Positive deviance

A literature review about the relevance for health promotion

Geke van Dick

Rianca Scheffel

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Geke van Dick (920814 181 040)
Rianca Scheffel (911018 733 040)
MSc Internship Health and Society (HSO-70324)

Organization: University of Bergen
Department of Health Promotion and Development
Internship supervisor: prof. Maurice B. Mittelmark

Wageningen University and Research Centre
WUR supervisor: dr. ir. Lenneke Vaandrager

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Preface

Dear reader,

This paper is the result of our internship at the Department of Health Promotion and Development at the University of Bergen. At the start, it was difficult to find an internship in Scandinavia. We were interested Scandinavia, since there is more attention for prevention and health promotion in these countries compared to other European countries. Fortunately, with the help of Lenneke Vaandrager, we came in contact with professor Maurice B. Mittelmark from the University of Bergen, Norway.

Maurice was searching for two interns for a positive deviance project. The exact content of the project was not clear yet, but only that it would be a literature review. At first, this was not what we had in mind for our internship, but soon it became clear that our expectations were too demanding. We wanted to conducted field research, but this is rarely possible when doing an internship abroad due to time and language restrictions. After realizing this, we became more interested in the proposed project, since we thought that positive deviance was a promising concept. Therefore, we decided to take the opportunity to do our internship in Norway.

Before we knew it, it was the end of August and we needed to pack our belongings and leave the Netherlands. The warm welcome of Maurice made it easier for us to forget everything that we had left behind. Maurice, we want to thank you for your supervision. We have learned a lot from you and you stimulated us to improve ourselves. Therefore, we are now more confident about our own skills and qualities. You treated us as equals and we got the opportunity to make our own plan for the project. This enabled us to enjoy the beauty of Norway, besides working on the project. It has been a great experience for us, academically as well as personally. We are looking forward to continue our collaboration and to publish articles together.

Lenneke, we want to thank you for being our supervisor from the Wageningen University. Thank you for your feedback, this stimulated us to look more critically at our paper. We know now that our paper will comply with the requirements of the University of Bergen and the Wageningen University.

We started the project with the assumption that positive deviance might be a relevant concept for health promotion. After carrying out this project, we think that positive deviance is a promising and valuable concept for health promotion. We are curious if you agree with us after reading this paper.

Best wishes,

Geke van Dick & Rianca Scheffel

Summary

The purpose of this paper is to explore if positive deviance can be a relevant concept for health promotion. Health promotion focusses on enabling individuals and communities to increase control over and to improve their health, whereas positive deviance focusses on stimulating the whole community to perform better. Positive deviance is used to develop interventions based on the successful behaviors and strategies of individuals at risk who despite their circumstances perform better than their peers. Attempts have been made to define positive deviance in relation to health. However, there is no universal definition of positive deviance, which includes a description of the positive deviance approach and the positive deviance methodology.

A literature review was carried out, which included two rounds of data collection. A total of 222 publications were collected, which were used to create the positive deviance database. The positive deviance database was used as a guide for this paper.

The concept of positive deviance is relatively new. Deviance was traditionally used to describe negative behaviors, attributes, or conditions. Within sociology, there was a debate about the term positive deviance. Some sociologists argued that the full scope of deviance, including positive and negative deviance, should be taken into account, while others argued that positive deviance was an oxymoron.

The first time that positive deviance was used to tackle a problem was in relation to child malnutrition, with promising results. Positive deviance is also used successfully to tackle other health related problems, such as problems related to health care management, hospital infections, and reproductive health. Limited elaborated health topics for which the positive deviance approach was used are sports and lack of physical activity, weight control, healthy eating, cancer, and smoking.

Salutogenesis, an approach used to promote health, focusses on the conditions leading to wellbeing and on factors associated with successful coping. Antonovsky, the founder of salutogenesis, emphasized the importance of looking at the deviance cases. In contrast to most sociologists, Antonovsky did not see deviants as negative, but as those individuals at risk who have a relatively high health status despite their circumstances.

The main weakness of the positive deviance literature is that researchers have been unclear about their methodologies and findings, which is an important point that needs to be changed before positive deviance can be used as a standard approach in health promotion. Positive deviance has not been elaborately used to tackle health related problems, since it is a relatively new concept. However, the successes of positive deviance cannot be neglected. Therefore, positive deviance seems a relevant concept for health promotion.

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Chapter 1 - Introduction

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Health promotion is *"the process of enabling individuals and communities to increase control over, and to improve, their health"* (World Health Organization, 1986, p. 1). The World Health Organization (WHO) established this definition during the First International Conference on Health Promotion in Ottawa, where also the Ottawa Charter was developed. In the Ottawa Charter, three key strategies are presented in order to promote health. The first strategy, advocate, focusses on ensuring the creation of conditions that are favorable to health. The second strategy is enable, which focusses on creating a supportive environment, ensuring access to information, and developing skills to make it possible for people to make healthy choices. The final strategy is mediate, which focusses on the collaboration between all organizations in a society, both governmental and independent, since it is impossible for the health sector to achieve health promotion on its own. During the conference, five areas for health promotion action were developed for the Ottawa Charter, namely: build healthy public policy, create supportive environments, strengthen community action, develop personal skills, and reorient health services. In the Ottawa Charter, the WHO stated that *"health promotion strategies and programmes should be adapted to the local needs and possibilities of individual countries and regions to take in to account differing social, cultural and economic systems"* (World Health Organization, 1986, p. 2).

In the Ottawa Charter, it is emphasized that individuals are responsible for their own health. Moreover, individuals have a societal responsibility to create opportunities for others to take responsibility for their health (Green & Tones, 2010). As summarized by Koelen and Van den Ban (2004), *"health promotion brings together actions directed at strengthening the skills and capabilities of individuals, and actions directed towards changing social, environmental and economic conditions that may have an impact on public and individual health"* (Koelen & Van den Ban, 2004, p. 37).

Health assets are the social, financial, physical, environmental, and human resources that individuals and communities have at their disposal to take actions to protect them against negative health outcomes and/or to promote their health status. Assets can operate at different levels, namely at the individual, community, and organizational or institutional level. Therefore, the assets approach to health is used often in health promotion (Morgan & Ziglio, 2007).

An example of an assets approach to health is the salutogenic approach. Salutogenesis, as proposed by Antonovksy, focusses on the movement of a person across the ease/dis-ease continuum. It focusses on the conditions leading to wellbeing and on factors associated with successful coping. The

components that actively promote health are called ‘salutary factors’ (Green & Tones, 2010). Therefore, salutary factors can be classified as assets.

A viable assets approach to health is positive deviance, which is rarely used in the health promotion arena. *“Positive deviance is the observation that in most settings a few at risk individuals follow uncommon, beneficial practices and consequently experience better outcomes than their neighbours who share similar risks”* (Marsh, Schroeder, Dearden, Sternin, & Sternin, 2004, p. 1177). The positive deviance approach uses the successful behaviors and strategies of these individuals, the positive deviants, to develop interventions to stimulate the whole community to perform better (Pascale, Sternin, & Sternin, 2010). This approach has been used in several disciplines, but examples of the use of the positive deviance approach in health promotion are scarce. However, positive deviance can be a relevant approach for salutogenesis and health promotion in order to find assets that enable people to stay healthy and to accomplish positive social change.

1.1. Positive deviance in relation to health

In the field of nutrition, the acknowledgement of the existence of individuals at risk performing better than their peers is visible in the literature from the 1960’s. Hegsted (as cited in Zeitlin, Ghassemi, & Mansour, 1990) advised in 1967 that:

We should pay a great deal more attention to those individuals who are apparently healthy while consuming diets which seem to us to be restricted. We should pay more attention to the reasons for nutritional success rather than nutrition failure. (Zeitlin et al., 1990, p. 7)

In 1972, Wray remarked that some children grew and developed well despite living in hard circumstances, because their mothers knew how to provide them in their basic needs. Wray proposed to *“search out the successful mothers in such circumstances, examine their child care practices, and try to identify what it is they are doing that makes the difference in their children”* (Wray, 1972, p. 279). Furthermore, he suggested that these successful mothers should teach other mothers living in the same environment how these mothers can provide their children in their basic needs. In 1976, Wishik and Vynckt identified families whose children performed better than their peers did in height and weight measurements. The term positive deviants was used to describe these children (Wishik & Vynckt, 1976). Greaves (1979) recommended using an approach that focusses on the people who do well, which is in line with the thoughts of Wray. According to Greaves (as cited in Zeitlin et al., 1990):

> *There are many who do manage to rear healthy and active children, and yet who belong to the same 'community' as some who cannot. How do they manage? Are they following some*

> *of the basic rules? What is their secret? Can it be shared with others? There would seem to be tremendous opportunity for research here.* (Zeitlin et al., 1990, p. 7)

This recommended approach could now be seen as the positive deviance approach.

In 1990, Zeitlin, Ghassemi and Mansour published "*Positive deviance in child nutrition: With emphasis on psychosocial and behavioural aspects and implications for development".* In this publication, the concept of positive deviance was used as a research approach to discover nutrition and health practices within a community, which can be transformed into formal supports. The goals of positive deviance research were *"to discover beneficial behaviours and styles of behaviours and transform them into practices that can be generally recommended and supported by nutrition, health, and social services"* (Zeitlin et al., 1990, p. 82). The work of Zeitlin and colleagues inspired Jerry and Monique Sternin to use the positive deviance approach in their fieldwork. In 1990, they started working on a project to reduce child malnutrition in Viet Nam. Their six-month visa would only be extended if the project showed a reduction of the prevalence of child malnutrition. With this in mind, Jerry Sternin stated that:

> *Given our six-month deadline, and my conviction that any solution must be sustainable, I knew that this couldn't be "business as usual." We would have to find a new approach based on something that was already working using resources already available. These defining criteria all pointed towards an obscure research construct: positive deviance (PD)* [positive deviance]. (Pascale et al., 2010, p. 23)

The project continued after the first six months, because the preliminary findings showed improvements. In addition, the project was extended to different communes in Viet Nam (Pascale et al., 2010). In 2004, the Viet Nam project ended after improving the nutritional status of 1.5 million children (Mackintosh, Marsh, & Schroeder, 2002). Besides the Viet Nam project, the positive deviance approach became more widely used in other projects in and beyond the field of nutrition. For example, positive deviance was used to reduce female genital cutting in Egypt (McCloud, Aly, & Goltz, 1991), to improve sport performances (Ewald & Jiobu, 1985; Hughes & Coakley, 1991; Wittig & Schurr, 1994), and to improve patient safety (Macklis, 2001).

The nutritional research on individuals at risk who performed better than their peers did, evolved into the positive deviance approach. This approach was used to discover successful behaviors and transform them into practices for the whole community. However, not only nutritional researchers were interested in these individuals. Other researchers used different perspectives to construct their theories. For example, Antonovsky, Maoz, Dowty, and Wijsenbeek (1971) found in their research on

Second World War camp survivors a few individuals who managed to be well adapted. The researchers raised the question: "*What has enabled some women, subjected to the most destructive experiences conceivable, to lead well-adapted lives?*" (Antonovsky, Maoz, Dowty, & Wijsenbeek, 1971, p. 191). Antonovsky continued searching for what enabled some people to perform better and found his answer in the sense of coherence, which is part of his model of salutogenesis (Antonovsky, 1979).

In order to have a better understanding about the concept of positive deviance in relation to health, it is important to be informed about the different definitions, approaches and methods of positive deviance. These are explored in the next sections.

1.1.1. Definitions of positive deviance

There is not one universal definition of positive deviance, but all definitions include the same main elements (behavior, deviation, and success). However, not all definitions emphasize the same main element, describe the main elements in the same way, and/or are suitable for every research discipline. The Positive Deviance Initiative, a network organization aiming at amplifying and disseminating the use of the positive deviance approach, defined positive deviance as:

> *The observation that in every community or organization, there are a few individuals or groups whose uncommon but successful behaviors and strategies have enabled them to find better solutions to problems than their neighbors who face the same challenges and barriers and have access to same resources.* (The Positive Deviance Initiative, 2010, p. 2)

Spreitzer and Sonenshein (2004) described positive deviance as "*intentional behaviors that significantly depart from the norms of a referent group in honorable ways*" (Spreitzer & Sonenshein, 2004, p. 841). In the article of Johnson Morris (2014) positive deviance is used to refer to "*the collective acts of individuals within organizations and positive deviants refers to individuals, and both refer to behavior and results that are extreme positives of normal distribution curve"* (Johnson Morris, 2014, p. 14).

Besides this definition of positive deviants by Johnson Morris, there are other definitions. Comparable to the definition of positive deviance, the emphasis on the main elements (behavior, deviation, and success) differs between the definitions of positive deviants. Positive deviants are defined by Schooley and Morales (2007) as *"individuals who share the same socioeconomic characteristics as their peers/other members of the community and yet manage to find ways to overcome barriers and actually practice positive behaviors without external interventions"* (Schooley & Morales, 2007, p. 376). According to Johnson Morris (2014), Pascale and Sternin have described

positive deviants as *"effective community members who are able to succeed when others fail despite facing similar environmental circumstances and resources"* (Johnson Morris, 2014, p. 20). Walker and colleagues (2007) referred to positive deviants as individuals:

> *Whose special, or uncommon, practices and behaviors enable them to find better ways to prevent malnutrition [or other health problems] than their neighbors who share the same resources and face the same risks. These individuals are positive deviants because they differ in a healthy direction from the normative (and less healthy) outcome of their neighbors in the same milieu*. (Walker, Sterling, Hoke, & Dearden, 2007, p. 572)

1.1.2. Positive deviance approach

In 2010, The Positive Deviance Initiative published a basic field guide about the positive deviance approach. The positive deviance approach is a problem solving asset-based approach. The goal of the positive deviance approach is to discover successful uncommon behaviors or strategies of community members and to teach these behaviors or strategies to the whole community. The positive deviance approach strives to accomplish *"sustainable behavioral and social change by identifying solutions already existing in the system"* (The Positive Deviance Initiative, 2010, p. 2).

In order to use the positive deviance approach, a problem has to meet several criteria. The problem is relational, needs social and/or behavioral change, and is not merely technical. Other solutions have not worked to solve the complex problem. Positive deviant individuals and/or groups exist within the community (Pascale et al., 2010; The Positive Deviance Initiative, 2010), which implies that solutions are already present (Leavy, 2011; Marra, Pavão Dos Santos, Cendoroglo Neto, & Edmond, 2013; Saco, 2005). The solutions are discovered by the community members themselves and are based on available resources, which results in innovative and/or creative behaviors and practices (Gary, 2013; Leavy, 2011; Marra, Pavão Dos Santos, et al., 2013). The leader of the community acknowledges the existence of the problem and the importance of solving it (The Positive Deviance Initiative, 2010).

The positive deviance approach has several features. For example, the community, all individuals or groups who are part of the problem, owns the entire positive deviance process. To make this happen, the facilitators need to accept the shared norms and values of the community and its culture. The successful behaviors and strategies are generated by the community itself, which makes behavioral and social change possible. The community members only take over the discovered behaviors and strategies if they are in accordance with the shared norms and values and if members can identify themselves with the positive deviants. Since the approach includes the shared norms and values of the whole community, the widest range of the community is involved in the change process. The approach makes use of existing resources and assets in the community, which makes

change possible for everyone. In contrast to approaches that focus on knowledge gain, the positive deviance approach focusses on practice, because *"you are more likely to act your way into a new way of thinking than to think your way into a new way of acting"* (The Positive Deviance Initiative, 2010, p. 3).

1.1.3. Positive deviance methodology

There is not one single methodology to carry out the positive deviance approach. In the literature about positive deviance, several methods are described. For example, the method proposed by the Positive Deviance Initiative (2010). This methodology consists of five basic steps, namely: define the problem, perceived causes, challenge and constraints, common practices and desired outcomes; determine the presence of positive deviants; discover successful uncommon behavior; design activities; and monitoring and evaluation. The first four steps are also known as the four Ds (The Positive Deviance Initiative, 2010). According to Fowles (2009), the positive deviance approach consists of six steps, namely: define the problem, perceived causes and community norms; identify the positive deviants; discover the unique practices and behavior; design and implement intervention; determine the effectiveness of the intervention; and disseminate the intervention more widely (Fowles, 2007). Marsh and colleagues (2004) described also six steps, but these steps differ from the six steps mentioned by Fowles (2007). The six steps mentioned by Marsh et al. (2004) are: develop case definitions; identify the positive deviants; discover uncommon behaviors or enabling factors; analyze and confirm behaviors; design a program; and monitor implementation and evaluate results (Marsh et al., 2004). According to Saco (2005), Sternin and Pascale (2005) proposed an eight steps outline. These steps are: define the community; conduct a situation analysis; define desired outcome; define and identify positive deviants; design the positive deviance inquiry; carry out the inquiry; analyze the inquiry findings; and design an intervention based on the inquiry findings (Saco, 2005). Dorsey (2000) presented another eight steps outline based on an interview with Jerry Sternin. The steps are: do not presume to have the answer; do not think of it as a diner party; let them do it themselves; identify conventional wisdom; identify and analyze the deviants; let the deviants adopt deviations on their own; track results and publicize them; and repeat the previous steps (Dorsey, 2000).

The steps of the methods have similarities and differences. All methods acknowledge the importance of identifying the needs of the community, the problem, and the positive deviants. Furthermore, all methods try to discover the uncommon behaviors and\or practices of the positive deviants; this is often called the positive deviance inquiry. Moreover, interventions are designed in all methods based on the results of the positive deviance inquiry. Besides these similar steps, some methods contain additional steps. These steps are situation analysis, monitoring and evaluation, continuous research

on the positive deviants within a community, and extend the positive deviance research to other communities.

1.2. Purpose and research questions

The purpose of this paper is to explore if positive deviance is a relevant concept for health promotion by carrying out a literature review. Therefore, the main research question is:

To what extent is positive deviance a relevant concept for health promotion?

To answer this research question, three sub-questions are used:

1. How has the concept of positive deviance developed?
2. How is positive deviance applied in relation to health?
3. To what extent are there references in the work of Antonovsky to the concept of positive deviance?

1.3. Structure

In the second chapter of this paper, the methodology is described. Sub-question 1 is answered in chapter three: 'Theoretical perspectives on deviance'. Chapter four till eight contain a comprehensive description of the application of positive deviance in relation to health, which answers sub-question 2. The order is as follows: child nutrition (Ch.4), management of health care (Ch.5), hospital infections (Ch.6), reproductive health (Ch.7), and limited elaborated health problems (Ch.8). Chapter nine consists of the references in the work of Antonovsky to the concept of positive deviance. The discussion and the conclusion of this paper can be found in chapter ten and chapter 11 respectively.

1.4. Notes about the positive deviance literature

Before reading the following parts of the paper, it is important to keep the following in mind. The section about positive deviance in relation to health already indicates that there is vagueness about the concept of positive deviance, including the definition, approach, and methodology of positive deviance. Therefore, different definitions, approaches, and methodologies are used in the positive deviance literature. If reported in the publications, the used definitions, approaches, and/or methodologies are described in this paper, but in many publications, they are not explicitly mentioned. Furthermore, in many publications the discovered positive deviance behaviors and strategies are not reported. If these behaviors and strategies were reported, they are described in this paper.

All found positive deviance publications in relation to health are included in this paper. However, in some cases it is questionable if it really is positive deviance, since the main elements (behavior,

deviation, and success) of the definition of positive deviance are not included. Nevertheless, these publications are included, since the authors named their approaches positive deviance.

As part of the internship project, a positive deviance database was created including all positive deviance publications. This database can be found on the website of the Department of Health Promotion and Development of the University of Bergen (http://www.uib.no/en/node/81908#). Everyone interested in positive deviance can use this database to search for publications.

Chapter 2 - Method

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The purpose of this paper is to explore if positive deviance can be a relevant approach for health promotion. Therefore, a literature review was carried out of which the method is explained in this chapter. The first round of data collection consisted of a systematic literature search using PubMed, Web of Science, and Scopus, and a supplementary literature search using different sources. In order to collect the positive deviance publications, the libraries of the University of Bergen and Wageningen University were used. If publications were not accessible, different services of Google were used to obtain them, namely Google Scholar, Google Books, and Google Search. After the final selection and the analysis, the positive deviance database was created to store the obtained positive deviance literature. The publications of the positive deviance database were processed in order to write the paper. Some additional publications were added to the database during the second round of data collection. A private database was created containing relevant publications for the paper that were irrelevant for the positive deviance database. This private database also includes all used publications of Antonovsky.

2.1. Data collection: the first round

2.1.1. Starting literature

The starting literature consisted of 42 papers provided by Maurice B. Mittelmark. These provided papers were the starting point of the positive deviance collection. Moreover, a list of a PubMed search on positive deviance was provided. The PubMed list was created by using the index list with search terms related to the concept of positive deviance. The search terms that were used in PubMed are: positive deviance, positive deviance/hearth approach, positive deviance analysis, positive deviance approach, positive deviance control case life, positive deviance control case life history, positive deviance for hand hygiene study group, positive deviance hearth approach, positive deviance in, positive deviance in nutrition, positive deviance in nutrition research, positive deviance in nutrition research project, positive deviance inquiry, positive deviance strategy, positive deviance study, positive deviant, positive deviant infants, positive deviant nurses, positive deviants, positive deviation, and positive deviations. There were no exclusion criteria.

The PubMed list contained 220 hits. All hits overlapping with the provided papers were excluded. Moreover, all articles in the field of physics were excluded. In these articles, there were references to the term ‘positive deviations’, which is not related to positive deviance. This selection process resulted in 72 articles, of which 62 were accessible.

The 104 publications, 42 of the provided papers and 62 of the PubMed search, were not regarded as all-inclusive, since PubMed is a database covering only literature in the fields of biomedicine and health. Therefore, additional literature was obtained by using a systematic search, since positive deviance is also used in other fields.

2.1.2. Systematic search

Databases search

Besides PubMed, the databases of Web of Science and Scopus were used to search for literature. The different databases were used to complement each other and to cover a large amount of the peer-reviewed literature. PubMed covers most of the biomedical and health related literature. Therefore, Web of Science and Scopus were used to search for literature both inside and outside the biomedical field, since positive deviance is also used in other fields. Since PubMed and Scopus do not cover literature published before 1950, Web of Science was used to cover the literature published since 1900. Scopus was selected since it contains the largest amount of peer-reviewed literature (Burnham, 2006; Falagas, Pitsouni, Malietzis, & Pappas, 2008).

In Web of Science, the search term 'positive deviance' was used to search for literature in the search field 'topic'. In Scopus, the search term 'positive deviance' was used in the fields; article title, abstract and keywords. In both databases, all non-English written literature was excluded from the search.

The search results of Web of Science revealed 171 hits. Of these hits, 86 publications were excluded, since they were already in the collection. This resulted in 85 new publications, of which 69 were accessible. Searching through the Scopus database resulted in 172 hits, including 30 new publications of which only 20 were accessible.

Reference lists

The reference lists of the starting literature were analyzed in order to find other relevant literature. While searching through the reference lists, two criteria were used: the article was published in a scientific journal, and the title was related to the concept of positive deviance. From the reference lists, 110 possibly important articles were identified of which 51 were accessible.

2.1.3. Supplementary literature search

The systematic search added 96 publications to the positive deviance collection. In order to determine if the collection was all-inclusive, non-systematic research methods were used to search for additional literature. First, an overview of existing positive deviance literature provided by a Dutch organization, Centre Media and Health, was compared with the positive deviance collection.

Of all the publications in the overview, 19 were not present in the collection of which 15 were accessible.

Second, there was one article in the whole collection presenting a systematic review of all available positive deviance literature related to child nutrition. The author of the article was contacted to ask for more information. She provided her final dissertation *'A Multiple Case Study Analysis of the Positive Deviance Approach in Community Health'* (Bisits Bullen, 2012). The reference list of this dissertation was used to search for more literature. After comparison with the collection, nine new publications were found of which five were accessible.

Third, two books showed up in several databases and reference lists. These books were '*Inviting Everyone: Healing Healthcare through Positive Deviance'* (Singhal, Buscell, & Lindberg, 2010) and *'The Power of Positive Deviance: How Unlikely Innovators Solve the World's Toughest Problems'* (Pascale et al., 2010). These books were purchased, since they seemed relevant for the paper.

The supplementary literature search added 22 new publications to the positive deviance collection. Since the supplementary literature search did not add many new publications and time was restricted, it was decided to stop searching for additional literature.

2.1.4. Final selection

The final selection was used to examine if all the publications in the collection were relevant. Therefore, the available abstracts of the publications were examined. If the concept of positive deviance was not present in the abstract, the search function of Adobe Reader was used to search in the publication for the words 'deviance' or 'deviant'. The word 'positive' was not included in this search, since also sociological articles about deviance needed to be part of the collection. If there was no match with the words 'deviance' or 'deviant', the publication was regarded as irrelevant and excluded from the positive deviance collection. Eventually, all provided papers from the starting literature were classified as relevant as well as 51 publications from the search through PubMed. Furthermore, 39 publications of Web of Science, 16 publications of Scopus, 41 publications from the reference lists, 11 publications from the overview, five publications from the reference list of Bisits Bullen, and two books were classified as relevant. This resulted in a positive deviance collection consisting of 207 publications.

2.1.5. Analyzing data

Scanning was used to read all the 207 publications. Parts of these publications were highlighted when they included an explanation about positive deviance. In publications describing studies, parts about the aim, the method, the results, and the conclusion of the study were also highlighted. After scanning, notes were added to the publication about the extent to which positive deviance was a key

concept, the relevance to health, and the main topic. These main topics were used to categorize the publications of the positive deviance collection in folders. These folders were: 'Concept of Positive Deviance', 'Development', 'Health Care', 'Management and Innovation', 'Nutrition', 'Physical Activity/Sports', 'Positive Organizational Scholarship', 'Related Concepts', 'School Setting', 'Sexual Health', 'Smoking', 'Systems Engineering', 'Typology', and 'Weight Control'. Tags were added to all publications, all publications were tagged based on their main topic, country and continent of investigation, and target group.

2.1.6. The positive deviance database

The positive deviance collection was a private collection, but the intention was that it could be used by everyone interested in positive deviance. Therefore, a positive deviance database was created in Zotero including all 207 publications from the collection. Zotero is a research tool to collect and share research sources. The positive deviance database can be found on the website of the Department of Health Promotion and Development of the University of Bergen (http://www.uib.no/en/node/81908#). The positive deviance collection could not be imported in Zotero due to author and publication rights. Therefore, all publications from the collection needed to be uploaded from the World Wide Web. One of the provided papers, 'The Food and Nutrition Bulletin' from 2002, consisted of several articles. To improve the traceability of these articles, they were uploaded individually to the Zotero database. Therefore, the positive deviance database consisted of 216 publications (see table 1).

Table 1: Overview positive deviance database after the first round of data collection

	Hits	Additions	Accessible	Relevant
Provided papers	-	-	-	42
PubMed	220	72	62	51
Web of Science	171	85	69	39
Scopus	172	30	20	16
Reference lists	-	110	51	41
Overview	101	19	15	11
Reference list Bisits Bullen	118	9	5	5
Books				2
Food and Nutrition Bulletin				9
Total				216

2.2. Processing data

The positive deviance database was used as a guide during the writing process of the paper, since the folders were the starting point of the chapters. The writing process of each chapter started with copying the highlighted parts of the publications in the folder of interest. For example, the literature in the typology folder was used to write the typology of deviance chapter. However, in the end not all publications in each folder were used to write the paper, since some publications did not add new information. For example, the relevant parts of some publications only contained references to statements of other authors. Since the goal was to use literature as close to the original source as possible, the original publications were used. Furthermore, the paper only covers the health related positive deviance publications. Therefore, publications in the folders 'Development', 'Management and Innovation', 'Positive Organizational Scholarship', 'Related Concepts', 'School Setting', and 'Systems Engineering' were not used to write the paper. In the paper, the data are presented as objective as possible. Critical notes are only part of the discussion chapter of the paper.

2.3. Data collection: the second round

Some highlighted parts included only references to other publications. However, not all of these publications were present in the positive deviance database. Therefore, additional literature was obtained, since the aim was to use literature as close to the original source as possible. This was especially the case for the typology chapter, since references to some fundamental sociological articles were made frequently. Google Scholar and Google Search were used to find the original sources. However, the articles of Heckert (1989), Ben-Yehuda (1990), and Goode (1991) were not accessible. Therefore, the authors were successfully contacted and the articles were acquired.

The literature obtained during the second round of data collection was analyzed by using the same strategy as used during the first round of data collection. Six publications were added to the positive deviance database, which resulted in a final database consisting of 222 publications. Moreover, a separate private database was created containing relevant publications for the paper that were irrelevant for the positive deviance database.

2.4. Data analysis publications Antonovsky

Maurice B. Mittelmark provided 74 publications of Antonovsky. These publications were all read in order to understand the development of salutogenesis. Parts were highlighted when they contained information related to the concept of positive deviance. These highlighted parts were used to write the chapter about the linkages between the development of the concept of salutogenesis and positive deviance. The publications of Antonovsky that were used to write this chapter were added to the private database.

Chapter 3 - Sociological perspectives on deviance

Geke van Dick and Rianca Scheffel

Amongst the social sciences, a theory about deviance has developed to an advanced degree in sociology. Therefore, this chapter consists of a description of two traditional sociological deviance approaches, the positive deviance debate, and new typologies of deviance.

The concept of positive deviance is relatively new (Heckert, 1989). According to Dodge (1990), *"theorists of deviance have neglected for too long the positive deviance dimension in the historical development of the sociology of deviance"* (p. 94). Deviance was traditionally used in sociology to describe negative behaviors, attributes, or conditions. The people who performed these negative behaviors, attributes, or conditions were called deviants (Heckert & Heckert, 2002). The sociologist Emile Durkheim was one of the first sociologists who mentioned the importance of deviance, as explained by Wolf and Zuckerman (2012). Durkheim used the concept in relation to crime and stated that "*we do not condemn it because it is a crime, but it is a crime because we condemn it"* (Wolf & Zuckerman, 2012, p. 643)[1]. According to Durkheim, crime can have a social function in society through defining society's values and reinforcing social solidarity which can strengthen social cohesion (Wolf & Zuckerman, 2012).

3.1. Traditional sociological deviance approaches

The normative and the reactivist approach are two major approaches to describe deviance within sociology. Originally in the classical normative approach, the focus was only on the severe norm violators, such as drug users and murders (Chananie-Hill, McGrath, & Stoll, 2012). Currently, deviance is described in the normative (or objectivist) approach as behaviors, attributes, or conditions that violate the norms of a group (Heckert & Heckert, 2002). According to Freedman and Doob (1968), everybody sometimes feels deviant when being different from the cultural and statistical norms. In some cases, a minor deviation from the norm can cause feelings of being deviant, while in other cases a major deviation is needed in order to feel deviant. When individuals identify themselves as being deviant, they prefer to affiliate with other similar deviants (Freedman & Doob, 1968).

In the reactivist (or subjectivist) approach, deviance is described as socially disapproved behaviors, attributes or conditions that are negatively evaluated and labeled by social groups (Heckert & Heckert, 2002). This means that deviance is not inherent in the act itself, but is constructed by society (Irwin, 2003). According to Akers (1968), labeling forces individuals into the role of being deviant and constructs deviance. Deviants are stigmatized, and are therefore more committed to

[1] Secondary citations are only used when it was impossible for the authors to obtain the original publications.

their deviant role, which increases the probability of future deviant behavior that might not have occurred otherwise (Akers, 1968).

3.2. The positive deviance debate

Since the 1950's, several sociologists have made explicit and implicit references to the relevance of positive deviance. Sorokin (1950) and Lemert (1951) both emphasized the importance of understanding positive individuals in order to understand negative individuals. However, these sociologists did not use the term positive deviance to describe the behavior of these positive individuals (Heckert, 1998). Buffalo and Rodgers (1971) mentioned the term positive deviant in their typology to describe the perceived deviance of delinquents from the accepted social norms and the behavioral norms of their peers. In their typology, positive deviants are the delinquents who have shifted their behavior towards the accepted social norm. Extreme positive deviants even perceive that their behavior conforms to the accepted social norm (Buffalo & Rodgers, 1971). Katz (1972) also acknowledged the existence of deviants, who were, in a positive or negative way, violators of the institutionalized expectations. However, deviance still referred to the negative violators, whereas charisma was a term used to refer to positive violators (Katz, 1972).

Liazos (1972) criticized the theoretical and ideological shortcomings of the sociology of deviance. The labeling ideology aims to normalize the deviants in order to show that they are no different from others. However by labeling deviants, they inevitable feel different. According to Liazos, the sociology of deviance focused too much on the negative stereotype deviants (e.g. homosexuals and prostitutes), while neglecting the harmful types of deviance (e.g. racism and violence). Another point he emphasized is that sociologists ignored the study of the upper classes deviants (Liazos, 1972).

In 1985, Dodge published an article titled: *'The Over-Negativized Conceptualization of Deviance: A Programmatic Exploration'*. Dodge stated that excluding the positive dimension of deviance from the definition of deviance had resulted in the exclusion of positive deviance as an important part of the deviance research. Moreover, Dodge remarked that an ideal solution would be to integrate both types of deviance into one theory instead of separate theories of positive and negative deviance. He propounded that:

> *If there is to be an adequate empirically based theory of deviance, the full scope of social deviance must be taken in to account for the social phenomenon under scrutiny is social deviance, not merely the study of its negative and positive aspects.* (Dodge, 1990, p. 78)

However, Dodge remarked that there was not yet a definition of deviance covering both positive and negative deviance without violating the criteria by which deviance was originally defined (Dodge, 1990).

In respond to Dodge (1990), Sagarin (1990) argued that:

> *The concept of "positive deviance" is and should remain an oxymoron or self-contradicting phrase, because it would obfuscate rather than clarify, would collapse into one group two ends of continua that have nothing in common except that they do not meet in the middle, and would deprive social analysts of the opportunity to determine why and with what consequences people depart from the normative in a manner that elicits dire consequences as well as why a more conforming public reacts with hostility to some forms of behavior an statuses.* (Sagarin, 1990, p. 98)

Sagarin stated that it would be a step backwards for sociology to include positive deviance. Furthermore, he criticized that Dodge (1990) used the word deviance in an incorrect way by confusing the word deviation with the word deviance. According to Sagarin, deviation from the norm is possible in any direction, while deviance always refers to the negative direction (Sagarin, 1990).

In contrast to Sagarin (1990), Heckert (1989) acknowledged the existence and importance of both negative and positive deviance. She mentioned that deviance could be examined as the violation of statistical norms. The middle of a normal curve represents conformity and both ends of the curve represent deviance. The negative deviants can be found at the far left of the curve and the positive deviants at the far right. Heckert agreed with the interactionists theorists that both negative and positive deviance are relative concepts, since *"actions or behaviors that are defined as deviant vary over time, across societies, and within societies"* (Heckert, 1989, p. 136). In other words, time and societies influence the ongoing process of defining individuals as negative or positive deviants. Therefore, Heckert stated that it is possible that individuals labeled as negative deviants become labeled as positive deviants and vice versa (Heckert, 1989).

Ben-Yehuda (1991) stated that he agreed with the arguments of both Dodge (1990) and Heckert (1989) to accept the term positive deviance and to use it as a sociological approach. He rejected the study of Sagarin (1990), because the definitions of deviance as negative were all constructed by sociologists. Ben-Yehuda claimed that Sagarin (1990) neglected that Dodge (1990) presented several sociologists who implied the existence of positive deviance. The study of Heckert (1989) supported the findings of Dodge (1990) and discovered other sociologists who implied the existence of positive deviance. Ben-Yehuda refused to accept the difference between deviation and deviance as explained

by Sagarin (1990). Outside the field of sociology, deviance was defined as something that is systematically different. According to Ben-Yehuda, *"there is nothing in the concept of deviance - in itself - which implies anything negative"* (Ben-Yehuda, 1990).

In his article, Ben-Yehuda emphasized that positive as well as negative deviance are important to understand societal change and stability. He argued that deviance is a relative concept, since culture and values influence the labeling of deviants. Therefore, *"deviance is not an objective, eternally true, essence. Deviance is the product of complex and dynamic processes of interaction, power and legitimacy"* (Ben-Yehuda, 1990). Ben-Yehuda claimed that the sociological rejection of positive deviance is due to the resistance to innovation (Ben-Yehuda, 1990).

In 1991, Goode published his article *'Positive Deviance: A Viable Concept'* in which he claimed that the concept of positive deviance should not be acknowledged by sociologists. This statement was in line with the arguments of Sagarin (1990). According to Goode, deviants are always stigmatized, which is not the case by positive deviants. Goode (1991) stated that *"if no such* [negative] *reactions take place or are forthcoming, deviance simply does not exist"* (p. 291). Therefore, the concept of positive deviance was not applicable to the reactivist approach. However, according to Goode, positive deviance could be viable to the normative approach, but there was no relationship between negative and positive deviance. Therefore, he argued that positive deviance was not a viable concept for both the reactivist and the normative approach. Goode stated that:

> *We are asked to see commonalities in phenomena that lie at the opposite ends of a spectrum and deviance as something of a curvilinear affair. There may be similarities in some areas, depending on the spectrum* […]. *However, these dimensions are irrelevant to the issue of deviance* […]. (Goode, 1991, p. 305)

Shekar and colleagues (1991) claimed that positive deviance is not associated with the same factors as negative deviance, which is in line with Goode (1991). The results of their study showed that *"a factor that may be associated with negative deviance need not necessarily be inversely associated with positive deviance"* (Shekar, Habicht, & Latham, 1991) and vice versa. They argued that positive and negative deviance are not solely two ends of a continuum wherein one is the opposite of the other (Shekar et al., 1991).

West (2003) acknowledged the importance of the concept of positive deviance in order to understand deviant behavior. However, West agreed with Sagarin (1985) and Goode (1991) that the focus of deviance should be on the negative. Therefore, positive deviance should not be used separately, but only as part of the analysis to understand negative deviance. West concluded that the

"inclusion of the [positive deviance] *concept within the discipline aids in the development of a theoretically sophisticated understanding of deviance"* (West, 2003, sec. Conclusion, para. 2).

Chananie-Hill and colleagues (2012) stated that individuals could perform both pro-normative and counter-normative behaviors. Therefore, it is not possible to classify an individual as being exclusively a positive or a negative deviant. Furthermore, they stated that social reactions to the performed behavior can be evaluated either positively or negatively irrespective of the norm (Chananie-Hill et al., 2012).

3.3. New typologies of deviance

As part of the positive deviance debate, several sociologists developed alternative typologies of deviance, including positive and negative behaviors. The traditional normative and reactivist approach were only applicable to describe negative deviance. Therefore, both approaches were extended in order to include positive deviance. Positive deviance is, according to the normative approach, behavior that exceeds the norms. The reactivist approach defines positive deviance as behavior that is positively evaluated and labeled (Heckert & Heckert, 2002).

In 2002, Heckert and Heckert published an article about their proposed typology of deviance. They argued that *"to fully understand the process of deviance, both normative expectations and social reactions have to be taken into account"* (Heckert & Heckert, 2002). They developed a model (see figure 1) which cross-classifies normative expectations with social relations and collective evaluations. This classification resulted in four deviance categories: negative deviance, rate busting, deviance admiration, and positive deviance. Negative deviance and deviance admiration both describe underconformity or nonconformity to the norms. If this behavior is evaluated negatively, it is classified as negative deviance. In contrary, if this behavior is evaluated positively, it is classified as deviance admiration. Furthermore, positive deviance and rate busting both describe over-conformity to the norms. If this behavior is evaluated negatively, it is classified as rate busting. However, if this behavior is evaluated positively, it is classified as positive deviance (Heckert & Heckert, 2002).

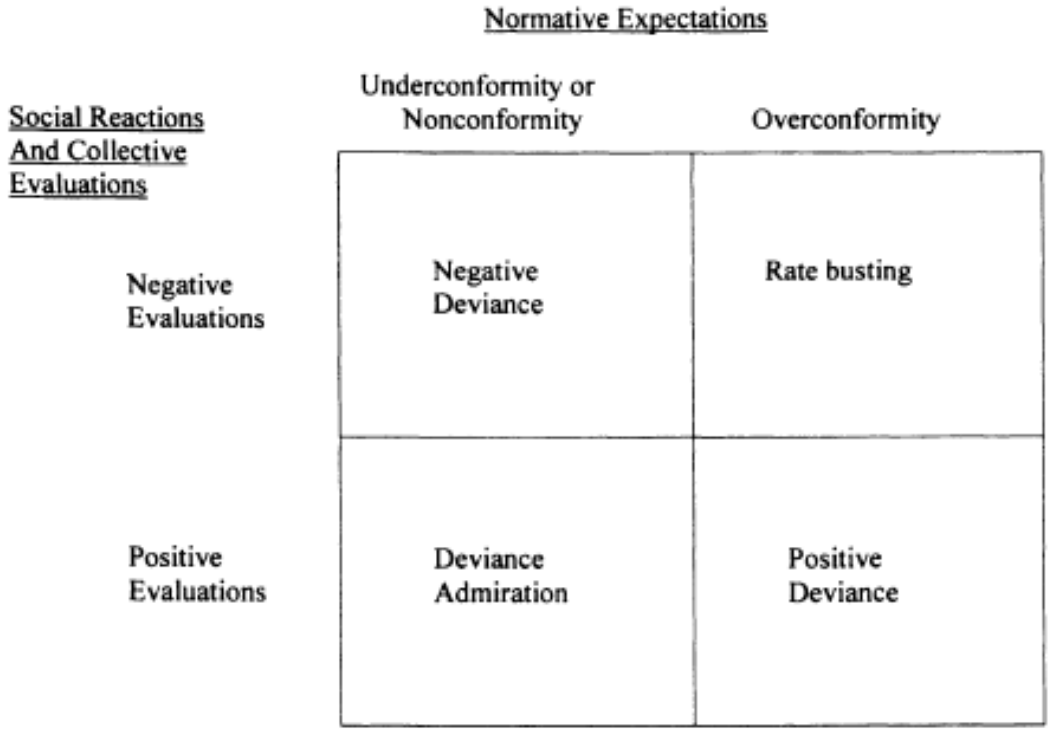

Figure 1: Deviance typology by Heckert and Heckert (2002) reproduced by permission

Another typology was proposed by Warren (2003), who focused on deviance in organizations. Within organizations, there are individuals who harm the organization and individuals who benefit the organization. Warren developed a typology of deviance based on reference group norms and hypernorms. The hypernorm encompasses universal values and beliefs, whereas the reference group norm represents the cultural specific values and beliefs. The typology consisted of four categories, namely constructive conformity, destructive conformity, constructive deviance, and destructive deviance. Constructive conformity and destructive conformity both describe behaviors that are conform to the reference group norms. If the behavior also conforms to the hypernorm, this behavior is called constructive conformity. If the behavior deviates from the hypernorm, destructive conformity is used to describe this behavior. Constructive deviance and destructive deviance are both used to describe deviation from the reference group norm. If the behavior is also deviating from the hypernorm, it is called destructive deviance. In contrast, if the behavior is conform to the hypernorm, constructive deviance is used to describe this behavior (Warren, 2003). Spreitzer and Soneshein (2004) referred to the typology of Warren (2003) as an individual level construct. They argued that it can also be applied at the organizational level (Spreitzer & Sonenshein, 2004).

Vadera and colleagues (2013) modified Warren's (2003) definition of constructive deviance. They defined constructive deviance as *"behaviors that deviate from the norms of the reference group such that they benefit the reference group and conform to hypernorms"* (Vadera, Pratt, & Mishra, 2013, p.

1223). They discovered that there are three main mechanisms underlying constructive deviance, namely intrinsic motivation, felt obligation, psychological empowerment (Vadera et al., 2013).

3.4. New typologies of positive deviance

Heckert (1998) mentioned five types of positive deviance, namely altruism, charisma, innovation, supra-conformity, and innate characteristics. Altruism describes the voluntary act of an individual to assist other people without expecting something in return. Charisma is the legitimate authority of a leader who can fulfill his/her followers in their needs and desires. The ability to create something new with existing cultural elements is called innovation. Supra-conformity is the behavior that is in line with the idealized cultural norms. Innate characteristics are traits that are perceived as being positive deviance in a specific culture. In addition, Heckert proposed a sixth type of positive deviance, the ex-deviant. The ex-deviant refers to a person who managed to overcome his/her negative deviant status and became normal. She stated that other types of positive deviance could be proposed and added in the future. Furthermore, she mentioned that the types of positive deviance are not exclusive, since the same behavior can be categorized in different types (Heckert, 1998).

In 2003, Irwin proposed two additional types of positive deviance to the ones of Heckert (1998). These two additional types were high culture icon and popular celebrities. Popular celebrities are the elite individuals who behave alternative in order to become an example for their followers. High culture icons are individuals who copy the behavior of the popular celebrities. These types are both elite deviants, since they enjoy enormous wealth, power, and prestige. However, these elite deviants are not recognized as such in every society, since culture, values and norms differ (Irwin, 2003).

3.5. Summary

Two traditional sociological deviance approaches are the normative and the reactivist approach. Deviance was traditionally used to describe negative behaviors, attributes, or conditions. The concept of positive deviance is relatively new. Within sociology, there was a debate about the term positive deviance. Some sociologists argued that the full scope of deviance, including positive and negative, should be taken into account, while others argued that positive deviance was an oxymoron. As part of the positive deviance debate, several sociologists developed alternative typologies of deviance, including positive and negative behaviors.

Chapter 4 - Child nutrition

Geke van Dick

Child malnutrition was the first problem for which the positive deviance approach was used in order to tackle the problem. Therefore, an overview of the use of the positive deviance approach in relation to child nutrition is presented in this chapter. The chapter starts with a short introduction about how the positive deviance approach became a valuable approach in child nutrition research. Followed by an overview about how Save the Children incorporated the positive deviance approach into a wider child nutrition program, the Hearth program. This section also includes a description of the first applications of the positive deviance/Hearth approach in Viet Nam, Bangladesh, and Haiti, and continues with a description of the evaluation of the positive deviance/Hearth field guide. In the final section of the chapter, an overview is provided about how the positive deviance approach continued to be used to rehabilitate malnourished children, and how the approach was used to reduce infant and child mortality. The final section ends with a description of the relevance of empowerment for the success of the positive deviance approach.

An important note to keep in mind is that for a large part the positive deviance approach was still in its infancy when it was used in relation to child malnutrition. There was, and still is, vagueness about the explanation of the positive deviance approach and its use. Many researchers have not been clear in reporting how they used positive deviance or in reporting which positive deviant behaviors and strategies that they found. This chapter consists of an overview of all reported strategies and findings related to studies who claimed to have used the positive deviance approach.

4.1. Development of positive deviance in child nutrition research

Researchers interested in the problem of child malnutrition were the first outside of sociology to acknowledge the importance of studying individuals at risk who perform better than their peers do (Zeitlin et al., 1990). Wray (1972) asked the question *"Can we learn from successful mothers?"* (p. 279), which inspired other nutrition researchers to observe successful mothers and learn from them (Berggren & Wray, 2002). Wishik and Van der Vynckt (1976) gave these successful mothers an academic title, namely positive deviants. In 1990, Zeitlin, Ghassemi and Mansour defined positive deviants not as the successful mothers, but as the *"children who grow and develop adequately in low-income families living in impoverished environments, where a majority of children suffer from growth retardation and malnutrition"* (Zeitlin et al., 1990, p. 5).

The study of Shekar, Habicht and Latham (1992) on the use of a positive-negative deviant analysis to improve nutrition programs in India is an example of an early study focusing on positive deviants.

Between 1986 and 1987, children who grew much better (the positive deviants) and those who grew much worse than the norm (the negative deviants) were compared to identify characteristics of child growth. The results indicated that the determinants of positive and negative deviance in child growth were likely to be different within a community (Shekar et al., 1992). The study of Shekar and colleagues (1992) is not the only example of its kind. Zeitlin and colleagues (1990) reviewed around forty studies carried out in developing countries that had compared well-nourished and malnourished children. The aim of the study of Zeitlin and colleagues was to identify variables protecting the nutritional status of poor children. The results pointed at three types of variables related to child growth: socio-economic, physiological, and psychosocial and behavioral variables (Zeitlin et al., 1990). These results indicated that *"positive-deviance research highlights the fact that the best-growing children do not necessarily mirror the clinically malnourished, and that diet quality in addition to calories and frequent feeding distinguish good from poor growers"* (Zeitlin, 1991, p. 262). Therefore, positive deviance could be used to design policies and programs that could transfer the successful strategies and behaviors to the parents of malnourished children (Zeitlin et al., 1990).

Till the beginning of the 1990's, positive deviance was used in research to discover successful strategies and behaviors, but not to design policies and programs for malnourished children (Zeitlin et al., 1990). However, the work of Zeitlin and colleagues (1990) and subsequent the article of Shekar and colleagues (1992) *"made the study of mothers' PD* [positive deviant] *behavior and its impact on childhood nutrition a respectable category for academic and operational research"* (Berggren & Wray, 2002).

4.2. Commencement of positive deviance approach in practice

Save the Children adopted the positive deviance approach and incorporated it into a larger program, the Hearth approach. *"Hearth programs engage parents in rehabilitating their malnourished children at home, using diets based on local knowledge and resources"* (Berggren & Burkhalter, 1997, p. 1). Hearths, part of Hearth approach, were neighborhood-based ('around the Hearth') daily feeding sessions for two weeks. Trained local volunteers educated caregivers of malnourished children in adopting better feeding and caregiving practices to improve their child's nutrition sustainably (Dickey et al., 2002). Malnourished children whose caregivers participated in the Hearths generally gained weight. If not, the children were referred to a clinic for further investigation (Berggren & Burkhalter, 1997).

4.2.1. Origins of positive deviance/Hearth approach

The origins of the Hearth approach can be traced back to the Mothercraft Centers in the 1960's. The centers paid nutrition experts to educate mothers to rehabilitate their malnourished children. During

daily sessions for a period of three months, mothers learned to feed their children with inexpensive local foods. Once severe malnutrition was eradicated from the community, the center closed and moved to another community. The program improved the health status of malnourished children emotionally as well as physically. Moreover, follow-up studies showed improvements in food selection and food preparation, family diets, and survival of younger siblings born after completion of the program. Despite these promising results, the program needed modification due to high costs and low population exposure.

In 1984, a faster and less expensive approach was developed: the Nutrition Demonstration Foyer (NDF). The NDF, in contrast to the previous approach, consisted of only two weeks of sessions in local outdoor volunteer kitchens. Due to the short duration of sessions, each nutrition expert could reach approximately 340 to 425 malnourished children per year. The NDF showed the same positive results as the Mothercraft Centers, while having lower costs and higher exposure rates (Berggren & Burkhalter, 1997).

Save the Children adopted the NDF approach and applied the approach with success in various countries. In three cases, Viet Nam, Bangladesh, and Haiti, the approach was adjusted to rely more on resources and knowledge already available within the community (Berggren & Burkhalter, 1997). The adjusted approach, the Hearth approach, differed from the NDP approach on several elements including the use of volunteer mothers to perform the Hearths, the use of the kitchens of the volunteers, and the positive deviance approach derived from the work of Zeitlin and colleagues (1990) (Bolles, Speraw, Berggren, & Lafontant, 2002; Burkhalter & Northrup, 1997). An overview of the use of the positive deviance/Hearth approach in Viet Nam, Bangladesh, and Haiti is provided in the sections below.

4.2.2. Viet Nam

At the end of the 1980's, Viet Nam had the highest prevalence (52%) of moderately and severely underweight children despite relatively low child mortality rates compared to the rest of South Asia. However, still 55 percent of children under five were adequately nourished according to the UNICEF's criterion. Remarkably, most of these children were coming from poor families; these children were positive deviants (Sternin, Sternin, & Marsh, 1997).

In 1990, Save the Children received an invitation from the Government of Viet Nam to create a national development model, which developed into the 'Poverty Alleviation and Nutrition Program' (PANP). The PANP made use of the existing social infrastructure and of community health volunteers (CHV). The program consisted of four integrated subprograms: 'Growth Monitoring and Promotion' (GMP), 'Nutrition Education and Rehabilitation Program' (NERP), 'Nutrition Revolving Loan Fund'

(NRLF), and 'Healthy Pregnancy and New Mother Program' (HPNMP) (Sternin, Sternin, & Marsh, 1999). The GMP was a program that monitored the weight of all children under three-years of age every two months. Children suffering from moderate or severe malnutrition were immediately enrolled in the NERP, which consisted of monthly two-week feeding sessions. The content of the sessions was partly based on the results of a positive deviance inquiry. CHVs were trained to conduct the positive deviance inquiry to identify the feeding practices of mothers in the community whose children were better nourished. The NERP had two objectives: to rehabilitate malnourished children, and to educate their caregivers new feeding and caregiving behaviors and strategies needed to sustain the improved nutritional status after rehabilitation (Berggren, 1997). Caregivers were re-invited for another two-week session if their children were still moderate or severely malnourished. If after two NERPs, children still did not gain weight, families were provided a loan in the form of supplementary foods; the NRLF (Berggren, 1997). Finally, the HPNMP enabled all women to have healthy pregnancies, safe deliveries, and healthy babies and to be healthy mothers (Sternin et al., 1999).

Between 1991 and 1995, the Viet Nam Hearth program, the NERP, was implemented in four communes of the province Thanh Hoa, one of the poorest provinces of Viet Nam (Berggren, 1997). The positive deviance inquiry revealed that the positive deviant foods varied by community and season. Some of these identified foods were shrimps and crabs, sweet potato greens, sesame seeds, peanuts, dried fish, fish sauce, and corn. In the NERP, these findings were used in the feeding sessions (Sternin et al., 1999). Two years after the start of the program, the prevalence of severe child malnutrition in the participating communes was decreased by 82 percent (Sternin et al., 1997). During the whole program, Save the Children shared their results with Vietnamese and foreign nutritional experts in order to stimulate curiosity for implementing the positive deviance approach more broadly.

In 1993, Save the Children expended their program to ten other communes under the supervision of locals. In these communes, the prevalence of severe malnutrition decreased from 19 percent to four percent between 1993 and 1995. These results showed that the quality and impact of the program were sustained if the program was managed by Vietnamese solely. Many international organizations, including Vietnamese organizations, expressed their interest in replicating the program in other regions of the world. In 1994, 'The Living University' in Viet Nam opened its doors for others interested in replicating PANP in Viet Nam or in another geographical area. The participants learned all about the program through theory-based workshops and through visits to the participating communes (Sternin et al., 1999).

Three to four years after Save the Children had withdrawn, the long-term effect of the PANPs were evaluated in four communes that had participated in the program between 1993 and 1995. The four communes were compared to another commune who had never been exposed to the PANP. Results indicated sustained improvement in the nutritional status of the children. Moreover, the results revealed that even siblings born after participation in the PANP had higher nutritional benefits than their peers whose parents had never participated in the program. These results indicated that the positive deviance approach had the potential to identify easy, affordable, and sustainable childcare practices that promote growth (Mackintosh et al., 2002).

4.2.3. Haiti

In the beginning of the 1990's, the Albert Schweitzer Hôpital was overwhelmed with more than 9000 malnourished children who needed rehabilitation (Bolles et al., 2002). The positive deviance/Hearth approach was selected as a fast and effective program to decrease the prevalence of malnutrition quickly. The short-term objectives of the program were rehabilitation of malnourished children and maintaining participation of preschool children in the program. The long-term objectives were to reduce the prevalence of malnutrition and to develop a network of volunteer mothers to assist the hospital in improving primary health care (Burkhalter & Northrup, 1997). The positive deviance inquiry revealed that positive deviance practices were unique for each community and positive deviance foods were seasonal. Therefore, it was important that the content of the Hearts was always adapted to the season and the participants. The preliminary findings indicated that children who took part in the Hearths grew at rates as fast as or faster than the national average (Bolles et al., 2002). However, Burkhalter and Northrup (1997) found this effect only for mild malnourished children, while severe malnourished children only showed improvements in their nutritional states when participating in the Growth Monitoring Program (GMP). More investigation was needed on the effects of Hearths and GMP, but it seemed like a combination would produce the best results (Burkhalter & Northrup, 1997).

4.2.4. Bangladesh

In 1995, Bangladesh was one of the poorest countries in the world with the highest population density (117.8 million) of any agricultural country. The mortality rate of children under five years of age was high. Sixty-seven percent of surviving children were in some degree malnourished and 25 percent was even severely malnourished. The World Relief Corporation (WRC) started implementing a Child Survival Program (CSP) in 1987. In 1995, the Hearth model, including the positive deviance approach, was added as a subprogram of the CSP, which was renamed Shishu Kabar. During feeding sessions, mothers were educated about the use of different menus. These menus consisted of available, low-cost, and appropriate foods, since they were based on the main findings of the positive

deviance inquiry. Peanuts, which were not identified during the positive deviance inquiry, were also added to the menus in order to conform to the calorie norm. After the pilot study, 90 percent of the children whose mothers had completed the Hearths showed catch-up or adequate growth during the follow-up weighing. Results indicated that severely malnourished children probably had underlying diseases inhibiting them from profiting from the program. Still severe malnutrition had decreased from 6.9 to 3.7 percent (Filoramo, 1997).

The programs in Viet Nam, Haiti, and Bangladesh are examples of early interventions including the positive deviance approach. The positive deviance/Hearth approach was still a developing approach, which explains the small, but possibly important differences between the three different programs. For example, the Viet Nam program paid attention to mobilize and educate the whole community. Dietary information from both well-nourished and malnourished children was collected in Viet Nam, whereas in Haiti and Bangladesh only information was collected from positive deviants. In Bangladesh, peanuts were added to the menus even though they were not identified as positive deviance foods, whereas in Viet Nam and Haiti only positive deviance foods were used in the program (Burkhalter & Northrup, 1997). Therefore, it was important to have clear guidelines on how to use the positive deviance/Hearth approach.

4.2.5. Field guide to positive deviance/Hearth approach

In 1998, a field guide for using the positive deviance approach within the Hearth Model was published. The guide was developed to assist trainers, program officers, and managers from non-governmental organizations in designing a community-based nutrition education and rehabilitation program in collaboration with the community. The guide could be used to apply the positive deviance approach and to implement the Hearth approach outside of Viet Nam, Haiti, and Bangladesh (Sternin, Sternin, & Marsh, 1998).

Lapping and colleagues (2002) tested the validity of the positive deviance approach as explained in the guide '*Designing a community-based nutrition program using the Hearth model and the positive deviance approach—A field guide'*. The positive deviance inquiry was used to identify factors associated with a good nutritional status of Afghan refugee children in Pakistan. The results indicated that mothers of positive deviance children intended to breastfeed their children until 24 months and fed their children special high nutritional foods. Identified stimulating caring and health-seeking practices were active feeding and increased breastfeeding during diarrhea. This last practice is very important in Pakistan, since diarrhea is the main cause of mortality for children under five years of age.

The positive deviance inquiry revealed factors beneficial to a better nutritional status that were not found in the case control study. These positive deviance factors were likely *"to be beneficial to others, have low- or no risk if adopted, and have little opportunity cost"* (Lapping et al., 2002, p. 31–32). However, the case control study identified factors that were not captured in the positive deviance inquiry, but these factors did not give fuller understanding to the complex problem of under nutrition. Using the positive deviance inquiry enabled the researches to capture the attitudes and complex behaviors of the caregivers of positive deviants. The choice to use the positive deviance approach should depend on the goal, resources, and staff ability in the research (Lapping, Schroeder, et al., 2002). The field guide gave other researchers a better opportunity to use the positive deviance approach in other settings.

4.3. Continuation of positive deviance approach in practice

In the sections below, an overview is provided of the use of positive deviance related to child nutrition after the initialization in Viet Nam, Haiti, and Bangladesh. The positive deviance approach is used in several countries to prevent infant and child mortality, to rehabilitate malnourished children, to stimulate child growth, and to empower communities, especially mothers. These four aspects are described in the sections below.

4.3.1. Using positive deviance to reduce infant and childhood mortality

In 2000, the infant mortality rate in Pakistan was high (95/1000), especially neonatal death rates. Save the Children had two large health programs in Afghan refugee camps to provide direct maternal and child health services. Three villages and one Afghan refugee camp in the Haripur District were selected in order to test the positive deviance approach for newborn care in the refugee camps. The positive deviance cycle consisted of five steps: planning, community orientation, situation analysis, positive deviance inquiry, and community feedback with action planning. The Afghan refugees had benefited from 15 years of free preventive antenatal care, where the Pakistanis had only benefited from 18 months of free reproductive health care.

The positive deviance inquiry revealed many practices to prevent infant mortality, in some aspects positive deviant behaviors and practices differed between the Pakistanis and the Afghan refugees. Examples of positive deviant behaviors were immediate or exclusive breastfeeding, increased consumption of mother during pregnancy, the use of clean materials during delivery and immediate care, and keeping the baby warm. The Afghan refugee community was enthusiastic about the positive deviance approach and wanted to share the identified positive deviance behaviors with family members and neighbors. The Pakistanis declared that the identified positive deviance behaviors were not new to them. However, the behaviors were not commonly practiced, but the

Pakistanis committed themselves to use the positive deviance behaviors. *"The PD* [positive deviance] *approach provides those communities with a vision of that possibility, a voice to express it, and the confidence to pursue it"* (Marsh et al., 2002, p. 115).

In Pakistan, the positive deviance/Hearth Nutrition Program was set up in 2006 in order to accomplish the fourth millennium development goal, the reduction of childhood mortality due to malnutrition by 2015. The effectiveness of the program was tested by comparing the breast- and complementary practices of Hearth and non-Hearth mothers with children between six and twenty-four months living in slum areas in the Quetta District. After participating in the Hearth program, 70 percent of the mothers started giving complementary foods to their child at six months of age compared to 49 percent of the non-Hearth mothers. More Hearth-mothers (64%) than non-Hearth mothers (44%) were giving their children boiled water and 65 percent of the Hearth-mothers gave their children cheese and yogurt weekly, compared to 24 percent of the non-Hearth mothers. These results indicated that the feeding practices of Hearth-mothers were significantly better than the feeding practices of non-Hearth mothers. Children from Hearth-mothers also had a significantly lower rate of underweight than children from non-Hearth mothers (Nishat & Batool, 2011). However, there is no data on the effect of the positive deviance/Hearth program on childhood mortality rates.

Breastfeeding

Breastfeeding benefits the child's health and especially exclusively breastfeeding is related to reductions in infant morbidity and mortality rates. *"Focusing on optimal breastfeeding and including pregnant mothers and infants less than six months of age in programs provides an opportunity to not only rehabilitate malnourished children but to prevent malnutrition from occurring in the first place"* (Dearden et al., 2002, p. 105).

In Viet Nam, the existing knowledge, attitudes, and practices related to breastfeeding of 120 mothers with infants between zero and six months were documented. All participating mothers had breastfed their child in the previous 24 hours, but only 24 percent had exclusively breastfed their child in the previous 24 hours. An important factor restricting exclusive breastfeeding was returning to work; only 5 percent of the woman who had returned to work within six months postpartum exclusively breastfed compared to 58 percent of the mothers who stayed home. Examples of factors associated with exclusive breastfeeding were the attendance of a nurse, midwife, or assistant doctor at delivery, mothers staying at home, and the feeling of the mother as having sufficient milk. Positive deviants were the mothers who did manage to exclusively breastfed while returning to work and the mothers who were able to successfully negotiate a later return to work in order to remain at home to

exclusively breastfeed (Dearden et al., 2002). However, there is no data on how some mothers were able to combine working and exclusive breastfeeding.

Problems with low breastfeeding rates are not restricted to only developing countries. In the United States alone, 13 billion dollar per year could be saved on medical care and treatment if 90 percent of all women would exclusively breastfeed their child in the first six months. Especially black mothers and lower educated mothers have low breastfeeding rates. In order to understand why some women are breastfeeding their child, these women, the positive deviants, were investigated. In the study, 19.8 percent of the black mothers and 40.3 percent of the white mothers were classified as positive deviants. Support of the hospital and having the possibility to breastfed the first time in the hospital were found to be important determinants for breastfeeding among white and black positive deviant mothers. Breastfeeding was also more likely for black mothers if they had a child low birth weight (Ma & Magnus, 2012).

4.3.2. Using positive deviance to rehabilitate malnourished children

Rehabilitation programs in Viet Nam, Haiti, and Bangladesh continued after the first initialization of the positive deviance/Hearth program in the beginning of the 1990's. In Viet Nam, the government introduced the National Plan of Action in 1995. One of the key goals was that the prevalence of under-five malnutrition would be reduced to less than 30 percent by 2000 (Mackintosh et al., 2002). Therefore, the positive deviance/ Hearth program extended to other communes. At the beginning of 1998, the program had reached more than 200 communes in Viet Nam and had affected 1.2 million people (Sternin et al., 1999). In Haiti, the prevalence of malnutrition was higher for children coming from mountain areas (61%) than for children from other parts of the district (32%). In 2000, the positive deviance/Hearth approach was implemented in 13 villages of the direct of Leogane. After six months, all children within eight villages and two-third of the children within the remaining five villages had continued to gain weight as fast as or faster than the national average (Bolles et al., 2002).

By the mid 2000's, Bangladesh was still a country with high poverty and high rates of disease and malnutrition. Fourteen percent of the urban population in Bangladesh lived in poverty, and even 50 percent of the slum population. Of all children living in slums, 73.2 percent were underweighted (Pryer, Rogers, & Rahman, 2004). A positive deviance inquiry was used to discover the successful behaviors, strategies, and characteristics contributing to the nutritional status of slum children in Bangladesh. A panel survey was conducted between 1995 and 1997 to identify social, economic, and demographic factors that predicted good height-for-weight for children living in slums. Some identified factors were that slum families with well-nourished children, the positive deviants, had

higher incomes and higher loans. The height and weight of positive deviant mothers was also strongly related to the nutritional status of their children. This implied that maternal malnutrition might be an important predictor for child malnutrition. Equal treatment of all children enhanced the chances of well nourishment and female-headed households had children with a better nutritional status. Well-nutrition rates increased also through a higher quality of the home environment, for example having electricity, having more living space, and living in a better neighborhood (Pryer et al., 2004). A nutrition education program in Bangladesh focusing on increasing vegetable consumptions tracked down positive deviants, women who were feeding their children more vegetables than the norm. Their childcare and feeding practices were used for storytelling and photo instructions to demonstrate positive nutrition behaviors and their consequences (Parvanta, Thomas, & Zaman, 2007). The positive deviance approach was not only used to rehabilitate malnourished children in Viet Nam, Bangladesh, and Haiti, but also extended to other countries.

In India, the Integrated Child Development Services (ICDS) combats child malnutrition since the 1970's. However, still 65 percent of children who were part of the ICDS program were underweighted in 2005. In cooperation with UNICEF, an extra 'overlay' program was introduced in several areas of India. The program encompassed raising awareness for the importance of immediate initiation of exclusive breastfeeding for six months and timely introducing complementary foods; treating diarrhea; complete immunization; and micronutrient provision. The program showed promising results, but the prevalence of underweight was still 55 percent.

In order to improve the program, the 'overlay' program in Bihar, the Dular program, was evaluated to identify positive deviants and positive deviant behaviors and practices. The malnutrition rates of at least 75 children in ten villages participating in the Dular program and ten villages participating in the regular ICDS program were compared. Moreover, the attitudes and beliefs regarding care-giving and feeding practices were explored. Not surprisingly, the main characteristic associated with better growing children was a higher socioeconomic status. However, there were also positive deviant characteristics found in the poorer households. For example, well-nourished children got complementary foods on average two months earlier than malnourished children did. The use of soap was also associated with a higher nutritional status; a better hygiene in general was associated with well nourishment. Another important characteristic predicting the nutritional status of the child was the literacy of the mother. Literate mothers were seven times more likely to have well-nourished children than non-literate mothers. These positive deviant characteristics could be used to improve the nutrition programs in India (Levinson, Barney, Bassett, & Schultink, 2007).

The prevalence of child malnutrition is high in the slums of India. The positive deviance approach was used to investigate the factors contributing to well nourishment of children living in the slums of Vadodara (Kanani & Popat, 2012). Thirty positive and 30 negative deviant children were involved in the study. The research consisted of weighting sessions; one-on-one interviews with the mothers of positive and negative deviant children; and observations of the hygiene conditions in and around the house. Several household factors contributed to better child nutrition: smaller family sizes; higher maternal literacy, equal treatment of children, better environmental hygiene; and lower incidence of infections. Moreover, positive deviant behaviors were identified: frequent breast feeding, timely initiation of complementary foods, active feeding, and feeding foods of thicker consistency. Kanani and Popat (2012) stated the value of positive deviance should not be underestimated, but at the same time should it not distract the attention from the importance of changing the economic, social, and political conditions of the poor.

4.3.3. Using positive deviance to improve child growth

Determinants of positive and negative deviance in child growth are likely to be different within a community (Shekar et al., 1992). Positive deviants are the *"children who grow and develop adequately in low-income families living in impoverished environments, where a majority of children suffer from growth retardation and malnutrition"* (Zeitlin et al., 1990, p. 5). Different researchers focused on identifying the determinants of positive deviance in child growth in order to use these determinants for interventions.

In China, feeding practices of children at risk who grew better than their peers were identified through interviews with the mothers of these positive deviant children. Some of the identified practices were breastfeeding until the age of 12 months, feeding soybean milk, liver, and pork blood products on a regular basis between the seventh and ninth month and not feeding rice flour before seven months of age (Guldan et al., 1993).

In Viet Nam, the 'Community Empowerment and Nutrition Program' (CENP), previously called PANP, aimed at improving child growth (Tuan et al., 2002). The 'Viet Nam Study to Improve Outcomes in Nutrition' (ViSION) project investigated if improved diets and/or reduced morbidity rates were the main causes for the improvements in growth in communities participating in CENP (Sripaipan et al., 2002). In the Phu Tho province, the province with the highest percentage of child malnutrition in 1999, 12 communes were selected and randomized to six intervention groups (120 children) and six control groups (120 children). A positive deviance inquiry was used to identify positive deviant families and interview them on how they kept their children well-nourished (Hendrickson et al., 2002). Overall, the results showed no statistical significant difference in growth between the

intervention and control group, but the intervention showed some positive effects (Schroeder et al., 2002). However, these positive effects are not relevant for the purpose of this paper.

4.3.4. Effect of positive deviance on empowerment

The NERP in Viet Nam was based on social support and creating self-efficacy, which differentiated the program from others. According to Bandura, self-efficacy is important, because knowledge and motivation are not sufficient for behavioral change (Dickey et al., 2002). Therefore, empowerment, gaining control over your own life, could be seen as an important aspect of positive deviance. The goal of using positive deviance in child malnutrition is to empower communities to rehabilitate malnourished children (Hendrickson et al., 2002). In the CENP in Viet Nam, mothers and volunteers reported increases in several empowerment domains, with mothers reporting slightly bigger increases. The mothers became more confident in sharing information with their neighbors and implementing new childcare and feeding practices, which are both important contributors to better, sustainable health outcomes (Hendrickson et al., 2002).

In India, a study was conducted on how to use positive deviant mothers in the slums of Delhi as educators to encourage other families to practice positive deviance behaviors. The positive deviant children and the infant feeding practices of mothers were identified. Identified positive deviance behaviors were feeding high-energy dense complementary foods, using supervised bowl feeding, and active father-participation in feeding and care-giving practices. Transferring these behaviors to the rest of the community was challenging due to the effects of the psychosocial environment on behavior change. Therefore, more research was needed on the determinants of adaptation, maintenance, and dropout of positive deviance behaviors (Sethi, Kashyap, Seth, & Agarwal, 2003).

4.4. Summary

The first time that positive deviance was used to tackle a problem was in relation to child malnutrition. The positive deviance approach was adopted by Save the Children and included in a wider program, the Hearth program. Viet Nam, Bangladesh, and Haiti were the first countries where the positive deviance/Heart approach was used to rehabilitate malnourished children, and with success. The implementation of the approach differed between the different countries, since there were no specific guidelines on how to use the approach. In order for other researchers to use the positive deviance/Heart approach, a field guide was developed. The positive deviance approach continued to be used to rehabilitate malnourished children. The approach was also used to stimulate child growth and to decrease infant and child mortality rates, for example by stimulating breastfeeding. The success of the positive deviance approach is partly determined by its ability to empower communities, especially mothers.

Chapter 5 - Management of health care

Rianca Scheffel

Besides the use of positive deviance in the field of child nutrition, it is also used to identify strategies and behaviors within health care organizations. The assumption is that health care staff will accept changes more easily when they are generated within their own clinical communities, rather than designed by policymakers or managers. Therefore, it is appropriate to use positive deviance within health care (Lawton, Taylor, Clay-Williams, & Braithwaite, 2014). The concept of positive deviance was introduced to several U.S. hospitals CEOs by Jerry and Monique Sternin. The Sternins gave presentations and workshops about positive deviance and its success to combat child malnutrition. They explored with the CEOs how positive deviance could be applied to several problems in U.S. hospitals. Some CEOs were skeptical that an approach that was used to combat child malnutrition would hold relevance for hospitals. For other CEOs the notion of amplifying 'what works' instead of fixing 'what does not work' was promising (Singhal, Buscell, et al., 2010).

In this chapter, an overview is given of the literature in which positive deviance is used in relation to the management of health care. Different aspects of health care management are presented in the sections below, namely hospital management, nurse management and patient safety. These aspects are interrelated, as mentioned by Gary: *"the work of nurses is more than simply application of clinical knowledge and skills as patient safety and quality depends on critical decisions about prioritization and organization of care delivered in a complex health care system"* (Gary, 2014, p. 143). Quality improvement, another aspect of health care management, is also described in this chapter.

5.1. Hospital management

Tarantino (2005) mentioned that positive deviance could be used as a tool for hospital organizational change. He argued that resistance would be little, since the change process comes from the inside out and existing knowledge and solutions within the organization are used. Positive deviance is especially suitable in situations where behavioral and attitudinal changes are essential to succeed, because *"by beginning with what the people in your organization have, building on what they know and learning from what they discover, you have a great chance to succeed"* (Tarantino, 2005, p. 63). Positive deviance allows hospital leaders to involve physicians, which stimulates both parties to work more interdependently to improve patient care in a changing environment. The power of the positive deviance approach lies in its bottom-up approach, which enables frontline health care staff, instead of the chief executive officer, to determine where to put effort in (Cohn, Friedman, & Allyn, 2007).

Luft (2010) introduced positive deviance as a concept that can provide reliable health care data. Health care data are important for several aspects of hospital management. Therefore, health care systems need mechanisms to continually gather and assess data. Positive deviance can provide health care data, since it can provide data of good statistical outliers, the positive deviants. It also needs no central agency deciding what to examine. Furthermore, positive deviance only needs to identify data which are already used in health care, which reduces costs (Luft, 2010).

In 2013, an article was published about nine health care organizations (HCOs) that received the Malcolm Baldrige National Quality Award from 2002 to 2008. A positive deviance perspective was used to analyze the applications of these hospitals and their hospital knowledge management. The authors mentioned that they applied positive deviance at a broader level. It was beyond the scope of their article to carry out all steps of the positive deviance approach and to test the outcomes in larger population-based samples. Four elements of knowledge management (creation, application, storage and retrieval, and transfer) were examined in the high-performing HCOs. The results indicated that all nine HCOs had a comprehensive and sophisticated process of knowledge management in their organization culture and their specific procedures. This resulted in several positive outcomes for these health care organizations and distinguished them from other U.S. HCOs (Griffith et al., 2013).

5.2. Nurse management

In 2008, an article was published about how positive deviance can be used by nurse leaders as a powerful strategy to accomplish positive change. It is proposed that positive deviance can be used to encourage development of sustainable, innovative strategies and behaviors from inside the organization. Positive deviance was determined as suitable for nursing in health care, because the nature of health care always requires strategies and behaviors that seek stability and safety (Jaramillo et al., 2008).

Gary (2013) explored the use of the concept of positive deviance in nurse management. Positive deviance was described as *"nonprescribed practices or strategies that are intended to produce or do produce better outcomes than traditional standard practices"* (Gary, 2013, p. 28). The clinical decisions of nurses have an important influence on patient outcomes and the input of nurses on policymakers and policies is needed in order to improve health care. Gary (2013) mentioned that the concept of positive deviance is useful in nursing, since it offers nurses a basis for decision making when the standard prescribed practices and guidelines are not suitable (Gary, 2013). Kennedy (2013) acknowledged, after reading this publication of Gary (2013), that the positive deviance approach is needed in order to change systems in health care. By making use of the positive deviance approach, systems in health care will be safer for both patients and health care staff (Kennedy, 2013).

In 2014, an article was published about the development of various viewpoints about the use of positive deviance in the delivery of patient-centered care. A study was carried out to discover how critical care nurses provided care when standard practices and guidelines did not meet the specific care needs of a patient. A panel of critical care nurses was used to conduct a 3-round online Delphi study. Positive deviant nurses revealed several dominant categories of issues about when standard practices and guidelines lacked the ability to deliver patient-centered care. Examples of these categories are care during emergent situations, and end-of-life care. These dominant categories provided a list of guidelines to review for further research. Better guidelines are needed that should guide practices and help nurses to deliver needs based patient-centered care (Gary, 2014).

5.3. Patient safety

Macklis (2001) explained that positive deviance could be used to change health care in order to improve patient safety, since change initiatives in health care should be local and internally driven. Furthermore, change is translated into concrete action steps and optimized from within which leads to local operational autonomy (Macklis, 2001). In another publication, it is explained that positive deviance can be used to improve patient safety management. Approaches that focus on error detection and its management have not created patient safety improvements. The main reason for this is that these approaches are not applicable to a complex adaptive system such as health care. The focus on successful behavior will be more effective and therefore positive deviance can be used as an approach to improve patient safety (Lawton et al., 2014).

The traditional top-down approach to improve patient safety has not been successful, because policymakers and leaders do not understand the realities of front-line work. Patient safety is more likely to improve when front-line staff takes ownership of problems and when it develops and implements solutions. An approach who applies this, is front-liner ownership (FLO) approach. Positive deviance is used as a theoretical framework for this approach. The FLO approach is context specific and there are no linear steps that reach to a desired outcome. With the FLO approach, the staff identifies possible solutions to problems and minimum guidelines are used to guide the process. The FLO approach was carried out in five Canadian hospitals and groups of health care staff were thought how to use the approach. The results indicated that the actions and interventions resulting from the FLO approach varied widely between the hospitals. This implied that the context of a problem is important and that not all solutions are always applicable (Zimmerman et al., 2013).

Bearman and Stevens (2014) explained that the positive deviance approach could be used as a strategy for the implementation of infection prevention practice in order to improve quality and patient safety. By recognizing and engaging positive deviants, key barriers and solutions for

implementing best infection prevention practices should be discovered. Besides the positive deviance approach, other strategies to accomplish infection prevention practice were also explored, such as mass media, distribution of educational materials and marketing. However, more data are needed to define which strategy is the most effective one (Bearman & Stevens, 2014).

5.4. Quality improvement

Positive deviance is used in various ways to improve the quality of health care, of which an overview is given in this section. Measuring health care quality requires data systems that include robust data and that collect data overtime. The integration of different data systems also has to be possible in order to easily analyze trends (Klaiman, Pracilio, Kimberly, Cecil, & Legnini, 2014). Positive deviance can be a relevant approach to accomplish quality improvement, since it involves identification of context specific factors and practices that are connected with top performance and it promotes the use of these factors and practices within health care (Bradley et al., 2009; Pallas, Curry, Bashyal, Berman, & Bradley, 2012).

Bradley and colleagues (2009) proposed that positive deviance could be used to identify practices that can be implemented in order to improve the health care quality as a whole. They mentioned that the positive deviance approach is particularly appropriate when health care organizations can be ranked reliably based on valid performance measures and when there exists openness about practices to achieve exceptional performance. Their positive deviance approach contained four steps: identify positive deviants; study organizations in-depth using qualitative methods to generate hypotheses about practices that allow organizations to achieve top performance; test hypotheses statistically in larger, representative samples of organizations; and work in partnerships with key stakeholders, including potential adopters, to disseminate the evidence about newly characterized best practices. The authors mentioned that the positive deviance approach holds much promise for improving practice, since it stimulates collaboration between researcher and practitioner that identifies achievable solutions. They argued that the identification and examination of positive deviant health care organizations provides opportunities to characterize and disseminate strategies for improving quality (Bradley et al., 2009).

In developed countries, positive deviance is used for different aspects of quality improvement, namely medication reconciliation, chronic disease management, acute myocardial infarction and stroke quality, diabetes care, and H1N1 vaccination improvement. An overview of these aspects of quality improved is presented in this section. At the end of this section, an overview is given of the use of positive deviance to improve the quality of health care in developing countries.

5.4.1. Medication reconciliation improvement

The positive deviance approach was used at Waterbury Hospital, with initial help from Jerry and Monique Sternin, to improve patient adherence to medication regimes after discharge from the hospital. At first, many of the health care staff was skeptical, but when the approach was carried out more and more staff members were intrigued and became involved. Several communication problems in relation to medication reconciliation were discovered and the health care staff learned strategies and behaviors from successful staff members. After applying the positive deviance approach, the Waterbury Hospital achieved a 66 percent improvement in medication reconciliation. Four years after carrying out the positive deviance approach and without further intervention, the medication reconciliation improvement was still maintained (Singhal, Greiner, & Dura, 2010).

5.4.2. Chronic disease management improvement

To improve chronic disease management (CDM) in primary health care, a prospective case study of positive deviants was used. Chronic disease management involves observing indicators of quality over time and across patients and performance. CDM has to improve and adoption rates have to rise in order to give patients the care they need. By making use of positive deviants, physicians who were successful in closing the gap in care of individuals with chronic diseases, several factors were discovered that were crucial for successfully improving CDM. Examples of these factors are project management, information and communication technology support, health care delivery systems, and innovative funding. The results implied that successful implementation of CDM may require a set of interrelated system and technology factors (Green, Fortin, Maclure, Macgregor, & Robinson, 2006).

5.4.3. Acute myocardial infarction and stroke quality improvement

The positive deviance approach was used to discover what distinguished top-performing hospitals in acute myocardial infarction (AMI) mortality rates from low-performing ones. Several key factors were identified which were associated with better performance in AMI care. Most key factors were connected to organizational approaches, such as coordination and communication among groups, organizational goals and values, and learning and problem solving (Curry et al., 2011). A national positive deviance study was carried out to determine hospital strategies associated with higher survival rates for patients hospitalized with an AMI. Strategies that promoted exceptional outcomes were discovered. Six domains were identified: hospital protocols and processes for AMI care, organizational values and goals, senior management involvement, broad staff presence and expertise in AMI care, communication and coordination among groups, and problem solving and learning. Low- and high-performing hospitals differed in five of the six domains, only for the first domain was no important differences found. The positive deviance approach was regarded as suitable to improve health care performances and to reduce mortality rates (Krumholz, Curry, & Bradley, 2011).

In order to lead and support ongoing institutional stroke quality improvement, the positive deviance approach was used. The strategies, strengths, and behaviors of positive deviants in the University of Colorado Hospital were explored. Common methods were identified and common themes were discovered, such as empowering staff to find department-specific solutions to common practices and setting increasingly more ambitious targets. This information was used to develop an intervention that supported quality improvement in three ways, namely to evolve ideas for interventions, to decrease stakeholder resistance to change, and to demonstrate key elements of culture that can be adapted to support change management. After implementation, the median treatment time to thrombolysis was decreased from 71 to 43 minutes and 68 percent instead of 27 percent of patients were treated within 60 minutes of arrival. The conclusion was that positive deviance methods can be used to support quality improvement projects whenever positive deviants can be identified (Hudak et al., 2014).

5.4.4. Diabetes care improvement

Practice-based care management can improve clinical quality and can decrease health care costs. Positive deviance was used to discover best practices in diabetes care management in patient-centered medical homes (PCMHs). Examples of these practices are more patient-centered care manager duties, better use of the electronic medical record for messaging and patient tracking, and stronger integration of the care manager into the care team. These practices can be used to improve the implementation of care management in other PCMHs (Taliani, Bricker, Adelman, Cronholm, & Gabbay, 2013).

The positive deviance approach was carried out in order to understand key features to improve diabetes care. Factors that higher-performing primary care practices used in their diabetes care were determined. After the comparison of these factors, several key factors that supported higher performances were identified, such as highly engaged practice administrators, clear roles and responsibilities, and accountability to these roles and responsibilities. Attention should be paid to these key factors in order to improve the diabetes care (Gabbay et al., 2013).

In order to identify potential glycemic overtreatment in persons at hypoglycemic risk, positive deviance was used. A cross-sectional study was carried out of patients in the Veterans Health Administration receiving insulin and/or sulfonylureas. The identification of positive deviants, extreme positive outliers, implied that there are practical solutions available which can be identified, evaluated, and distributed (Tseng, Soroka, Maney, Aron, & Pogach, 2014).

5.4.5. H1N1 vaccination improvement

The positive deviance approach was carried out to identify positive outlier local health departments (LHDs) during the 2009 H1N1 vaccination campaign. In order to improve comparable events in the future, lessons had to be learned from the staff from these LDHs. Specific contexts and mechanisms that led to successful vaccinations were identified, such as defining priority groups, communicating with the public, and establishing community partnerships. The results showed that the positive deviance approach revealed how LHD context activated specific mechanisms, which led to success (Klaiman, O'Connell, & Stoto, 2013). In 2014, a comparable research was published about successful school-based vaccination clinics during the 2009 H1N1 school-based vaccination clinic implementation. The results of this study indicated that positive deviants were identified and key mechanisms were discovered. Examples of these key mechanisms are having a relationship with local school authorities and communicating effectively with parents (Klaiman, O'Connell, & Stoto, 2014).

5.4.6. Quality improvement in developing countries

Positive deviance is rarely used to improve the quality of health care in developing countries and it is limited elaborated in the literature. In Indonesia, a positive deviance study was carried out to discover factors that enabled nurse-patient communication in a family planning context. A better nurse-patient communication was needed to improve the quality of counselling in family planning programs in developing countries. Positive deviant nurses and positive deviant patients were identified within a community. These positive deviants selected several enabling communication factors, such as feedback from colleagues, confidence in their own communication skills, and communication aids. These factors implied that communication should go beyond the normal communication skills training that was normally used (Kim, Heerey, & Kols, 2008).

To improve the quality, access, and utilization of rural primary health care in Ethiopia, a mixed methods positive deviance study was carried out. Primary Health Care Units (PHCUs) with higher performances were selected in order to discover factors that might explained the differences among rural PHCUs. The results revealed three key themes that distinguished the high performing PHCUs from the others. These key themes were managerial problem solving capacity, relationship with the district health office, and community engagement. These themes should be used in an intervention in order to improve the rural primary health care quality (Bradley et al., 2012).

5.5. Summary

Positive deviance is used in different aspects of health care management, namely hospital management, nurse management, and patient safety. Positive deviance is also used successfully to improve the quality of health care, for example to improve chronic disease management, acute myocardial infarction care, and diabetes care. Several authors have argued that positive deviance is

suitable to improve health care management. The positive deviance approach is relevant, since it involves identification of context specific factors and practices that are connected with top performance and it promotes the use these factors and practices within health care. This results in practice-based care management that can improve clinical quality and can decrease health care costs.

Chapter 6 - Hospital infections

Rianca Scheffel

Every single day, patients in hospitals die because of hospital acquired infections. Health care staff members who do not consistently follow the known infection control protocols, inter alia cause this. Another cause is that many bacteria have become drug resistant, since many bacteria coexist with antibiotics in hospitals. Hospitals have become reservoirs of infections in which health care staff works with many patients. Therefore, controlling infections in hospitals is complex and challenging (Singhal, Buscell, et al., 2010; Singhal, McCandless, Buscell, & Lindberg, 2009).

Positive deviance can play an important role in infection prevention in hospitals, since it stimulates conversations among leaders, managers, and health care staff. Therefore, the positive deviance approach can be important for establishing a safety culture within a health care organization (Marra, Pavão Dos Santos, et al., 2013). In this chapter, an overview is provided of the literature of positive deviance related to hospital infections. Different aspects of hospital infections are described in the sections below, namely hand hygiene compliance, prevention of MRSA infections, and other hospital infections.

6.1. Hand hygiene compliance

Various researchers have argued that positive deviance can be used to increase the hand hygiene compliance of health care staff (De Macedo et al., 2012; Marra et al., 2011; Marra, Noritomi, et al., 2013). An increase of hand hygiene compliance is needed to reduce the risks of the spreading of microorganisms between patients (De Macedo et al., 2012). Hand hygiene compliance is also seen as an intervention to reduce health care-associated infections (Marra, Noritomi, et al., 2013). According to the World Health Organization (WHO), each hospital should have rules and legislations for monitoring and encouraging hand hygiene practices among health care staff. However, only 30 to 40 percent of all health care staff adheres to hand hygiene practices (De Macedo et al., 2012). Worldwide, the lowest rates of hand hygiene compliance are reported for intensive care units (UICs). Besides the positive deviance approach, other strategies are used to improve adherence to hand hygiene practices, such as feedback on compliance (Marra et al., 2011).

The article of Erasmus and colleagues (2009) about reasons for poor hand hygiene among hospital staff can be seen as one of the first articles in the field of hand hygiene which recognizes the concept of positive deviance. The term positive deviance is not used, but instead positive role models are mentioned. The lack of these positive role models hindered hand hygiene compliance in different hospitals in the Netherlands (Erasmus et al., 2009).

Marra and colleagues (2010) proposed that positive deviance could be seen as a new strategy for improving hand hygiene compliance to decrease the incidence of healthcare-associated infections. They mentioned that positive deviance in hand hygiene links what the health care staff knows to what the staff really does during the work shifts. Furthermore, the positive deviance approach focuses on promoting hand hygiene compliance at all opportunities by everybody who is in contact with patients and their environment. A nine-month controlled trial was carried out in two hospital units. Meetings were organized in which health care staff could express their feelings about hand hygiene compliance, could note good examples (the positive deviants), and could discuss what needed to be improved. The positive deviants were the people who wanted change and wanted to develop new ideas and practices to improve the hand hygiene performance of their colleagues. Positive deviants also motivated colleagues to use alcohol dispensers. The results showed that the use of the positive deviance approach resulted in a significant improvement in hand hygiene compliance in the number of hand hygiene episodes per 1000 patient-days. This was associated with a decline in the incidence density of healthcare-associated infections per 1000 patient-days (Marra, Luciana Reis Guastelli, et al., 2010).

Rupp and Kalil (2010) commented on this article of Marra and colleagues (2010). They stated that the level of hand hygiene adherence in the study is not exactly known and that it is not clear if the positive deviance approach worked. They also argued that it is not clear what types of healthcare-associated infections were reduced (Rupp & Kalil, 2010). Marra, Neto and dos Santos (2010) commented on Rupp and Kalil (2010) that there is a need for improved study designs in reports about hand hygiene interventions, but that the positive deviance approach worked to improve hand hygiene adherence in their study. However, they acknowledged that there is much more to learn about hand hygiene (Marra, Neto, & Pavão Dos Santos, 2010).

In addition, Marra and colleagues (2011) published an article about positive deviance as a program for sustained improvement in hand hygiene compliance. An observational study was carried out to measure the effect of positive deviance on hand hygiene compliance. The results were comparable with the results of their nine-month controlled trial study. There was more than a two-fold differences in the number of alcohol gel aliquots dispensed per month from the month before the implementation of positive deviance intervention to the last month of the intervention. There was also more than a three-fold difference in the amount of liters of alcohol gel used per 1000 patient-days. They concluded that the positive deviance approach can be used to improve hand hygiene compliance and can be associated with a decline in the incidence of device-associated healthcare-associated infections (Marra et al., 2011).

In another study, a nurse call system was used as a tool in a positive deviance approach to improve hand hygiene compliance in two hospital units. The entire health care staff (nurses, dietitians, psychologists, cleaning staff etc.) of these units could participate during hand hygiene meetings twice a month. The staff members who participated in these meetings were seen as the positive deviants. These positive deviants proposed several solutions, such as the provision of a daily supply of liquid alcohol for current surface cleaning in the rooms and the relocation of the alcohol rub dispensers to make the access and the use easier. They were stimulated to spread their ideas and solutions to other staff members. The hand hygiene compliance of the nurses was evaluated by making use of electronic counters to measure the number of uses of alcohol-based hand rub and by making use of the nurse call system to measure the number of nurse visits to patient rooms. The conclusion was that the "*PD* [positive deviance] *approach to hand hygiene produced increased compliance, as measured by increased consumption of alcohol hand sanitizer, an improved ratio of alcohol hand rub uses to nurse visits, and a reduced rate of device-related infections, with results sustained over 2 years*" (De Macedo et al., 2012, p. 1).

In 2013, the results of a multicenter study were published in which positive deviance was used to improve hand hygiene compliance in nine different settings in seven hospitals. Positive deviants recommended several changes during the meetings twice a month, for example to change the pressure of the water tap and to place alcohol gel dispensers in the corridors. The results indicated that the positive deviance intervention improved the hand hygiene in multiple hospital settings. There were 11,724 hand hygiene observations in the intervention phase instead of 5,791 observations in the pre-intervention phase. A significant difference was found in the overall hand hygiene compliance: 62.0 percent in the intervention phase instead of 46.5 percent in the pre-intervention phase. There was also a corresponding decline in device-associated healthcare-associated infections and there was a decrease in the median length of hospital stay between the pre-intervention phase and the intervention phase. Therefore, the conclusion was that the positive deviance strategy had *"the potential to be used in several areas of infection prevention and hospital epidemiology*" (Marra, Noritomi, et al., 2013, p. 987).

In addition, a study was carried out about positive deviance as a new tool for infection prevention and patient safety. Positive deviants suggested several changes to improve infection prevention, such as to place alcohol gel dispensers on mobile x-ray devices and to change the procedure for monitoring the use of alcohol gel. The results showed that, in order to use positive deviance to improve hand hygiene compliance, it is important that nurse managers facilitate the discussions among nurses and give the positive deviants the chance to express their feelings. Together with the positive deviants, the best practices for hand hygiene should be discussed. Positive deviance was

regarded as a tool for infection prevention and patient safety, since it tries to improve processes by questioning errors and by analyzing work flows (Marra, Pavão Dos Santos, et al., 2013).

An article about new technologies to monitor health care staff hand hygiene was written by Marra and Edmond (2014). Positive deviance is described in this article as a non-technological approach that can improve hand hygiene compliance. Positive deviance enables health care staff to decide how their work should be carried out. The authors stated that positive deviance stimulates ownership of problems by frontline staff and promotes positive deviants to develop and apply changes to improve hand hygiene compliance (Marra & Edmond, 2014).

6.2. Prevention of MRSA infections

The bacteria Methicillin Resistant Staphylococcus Aureus (MRSA) is a leading source of hospital-acquired infections, causing endemics in hospitals around the world. MRSA leads to unnecessary suffering, death and ricing health care expenses. The resistance of the bacteria to antibiotics has grown exponentially over the last years (Buscell, 2006; Singhal, 2010; Singhal, Buscell, et al., 2010; Singhal, McCandless, et al., 2009). For example, only two percent of staphylococcus aureus infections were antibiotic resistant in the United States in 1972. In 2004, this percentage had grown to 63 percent (Buscell, 2006).

Most healthy people do not know that they carry MRSA. However, when MRSA has entered their body, it can lead to severe infections and even death. MRSA can live up to six weeks on environmental surfaces and it can be transmitted easily through skin-to-skin contact or through shared personal items. Therefore, many objects in a hospital can be seen as vectors for transmission (e.g. stethoscope, catheter, breathing tube) (Lindberg & Schneider, 2013; Singhal, Buscell, et al., 2010; Singhal, McCandless, et al., 2009; Singhal & Greiner, 2007). In this section, an overview is given of the positive deviance literature related to the prevention of MRSA infections, including health care staff engagement, organizational culture change, the use of social network maps, and successful U.S. hospitals.

6.2.1. Health care staff engagement

Positive deviance is used in MRSA prevention to bridge the gap between knowledge and practice; between what health care staff already knows and what it does. The positive deviance approach concentrates on how to nurture reliable adherences to known infection prevention measures at all times, by everybody who comes in contact with patients and their environment (Buscell, 2008a). It enables health care staff with ideas about preventing MRSA to connect with other people who have the resources to make it happen (Buscell, 2008b). The approach allows health care staff to discover their own solutions, which stimulates engagement and development. It also engages patients in the

program and stimulates them to be aware of the MRSA prevention program (Bonuel, Byers, & Gray-Becknell, 2009). At first, many people were skeptical about the relevance of the positive deviance approach to MRSA prevention (Singhal & Greiner, 2010). However, nowadays the approach is used across the United States (U.S.) to reduce MRSA infection levels. This approach to MRSA control also spread to Canada and the United Kingdom (Lewis, 2009).

The problem of MRSA is so massive that every person in patient care has to be part of the solution. Positive deviance stimulates this by enabling all staff members to come up with solutions (Buscell, 2006). The positive deviance approach was suitable for MRSA prevention and control in Pittsburgh Veterans Hospitals, because all members of the health care staff took responsibility for MRSA prevention and control. When "*the staff owns the solutions they propose, they comply with them*" (Singhal & Greiner, 2007, p. 26). By using the positive deviance approach, the transmission of MRSA became visible and it was no longer abstract for health care staff and patients (Singhal & Greiner, 2007). The implementation of the positive deviance approach to prevent MRSA also influenced the culture within the Pittsburgh Veterans Hospitals. After the implementation, MRSA was seen among staff and patients as everyone's problem, since transformation had occurred from within. As a result, staff members at all levels and in all units and patients were working together to prevent MRSA infections (Singhal & Greiner, 2010).

The implementation of the positive deviance approach developed over time. Jerry and Monique Sternin came to Pittsburgh several times to give positive deviance workshops for the health care staff. The implementation of the positive deviance approach at the Pittsburgh Veterans Hospitals was also important for the further development of positive deviance as an approach to prevent MRSA infections (Singhal & Greiner, 2010).

6.2.2. Organizational culture change

The use of the positive deviance approach at the Pittsburgh Veterans Hospitals inspired the leaders of the Albert Einstein Medical Center to implement the positive deviance approach. Jerry Sternin and the Plexus Institute were important during the implementation of the positive deviance at this center. After carrying out several pilots in different units, the approach was extended to the whole center. By making use of the positive deviance approach, successful strategies and behaviors were discovered and it also changed the culture at the center (Buscell, 2010). The positive deviants recommended several changes, such as to make the supply boxes (with gowns, gloves etc.) out of Plexiglas with visible stock and to have a sheet on all patient bedside charts that shows the MRSA status of the patient. Moreover, the positive deviance approach to MRSA prevention led to a new way of collaborating at Albert Einstein Medical Center. The approach was successful, because it

identified problems that were only visible for the health care staff who worked with the patients. It also changed the way people got along with each other. After making use of the positive deviance approach, health care staff at all levels of the organization treated each other more respectfully (Buscell, 2008a).

In other studies, it is also mentioned that the positive deviance approach influenced the culture of different health care organizations. In one study, the positive deviance approach was used in order to drive change from the frontline health care staff upward and to make everyone aware that MRSA is everyone's business. The approach gave staff members the opportunity to share and discuss with peers and leaders to highlight existing effective behaviors and practices. A prevention program was designed including the five discovered components leadership engagement, active surveillance, hand hygiene, contact precautions, and cultural transformation. The results showed that after one year of implementation, four months of zero healthcare-acquired MRSA infection were established in all three intensive care units. Therefore, it was argued that that culture change is important for a successful implementation of MRSA prevention (Bonuel et al., 2009).

In another study, positive deviance was used as a tool for MRSA control and prevention in a U.S. hospital. Positive deviants suggested several changes, for example to scrub the equipment and to wipe food trays with anti-bacterial wipes. The positive deviance approach was effective, since the MRSA infections were reduced with 84 percent after two and a half years. Positive deviance also changed the culture of the organization as mentioned in the report: *"when data allows people to see the difference their actions are making, it acts as a self and collective motivator"* (Singhal, Buscell, & McCandless, 2009, p. 6).

6.2.3. The use of social network maps

Social network maps can provide visual and theoretical hints about how relationships emerge in combination with successful infection control. The mapping of positive deviance MRSA prevention networks can help hospitals to measure, understand, and enhance their MRSA prevention. The networks of the health care units with the lowest MRSA transmission rates should be studied in order to prevent MRSA infections (Buscell, 2008b).

Social networks maps were used to see patterns in MRSA infections among staff members in four hospital nursing units. The networks showed which staff member worked with whom on MRSA prevention. One network was created before the positive deviance implementation and one after the implementation. The results revealed that collaboration and communication among staff members working in different units and different roles was increased after the implementation of positive deviance. This increased collaboration and communication developed in combination with

new norms for infection prevention (Lindberg & Clancy, 2010). Social network maps were used at Billings Clinic to illustrate the community building power of positive deviance. The Billings Clinic community itself built these networks, since all networks were result of decisions made by the community. The improved networks at Billing Clinics resulted in higher adherence to good infection practices, lower infection rates and a change in the bacterial ecology (Singhal & Buscell, 2010).

6.2.4. Successful U.S. hospitals

Lindberg and colleagues (2009) studied six U.S. hospitals that are all part of the positive deviance MRSA Prevention Partnership. Their study revealed that the positive deviance approach was an effective approach to tackle complex patient safety and quality challenges that rely on social and behavioral change. Practices that were preventing infections were discovered and spread and barriers to infection prevention were eliminated (Lindberg, Norstrand, Munger, DeMarsico, & Buscell, 2009). Lanham and colleagues (2013) referred to this study about health care associated MRSA (HA-MRSA) as *"one of the first multi-institutional, geographically dispersed efforts to show positive results for HA-MRSA prevention"* (Lanham et al., 2013, p. 198).

Singhal (2010) explained in his article why some U.S. hospitals (e.g. Pittsburgh Veterans Hospitals, Albert Einstein Medical Center, Billings Clinic) managed to show declines in MRSA infection rates. These hospitals managed, because they used the positive deviance approach instead of the traditional approach. They focused on what worked instead of trying to solve what did not work. They believed that among the staff members there were uncommon behaviors that prevented MRSA transmissions and that could be learned by others. According to Singhal, the positive deviance approach should be used more often in order to improve the quality of life of individuals and communities (Singhal, 2010).

In 2011, the results of the sustainability of a multifaceted infection control intervention to prevent MRSA transmission implemented in one single U.S. hospital were published. The positive deviance approach was used as systems and behavioral change strategy. Patients and health care staff were involved in the approach and were stimulated to find solutions to prevent MRSA transmission. The intervention resulted in a reduction of MRSA transmission and the overall hospital-wide clinical incidence of MRSA colonization or infection reduced with 21.8 percent. This clinical incidence reduced even with 61 percent during the post-intervention period of seven years. The authors mentioned that the implementation of the positive deviance approach may have nurtured a more immediate effect than the other facets of the intervention (Ellingson et al., 2011).

At Main Medical Center (MMC), another U.S. hospital, the positive deviance approach was used in order to prevent MRSA infections and other healthcare-associated infections. The use of positive

deviance gained insights related to three themes. The first theme, the interrelated roles of anxiety, attachment, and relationships, revealed that there was uncertainty among the participants involved in the positive deviance approach. The second theme, the process of leadership across organizational networks and hierarchies, described the relationships across the MRSA Collaborative. The last theme, shifts in power that facilitated leadership and contributed to a self-organization towards desired effects, showed that the shifts in power had positive effects on the process. The results indicated that MRSA rates had decreased and infection prevention practices had improved at MMC (Lindberg & Schneider, 2013).

6.3. Other hospital infections

Besides that positive deviance is used in several hospitals to improve hand hygiene compliance and to prevent MRSA infections, it is also used to prevent other hospital infections. These infections are limited elaborated in the literature. In this section, an overview is presented of the use of positive deviance to prevent cross-contamination and to reduce bloodstream infections.

Positive deviance was used to prevent cross-contamination in the St. Patrick Hospital and Health Sciences Center. Special attention was paid to the transport of patients infected or colonized with multidrug-resistant organisms (MDRO), since the guidelines for preventing MDRO transmission do not address patient transfer in detail. The positive deviants in the hospital suggested several solutions, such as a communication plan, a transfer process, and wearing the right protective equipment. This improved the prevention of cross-contamination (Patterson, 2011).

The positive deviance approach was carried out to reduce bloodstream infections (BSIs) in an outpatient hemodialysis center in New Jersey between 2008 and 2011. In this center, positive deviance was used as a behavioral change intervention combined with other interventions. The positive deviants showed behavior, for example the use of a mnemonic device to achieve almost perfect hand hygiene compliance, which was taught to others. The results indicated a significant decrease in access-related BSIs and an improved adherence to infection prevention practices (Downham, Jones, Peterson, & Mourad, 2012).

To engage health care staff in an intervention to reduce BSIs in outpatient hemodialysis centers, the positive deviance approach was used. During meetings, the positive deviants proposed several changes, which resulted in the establishment of three separate shifts for dialysis patients with thorough disinfection of the equipment and the entire unit between shifts. The results indicated that positive deviance helped the health care staff to adopt responsibility for improving their infection prevention practices. The positive deviance approach also had an positive effect on the culture of the

center, since health care staff members felt comfortable talking about infection prevention and holding each other accountable for infection prevention (Lindberg et al., 2013).

6.4. Summary

Controlling infections in hospitals is complex and challenging. Positive deviance is used to improve hand hygiene compliance, to prevent MRSA infections and to prevent other hospital infections. Various researchers have argued that positive deviance is suitable to increase the hand hygiene compliance of health care staff. The results of different studies indicated that the positive deviance approach improved the hand hygiene in multiple hospital settings and that there was a corresponding decline in healthcare-associated infections. The positive deviance approach was successfully used to prevent MRSA infections. It discovered successful strategies and behaviors and it changed the culture of health care organizations. The positive deviance approach was also used to prevent other hospital infections, such as cross-contamination and bloodstream infections.

Chapter 7 - Reproductive health

Geke van Dick

As defined by the World Health Organization (2002), reproductive health is:

> *A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capacity to reproduce and the freedom to decide if, when and how often to do so.* […]. (WHO, 2002, p. 4)

Positive deviance has been used to improve reproductive health, especially related to safe pregnancy and childbirth, and sexual health. An overview of the use of positive deviance in relation to these topics is presented in this chapter.

7.1. Safe pregnancy and childbirth

The right to have the capacity to reproduce and the freedom to decide if, when, and how to do so implies some other rights related to safe pregnancy and childbirth. For example, men and women have the right to have access to safe, effective, affordable, and acceptable methods of family planning. Moreover, women have the right to have access to healthcare services in order to have safe pregnancies and childbirth (WHO, 2002). An overview of the use of positive deviance in relation to family planning, pregnancy outcomes, and maternal and newborn care is presented in this section.

7.1.1. Family planning

In Ethiopia and Kenya, the perceptions of community norms shape the contraceptive use through three mechanisms. First, the contraceptive use of women was lower when women's own fertility desires regarding boys were conform to the norm. Second, the use of contraceptives was higher when women's fertility desires regarding boys were not conform to the norm; these women were the positive deviants. Finally, the contraceptive use of both men and women was influenced by the extent to which they expected their social network to approve family planning. Positive deviant men in the contraceptive use were not found, More research is needed to discover why there were only positive deviant women (Dynes, Stephenson, Rubardt, & Bartel, 2012).

7.1.2. Pregnancy outcomes

In 2000, the pregnancy outcomes were not optimal in Egypt, especially related to low birth weights. Therefore, a positive deviance inquiry was conducted in Upper Egypt to identify factors associated with good pregnancy outcomes despite limited resources. Indicators of pregnancy outcomes were weight gain of the mother and birth weight of the child. The positive deviants had a higher number of

antenatal visits, more day-time rest, higher consumption of meat and vegetables, lower exposure to secondhand smoking, and did not show signs of urinary tract infection (Ahrari et al., 2002). Following the results of this study, a project was initiated to upgrade health care facilities to provide better antenatal care. Improved pregnancy through education supplementation sessions (IMPRESS) were developed to counsel women at risk of delivering low-birth weight infants and to supplement them with adequate foods. An evaluation of the effect of this project on the birth weights indicated a reduction in the prevalence of low-birth weight. Only 2.6 percent of the target group infants were born with a low-birth weight compared to the national average of 12 percent. Moreover, the project increased daytime rest, food consumption, iron intake, and avoidance of secondhand smoking. The project could be introduced in other regions and countries as well (Ahrari et al., 2006).

Women from low-income communities are more likely to have poor nutritional diets, which could have a negative impact on pregnancy outcomes. However, some low-income pregnant women have adequate nutritional diets, the positive deviants. A study focusing on these positive deviants revealed that these women felt responsible for their own diet; were aware of the need for a balanced diet; ate foods with adequate nutritional requirements; ate more meals at home; and were more willing to prepare meals outside of the desired meals (Fowles, Hendricks, & Walker, 2005).

Pregnant women are at risk of anemia, especially when struggling with poor nutritional diets. Therefore, iron supplementation is an important part of antenatal care programs, but the effectiveness is only partial. The impact of a positive deviance approach to improve iron supplementations programs in rural Senegal was examined. The analysis revealed that the risk of anemia was significantly reduced in the positive deviance area. However, there was still a high prevalence of anemia, implying the need for additional strategies to combat anemia (Ndiaye, Siekmans, Haddad, & Receveur, 2009).

The United States of America struggles with one of the highest teenage pregnancy rates of all developed countries. Pregnancy outcomes of adolescent girls are worse than the pregnancy outcomes of older women. Identified socio-demographic and behavioral characteristics associated with healthy pregnancies and birth outcomes among adolescents are being older, non-black, a non-smoker, and/or married. Having more children, gaining a moderate amount of weight, having a longer inter-pregnancy interval, and receiving adequate prenatal care are also associated with healthier pregnancies and better birth outcomes. All of these factors could be used while developing interventions for pregnant adolescents (Wallace & Harville, 2012).

7.1.3. Maternal and newborn care

In Pakistan, infant mortality in the first forty days was common. The positive deviance approach was implemented in eight villages to constitute better health outcomes for mothers and their newborns. A team consisting of a village leader, volunteers and NGO staff identified positive deviant infants, infant who survived despite poverty, prematurity and maternal health history. Moreover, positive deviant family members of the infant were identified. Sharing of the identified positive deviance practices with the rest of the community was an important aspect of the program. After the start of the program, no newborns had died anymore (Shafique, Sternin, & Singhal, 2010).

7.2. Sexual health

Reproductive health care includes the care for sexual health. The World Health Organization (2002) defined sexual health as:

> *A state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled.* (WHO, 2002, p. 5)

Negative consequences or conditions of sexual health are infections with the human immunodeficiency virus (HIV), sexually transmitted infections (STIs), and reproductive tract infections (RTIs), unintended pregnancy and abortion, sexual dysfunction, sexual violence, and harmful practices (WHO, 2010). Positive deviance has been used to address some of these problems, namely HIV, sexual violence, and harmful practices, which are addressed in this section.

7.2.1. HIV prevention

The human immunodeficiency virus (HIV) causes the acquired immunodeficiency syndrome (AIDS). In 1981, the first cases of AIDS were identified. The prevalence of HIV rose to an estimated 39 million people worldwide in 2007 of which 64 percent lived in Sub-Sarah Africa. However, the pandemic spreads at fast rates to large countries in Asia. There is still no cure available for HIV/AIDS, preventing infection with HIV is therefore extremely important (Solomons & O'Donnell, 2007).

Abstinence to prevent HIV infection

In Rwanda, the infection rate of HIV/AIDS is 13 percent, with 10 percent of the sexually active adolescents being HIV positive. Rwandan adolescents engage in sexual risk behaviors through early sexual experimentation and limited use of condoms. The positive deviance approach was used to understand the determinants of sexual behavior of adolescents. Positive deviants were the

youngsters who were abstaining from sex or who were constantly using condoms. The study took place in four provinces of Rwanda in 2001, incorporating interviews with 1327 boys and girls between 15 and 24 years. Factors associated with prolonged abstinence were living in rural areas, being Islamic, abstaining from alcohol, having the perception that peers abstain from sex, and the perceived self-efficacy to refuse sex in the early stages of a relationship. Besides these factors, girls abstained sex more often when their father was living under the same roof. If youngsters were sexually active, urban inhabitants were more likely to use condoms than their rural peers were. All these protective factors could be used to design program to change the sexual behavior of adolescents in Rwanda (Babalola, Awasum, & Quenum-Renaud, 2002).

Another study on sexual abstinence in countries with a high HIV prevalence took place in Burkina Faso and Côte d'Ivoire. The group norm in both countries was that young people favor early and non-marital sexual initiation. However, there were youngsters who did not conform to these norms, the positive deviants. The factors associated with late sexual initiation were identified through interviews with the positive deviants. The positive deviants had a strong commitment to the ideal of premarital virginity and attached a deep sense of meaning to their virginity. They had educational and professional ambitions, and the negative consequences of early sexual debut motivated youngsters to abstain. Abstainers had a strong belief in their own capability to abstain from sex. In addition, external factors such as a negative sexual experience of a peer and the parental opinion influenced the abstinence. Overall, internal factors mainly determined abstinence. Promoting all the identified factors could be a key factor in HIV prevention (Babalola, Ouedraogo, & Vondrasek, 2007).

Protection to prevent HIV infection

In 2002, Save the Children trained, as part of a HIV/AIDS program, peer educators to conduct a positive deviance inquiry with commercial sex workers (CSWs) and injecting drug users (IDUs). CSWs showed positive deviant behaviors in negotiating condom use. Positive deviant CSWs emphasized to their clients that it was important to prevent their families from being infected. Moreover, they made sure that condoms were available, and if not, they made sure that a colleague bought condoms while the CSW distracted the customer. The IDUs showed also positive deviant behaviors in the form of bending the needle after use and sniffing the drug if no clean needles were available (Lapping, Marsh, et al., 2002).

In New York City, conventional methods to prevent HIV infection for IDUs did not have the desired effect. Therefore, injecting drug users (IDUs) who had managed to avoid hepatitis C and HIV infections for eight to 15 years were investigated to be able to understand long-term non-infection. Interviews with the positive deviants revealed that remaining uninfected was the result of

continuous hard work and adaptation to the changed circumstances. IDUs focused on more than only the goal of staying uninfected, which enhanced their motivation to continue their practices (Friedman, Mateu-Gelabert, Sandoval, Hagan, & Jarlais, 2008). These additional goals were for example making sure not to get into drug withdrawal and maintaining social relations with providers of money, drugs, and other resources. These goals were not directly related to HIV infection prevention, but contributed to staying uninfected through avoiding high-risk behaviors, avoiding injecting with high-risk partners, and avoiding injecting in high-risk contexts (Friedman, Sandoval, Mateu-Gelabert, Meylakhs, & Des Jarlais, 2011). All of these strategies and practices could be used to develop new staying safe methodologies (Friedman et al., 2008, 2011).

Nutrition to prevent HIV infection

Food security is the condition in which "*all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life"* (Solomons & O'Donnell, 2007, p. 14). Malnourished people are more severely affected by infectious pathogens like HIV (Solomons & O'Donnell, 2007). Malnutrition lowers the body's resistance by weakening the immune system (Samuels & Rutenberg, 2011). Moreover, families who have a HIV-positive member tend to get isolated by the community, which complicates their access to nutritional foods. Therefore, food security is an important factor to combat HIV. The positive deviance approach could be an opportunity to investigate existing behaviors and practices of families who despite having (a) HIV member(s) in their family still manage to have enough access to nutritional foods (Solomons & O'Donnell, 2007).

Anti-retroviral treatment (ART) is a drug to prevent the growth of the HIV. ART is becoming increasingly available in sub-Saharan Africa, with relatively high levels of adherence. However, the efficacy of ART is largely influenced by the consumption of nutritional foods. In Zambian and Kenya, some people on ART were able to have sufficient consumption levels that enabled them to stick to their medication and/or even to maintain food secure, these are positive deviants. The majority of people on ART did not manage to be food secure, since food consumption mainly depends on the season, due to availability and prices of food. The positive deviants were the individuals who had a greater number of assets, who were more connected to the formal sector, and who had someone to rely on in their network. Therefore, providing support to people on ART in the form of teaching skills, creating livelihood networks and assets, and providing food and/or cash could benefit. All of this support could not only benefit HIV-positive people, but all poor people in general (Samuels & Rutenberg, 2011).

7.2.2. Sexual violence

Sexual violence is mostly directed to vulnerable individuals and groups, which can be both men and women. Examples of sexual violence are rape, coerced sex, sexual abuse, female genital cutting, and forces prostitution (WHO, 2010). Positive deviance has rarely been used to address these problems. However, there are two examples of the use of positive deviance to tackle these problems, which are described in this section.

Female genital cutting

In Egypt, female genital cutting (FGC) is part of a deeply rooted culture and tradition. Egyptians practice FGC, independent from their religious affiliation, educational background, or social class. In 1996, 97 percent of all ever-married women in Egypt were circumcised. Moreover, 87 percent of all women supported the continuation of this practice, but there was also a countermovement. The countermovement focused on discovering factors that enabled families to refuse circumcision of their daughters, the positive deviant families. The Centre for Development and Population Activities (CEDPA) in Egypt identified nine positive deviant families and interviewed them. Based on the finding of the positive deviance inquiry, strategies and activities were developed in order to end FGC in the participating communities. The project expanded to other communes in Egypt and identified 83 positive deviants. The project stimulated the openness about FGC and women to be open about not being circumcised. The positive deviance inquiry revealed that the emotional and psychological traumas associated with FGC were the main reasons why mothers refused to circumcise their daughters. CEDPA concluded that the positive deviance approach could be a useful methodology to eliminate FGC in other communities and countries (McCloud et al., 1991).

Girls' trafficking

In Indonesia, among 30 to 40 percent of all commercial sex-workers in 2000 were under 18 years old, suggesting a high incidence of trafficking. Save the Children addressed this problem in their anti-trafficking program between 2002 and 2005. Save the Children used the positive deviance approach to identify families in Gadungsari, who despite their poverty had managed to keep their daughters at home. Identified positive deviance practices were saving, studying, working, and learning more, which were used to develop a program. Boys and girls got the opportunity to learn informal and formal during the program. Moreover, the program stimulated the inhabitants to come together to discuss and solve their own problems. Two years after the project initiated, results showed that since the beginning of the program, no girls had left the commune to enter the sex trade. Furthermore, the taboo about trafficking was violated. Gadungsari served as a model for replication in the rest of Indonesia (Durá & Singhal, 2009).

7.3. Summary

Positive deviance has been used in several cases to improve reproductive health, through improving safe pregnancies and childbirth, and sexual health. Positive deviance was used to stimulate contraceptive use, to improve pregnancy outcomes, and to improve maternal and newborn care. In order to improve sexual health, positive deviance was used to prevent HIV infection and to decrease sexual violence and harmful practices. In order to prevent HIV infection, positive deviance was used to stimulate abstinence, to stimulate safe sex practices and safe drug use, and to improve the nutritional status of vulnerable groups. Female genital cutting and girls' trafficking are examples of sexual violence for which positive deviance was used to address these problems.

Chapter 8 – Limited elaborated health problems

Geke van Dick and Rianca Scheffel

Since positive deviance is a relatively new concept, it has not been used elaborately to solve health related problems. Positive deviance has been used, as mentioned in the previous chapters, in the field of child nutrition, health care management, hospital infections, and reproductive health. However, positive deviance has also been used to address problems related to sports and lack of physical activity, weight control, healthy eating, cancer, and smoking, which are described in this chapter.

8.1. Sports and physical activity

The concept of positive deviance was used in order to describe the behavior of long-distance runners and bodybuilders. Positive deviance was defined as *"behavior which is pro-normative but becomes deviant when pursued with an intensity and extensity going beyond conventional bounds"* (Ewald & Jiobu, 1985, p. 144). Sport constitutes positive deviance, since sport includes several norms and values that are highly important in the American culture. Furthermore, sport is related to fitness and health, which are part of a popular societal culture. Long-distance runners and bodybuilders are deviant in the positive sense, because they dedicate a higher amount of their energy and time to their sports activities in comparison with the rest of the society (Ewald & Jiobu, 1985).

In 1991, Hughes and Coakley published an article about positive deviance among athletes. The aim of the study was to develop a working definition of positive deviance and use this definition to analyze the behavior of athletes. Positive deviance was defined as an over-commitment or over-conformity to the sport ethic; the norms and values embodied in the sport itself. Besides that athletes show commitment to this sport ethic, physicians and trainers show commitment as well (Hughes & Coakley, 1991). Wittig and Schurr (1994) used this concept of positive deviance described by Hughes and Coakley (1991) to discover the psychological characteristics of women volleyball players. Some women in the sample were willing to take risks in order to achieve positive sport goals. These characteristics matched with positive deviant behavior as described by Hughes and Coakley (1991). However, more research was needed in order to determine over-commitment or over-conformity of athletes to the sport ethic (Wittig & Schurr, 1994).

Besides that positive deviance is used to describe the behavior of athletes, it is also used to study the physical activity of adults in rural areas. The positive deviance approach was carried out to discover what made certain rural citizens physically active despite their situation. Therefore, individuals were interviewed who were already physically active and lived in rural areas: the positive deviants. The

results indicated that managing health problems was the most important motivator for positive deviants to be physically active. Positive deviants used resources in their local environment for their physical activity. It is mentioned that the understanding of how these physical active adults took advantage of their situation can be used in interventions that aim to improve the physical activity in high-risk rural populations (Kegler et al., 2013).

8.2. Weight control

A multi-source method (MSM) was used to develop an intervention to improve weight loss among low-income postpartum women. A MSM combines local, scientific, and theoretical knowledge by using six components. Positive deviance was one of these components and was used to discover local knowledge, strategies, and behaviors. Results showed that a multi-source method could be used in order to develop an intervention. A MSM was especially suited for populations for whom existing evidence-based interventions are unavailable or lack relevance (Walker, Kim, Sterling, & Latimer, 2010).

Positive deviance was used to develop a weight-loss website that incorporated the strategies and practices of adults with long-term weight loss success in a web-based weight control intervention 'AchieveTogether'. Using these strategies and practices of successful weight losers offers the potential to develop long-term, sustainable interventions with less supervision of experts. However, more research is needed in order to improve the efficacy of the intervention (Kraschnewski et al., 2011). Positive deviance was also used as a qualitative approach to study internet behavioral interventions that have succeeded to engage users where most other interventions failed. Two features were identified that contributed to engage users of internet interventions: the intervention targets individuals with urgent health concerns; and the intervention adapts to individual needs (Schubart, Stuckey, Ganeshamoorthy, & Sciamanna, 2011).

In order to determine successful weight control practices, a positive deviance approach was carried out. The positive deviance approach contained four steps, namely identify positive deviants, qualitative data collection and analysis of practices, testing hypotheses in a representative sample, and dissemination of best practices. The practices of successful weight losers were examined and five primary themes that helped to sustain long-term weight loss were discovered. These themes included practices related to nutrition, physical activity, restraint, self-monitor, and motivation. These themes were used to develop a list of practices that can be used to design weight control interventions. The positive deviance approach was an appropriate qualitative research approach to discover weight control practices (Stuckey et al., 2011).

Positive deviance was also used to understand the distribution of weight counseling performed by primary care providers (PCPs). This understanding was needed in order to design effective interventions for PCPs. Positive deviant PCPs were identified to discover practical methods that could be used to increase weight counseling. The results showed that a minority of the U.S. PCPs provided the majority of primary care weight counseling (Kraschnewski, Sciamanna, Pollak, Stuckey, & Sherwood, 2013).

8.3. Healthy eating

Healthy diets can prevent disease or control deterioration of disease. People tend to claim that healthy diets are more expensive, but there are people who are able to have healthier diets at lower costs than the average: the positive deviants. In the Seattle Obesity Study, it was investigated what characterized the positive deviants. Three diet quality measures were used; Healthy Eating Index (HEI), Mean Adequacy Ratio (MAR), and Energy Density (ED). The results depended on the diet quality measure used, only gender and diets costs were associated with diet quality across all three methods. A low cost high quality diet consisted of more fruits, vegetables, and whole grains and less saturated fat, alcohol, and added sugars than a low cost low quality diet. The positive deviants tended to place more importance on foods being healthy compared to those with a low quality diet (Davis, 2014).

8.4. Cancer

Diets can lower the risks of cancer up to 30 percent or more. A positive deviance approach was used to investigate the characteristics of a class-appropriate healthy diet to reduce the risk of cancer in Guatemala. Personal day menus were developed based on the results (Vossenaar et al., 2009). Another study was carried out about the same topic. The results showed that the presence of people who adhered to the cancer prevention diets was low. However, the results could be used to develop a dietary change guidance based on the findings of the positive deviants (Vossenaar, Bermúdez, Anderson, & Solomons, 2010).

Breast cancer mortality is higher among blacks than among non-blacks in the United States of America. This disparity could be caused by socioeconomic status (SES). It was investigated what the impact of the implantation of Medicare mammography on disparities, on the existence of communities without disparities, and on the relation of disparities and SES while using epidemiological data. The results indicated that there were communities without disparities: the positive deviants. Future research needs to investigate what distinguished positive deviant communities from the average, in order to help other communities. *"By analyzing the characteristics*

of positively deviant communities, other communities might be able to identify previously untapped or modifiable assets that would move them in a positive direction" (Levine et al., 2008, p. 123).

In Honduras, cervical cancer is the leading cause of death for women. Screening is an important early detection method. Early detection is an effective tool to prevent morbidity and mortality due to cervical cancer. The barriers of screening and the women who had overcome these barriers were studied. Two important factors that stimulated screening were self-love and social support. Future interventions should focus on stimulating self-love and engaging men in the intervention in order to create social support for screening (Garrett & Barrington, 2013).

8.5. Smoking

The positive deviance approach was carried out to improve smoking cessation outcomes in New South Wales (NSW) prison settings. The average smoking prevalence in NSW prisons was generally over 72 percent. After a 15-month intervention, smoking rates were decreased with twenty percentage points. Furthermore, 70 percent of the participants were still not smoking three months after the intervention was carried out. These rates are higher than the success rates of other interventions to reduce smoking in NSW prisons, which had an average success rate of 52 percent. The conclusion was that positive deviance is a low-cost method that focuses on existing and feasible practices and behaviors. Therefore, it is suitable to develop interventions to reduce smoking prevalence in prisons (Awofeso, Irwin, & Forrest, 2008).

8.6. Summary

Positive deviance is used to improve physical activity and identify positive deviant characteristics of athletes, and to discover weight control practices that could be used to develop weight control interventions. With the use of positive deviance, the characteristics of people who are able to have healthier diets at lower costs can also be identified. Diets could be developed to reduce cancer risks based on the findings of positive deviance. Positive deviance could also be used to determine barriers of cancer screening and to discover how to overcome these barriers. Positive deviance is also a low-cost method to reduce smoking prevalence in prisons.

Chapter 9 - Work of Antonovsky

Geke van Dick and Rianca Scheffel

Since the purpose of this paper is to explore if positive deviance can be a relevant concept for health promotion, it is important to explore if there are similarities between positive deviance and health promotion. The work of Antonovsky, the founder of salutogenesis, is often used in health promotion. Antonovsky was one of the researchers who was interested in individuals at risk who performed better than their peers did. In this chapter, similarities between the work of Antonovsky and the concept of positive deviance are explored. Therefore, related implicit and explicit references in the work of Antonovsky have been selected with the definitions of positive deviance in mind. In addition, this chapter contains a brief overview of the theory of salutogenesis and its development.

Aaron Antonovsky (1923-1994) was born as the son of Russian-Jewish immigrants in Brooklyn, New York (Antonovsky, 1987; Lindström & Eriksson, 2006). At Yale University, he studied sociology and got interested in medical sociology. After a couple of years, Aaron Antonovsky and his wife Helen emigrated to Israel (Antonovsky, 1987). Between 1977 and 1978, Antonovsky wrote his first book *"Health, Stress and Coping"* about the theory of salutogenesis. He published his second book *"Unraveling the Mystery of Health"* in 1987 (Antonovsky, 1990). In 1993, Antonovsky retired, but continued working on his theory until he got sick in 1994 and died shortly after (Lindström & Eriksson, 2006).

9.1. Early work

In 1959, Antonovsky published an article about Negro youth overcoming the social disposition of their minority status despite the difficulties they faced (Antonovsky & Lerner, 1959). Therefore, these Negroes can be classified as positive deviants in their population. This article can be seen as the starting point of Antonovsky's interest in people who manage to do well. In 1967, Antonovsky published a paper about the career patterns of moderately successful Negroes. He concluded that Negroes *"attribute their success to their personal characteristics, outstanding among which they see perseverance, willingness to work hard and sacrifice"* (Antonovsky, 1967, p. 259). This conclusion can be related to the concept of positive deviance, since it is about people who recognize their own strengths and use these strengths to face difficulties (Heckert & Heckert, 2002).

A study of concentration camp survivors carried out by Antonovsky, Maoz, Dowty, and Wijsenbeek (1971) confirmed their hypothesis that the camp survivors in the study were more poorly adjusted than the controls without the concentration camp trauma. However, still there were a number of well adapted camp survivors (Antonovsky et al., 1971). These survivors were the positive deviants,

since they managed to do well despite their trauma. The authors raised the question: "*What has enabled some women, subjected to the most destructive experiences conceivable, to lead well-adapted lives?*" (Antonovsky et al., 1971, p. 191).

This was the first time that the key question of positive deviance appeared in the work of Antonovsky. The authors proposed three possible answers to their question: "*an initial underlying strength, an environment which provided opportunities to reestablish a satisfying and meaningful existence, and a "hardening" process which allows the survivor to view current stresses with some equanimity*" (Antonovsky et al., 1971, p. 192). The first answer can be related to positive deviance, because positive deviants have to use their own strengths to overcome the difficulties they face (Heckert & Heckert, 2002). Besides these proposed answers, the authors pointed out that further investigation was still needed (Antonovsky et al., 1971).

Antonovsky published his first paper about breakdown in 1972. He defined breakdown as "*a result of an unresolved disturbance of homeostasis"* (Antonovsky, 1972, p. 541). This disturbance is caused by the confrontation of an individual with a stressor from his inner or outer environment, which causes a state of tension. Antonovsky described tension as the strain of a stressor in his book *"Health, Stress and Coping"* (1979). People can resolve tension by making use of tension management. Tension management depends on the available generalized resistance resources (GRRs). Antonovsky defined a GRR as *"any characteristic of the person, the group, or the environment that can facilitate effective tension management"* (Antonovsky, 1979, p. 99). An unavailability of GRRs leads to ineffective tension management. Stress is the remaining strain after ineffective tension management (Antonovsky, 1979). In 1973, Antonovsky redefined breakdown as *"the global entity of overall state of health or illness"* (Antonovsky, 1973, p. 605), which he later also called the ease/dis-ease continuum (Antonovsky, 1979).

9.2. Salutogenesis

In his first book *"Health, Stress and Coping"* (1979), Antonovsky mentioned that his focus had shifted from studying stressors to studying overcoming stressors. This focus shift enhanced the chance of finding positive deviants, since positive deviants manage to overcome stressors successfully (Pascale et al., 2010). Moreover, Antonovsky asked himself again the question: *"How do some of these people* [concentration camp survivors, the poor, Afro-American slaves, or free Negroes] *manage to stay reasonably healthy?"* (Antonovsky, 1979, p. 8). By asking this question, Antonovsky detached himself from the pathogenic orientation, since he focused on health instead of disease. In addition, Antonovsky extended his question by asking how any person can manage to stay healthy, which is the essential question of salutogenesis.

Salutogenesis focusses on the movement of a person across the ease/dis-ease continuum. According to Antonovsky, the answer to the salutogenic question lies within the GRRs. He became aware of the important value of GRRs through "*"deviants" such as those concentration camp survivors, poor people, or members of minorities who do stay at a fairly high level of health ease"* (Antonovsky, 1979, p. 99). This is the first time that Antonovsky mentioned the existence of deviants in his work. In general, the word deviant refers to negative behavior, as described in chapter three. However, Antonovsky used deviant to refer to people who behaved in a positive way. This is also the case with positive deviance (Heckert & Heckert, 2002).

According to Antonovsky, people mobilize their GRRs to face stressors, which shape one's life experiences. These life experiences are important for the shape of one's sense of coherence (SOC). Antonovsky defined the sense of coherence as:

> *A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected* (Antonovsky, 1979, p. 123)

According to Antonovsky, a person's sense of coherence influences, depending on the strength of one's SOC, the way of seeing the world and one's life in it as predictable and comprehensible. The strength of one's SOC influences the way people respond to stressors. On the one hand, people with a strong SOC mobilize the right GRRs at their disposal to overcome stressors. On the other hand, people with a weak SOC fail to mobilize the right GRRs and therefore fail to overcome stressors. For that reason, Antonovsky hypothesized that *"given the same life-events score, people with different strengths of the sense of coherence manifest different health outcomes"*(Antonovsky, 1979, p. 177).

In his second book *"Unraveling the Mystery of Health"* (1987), Antonovsky elaborated his definition of the sense of coherence based on the results of a SOC research among 51 people. These people had two things in common, *"they had experienced major trauma, and they were reported to be coping amazingly well"* (Antonovsky, 1987, p. 16). The results showed that 16 people had a strong SOC. According to Antonovsky, the difference between the people with a strong SOC and the people without a strong SOC could be explained by three themes. These three themes were comprehensibility, manageability, and meaningfulness, which became the core concepts of the new definition of SOC. In 1987, Antonovsky redefined the SOC as:

> *A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external*

> *environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement*. (Antonovsky, 1987, p. 19)

The SOC was used to explain the successful coping of 16 people. However, it cannot explain the other 35 people who also managed to cope amazingly well with their trauma. In contrary, the concept of positive deviance can be used to explain the successful coping behavior of all 51 camp survivors. These survivors all managed to behave positively outstanding against all odds, which is a characteristic of a positive deviant (Marsh & Schroeder, 2002).

9.3. The deviant case

In his second book *"Unraveling the Mystery of Health"* (1987), Antonovsky stated that there were people who *"even with a high stressor load, survive and even do well. (….) This is the mystery the salutogenic orientation seeks to unravel"* (Antonovsky, 1987, p. xii). This mystery is the same mystery that positive deviance tries to solve. Furthermore, Antonovsky stated that it is important to look at deviant case and ask questions such as *"Who are the blacks who do not have hypertension? Who are the Type A's who do not get coronary disease? Who are the smokers who do not get lung cancer?"* (Antonovsky, 1987, p. 11). In addition, as mentioned by Antonovsky, there are "*mothers who somehow manage to nurture and protect and give strength, opening a way to escape"* (Antonovsky, 1987, p. 105) despite that they live in poverty and face insecurities. These mothers can be identified as positive deviants. However, positive deviant cases are exceptional cases which make them hard to find (The Positive Deviance Initiative, 2010).

Antonovsky referred to the work of others to explain his own theory of salutogenesis. Some of these references are also in line with the concept of positive deviance. Among others, he quoted the work of Werner about stress-resistant children: *"Yet there were others, also vulnerable - exposed to poverty, biological risks, and family instability, and reared by parents with little education or serious mental health problems - who remained invincible and developed into competent and autonomous young adults"* (Werner, 1982 in Antonovsky, 1987, p. 44). Furthermore, he quoted Srole's work about the mental health of a metropolitan population:

> *Those who are deviant in the specific sense that they have come through the entanglement [of deep poverty] with few or no apparent signs or symptoms of mental impairment. Who is this "species of those caught in the web of poverty but remaining psychologically intact"* (Srole, 1967 in Antonovsky, 1987, p. 56)

According to Antonovsky, this question of Scrole was important for the work on the sense of coherence. However, there is not one single answer to this question, since there is not one successful strategy or style to overcome stressors (Antonovsky, 1990). The concept of positive deviance acknowledges this, since every situation is different and needs a different strategy. To use the positive deviance strategy successfully, others need to have access to the same resources in the same specific environment as the positive deviant (The Positive Deviance Initiative, 2010).

9.4. Summary

The first time that the key question of positive deviance appeared in the work of Antonovsky was when he asked: "*What has enabled some women, subjected to the most destructive experiences conceivable, to lead well-adapted lives?*" (Antonovsky et al., 1971, p. 191). Antonovsky extended his question by asking how any person can manage to stay healthy, which is the essential question of salutogenesis. According to Antonovsky, the answer to this question lies within the generalized resistance resources (GRRs). He became aware of the important value of GRRs through *"'deviants' such as those concentration camp survivors, poor people, or members of minorities who do stay at a fairly high level of health ease"* (Antonovsky, 1979, p. 99). In general, the word deviant refers to negative behavior. However, Antonovsky used deviant to refer to people who behaved in a positive way, which is also the case in positive deviance.

Chapter 10 - Discussion

Geke van Dick and Rianca Scheffel

Following the previous chapters, positive deviance seems a relevant concept for health promotion. Positive deviance should be examined more thoroughly in order to use it as an effective approach in health promotion, since it is a relatively new and vague concept. There should be more clearness about the definition of positive deviance, the positive deviance approach, and the positive deviance methodology. However, the successes of positive deviance cannot be neglected.

In this chapter, the strengths and weaknesses of the study are discussed. These strengths and weaknesses could have influenced the quality of this paper. Therefore, the content of this chapter should be taken into account while reading the paper.

10.1. Literature

The literature that was used to write this paper has some strengths and weaknesses. The lack of a universal positive deviance approach causes vagueness. There is no publication that provides a comprehensive explanation of the positive deviance approach that includes the definition of positive deviance, positive deviance method, and the positive deviance approach as a whole. Researchers named their own initiators of positive deviance. For example, some named Jerry and Monique Sternin as the initiators of positive deviance, while others named Marian Zeitlin. One the one hand, Marian Zeitlin can be seen as the initiator of positive deviance, since she was the first to develop a theoretical positive deviance framework. On the other hand, Jerry and Monique Sternin are mainly responsible for the dissemination of the positive deviance idea and they could therefore be seen as the initiators of positive deviance. Without the Sternins, the concept of positive deviance would not have spread to other fields of research and therefore not be used to tackle other problems besides child malnutrition.

Another consequence of the vagueness about the foundations of positive deviance is that it resulted in the use of different versions of the positive deviance approach, which contained different, but related steps. Some versions only included steps leading to the identification of positive deviants, the positive deviance inquiry. For example, in some studies, the focus was only on the identification of successful behaviors and strategies of mothers who have well-nourished children, but not on the relevance of these findings for interventions (e.g. Dearden et al., 2002; Ma & Magnus, 2012; Pryer et al., 2004; Shekar et al., 1992). In health care management, there are also studies that only included a positive deviance inquiry, but do mention that the results should be used in interventions (e.g. Gary, 2014; Griffith et al., 2013; Klaiman et al., 2013). In other publications, the positive deviance

approach, including the positive deviance inquiry, was used to develop interventions (e.g. Marra, Noritomi, et al., 2013; Walker et al., 2010). However, some authors were unclear about what the exact findings of the positive deviance inquiry were and how they were used to design the intervention (e.g. Burkhalter & Northrup, 1997; Nishat & Batool, 2011).

Some authors have not been elaborative in describing their methodology. Therefore, it was not always possible to determine if the authors had understood the main elements (behavior, deviation, and success) of the positive deviance approach. For example, Ma and Magnus (2012) classified 19.8 percent of the black mothers and 40.3 percent of the white mothers as positive deviants. These percentages are extremely high, which questions the fact whether these individuals can be labelled as positive deviants. Furthermore, Pryer and colleagues (2004) identified characteristics of positive deviants that were non-behavioral (e.g. housing conditions and neighborhood), which made these characteristics irrelevant for developing interventions. Some authors were clear about their methodology. For example, Griffith and colleagues (2013) mentioned that carrying out all steps of the positive deviance approach was beyond the scope of their article.

Some authors compared their results with the baseline data and some with control groups (e.g. Lapping, Schroeder, et al., 2002). This enhanced the evidence that the positive deviance approach can be effective. Moreover, some researchers studied the long-term effects of the positive deviance approach. They concluded that the effects were stable over time (e.g. Mackintosh et al., 2002; Singhal, Buscell, et al., 2009). These strengths can convince others that the positive deviance approach can be a valuable and promising approach.

10.2. Methodology used in this paper

In order to write the paper, a literature search was carried out and a positive deviance database was created. These steps have some strengths and weaknesses, which are explained in this section.

The literature search continued until a point close to saturation. The last data collection method only added five new publications to the positive deviance database. However, there is a possibility that there are more positive deviance publications, which would have been found if the data collection had continued. Of all hits, several publications are not included in the positive deviance database. These publications were excluded from further analysis, since the libraries of the University of Bergen and the Wageningen University did not have access to these publications. The hits also included several books about positive deviance of which two were purchased, since these seemed the most important ones. This selection could have influenced the comprehensiveness of the positive deviance database.

The methods that are used to search for data could have influenced the content of the positive deviance database. Different search fields were used in the databases PubMed, Web of Science, and Scopus, since the same fields did not exist in these three databases. Therefore, it is unknown if the hits would have been the same when all the databases had the same search field. Moreover, the use of the index list in PubMed resulted in more search terms (e.g. 'positive deviants' and 'positive deviance/hearth approach'). In the other databases, only the search term 'positive deviance' was used. It is unknown if extra hits would have appeared when the search terms of the index list were also used in the other databases. However, the last data collection method only added five additional publications and therefore it is likely that the positive deviance database is extensive.

The paper consists of only the parts of publications that are relevant for its purpose. In order to have a clear understanding of the whole article, the publications were all scanned. The content of the whole publication was taken into account during the writing process. Therefore, the overview of the publications in this paper is representative. Furthermore, where possible, the original publications were used to ensure that the secondary data were not an interpretation of the original text. This strength could have enhanced the objectivity of this paper. The objectivity enables the reader to develop his or her own opinion regarding the relevance of positive deviance for health promotion.

Most parts of this paper were written collaboratively. In order to do so, the authors have discussed the content as well as the style of the paper. Individually, both authors scanned all publications and decided which parts were relevant for the paper. Afterwards, the selected relevant parts were compared and differences were discussed in order to determine their relevance. By making use of this method, the data were analyzed from different viewpoints. Furthermore, the authors have critically checked each other's work, and made corrections and suggestions to improve the grammar, style, and clarity. This most likely resulted in a paper of a higher quality.

Chapter 11 - Conclusion and recommendations

Geke van Dick and Rianca Scheffel

11.1. Conclusion

Positive deviance seems a relevant concept for health promotion. Positive deviance is used to develop interventions based on the successful behaviors and strategies of individuals at risk who despite their circumstances perform better than their peers did. Health promotion is *"the process of enabling individuals and communities to increase control over, and to improve, their health"* (World Health Organization, 1986, p. 1). Health assets are resources that individuals and communities have at their disposal to protect them against negative health outcomes and/or to promote their health status. An approach focusing on health assets is salutogenesis. Salutogenesis focusses amongst others on the conditions leading to wellbeing and on factors associated with successful coping. Antonovsky, the founder of salutogenesis, already emphasized the importance of looking at the deviant cases. In contrast to most sociologists, Antonovsky did not see deviants as negative, but as those individuals at risk who despite their circumstances "*do stay at a fairly high level of health ease"* (Antonovsky, 1979, p. 99).

Deviance was traditionally used to describe negative behaviors, attributes, or conditions. The concept of positive deviance is relatively new. Within sociology, there was a debate about the term positive deviance. Some sociologists argued that the full scope of deviance, including positive and negative, should be taken into account, while others argued that positive deviance was an oxymoron. As part of the positive deviance debate, several sociologists developed alternative typologies of deviance, including positive and negative behaviors.

The first time that positive deviance was used to tackle a problem was in relation to child malnutrition. Viet Nam, Bangladesh, and Haiti were the first countries where an integrated positive deviance approach was used to rehabilitate malnourished children, and with success. The positive deviance approach continued to be used to rehabilitate malnourished children, but also to decrease infant and child mortality rates and to stimulate child growth.

Positive deviance is not only used with success in the field of child nutrition, but it is also used to tackle other health related problems. Several researchers have argued that positive deviance is suitable to improve health care management. Positive deviance is used successfully to improve the quality of health care in various ways, such as to improve chronic disease management, acute myocardial infarction care, and diabetes care. Several hospital infections have been successfully prevented by using the positive deviance approach. It is used to improve hand hygiene compliance,

to prevent MRSA infections, and to prevent other hospital infections, such as multidrug-resistant organisms and bloodstream infections.

The positive deviance approach has been used in several cases to improve reproductive health, namely through stimulating contraceptive use, improving pregnancy outcomes, improving maternal and newborn care, preventing HIV infection, and decreasing sexual violence. The positive deviance approach has also been used to address problems related to sports and a lack of physical activity, weight control, healthy eating, cancer, and smoking. However, it has not been used elaborately to tackle these health related problems, since positive deviance is a relatively new concept.

On the one hand, positive deviance should be examined more thoroughly in order to use it as a standard approach in health promotion, since it is a relatively new and vague concept. There should be more clearness about the definition of positive deviance, the positive deviance approach, and the positive deviance methodology. On the other hand, the successes of positive deviance cannot be neglected. Furthermore, positive deviance has the ability to empower individuals and communities, which is essential in health promotion.

11.2. Recommendations

There is still a lot unknown about positive deviance. Therefore, researchers are encouraged to investigate positive deviance more extensively in order to determine the possibilities of the application of positive deviance. More research should be carried out to investigate the effectiveness of positive deviance. In order to stimulate and to spread the use of positive deviance, it is important that researchers share their positive deviance experiences. Therefore, authors should describe their methodology more elaborately in order to improve the research about positive deviance and to give others the possibility to replicate the research. If these recommendations are succeeded, this will contribute to the establishment of positive deviance as an effective approach in health promotion.

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