevention. The people now using social media get informed about NCD's, so when they are old, they already know about it.</li> <li>- Lot of pictures posted on social media. The elderly can see this, even if they cannot read.</li> </ul>	<ul style="list-style-type: none"> <li>- Only 256 followers on Instagram.</li> <li>- A lot of followers on Instagram are not coming out of Puduk Payung</li> <li>- Only 188 followers on Facebook.</li> <li>- Lot of elderly people don't have a smartphone or can read and use social media.</li> </ul>

## Attachment G: Codebook

Code Group	Type	Code	Type	Description	Example
<b>Health promotion activities</b> (All the health promotion activities that are given at the puskesmas and in the community, for the elderly people regarding NCD's)	Deductive	Prolanis	Inductive	Prolanis is, once a month at the puskesmas, with diabetes and hypertension. Health promotion and other activities are given there.	'And then eu, we have euh prolanis. It is eu program for eu [ba], eu non-infectious disease. There is eu hypertension, diabetic and others. Euh, once a week, euh, once a month the patient come here to check the blood glucose and then we give them information, health information, health promotion'.
		Poksila (Posyandu Lansia)	Inductive	Poksila is, once a month, in the community for elderly people at risk of NCD's. Only preventative activities and health promotion are given.	'Because poksila his function is in preventive and promotion and not in curative. If they have a disease or non-communicable disease they can go to the puskesmas'.
		Brochure	Inductive	Brochure as a way of giving health promotion.	'We have two way to give health promotion to elderly people. One we have use brochure or another ehm.. promotion health media'.
		Exercising	Inductive	Exercising, once a week at the puskesmas, as a health promotion activity for the elderly people.	'In every Friday morning, we have an exercise activity in puskesmas Pudak Payung. We have gymnastic in here, but eh.. not much of our elderly people have come to here regularly'.
		Social media	Inductive	Use of social media, like Facebook, Twitter, Instagram or WhatsApp, to give health promotion.	'We will use our social media on Facebook page or Instagram of another social media. We have WhatsApp group maybe for the prolanis people or poksila people. So we can give any promotive and prevention from the social media'.
		Students	Inductive	Health promotion activities given by bachelor or master nursing students.	'So and before we make an intervention, maybe we can communicate to the further community, what the interventions must be used to the community, because we must make a promotion of the community and after that, we make an implementation with the Precede-Proceed procedure (...)'. 'Yes, from the health minister in Indonesia. We have so many video from the ehm.. minister of health'.
		Video	Inductive	Video as a way of giving health promotion.	
		Volunteers	Inductive	Volunteers are helping with certain tasks at health promotion activities.	'Eu, they have euh the volunteer eu, are incredible, they euh work without payment. Euh they, uh, met sometimes, sometimes we give them the information, health information, we teach them health information. And then we give them, information uh about puskesmas, about the health issues, about uh health community, and then eu they euh, talk to their community, and then they collaborate with us, in many programs'.
<b>Organization and structure of the puskesmas</b> (How the puskesmas is organized)		Health promotion waiting room	Inductive	Health promotion given in the waiting room.	'And then eu in eu Friday, we usually in Friday or in eu Saturday, euh miss (..) will euh have euh health promotion in the waiting room. In the waiting room euh she will explain euh many things'.
		Postbindu	Inductive	It's like a poksila, but from the age of 15 until 60 years old.	'About the preventing of the diabetic and hypertension now Posyandu Lansia is euh, have a program that's people have euh, 15. From 15 years [ba], have to check their blood pressure and glucose. It's called Postbindu'.
	Deductive	Structure	Inductive	The structure of the puskesmas, how it is organized and what staff and programs there are.	'She is a program holder of the puskesmas, that which hold like, something like elderly and then homecare and then ehm.. like [ba] disease, disease not spread. Like diabetic or like hypertension, like that in elderly'.

Research for implementing health promotion regarding non-communicable diseases for elderly people

		Collaboration	Inductive	The collaboration between the staff of the puskesmas and between different organizations and the puskesmas.	'Yeah the health network, we have to have a network with, health provider in our areas, like the general practioner, euh and then midwifery and then, clinics and euh we have a traditional euh health care'.
		Health insurance	Inductive	The role of the health insurance in the puskesmas and the people coming there.	'Euh if they don't have PBTS card or health insurance card euh they have to euh pay their euh regularly check. Although it is not expensive. It is just 10.000 roepias. But for people who don't get [...] euh not poor people. Poor people they have health insurance from government'.
		Staff health promotion	Deductive	All the staff involved with health promotion for the elderly, regarding NCD's, in the puskesmas and the community.	'I think ehm.. health promotion is not just my job. But their job too. The nurses or doctor. Or any other people in puskesmas Pudak Payung. It's their job too in health promotion'.
<b>Organizational barriers</b> (What organizational barriers in the puskesmas and community to consider during implementation for the elderly regarding NCD's)	Deductive	Collaboration-	Inductive	Collaboration as an organizational barrier between the staff of the puskesmas and between different organizations and the puskesmas.	'The biggest barrier is, sometimes the biggest barrier come from us. I mean, we lack of coordination and collaboration. We look individually, sometimes I think it is the biggest barrier. Uh if we, if we not communicate to, uh other, uh, uh, health care or other uh, department. They don't know what our problem'.
		Difficulties to reach	Inductive	People who can't come to puskesmas because difficulties in transportation or people who can't come due to opening times of the puskesmas.	'And one more about the time. It does not match about the routine time of the puskesmas. Most people want the puskesmas provide to come to them, afternoon, but the puskesmas, they miss that facility'
		Lack of staff	Inductive	Lack of staff as an organizational barrier.	'Ehm.. When we have just 24 people in here, it's difficult to reach them all'.
		Money	Inductive	Money as an organizational barrier.	'We haven't got not much funding in here. Our finding is from the [...] health insurance, from the patients. We have retribution in here, but it is not much, we hire any staff again, haha'.
		Knowledge of the staff	Inductive	A lack of knowledge and education of the staff and volunteers.	'I think it depends worker are volunteer when they give information, because when they give information on society, sometimes ehm.. in Posyandu, sometimes in Posyandu, volunteer ehm.. tell the information is, is not enough for society'.
		Facilities-	Inductive	A lack of facilities as an organizational barrier	'We don't facilities to give us some information for health promotion. For example is ehm.. projector. Because many elderly people cannot go read'.
		Participation activities	Inductive	Low participation in health promotion activities organized by the puskesmas.	'In every Friday morning, we have any exercise activity in puskesmas Pudak Payung. We have gymnastic in here, but ehm.. not much of our elderly people have come to here regularly'.
<b>Organizational Strengths</b> (What organizational strengths in the puskesmas and community to consider during implementation for the elderly regarding NCD's)		Knowledge of the staff +	Inductive	Knowledge of the staff that can help in health promotion.	'So as, the health educator who must have knowledge. So to get it, we must do the training, like training from government or another and then before we go to the community, we must do the training and give the knowledge to the community like that'.
	Deductive	Facilities+	Inductive	Available facilities that can help giving health promotion	'About 100, euh but because they are euh elderly people euh sometimes they forget that they have to come here to check the blood glucose and further. But now we try to remember them by WhatsApp'.

Research for implementing health promotion regarding non-communicable diseases for elderly people

		Health promotion programs	Inductive	Programs where health promotion already is given.	'The good thing from prolanis promotion (...), non-infectious disease, so euh we directly tell to them that their disease euh have to maintain, have to cure euh..., we have to change their lifestyle'.
		Collaboration +	Inductive	Collaboration as an organizational strength.	'The strength of the organizational is, have a good teamwork, like, the program, the health education program, is communicable with another program holder, so they can do together and have a good teamwork'.
		Dedication of the staff	Inductive	The commitment of the staff to give health promotion.	'Spirit'.
		Volunteer +	Inductive	Availability of volunteers as an organizational strength.	'Ow yes, and for the health promotion, because limited number of the staff of puskesmas. The kader is training to, to how to give a health education, to the community, to the elderly'.
<b>Areas of need to change</b> (What areas the staff think is most important to change for the elderly regarding NCD's)	Deductive	Tobacco	Deductive	Decrease the use of tobacco.	'So the subject most necessary like tobacco use, but they know about tobacco use. They know about the negative of tobacco use. But they don't applicate it to their life'.
		Family support	Inductive	More support from the family is necessary for the elderly.	'Euh they will not take the drugs, they will not euh, euh don't exercise, and others. I hope the family will get involved too'.
		Food	Deductive	The consumption of unhealthy food	'Maybe here *Showing brochure* vegetable and fruit consumption. Because so many people in Java they nog like vegetables and fruit'.
		Lifestyle	Deductive	Changing an unhealthy lifestyle into a healthier one.	'We have to change their lifestyle. Euh, we help euh they not become worse euh, their condition [...] that they can do, their job'.
		Motivation	Inductive	Changing the motivation to be more healthy.	Willing, their willingness to be healthy. [...] if they don't have a willing they don't want to be healthy'.
		Diseases	Inductive	Managing specific diseases like, diabetes, hypertension, osteoporosis or dementia.	'Many euh elder people in puskesmas Pudak Payung have a problems, euh like euh diabetes, like euh hypertensions. Maybe you can give intervention, euh, implementation, with nutrition. Nutritionist knowledge'.
<b>Areas of strengths</b> (positive areas where health promotion is working good for the elderly regarding NCD's)	Inductive	Knowledge of the people	Inductive	How much people and elderly people already know about NCD's and what is available for them in the puskesmas.	'I think it's our strengths is ehm... Many people have knowledge about non-communicable disease. They know about non-communicable disease'.
		Existing programs	Inductive	Programs that already exist for people with NCD's or at risk, that work good.	'Prolanis is euh, one program, that it's for prevention, promotion and then a cure, and then they have rehabilitation or a the BTM. This is a good program'.
<b>Implementing new idea's</b> (How new ideas can be/are implemented for the elderly regarding NCD's)	Deductive				'Whatever your innovation. If you want it is continue [ba]. Whatever you want to intervention if you want to be, if you want that committee to continue, you make it easier and make it simple, more simple without money and not require lot of ehm.. extra energy'.
<b>Suitable intervention</b> (Interventions that are suitable and have a high chance to succeed for implementation for the elderly regarding NCD's)	Deductive	Nutrition	Inductive	Suitable interventions on the area of nutrition.	'And then ehm.. In prolanis activity we give them any snacks and ehm.. Literally not vegetable and fruit, but maybe in next month or this month, we have give them fruit and vegetables.
		Osteoporosis	Inductive	Suitable interventions for osteoporosis.	'You can give health education about osteoporosis and prevention of dementia.
		Waist circumference measurement	Inductive	Waist circumference measurement added to prolanis.	'Ehm.. In prolanis we have only activity like: blood pressure check and disease weight and height check, but ehm.. Maybe ehm.. this yes [ba]. Stomach [ba] we don't have this check in the prolanis.

Research for implementing health promotion regarding non-communicable diseases for elderly people

		Media	Inductive	Any (social) media to communicate health promotion.	'But in diabetic I don't have any brochure'.
		Tobacco use	Inductive	Suitable interventions to decrease the use of tobacco.	'So we found that so much smoking in the community and I think the best idea to solve that problem is make an activity like sport maybe football or education for the young people'.
		Dementia	Inductive	Suitable interventions to decrease the risk of dementia.	'In poksila is ehm, more virtuous to the health education, about prevention of dementia, and while you give, beside you give the health education, you can give gyms to prevent dementia in elderly'.
		Diabetes	Inductive	Suitable interventions for diabetes and diabetes prevention.	'So you can, can teach the community about physical activity in diabetes person and then the diet, how to euh, teach them to ehm, to calculate their calories or like that'.
		Hypertension	Inductive	Suitable interventions for hypertension and hypertension prevention.	'Many euh.. elder people in puskesmas Pudak Payung have a problems, euh like eu diabetic, like euh hypertensions. Maybe you can give euh intervention, euh implementation with nutrition. Nutritionist knowledge'.
<b>Important government laws and policies</b> (Important government laws and policies that has to be considered for implementation for the elderly regarding NCD's)	Deductive	Shift towards curative	Inductive	Focus point of the puskesmas changing towards curative.	'Now the paradigm of the puskesmas is not little, but very changed. Because the government want the puskesmas will become mini hospital. So they have in patient care. Ya, and this [...] also very like distract the health promotions. The main, the main function of the puskesmas'.
		Decentralization	Inductive	Decentralization of the government on the area of healthcare.	'From the health promotion in, actually, I tried to understand about Indonesian policies, because now we have decentralizations. You know. So each [...] on each city have there own regulations.
		Government	Inductive	The influence of the government on organizational, structure and health promotion of the puskesmas.	'Some of them like have a regularly refreshing about the information from the government. The government will have like routines for them and invite them to refresh their information'.
		Associations	Inductive	Existence of non-government associations for people with NCD's.	'But some activity like diabetic promotion, for the diabetic they have [...] some for dementia. Association as dementia [...] and they will have their own organizations. But this nothing in the [...] of the government'.
		A standard	Inductive	Lack of standard and evaluation of programs from the government.	'If they have prolanis, actually they have the program like that. In prolanis they have like a monthly activity for the elderly. But they don't have like a standard, what they should do'
		Chances and barriers for implementation	Deductive	Chances and barriers regarding government laws and policies that can influence an implementation.	'No you can do anything what do you want'.

## Attachment H: Plan of implementation

### 1. Development of proposal of change

Due to a higher social-economic status and a greatly improved health care, the life expectancy has increased in Indonesia. This development has also led to a shift in the leading causes of diseases and death and is characterized by a transition from communicable diseases to non-communicable diseases (World Health Organization, 2016). Non-communicable diseases (NCD's), are long in duration and have generally a slow progression. The high proportion of NCD's is primarily driven by four major risk life style factors: tobacco use, physical inactivity, harmful use of alcohol and unhealthy diets. Through the combination of a large elderly population and major risk life style factors there is an increasing group of people suffering from NCD's. Present day, in middle-income countries, as Indonesia, 82% of all people who die before the age of 70 can be attributed to NCD's (World Health Organization, n.d.). Cardiovascular diseases, cancers, chronic respiratory diseases and diabetes are the most prevalent non-communicable diseases in Indonesia. Especially the disease diabetes is of great concern. It is expected that the amount of people with diabetes in Indonesia will increase from 7,6 million in 2013 to 11,8 million in 2030 (Bloom et al., 2015). There is a great need for an approach to tackle these most common NCD's (Krishnan et al., 2010).

Bijsterbosch & Veenma (2017) executed their bachelor research in and around the community health centre 'Pudak Payung'. According to their research, the most common NCD's for elderly people in the community of 'Pudak Payung' are high blood pressure, diabetes, rheumatic disorders and arthrosis. The results showed that 71% of their research population has one or more NCD's. Of the people who have NCD's, 30% have diabetes. Behavioural risk factors are: tobacco use and unhealthy diets (fat, sugar, salt, vegetables and fruit). The researchers continued their research. They concluded health promotion regarding diabetes and nutrition is one of the areas that need to change in puskesmas 'Pudak Payung'.

The vision of the puskesmas 'Pudak Payung' is: 'Increase awareness, willingness and ability to live healthy lives for people in order to realize optimal public health degrees. Health efforts: promotive, preventive, curative and rehabilitative must be carried out in a comprehensive, integrated and sustainable manner. Increased health efforts are held to achieve quality, equitable and affordable health efforts by the community'. The health promotion regarding diabetes is of the promotive and preventative part of the vision to increase the awareness, willingness and ability to live healthy. To carry this out in a comprehensive, integrated and sustainable manner, the current trend of the government should be taken into account. This is a shift from preventative towards curative. The services the puskesmas offers, will probably become more curative in the future. That's why it is important to strengthen the health promotion activities that already exist. Another thing to make the implementation successful, sustainable and integrated in already existing health promotion, is to make it easy, simple, without money and a lot of extra energy, from the research conducted by this plan of implementation.

For the reasons described above, this plan of implementation focusses on improving and strengthening the health promotion for people with diabetes or at risk of diabetes in and around community health centre 'Pudak Payung'

### 2. Analysis of actual care and concrete goals for improvement

In table 1 is described the actual care and goals for improvement for elderly people with diabetes or at risk of diabetes. Many of these programs also include people with other diseases, but this plan of implementation focusses on bettering the health care for elderly people with diabetes. The focus of this plan of implementation lies on health promotion in the group activities and not on the individual care. All the data used in the analysis is from the results conducted prior by the researchers into making this plan of implementation.

Actual care	Goals for improvement
<p>Prolanis. This is a program for people who already have diabetes. People come here to the puskesmas, once a month, to get a new supply of medicine and to check their weight, height and blood pressure. A health promotion is given during the prolanis and sometimes brochures are handed out. An unhealthy snack box was given. The puskesmas receive guidelines from the Germas program of the government to conduct the prolanis.</p>	<p>In the Germas program from the government a measurement is waist circumference. This is not conducted right now at the prolanis. Waist circumference is an important indicator at the risk for diabetes. Another goal for improvement is the health education given. The health education given is very short and can be expanded. Subjects for health education: diabetes and sugar consumption, sugar sweeteners or how to count calories. These are ideas the staff think is important.</p>

	Facilities can be improved, there is no brochure about diabetes or other media to use as a tool to support the health promotion. Arranging a healthy snack box for the elderly people.
Poksila. This is a preventive and promotive program. All elderly people at risk of a NCD can come here every month. They can check their weight, height and blood pressure. Every three months they can check their cholesterol, uric acid and blood sugar. A snack box was given with more healthy snacks. They receive guidelines from the Germas program of the government.	Poksila is not very attractive for elderly people and not a lot of people come. It can be made more attractive by adding health promotion or other activities, like foot exercises. In the Germas program from the government a measurement is waist circumference. This is not conducted right now at the poksila.
Weekly exercise. On average 20-30 people come and exercise for one hour. After the exercise the people get an unhealthy snack box. Volunteers organise this.	Arranging a healthy snack box for the elderly people.
Use of media. Brochures are given to people with information about various disease. The puskesmas has social media: Facebook, Instagram and WhatsApp.	There is no brochure of people with diabetes and food consumption. So a brochure must be made.
Health education for the volunteers every two weeks a staff member gives health education in the community.	Health education about how to measure waist circumference, so the volunteers can do this at the prolanis and poksila. Health education about sugar consumption, sugar sweetener and diabetes.

Table 1. Actual care & goals for improvement

### 3. Problem analysis, target group and setting

The problem analysis combines both the data from the research of Veenma & Bijsterbosch (2017) and the research conducted by the researchers.

#### *Problem analysis target group*

The target group is elderly people with diabetes or at risk of diabetes. In general, when asking about health status and quality of life, of all elderly people, the majority rated their general health status as reasonable and their quality of life as excellent (Veenma & Bijsterbosch, 2017).

According to Veenma & Bijstersbosch, 71% of their research population has one or more NCD's. Of the people who have NCD's, 30% have diabetes. Also 30% of the elderly have hypertension, but all other NCD's are less frequent.

Looking at demographic factors it is important to consider that most elderly people in Pudak Payung have a low SES, are low educated and often cannot read (Veenma & Bijsterbosch, 2017). The elderly people do know about NCD's, but their knowledge is mostly very basic and not sufficient enough. Poor people in the area have access to free health insurance from the JKN. Most activities organized by the puskesmas are covered by health insurance. Some activities like blood sugar measurements at an poksila are not free. However they do not cost much money. Some people do not want to for pay health insurance and only want help if it is free.

In general the elderly people in Pudak Payung do not have a healthy lifestyle. They eat food with a lot of salt, fat and sugar and eat not enough fruits and vegetables. When preparing food they are frying everything, especially rice and fruits and vegetables. They also choose food that is easy to prepare, like instant noodles. This contains a lot of fat, sugar and salt. Sugar consumption is also a problem. They put sugar in almost all foods and drinks. Sometimes without them knowing that there is sugar in the food (Veenma & Bijsterbosch, 2017).

A big problem in the target group is the lack of motivation or willingness. Most people do have some knowledge about the NCD's, but they find it too difficult to change or do not want to change their lifestyle. Some people do not even want medicine to maintain their diabetes or do not want to come to activities at the puskesmas. Lack of family support is also a factor of motivation. The family is not much involved in helping their elderly with maintaining or changing their lifestyle if they have diabetes.

#### *Problem analysis setting*

	Barriers	Strengths
Individual health care workers	<ul style="list-style-type: none"> <li>Lack of staff.</li> <li>Not all health care workers work evidence-based practise.</li> <li>Volunteers do not have much knowledge about health care.</li> </ul>	<ul style="list-style-type: none"> <li>The staff is very committed to their job.</li> <li>The students are working evidence-based practise.</li> </ul>
Social context	<ul style="list-style-type: none"> <li>Lack of collaboration between the puskesmas and stakeholders.</li> <li>Elderly people have difficulties reaching the puskesmas and other activities.</li> </ul>	<ul style="list-style-type: none"> <li>Good collaboration between the students of Diponegoro University and the staff of the puskesmas.</li> </ul>

		<ul style="list-style-type: none"> <li>• There is a good collaboration between the staff of the puskesmas.</li> </ul>
Organisational context	<ul style="list-style-type: none"> <li>• Focusing on NCD's for elderly people is not a priority of the puskesmas.</li> <li>• Low participation in activities organised by the puskesmas.</li> <li>• Low amount of followers on social media and most elderly people don't use social media.</li> <li>• Puskesmas has limited opening times.</li> <li>• Poksila is not attractive for the elderly. Only weight, height and blood pressure is measured every month.</li> <li>• Sometimes it is difficult for elderly people to come to the puskesmas or other activities.</li> <li>• Most of the time unhealthy snack boxes are given.</li> <li>• Not all measurements of the Germas program are being performed at prolanis and poksila.</li> </ul>	<ul style="list-style-type: none"> <li>• Use of social media.</li> <li>• Organizing health promotion in the community.</li> <li>• For people with diabetes there is prolanis.</li> <li>• There is already a program organised by the puskesmas for people at risk of diabetes: poksila.</li> <li>• Poksila mixed with Posyandu.</li> <li>• The availability of enthusiastic volunteers.</li> <li>• Health promotion is not only a job for the health promotor, but for all the staff at the puskesmas.</li> </ul>
Economic and juridical context	<ul style="list-style-type: none"> <li>• Not much money available for health promotion.</li> <li>• Lack of facilities in the community, like projectors.</li> <li>• No brochure about diabetes available.</li> <li>• Tests in poksila like cholesterol measurements cost money.</li> <li>• Shift towards curative form preventative, influenced from the government.</li> </ul>	<ul style="list-style-type: none"> <li>• In the puskesmas itself, facilities like a projector and AC is available.</li> <li>• Health care insurance available for most people.</li> </ul>

Table 2. Problem analysis setting

#### 4. Development and selection of intervention strategies

This plan will focus on implementation of an intervention and not on dissemination. Whereas dissemination focusses on increasing the interest and knowledge of the intervention to promote a positive attitude and willingness to adapt to new interventions, the staff of the puskesmas already have a motivation for new interventions. They have a positive attitude towards innovation and want to better the health care for the inhabitants of Pudak Payung and Gedawang. The staff is familiar with new interventions the students introduce. The largest barrier are not a willingness to try new ideas, but lack of manpower and money. Therefore this plan of implementation focusses on the actual implementation of an intervention in practice.

Most interventions that are selected are ideas of the staff themselves. They know the puskesmas and its strengths and weaknesses best. Most of the interventions selected therefore, will have the support from the staff.

The interventions proposed in this plan are interventions on the educational and patient-oriented domains. In the educative domain the staff and volunteers are educated to use new measurements, techniques or enlarge the knowledge about the subject. In the patient-oriented domain interventions are focussed on improving the actual care. The financial and organizational domains are more difficult to change, with lesser effect. The biggest barriers, from the results of this research are lack of money and lack of staff. These are barriers difficult to change and influence. On the educational and patient-oriented domains, interventions can be made, while these barriers can be taken into account and therefore the greatest change can be expected here. The staff has a positive attitude towards changes and are committed to bettering the health care given. These are strengths of the puskesmas. The interventions that will be selected are as much as possible bettering the actual care and not new interventions, because the staff does not have the manpower to continue new interventions and because of an expected shift towards a more curative setting in the puskesmas influenced by the government. Therefore, it is important to strengthen the existing health promotion and preventive activities.

Interventions to improve the health promotion for elderly people with or at risk of diabetes:

- Measuring waist circumference during every poksila and prolanis. These programs receive guidelines what period health checks should be executed to prevent NCD's. These guidelines are in the Germas program of the government. The purpose of Germas is to create a healthy society, and aspects of this program focusses on a more healthy lifestyle. During the poksila and prolanis the waist circumference is not measured. Although this is a good indicator for risk

of diabetes and a better indicator than the body mass index. Waist circumference measures abdominal fat. Abdominal fat can trigger diabetes and other diseases, like heart attacks and strokes (Vazquez, Buval, Jacobs & Silventoinen, 2007).

The volunteers will be given a health education and training about the importance of measuring waist circumference and how to measure this, so the volunteers can perform this during the poksila. At the poksila are always enough volunteers present to do an extra measurement. At the prolanis the researchers will measure waist circumference once, and arrange with the staff that, at other prolanis, other students can measure this, because there are always students involved at prolanis. They now help with measuring weight and blood pressure and there are enough students to help with waist circumference measurements too.

- Arranging healthy snack boxes after activities like, poksila, prolanis and weekly morning exercise. At every activity snack boxes are given. This is an Indonesian custom. Most of the time the snack boxes are filled with unhealthy snacks like, sweet cakes or fried food. For people with diabetes this is very unhealthy and healthier options can be given for these people. To give a good example of healthy food and for the people to try healthy foods. The researchers make a do's and don'ts list with snacks for people with diabetes or other NCD's for the staff of the puskesmas, so they can use this list when compiling a snack box.
- Health promotion during the prolanis about a healthy lifestyle for people with diabetes. Chosen are subjects that have not been or hardly been discussed with the elderly people and subjects that is important for the elderly people. Subject are: focussing on foods, sugar and sugar sweeteners and explaining the healthy snack box to the elderly people. Sugar sweeteners will be discussed, because the many people have difficulties not using sugar and have a lack of motivation to use less sugar. Other subjects for health promotion can be: how to count calories and the importance of exercise.
- Making the poksila more attractive for the elderly people to come regularly. Now the poksila consist only of weight, height and blood pressure measurements. To make it more attractive health promotion activities can be arranged such as, foot exercises for people at risk of diabetes or other physical activities and talking more with the elderly about lifestyle.
- Making a brochure and use other media to provide information about diabetes. For some NCD's there is a brochure available, but not for diabetes. When making this brochure, taken into account must be the literacy and education level of the elderly people. When handing out a brochure, the brochure must be explained by a volunteer, student or staff of the puskesmas. The text of the brochure must be supported with pictures, so the elderly can remember what the brochure is about. Even better is the use of other media like spoken messages or movies, so the elderly do not have to read it but still gain the information.
- Motivational interviewing (MI) for the group of people who lack motivation and willingness. There is a group of elderly people with diabetes who do not want to come to the puskesmas or want to get medication. To reach these people a different strategy is needed and MI is an approach designed for these people. Motivational interviewing is an approach to elicit behavioural change by helping the elderly people to explore and resolve ambivalence in a non-directive and patient-centered way (Miller & Rollnick, 2002).

Due to limited time only a few interventions will be selected to perform:

- Introducing, teaching and measuring waist circumference;
- Arranging healthy snack boxes at activities
- Health promotion at the prolanis about new subjects regarding diabetes.

These interventions are chosen because these can be performed in a very short time span, the staff also think is important and do not cost a lot of extra money or time. The other ideas or interventions are suggestions for the staff or students.

## 5. Development, testing and execution of the plan of implementation

In table 3 the development and execution of the plan of implementation is displayed. This table only shows what the researchers actually carrying out, so only the interventions the researchers are doing themselves. Follow-up activities to integrate the new interventions in routines and the other interventions recommended are not shown in this table and are left for the puskesmas.

What activity	When executed	Where
Writing research proposal	07/2018 - 10/2018	Groningen, The Netherlands
Arrive in Semarang and exploring research area	9/10/2018 - 15/10/2018	Semarang, Puskesmas Puduk Payung & University Diponegoro

Data collection by using interviews	16/10/2018 - Master student 17/10/2018 - Head of puskesmas 2x - Health promotor 18/10/2018 - Nutritionist & epidemiologist - Bachelor student 24/10/2018 - Nurse 25/10/2018 - Lecturer - Lecturer	Diponegoro University, nursing faculty Puskesmas Pudak Payung Puskesmas Pudak Payung Puskesmas Pudak Payung  Diponegoro University, nursing faculty Puskesmas Pudak Payung Diponegoro University, nursing faculty Diponegoro University, nursing faculty
Data collection by conducting observations	10/10/2018 - A presentation about and group discussion of master students ongoing thesis. 15/10/2018 - Start of assessment for a seven weeks program of bachelor students - Health education given for the volunteers 19/10/2018 - One hour morning exercise on music 25/10/2018 - Prolanis 30/10/2018 - Master student implementation: supportive group & music therapy. - Master student implementation: hope therapy. 05/11/2018 - Poksila (posyandu lansia). 06/11/2018 - Use of social media	Puskesmas Pudak Payung  Puskesmas Pudak Payung and its community  In the community of Pudak Payung  Puskesmas Pudak Payung  Puskesmas Pudak Payung In the community of Pudak Payung  In the community of Pudak Payung  In the community of Pudak Payung Puskesmas Pudak Payung
Transcribing, coding and analysing the collected data and writing down the results of the interviews and observations	16/10/2018 - 07/11/2018	Kost putri puspa house (boardinghouse) & university library Diponegoro
Design a plan of implementation	07/11/2018 - 13/11/2018	Kost putri puspa house (boardinghouse) & university library Diponegoro
Discussing results and ideas for implementation with the health promotor of the puskesmas	08/11/2018	Puskesmas Pudak Payung
Reading about the measurement waist circumference, designing a plan of education for the volunteers and buying two measuring tapes.	13/11/2018	Kost putri puspa house (boardinghouse), university library Diponegoro.
Designing a plan of education for the elderly about diabetes and designing a little flyer with a small summary of the education.	14/11/2018	Kost putri puspa house (boardinghouse), university library Diponegoro
Designing a do's and don'ts list with snacks for people with diabetes or other NCD's.	15/11/2018	Kost putri puspa house (boardinghouse), university library Diponegoro
Re-reading and bettering the plan of implementation and the preparation of the interventions.	16/11/2018	Kost putri puspa house (boardinghouse), university library Diponegoro
Discussing and translating the designed education plans with the health promotor of the puskesmas and arranging a translator for the educations	19/11/2018	Puskesmas Pudak Payung
Executing the health education about the waist circumference for the volunteers of Pudak Payung	20/11/2018	In the community of Pudak Payung
Executing the health education about the waist circumference for the volunteers Gedawang	21/11/2018	In the community of Pudak Payung
Executing the health education about diabetes and performing the waist circumference measurement at the prolanis.	22/11/2018	Puskesmas Pudak Payung

Table 3. Development and execution of the plan of

## 6. Preservation of change: integration in routines

To preserve and integrate the new interventions after the researchers finish introducing them, it is important to look for ways it can last.

The interventions that will be selected are as much as possible bettering the actual care and not new interventions, because the staff does not have the manpower to continue entirely new interventions and because of an expected shift towards a more curative setting in the puskesmas influenced by the government. Therefore, it is important to strengthen the existing health promotion and preventive activities.

The government also issued the Germas program and one of the aspects is to promote a more healthy lifestyle and prevent NCD's. Therefore the Germas program supports regularly check-ups. One of these check-ups is waist circumference measurement. This intervention, to measure waist circumference, has support from the government and fits easily in a poksila and prolanis.

To preserve the intervention about waist circumference after the researchers introduce them, the volunteers will be trained to perform this measurement. There are always enough volunteers present at an poksila to perform this extra measurement and even a measuring tape is already present at the poksila.

During every prolanis there are students present and they help measuring weight and blood pressure. There are more students present than necessary, so there are more than enough students to help perform this measurement. The staff can instruct the students to measure waist circumference.

To ensure the healthy snack boxes introduced at one prolanis will continue to next prolanis and also to the other activities, a list of healthy snacks options will be made. In this list will be taken into account the budget there is and to keep it affordable. Healthy food options will be given that the elderly people will like, to ensure the snack boxes stay attractive for them.

One health promotion is given at the prolanis by the researchers, to introduce a new topic about diabetes and explain about the healthy snack boxes, in order to educate the elderly more about diabetes and the role of food. This to create more willingness from the elderly people to change to healthier snack boxes. After the health promotion a small brochure will be handed out to the people, so that they can remember everything that was said and show it to their families for more support.

## 7. Evaluation and adjustment of the plan of implementation

To ensure there are no obstacles, the interventions can be adjusted to make the interventions go well, it is important to evaluate the product, process and structure. To perform this evaluation the following questions can be used.

<b>Product evaluation</b>	<ul style="list-style-type: none"> <li>• How often is the waist circumference measured at the prolanis and poksila?</li> <li>• How often are healthy snack boxes given at the prolanis?</li> <li>• How often are healthy snack boxes given at other activities?</li> <li>• In what degree are the elderly people using the information of the health promotion?</li> <li>• How often is health promotion regarding diabetes given during a prolanis?</li> </ul>
<b>Process evaluation</b>	<ul style="list-style-type: none"> <li>• How is the collaboration between the staff and the students regarding measuring waist circumference?</li> <li>• How is the collaboration between the volunteers with education about waist circumference and no education about waist circumference?</li> <li>• What do the elderly people think about the transition to healthier snack boxes?</li> <li>• Is the information given during the health promotion at the Prolanis understandable for the elderly people?</li> </ul>
<b>Structure evaluation</b>	<ul style="list-style-type: none"> <li>• Are there enough measuring tapes available to perform waist circumference?</li> <li>• How often is a volunteer present at the poksila with knowledge about how to measure waist circumference?</li> <li>• Is there enough budget to give all the elderly people healthy snack boxes?</li> <li>• Are there brochures or other means present to use during a health promotion?</li> </ul>

Table 4. Evaluation

Due to limited time the researchers cannot evaluate and adjust this plan of implementation.

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## Attachment I: Supporting brochures of the interventions

### Pengukuran Lingkar Perut

#### Mengapa?

Pengukuran lingkar perut adalah pemeriksaan sederhana untuk mengetahui apakah orang membawa kelebihan lemak tubuh di sekitar perut bagian tengahnya. Lemak tubuh di sekitar perut tengah berisiko kesehatan lebih besar daripada berat di pinggul dan paha. Umumnya, semakin besar lingkar perut, semakin tinggi risiko terkena penyakit kronis seperti diabetes tipe 2, penyakit jantung dan beberapa jenis kanker. Mengukur lingkar perut dapat digunakan dengan mengukur indeks massa tubuh untuk memberikan indikasi risiko terkena penyakit kronis.

#### Bagaimana Caranya?

1. Gulung pakaian dibagian pinggang
2. Bernapaslah dengan normal
3. Letakkan pita pengukur di sekitar bagian tengah perut tepat di pusar dan pastikan tidak ada kerutan.
4. Periksa pengukuran Anda



**Risiko**      **Berisiko tinggi**



**Risiko**      **Berisiko tinggi**

#### Nilai Normal

Untuk pria, biasanya memiliki garis pinggang maksimal 90cm dan untuk wanita 80cm. Semakin besar ukuran pinggang, semakin tinggi risiko terkena penyakit.

#### Kurangi risikonya

Ada beberapa cara untuk meningkatkan derajat kesehatan anda yaitu :

- Berhenti merokok
- Meningkatkan aktivitas fisik
- Memperbaiki pola makan
- Mengurangi asupan alkohol
- Mengobati faktor risiko lain seperti Tekanan darah tinggi dan kolesterol tinggi
- Pastikan Anda cukup tidur



Femia & Evelyn

## Diabetes

Diabetes adalah penyakit di mana gula darah tidak seimbang. Sangat penting untuk menjaga gula darah seimbang untuk mengurangi risiko komplikasi. Untuk melakukan ini, penting untuk mendapatkan kesempatan untuk gaya hidup sehat.

Tips untuk gaya hidup sehat dengan diabetes:

- Latihan: Penting untuk berolahraga 30 menit sehari. Ini bisa apa saja mulai dari berjalan kaki atau membersihkan rumah. Intinya harus rutin dilaksanakan.
- Jangan merokok: Merokok memiliki efek buruk pada kadar gula darah Anda dan buruk untuk jantung dan pembuluh darahmu.
- Menurunkan berat badan: Semakin normal berat badan, itu lebih baik untuk gula darah.
- Makanan: makan makanan yang sehat!

Di kotak makanan ringan hari ini kami menambahkan beberapa hal yang sehat untuk di coba! Penting untuk menghindari makan banyak gula. Buah-buahan sangat sehat tetapi mengandung banyak gula. Namun, gula dalam buah adalah gula sehat untuk dimakan. Selain gula, ada juga vitamin, mineral, antioksidan dan zat makanan penting dalam buah. Nutrisi tersebut juga penting jika Anda menderita diabetes. Karbohidrat lambat dalam buah juga lebih sehat daripada fastcarbohydrates dalam minuman ringan, permen dan biskuit. Cobalah makan 2 buah sehari!



Dengan mengikuti tips untuk gaya hidup sehat untuk diabetes, komplikasi berikut dapat dihindari:

- Penyakit jantung
- Penurunan fungsi ginjal
- Penglihatan yang buruk dan menjadi buta
- Nyeri atau mati rasa pada kaki dan tangan
- Masalah lambung dan usus
- Amputasi anggota badan
- Masalah seksual
- Kehilangan ingatan



Femia

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## Daftar camilan sehat

Daftar apa yang boleh dan tidak boleh diberikan untuk jajanan yang diberikan di Prolanis, Poksila, latihan mingguan, dan kegiatan lainnya. Penelitian Veenma & Bijsterbosch (2017) telah menunjukkan bahwa orang tua di kegiatan komunitas di Wilayah Kerja Puskesmas Pudakpayung berisi makanan dengan sedikit buah-buahan dan sayuran serta terlalu banyak makan gula, lemak dan garam. Camilan yang tidak sehat dapat memperburuk kondisi orang tua, seperti diabetes (Tuvedi, Pappas & Jafar, 2006). Makanan ringan yang sehat dapat diberikan kepada orang-orang sebagai bagian dari usaha untuk mendapatkan contoh makanan yang sehat. Puskesmas dapat memberikan contoh yang sehat dan mengambil peran utama dalam makanan sehat untuk orang-orang ini.

### Lakukan :

#### 1. Buah dan Sayuran



Buah-buahan dan sayuran kaya serat, antioksidan dan phytochemical yang memiliki efek kesehatan yang menguntungkan. Sayuran dan buah-buahan mengurangi risiko hipertensi, penyakit jantung kronis, stroke, dan itu dapat mengurangi risiko kanker, demensia dan osteoporosis (Bazzano, Lit, Joshipura & Hu, 2008). Buah dan sayuran juga dapat menurunkan risiko terkena diabetes, terutama buah-buahan, seperti apel atau anggur, dan sayuran hijau, seperti bayam. Sadarilah, jus buah dengan gula dapat meningkatkan risiko diabetes (Boeing et al., 2012).

Bagi penderita diabetes itu juga sangat penting untuk makan buah dan sayuran. Mereka memiliki risiko tinggi komplikasi seperti kebutaan, hipertensi, stroke, gagal ginjal dan kaki diabetes. Buah dan sayuran mengurangi risiko ini. Buah dan sayuran juga membantu mengontrol gula darah (Diabetes UK, n.d.).

#### 2. Nasi dan Karbohidrat



Karbohidrat merupakan sumber energi yang penting bagi tubuh. Karbohidrat yang sehat atau lambat ditemukan dalam biji-bijian, sayuran, buah-buahan dan polong-polongan. Karbohidrat yang tidak sehat atau cepat ditemukan dalam permen dan kue. Di boks snack untuk orang-orang dengan atau berisiko diabetes dan penyakit lainnya lebih baik dengan menambahkan produk yang mengandung karbohidrat sehat. Karbohidrat lambat mengontrol kadar gula darah lebih baik daripada karbohidrat cepat, ini sangat penting bagi penderita diabetes (WHO, n.d.).

Konsumsi beras putih yang tinggi dapat menyebabkan risiko diabetes yang lebih tinggi, ini terutama risiko pada populasi Asia. Perubahan terbaru di negara-negara ini juga menurun tidak aktif dan makan sumber lain dari *refinedcarbohydrates* seperti kue kering, roti putih, dan minuman manis. Gabungan nasi putih dan dua perubahan lainnya, ada risiko diabetes yang lebih tinggi. Namun, makan nasi putih dikombinasikan dengan aktivitas fisik dan mengurangi minuman manis lainnya memberikan risiko diabetes yang lebih rendah (Hu, Pan, Malik & Sun, 2012).

#### 3. Air



Air adalah cairan yang paling sehat untuk diminum. Tubuh manusia terdiri dari 60% air. Minum air yang cukup sangat penting untuk hampir semua bagian tubuh seperti, fungsi ginjal, kulit sehat, persendian, fungsi otak, sistem pencernaan, tekanan darah atau pengaturan suhu. Air harus berasal dari sumber air bersih (WHO, n.d.).

Menggunakan air putih sebagai pengganti minuman ringan atau kopi dan teh (dengan gula) adalah cara yang baik untuk mengurangi asupan gula bagi penderita diabetes atau penyakit tidak menular lainnya (Popkin, D'Anci & Rosenberg, 2010).

#### 4. Protein



Produk tersehat di dalam kotak camilan adalah buah dan sayuran. Penelitian telah menunjukkan bahwa orang-orang di komunitas PudukPayung makan terlalu sedikit buah dan sayuran, tetapi cukup daging dan protein (Veenma & Bijsterbosch). Namun, menggunakan protein dalam kotak makanan ringan dapat menjadi pengganti permen. Orang dewasa membutuhkan sekitar 0,8 protein per kilo berat badan. Jika seseorang 50kilo, mereka membutuhkan 40 gram protein sehari. Tidak yakin apa efek protein pada penderita diabetes (WHO, n.d.).

Sumber protein misalnya: tempe, tahu, daging dan ikan. Penting untuk tidak menggunakan protein yang digoreng dengan banyak lemak atau digunakan dengan garam.

### Jangan Lakukan :

#### 1. Terlalu banyak garam



Pengurangan asupan garam dianjurkan karena dapat menurunkan tekanan darah tinggi dan menurunkan kebutuhan akan obat-obatan. Kebanyakan orang tidak menyadari bahwa ada sejumlah besar garam dalam makanan seperti roti, makanan kaleng, makanan cepat saji, acar, sup, daging olahan dan mie instan (Weber et al., 2013). Asupan garam yang tinggi dikaitkan dengan peningkatan risiko stroke dan penyakit kardiovaskular (Strazullo, D'Elia, Kandala & Cappuccio, 2009). Banyak penderita diabetes juga menderita tekanan darah tinggi. Jadi penting juga bagi pasien diabetes untuk mengurangi asupan garam mereka. Untuk orang dewasa sarannya adalah untuk tidak memiliki asupan lebih tinggi dari 6 gram garam hari ini. Untuk anak-anak ini bahkan lebih sedikit (Asif, 2014).

Tidak ada makanan ringan dengan kandungan garam yang tinggi harus digunakan kotak makanan ringan.

#### 2. Makanan Manis



Terlalu banyak gula itu buruk, entah Anda mengidap diabetes atau tidak. Gula berlebih yang diterima tubuh Anda, disimpan sebagai lemak. Menurut WHO (2018) makan lebih sedikit gula akan mengurangi risiko diabetes. WHO (2018) merekomendasikan untuk hanya mendapatkan 10% dari kalori Anda dari gula. Ini sama dengan 50 hingga 60 gram gula per hari. Konsumsi kebiasaan minuman manis dan jus buah dikaitkan dengan kejadian diabetes tipe 2 yang lebih besar. Penting untuk memiliki Indeks Massa Tubuh yang sehat, karena kelebihan berat badan memperkuat masalah kesehatan diabetes. Misalnya, ada risiko penyakit kardiovaskular yang lebih besar (Imamura, O'Conner, Ye et al., 2016). Makan gula secukupnya tetapi sebaiknya sesedikit mungkin. Jadi jangan tambahkan makanan dengan banyak gula di kotak makanan ringan.

### 3. Lemak



Tidak diragukan lagi, lemak dan kolesterol adalah kelompok nutrisi paling penting yang harus dibatasi dalam diet Anda jika Anda ingin membantu mengurangi risiko penyakit kronis. Ada berbagai jenis lemak dalam makanan: lemak jenuh dan tidak jenuh. Lemak jenuh adalah jenis lemak yang buruk yang dapat dikenali sebagai lemak keras, seperti mentega atau lemak dalam daging. Penggunaan berlebihan dari lemak jenuh meningkatkan kolesterol darah dan tingkat serangan jantung. Lemak tak jenuh yang baik, misalnya minyak zaitun. Itu juga di alpukat, ikan dan kacang berlemak. Jenis lemak yang baik lebih baik untuk tingkat gula darah dan menurunkan risiko serangan jantung. Makan terlalu banyak lemak dapat menyebabkan Anda mengonsumsi lebih banyak kalori daripada kebutuhan tubuh Anda yang menyebabkan kenaikan berat badan yang dapat memengaruhi kontrol diabetes dan kesehatan Anda secara keseluruhan (Woteki & Thomas, 1992). Jadi disarankan untuk hanya menggunakan makanan ringan dengan lemak tak jenuh di kotak makanan ringan.

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## Attachment J: Feedback forms of the presentation and interventions

### Feedback forms of the presentation

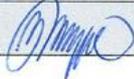


Feedback form research presentation KC 11 D3	
Education	Faculty of Nursing, Hanze University Groningen
College year	2018-2019
Studie subject	Bachelor Thesis U3
Role	Professional
Version	5.1
Determined examination committee	

Data	
Name students	F. Koopmans & E. van der Kooi
Student number	
Title product	Bachelor Thesis presentation
Client	Ms. Fitri
Name institution	
Name counsellor	
Feedback presentation & presentation skills	<p>Good presentation and presentation skills</p> <p>so many information about our health promotion in Pudukparyug and I hope you can adopt it at Netherlands</p> <p>- your presentation so much word and less picture, make me so sleepy .... hehehe</p> <p>but its very good information to us to improve our health promotion about Non communicable disease at elderly people</p>
Date	19 November 2018
Place	Puskemas Pudukparyug
Signature client	

share your talent. move the world.

Feedback form research presentation KC 11 D3	
Education	Faculty of Nursing, Hanze University Groningen
College year	2018-2019
Studie subject	Bachelor Thesis U3
Role	Professional
Version	5.1
Determined examination committee	

Data	
Name students	F. Koopmans & E.E. van der Kooi
Student number	8 335231
Title product	Bachelor thesis presentation
Client	Mr. Revo
Name institution	
Name counsellor	
Feedback presentation & presentation skills	Saya rasa dalam menggali informasi sudah bagus, penyakit tidak menular disebabkan dari kebiasaan makan, merokok yang tidak bagus. melatih kepiasaan untuk menjaga kesehatan dimulai dari anak-anak. kader perlu ditatih untuk mendapat pengetahuan tentang kesehatan. Sehingga saat posyandu bisa memberikan informasi supaya sehat kepada orang tua (parent's) agar mengajarkan kepada anaknya.
Date	17-11-2018
Place	Pushmas Pudeh Payung
Signature client	

Translation from Google Translate:  
I think that in the search for information it's good, non-infectious diseases are caused by eating habits, not good smoking. Training in managing health starts with children. Volunteers need to be trained to give health benefits. So that when a posyandu starts, they can give information to parents about a healthy lifestyle.

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### Feedback of interventions

Name: Erdelia Herdanindita

date: Wednesday 21 November 2018

Place: Balai RW 2 Kelurahan gedawang

Feedback:

- Evelyn and Mia ~~used~~<sup>did</sup> very good explanation. The volunteer can understand very easily because they used leaflet in Bahasa Indonesia. Beside that they used very easy sentences and words + body language so the volunteers can easily understand. The materials are very easy for the volunteers to do. So it's very possible for the volunteer to do.

Signature:



Name: Erdelia Herdanindita

Date: Thursday, 22 November 2018

Place: PROLANIS PUSKESMAS PUDAKPAYUNG

Feedback:

The contain of socialisation is very good and easy to understand. Evelyn and Mia can answer all of the question from the audience easily. The good thing is they observe behaviour of Indonesian people very well. So they can relate the contain of socialisation and bad life style behaviour in Indonesia.

Signature:

