

**Supporting Plant-Based Diets: Exploring Generative Research to Elicit Requirements for
an Interactive Support Tool**

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Abstract

Various contemporary challenges such as climate change, animal cruelty, and growing obesity rates could be alleviated if more people would integrate a plant-based diet (PBD). Despite a growing interest in a PBD, people still experience barriers to integrating a PBD. Several online resources have been established to support PBD behaviors. However, these resources often only provide support for preparing plant-based meals and do not provide support throughout different contexts related to a PBD. To provide support comprehensively, an interactive support tool (IST) could be utilized. To identify requirements for an IST, it is important to understand people's experiences and needs regarding a PBD. By employing generative research (GR), this study sought to access participants' latent needs. Three participants were first asked to complete sensitizing tasks within one week at home to explore personal experiences and to be prepared to communicate their needs during a generative session (GS) that followed afterward. Three participants who pursued a PBD attended the GS additionally. During the GS, all participants discussed challenges and needs related to a PBD and expressed which support was needed to overcome their challenges through various activities. Both the sensitizing tasks and the GS indicated that a PBD might be challenging due to ignorance, social pressure, misconceptions, perfectionism, and a lack of time and confidence. Therefore, support is needed for acquiring information, self-improvement, preparing meals, and dealing with negative comments. This study suggests eight requirements that could be implemented into a future IST to offer appropriate support for maintaining a PBD.

Keywords: plant-based diet, interactive support tool, generative research, sensitization

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Supporting Plant-Based Diets: Exploring Generative Research to Elicit Requirements for an Interactive Support Tool

Integrating a plant-based diet (PBD) has become a popular topic in society over recent years (Gheihman, 2021; Vestergren & Uysal, 2022). A PBD excludes all animal-derived products, such as meat, eggs, and dairy products (Ostfeld, 2017). Adopting a PBD has become an important topic since it might entail multiple benefits for human health, animal welfare, and the environment (Fehér et al., 2020; Willett et al., 2019). Several scientific findings suggest that a PBD has potential benefits for reducing the risk for cardiovascular diseases, reducing blood pressure, and preventing type 2 diabetes (Barnard et al., 2022; Guinter et al., 2018; Massera et al., 2016; Pollakova et al., 2021; Tantamango-Bartley et al., 2013). Also, since factory farming accounts for a significant part of all greenhouse gas emissions, its environmental impact might be reduced when plant-based alternatives are consumed more often (Candy et al., 2019). Focussing on these aspects, it would be beneficial if more people adopt a PBD.

Although the number of people who have adopted a PBD has doubled in Europe since 2015 (GreenQueen, 2021), still a considerable number of people experience challenges in maintaining a strict PBD (Bryant et al., 2022). One major challenge to maintain a PBD is dealing with a lack of social support (Kwasnicka et al., 2016). Changing diets might induce friction in social relationships, as others might react unsupportive, or might not make the effort to adhere to one's new diet preferences (Hodson & Earle, 2018). To this end, people who want to integrate a PBD might become hesitant, since they do not want to be a burden while eating with others (Williams et al., 2023).

Another suggested barrier to integrating a PBD is the idea that a PBD is too restrictive and lacks substantial nutrients (Baroni et al., 2019; Radnitz et al., 2023; Williams et al., 2023).

This idea might be based on the recommendation that a PBD should be well-planned to meet nutritional standards (Baroni et al., 2019; Fehér et al., 2020; Shaw et al., 2022). More precisely, a nutrient-dense PBD should include a variety of vegetables, fruits, legumes, nuts, and whole grains, along with supplements of vitamin B12, Omega 3, and vitamin D (Baroni et al., 2019; Katonova et al., 2022; Satija & Hu, 2018). Balancing a well-planned nutrient-dense PBD with daily obligations might be challenging for those who want to pursue a PBD. Therefore, they might revert to their old dietary habits (Williams et al., 2023).

To overcome challenges that hinder maintaining a PBD, previous research suggests that people could benefit from support (Lawo et al., 2020; Williams et al., 2023). Several online resources have been established to provide support for maintaining a PBD. For instance, VegPlate (Baroni et al., 2018) and PickupLimes (PickUpLimes, n.d.) explain how to maintain a healthy PBD through recipes, articles, and videos. These online resources also discuss several methods that could guide people in planning their PBD to meet nutritional standards. For example, the Plate Method (PickUpLimes, 2022) and the Nourish Method (PickUpLimes, 2023) illustrate the proportions of different food groups one should consume each day. Some of these methods are integrated into an app to assist users in planning their balanced daily meals (PickUpLimes, 2023). These resources, however, only support planning and preparing nutrient-dense plant-based meals. At the time of writing, few resources support overcoming challenges related to a PBD on a holistic level. Providing support throughout different contexts of a PBD (e.g., eating with others, weight loss, grocery shopping, etc.) might be beneficial for maintaining a PBD in the long term.

Support could be provided through an interactive support tool (IST; Lucero et al., 2009). ISTs are meant to help achieve a specific goal and can be designed in various ways depending on

that goal (Van Grinsven et al., 2011). To compose requirements for an IST, users' needs and motivations must be understood first (Sjøkvist & Kjørstad, 2019). Several studies have been conducted to examine motivations for adopting a PBD (e.g., Ghaffari et al., 2021; Janßen et al., 2016; North et al., 2021). Other studies discussed challenges that emerged while pursuing a PBD (e.g., Markowski & Roxburgh, 2019; Williams et al., 2023). Although these studies identified emerging challenges while attempting a PBD, very few provided an in-depth understanding of people's actual needs to be able to maintain a PBD. Thus, to compose requirements for an IST, a more comprehensive understanding of those needs should be obtained.

An in-depth understanding of people's needs and motivations can be discovered through generative research (GR; Sleeswijk Visser et al., 2005). Within GR the goal is to create empathy between the researcher and the participants in order to facilitate a comprehensive understanding of participants' experiences, feelings, and behaviors from their daily lives (Sanders & Stappers, 2018). Throughout the GR process, participants generate and share content of their daily lives through various tasks (e.g., drawing personal objects or recording daily routines; Scariot et al., 2012). These tasks are often designed to retrieve emotions, memories, or associations related to the context of research (Sanders & Stappers, 2018). Especially when these tasks are performed while related events take place (e.g., preparing a plant-based meal), an unfiltered overview of participants' needs, thoughts, feelings, and motivations during these events might be obtained (Groeneveld et al., 2020). Therefore, these tasks might yield insights that could otherwise be difficult to express by participants when asked directly at a later moment (Sanders & Stappers, 2018). Thus, to define requirements for an IST, GR could be a valuable approach for discovering the needs of people who could benefit from support while attempting a PBD.

To compose requirements for an IST, this study aims to explore how GR can contribute to obtaining people's needs in terms of support for maintaining a PBD. The requirements composed in this study can be used as guidelines for designers who want to create an IST for maintaining a PBD. Insights about challenges, needs, and experiences related to a PBD might be valuable for various purposes (e.g., policy, food marketing, etc.). In addition, this study's procedure can inform other researchers who intend to perform GR. Overall, the following research question has been formulated:

RQ: *How can generative research be performed to elicit requirements for an interactive support tool for maintaining a plant-based diet in the Netherlands?*

Theoretical Framework

Adopting a Plant-Based Diet

Due to the adoption of a PBD, people not only have to change their eating habits, people might also need to make adjustments in other practices (Twine, 2017a). For example, once people decide to pursue a PBD, people need to carefully select which restaurants suit their new food preferences, and which food products available in stores are plant-based. People might also have to adjust their knowledge and skills in terms of cooking once they shift to plant-based ingredients (Twine, 2017b). Furthermore, a PBD could also cause physical changes, such as weight loss (Turner-McGrievy et al., 2017) or hormonal imbalances (Szabó et al., 2021). Adjusting habits to a PBD and dealing with physical changes might be challenging for people, especially when people receive insufficient support or lack information (Kelsey et al., 1997).

Lawo et al. (2020) indicate that people who want to maintain a healthy PBD mostly seek information about nutrients. Via online resources and communities, such as YouTube channels and Facebook groups, people acquire information about nutrients and supplements and discuss questions with others who are more experienced with a PBD. More experienced people often recommend using diet trackers to ensure people's daily food intake meets nutritional standards (Lawo et al., 2020). However, in the long term, users often perceive the process of tracking their daily food intake as time-consuming and unpleasant (Lawo et al., 2020). To indicate which type of support could easily be integrated into people's daily lives to ensure usage over the long term, it might be meaningful to explore people's experiences and needs.

A Deeper Understanding

Insights into people's experiences and needs can be retrieved from people's knowledge. Knowledge refers to "thoughts and ideas that have already been experienced and have been

stored in memory” (Sanders & Stappers, 2018, p.52). This knowledge can be characterized into four levels: explicit, observable, tacit, and latent (Sleeswijk Visser et al., 2005). Explicit knowledge is based on facts and can be communicated relatively easily by people (e.g., “*Today I went to the shop.*”; Dienes & Perner, 1999b). Observable knowledge can be obtained through observations and refers to people’s often unconscious behavior (e.g., “*When she walks, her eyebrow goes up.*”; Sanders & Stappers, 2018). Tacit knowledge refers to knowledge that people have established from routines and habits, but is difficult to communicate (Venkitachalam & Busch, 2012). People might know how to open a door with full hands, but they might be unable to explain it. Lastly, latent knowledge describes often unconscious thoughts and feelings and embodies people’s needs that might arise during situations that are not yet experienced (i.e., latent needs; Yang, 2013). For example, people might find it difficult to imagine their needs in case of fire when they have never experienced one. As latent knowledge indicates how people would experience unencountered situations, it is an important level of knowledge to access when designers want to examine people’s perceptions of a new design solution that will be used during unencountered future situations (Carlgren, 2013).

Figure 1

Methods to Retrieve Levels of Knowledge, Adapted from Sanders & Stappers (2018)

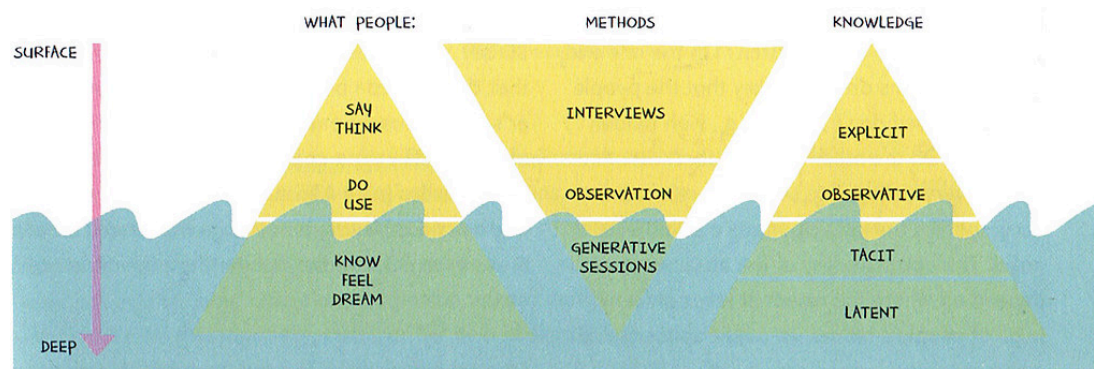


Figure 1 shows that each level of knowledge can be retrieved with a different type of method. The first two levels are mostly uncovered through conventional methods, such as interviews and observations (Preece et al., 2002). These methods retrieve knowledge about people's experiences from the past and the present (Sanders & Stappers, 2018). To obtain a deeper understanding of experiences that might occur in the future while interacting with a new design solution, people's dreams, goals, and fears for the future (i.e., latent knowledge) need to be retrieved as well through generative research (Sleeswijk Visser et al., 2005).

Generative Research

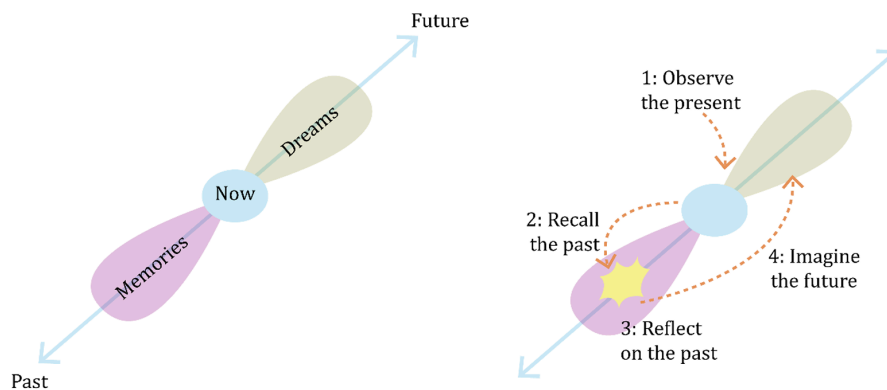
Path of Expression

The process of retrieving people's latent knowledge in a GR study is visualized in the *path of expression*, a model developed by Sanders and Stappers (2018). The model (see Figure 2) illustrates four steps that should be followed in a GR study to guide participants in retrieving, recalling, and understanding experiences. Once these steps are followed, researchers should be able to discover participants' latent needs for future situations (Sanders & Stappers, 2018).

During the first step of the model, participants should focus and reflect on current situations as this might make the participants more aware of their current experiences. Once aware of current experiences, participants should recall memories and reflect on past experiences (see steps 2 and 3). Reflecting on past experiences should improve participants' ability to understand their motives and values (Wendlinger, 1995), as current experiences are influenced by memories of past experiences (Sanders & Stappers, 2018). Once participants understand their motives and values, it should be easier for participants to imagine what they might need during future experiences (i.e., latent needs; see step 4).

Figure 2

Path of Expression, Adapted from Woertink (2021)



Note. On the left, the *experience domain model* is presented (Sanders & Stappers, 2018), which visualizes the basis of the path of expression.

Sensitization Period

The first three steps of the path of expression are often performed during a sensitization period (Kwiatkowska et al., 2015; Sanders & Stappers, 2018). The aim of sensitization is to provoke self-awareness among participants about their emotions and the contexts in which those emotions emerge (Cradock et al., 2021). A period of sensitization is often carried out in participants' everyday environments, making them feel comfortable to explore their past and present experiences (Sleeswijk Visser et al., 2005). For example, to explore current experiences, participants could take photographs of personal environments (Gellis, 2009) or report daily routines in a diary (Sonnetag, 2001). In the study by Gellis (2009), participants were asked to take photographs of certain objects or places in a therapy department (e.g., “*Take a picture of what you like the least.*”). Once participants explain their emotions and feelings based on the photographs' content, participants' experiences are structured, which might enable participants to

understand their values, emotions, and behaviors related to the experiences (Boud et al., 1985; Kirk & Sellen, 2010).

One of the main reasons why sensitization enables participants to understand their emotions and behaviors more in-depth is that sensitization stimulates self-reflection (Kwiatkowska et al., 2015; Sleeswijk Visser et al., 2005). Sengers et al. (2005) state that once participants reflect on daily experiences and behaviors, underlying values and needs are accessed. This means that through self-reflection, a process is established in which unconscious knowledge is translated into conscious knowledge (Sengers et al., 2005). Thus, sensitization is an important step in GR, as self-reflection could prepare participants to communicate unconscious latent needs and desires for new design solutions later in a generative session (GS) that often follows after a sensitization period (Sleeswijk Visser et al., 2005).

In terms of challenges related to dietary changes, a study by Cradock et al. (2021) suggests that sensitizing participants with several tasks yields insights into barriers to adopting a healthy diet. However, the study did not include a GS in which participants could express latent needs for a future design solution once participants were sensitized. Therefore, it is valuable to explore if participants benefit from sensitization in formulating needs for an IST. Therefore, this study poses the following sub-question:

SQ1: *How can sensitizing participants with tasks beforehand help them formulate their needs for an interactive support tool during a generative session?*

Sensitizing Probes

Since the aim of sensitization is to immerse participants in their experiences for multiple days, it is important that participants are engaged with the sensitizing tasks, as this might positively affect their motivation to perform the tasks (Froiland & Worrell, 2016). Since

participants' engagement could be enhanced by providing tasks playfully (Masek & Stenros, 2021), most sensitizing tasks are integrated into a playful probe. Along with the sensitizing tasks in a workbook, these probes often include several items such as images, icons, snacks, or a disposable camera to make the tasks more entertaining (Sander & Stappers, 2018).

The use of probes was introduced by Gaver et al. (1999). Probes entail “collections of evocative tasks meant to elicit inspirational responses from people - not so much comprehensive information about them, but fragmentary clues about their lives and thoughts” (Gaver et al., 2004, p.53). Although sensitizing probes are designed to prepare participants to express desires for future design solutions, Gaver et al. (2004) emphasize that data retrieved from the probe itself should not be analyzed to elicit participants' needs and design requirements. Still, in a study by Haines et al. (2007), a probe in which participants were asked to photograph what they value most about their homes was used as the main data source to discover participants' values and needs for their home environment.

In the context of dietary habits, probes have been implemented and analyzed to obtain insights into the correlation between eating habits and emotions (Gayler et al., 2021). In a study by Cradock et al. (2021), a probe was designed to sensitize participants to their experienced emotions and to analyze barriers to integrating a healthy diet among participants with type 2 diabetes. Thus, although sensitizing probes are normally only implemented to prepare participants for a follow-up GS (Sleeswijk Visser, 2005), Cradock et al. (2021) demonstrated that probes can be assembled for both sensitization and obtaining insights into participants' needs regarding dietary changes. Therefore, the present study seeks to examine if sensitizing probes can be useful for both sensitization and retrieving insights by integrating all the results from the sensitizing probes into the data analysis. Thus, the following sub-question has been formulated:

SQ2: *How can a sensitizing probe be used to gain more insights into challenges related to a plant-based diet?*

Generative Session

In a GR study, periods of sensitization are often followed by a GS (Sleeswijk Visser et al., 2005). According to the path of expression, participants should be able to express latent needs during a GS once they are familiarized with their past and present experiences during sensitization (Sanders & William, 2001). Participants' expressions of latent needs during a GS could be triggered through various techniques and tools embedded in activities (Sleeswijk Visser et al., 2005). A GS often starts with an activity that opens participants' minds by evoking associations (Sleeswijk Visser et al., 2005). An example of such activity is the creation of a collage (Sanders & Stappers, 2018). Through inducing associations between images and experiences, collages enhance the retrieval of underlying values (Deacon, 2000; Saunders, 2009; Watts, 2023). For example, Figure 3 displays how one image can evoke different associations, which might provide insights into people's motivations and values. The creation of a collage has been used to examine the underlying values of nostalgic objects (Havlena & Holak, 1996) and to explore participants' unconscious desires in terms of consumption (Belk et al., 2003).

Figure 3

Different Associations Made by One Image, Adapted from Sleeswijk Visser et al. (2005)



P1: 'I always shave myself in the evening. So I dive into my bed, completely fresh and clean.'

P4: 'I feel very sharp after shaving.'

P3: 'I always shave myself before going to work. I work in the swimming pool as a swimming teacher.'

Once participants have expressed their values, activities that discover needs for future design solutions can be performed (Sleeswijk Visser et al., 2005). Needs for future design solutions are often visualized by the creation of models or scenarios using materials such as Lego, Playmobil, cardboard, or clay (Sanders & Stappers, 2018). The stories explained by these visualizations often evoke rich imaginations about desired solutions for situations that have not yet taken place and could, therefore, reveal insights into participants' latent needs (Sleeswijk Visser et al., 2005). For example, models have been created to explore the needs of disabled people in terms of support for their personal infrastructure (Rajapakse et al., 2018).

Besides these two techniques, GR entails an extensive amount of techniques that could be implemented in a GS (Sanders & Stappers, 2018). In the context of receiving support for maintaining a PBD, no research was found that explored which generative techniques could be helpful for eliciting participants' latent needs. Since this study includes a GS, it might be meaningful to explore which tools and techniques during a GS are perceived as helpful by participants for revealing their needs. Insights from the sub-question can be used to enrich future research in this context or domain. Thus, the following sub-question is formulated:

SQ3: *Which generative techniques and tools during a generative session are perceived as helpful by participants for expressing and understanding their challenges and needs related to a PBD?*

Method

This study explored how generative techniques could be performed to discover people's needs in terms of support for maintaining a PBD. To ensure requirements for an IST met the target group's needs, a GR approach was employed to facilitate a collaborative process (Kang et al., 2015). As this qualitative study was conducted by one researcher, a bracketing statement (Fisher, 2014) can be viewed in Appendix A.

This study consisted of two components. Firstly, to address SQ1 (*“How can sensitizing participants with tasks beforehand help them to formulate their needs during a generative session?”*) and SQ2 (*“How can a sensitizing probe be used to gain more insights into challenges related to a plant-based diet?”*), a sensitizing probe including a workbook and props was provided to participants. Through several tasks in the workbook, participants could have been familiarized with daily experiences, and a deeper understanding of participants' needs, thoughts, and feelings could have been obtained (Sengers et al., 2005).

Secondly, a GS was held to address SQ3 (*“Which generative techniques and tools during a generative session are perceived as helpful by participants for understanding their challenges and needs?”*). During the GS, experiences related to a PBD and the sensitizing tasks were discussed. In addition, three activities were performed. Requirements for an IST were discovered through an activity in which superheroes were drawn (Kanafi et al., 2022), and scenarios were visualized using Playmobil props to identify where and how support was desired to maintain a PBD (Gansohr et al., 2023).

Participants

Two groups of participants contributed to this study. Participants' contributions and demographic information can be found in Table 1. The first group (Group 1) consisted of

participants who were interested in a PBD but were not following one at the time of research. Initially, four participants agreed to participate in Group 1. However, due to cancellations, three participants completed the sensitizing workbooks and participated in the GS. The second group (Group 2) consisted of participants who were following a PBD at the time of research. As Group 2 was already familiar with maintaining a PBD, they could share knowledge about experiencing and overcoming challenges related to a PBD, which could have provided insights for an IST. Although four participants agreed to participate in Group 2, only three participants participated in the session due to cancellations. Participants were recruited through snowball sampling (Goodman, 1961) via various Facebook Groups (e.g., Vega(n) Tilburg), and other social channels, such as WhatsApp.

Table 1

Overview of Participants' Demographics and Contributions

Group	Gender (<i>n</i>)			Mean age		Nationality	Highest educational level (<i>n</i>)			Contribution
	Male	Female	Other	M	SD		High school	Bachelor's	Master's	
1	0	3	0	32	16.20	Dutch	0	2	1	Probe, workshop
2	1	2	0	39	11.59	Dutch	0	3	0	Workshop

Materials

Sensitizing Probe

The sensitizing probe included a workbook, a plant-based snack, emoji stickers, a pen, a pencil, images, and a glue stick (see Figure 4). The workbook consisted of seven tasks (see Figure 5), which were pilot-tested for clarity with two additional participants beforehand. The

first task instructed participants to complete sentences that were composed to elicit demographic information (e.g., “*My name is __. I am __ years old.*”), and to draw a self-portrait. Subsequent tasks were divided into two sections. Firstly, tasks that could have been performed at any moment were presented. Thereafter, three tasks that should have been performed at a specific day or moment (i.e., after doing the groceries) were provided. The tasks were presented in pre-structured templates and were designed to elicit feelings and thoughts that might otherwise be difficult to express when asked directly (Sleeswijk Visser et al., 2005).

For example, participants were asked to draw their favorite meals and later reimagine them as plant-based meals. Participants were also asked to report what triggered their attention while grocery shopping by completing a sentence that was presented multiple times (i.e., “*When I was grocery shopping, I noticed that... . I thought this was..., because... .*”). Moreover, by completing sentences, participants’ imagination might have been triggered which might have elicited a wider variety of answers (Sanders & Stappers, 2018). The task in which participants were asked to report their daily routines via multiple steps on a timeline was meant to elicit participants’ emotions that were linked to certain events or activities (Sanders & Stappers, 2018). For visualizing these emotions, emoji stickers were provided (see Figure 4). These emoji stickers might have evoked a richer expression of participants’ emotions (Sanders & Stappers, 2018). With the task of selecting images, the researcher sought to elicit participants’ memories and emotions, along with evoking associations between the images’ content and participants’ thoughts, feelings, and experiences (Sleeswijk Visser et al., 2005). The images provided in this study’s probe displayed various contexts and objects (e.g., friends having dinner, weightlifting, a burger, etc.) and were randomly selected by the researcher to avoid biasing participants’ choices due to assumptions made by the researcher (see Appendix B).

Figure 4

Sensitizing Probe



Note. The images that were included in the probe can be viewed in Appendix B.

Figure 5

Overview of the Sensitizing Workbook's Pages and Tasks

	<p>HOI! WIE BEN IK?</p> <p>WIE IS DIT?</p> <p>HOE WERKT HIET?</p> <p>INROEGEN IN HET PAKKET.</p>	<p>WIE BEN JIJ?</p> <p>HOE WERKT HIET?</p> <p>INROEGEN IN HET PAKKET.</p>		<p>TEKEN JE FAVORIEETE MAALTIJD</p> <p>AFBEELDINGEN PLAKKEN!</p>	<p>AFBEELDINGEN PLAKKEN!</p>
<p>DROMEN...</p>	<p>DEEL II</p>	<p>BOODSCHAPPEN DOEN</p> <ol style="list-style-type: none"> 1. Teken ik boodschappen aan het doen was niet het na op... 2. Teken ik boodschappen aan het doen was niet het na op... 3. Teken ik boodschappen aan het doen was niet het na op... 4. Teken ik boodschappen aan het doen was niet het na op... 5. Teken ik boodschappen aan het doen was niet het na op... 6. Teken ik boodschappen aan het doen was niet het na op... 7. Teken ik boodschappen aan het doen was niet het na op... 8. Teken ik boodschappen aan het doen was niet het na op... 	<p>TIJDLIJN NORMALE DAG</p>	<p>TIJDLIJN VAN EEN DENKBEELDIGE DAG</p>	<p>BEDANKT!</p>

Note. Larger-sized pages can be viewed in Appendix C.

Generative Session

To conduct the activities in the GS, two templates were created (see Figure 6). On the first template, participants were asked to draw a portrait of another participant and to report that participant's name, characteristics, goals, and frustrations (see Figure 6A). For drawing the superhero, participants received a template in which a blank unisex body was displayed along with three areas for writing down the superhero's characteristics (see Figure 6B). During the GS, Playmobil props (e.g., dolls, tables, etc.) for performing the scenarios, and other materials such as pens, stickers for sticker voting, post-its, and sheets of paper were arranged. In addition, a whiteboard was used to document participants' comments. A laptop was used for note-taking, a camera was utilized for taking photographs, and a mobile phone was used to record the session.

Figure 6

Templates for the Workshop's Activities

Figure 6 consists of two templates, A and B, used for workshop activities.

Template A: This template is designed for drawing another participant. It features a large empty box at the top left for drawing. To its right is a label "NAAM:" followed by a dashed line for writing the name. Below the drawing box is an arrow pointing to it with the text "TEKEN HIER JE PARTNER". Below the drawing box are two smaller boxes: "KARAKTEREIGENSCHAPPEN:" on the left and "DOELEN:" on the right. At the bottom is a larger box labeled "FRUSTRATIES:". The letter "A" is in the bottom left corner.

Template B: This template is for drawing a superhero. It features a central outline of a unisex human body. To the right of the body are three stacked boxes for writing characteristics: "KRACHTEN:" at the top, "ZWAKKE PUNTEN:" in the middle, and "WAT MAAKT JOUW SUPERHELD SPECIAAL:" at the bottom. The label "NAAM SUPERHELD:" followed by a dashed line is at the top left. The letter "B" is in the bottom left corner.

Note. (A) Template to draw another participant and to report its name, characteristics, goals, and frustrations. (B) Template to draw a superhero and to describe its characteristics.

Informed Consent Statements

Since the contributions of each group were different throughout this study, two separate informed consent statements were composed for Group 1 (see Appendix D) and Group 2 (see Appendix E). Both statements were presented in a Google Forms document and shared with the participants via an email one week before their participation would be started if consented. The statement of Group 2 also included a short demographic survey. Demographic information of Group 1 was acquired from the workbook's first task.

Procedure

Sensitizing Probe

After giving informed consent, Group 1 was asked via email to share their addresses with the researcher to receive the sensitizing probe via PostNL one week before the workshop. Within this timeframe, participants were immersed in their experiences in a familiar setting for a longer period, which might have prepared them to communicate their feelings during the GS (Kaptein et al., 2007). Throughout the week, the researcher contacted the participants twice via email to verify the participants' and the tasks' status. After completing the tasks, participants were asked to bring the workbook to the GS.

Generative Session

After consenting, a 3-hour session was held with both groups together in a classroom at Tilburg University on December 04, 2023. One researcher facilitated the session, and one other researcher assisted by taking notes and photographs. The session started with introducing the session's structure (see Figure 7) and rules (i.e., opinions should be threatened with respect, and criticism was prohibited). After that, participants were divided into pairs by the researcher for an introduction activity of 15 minutes. During this activity, participants drew a portrait of their

partner. Also, participants discussed and reported each other's characteristics, goals, and frustrations regarding the adoption of a PBD (Salminen et al., 2022; see Figure 6A). The goal of this activity was to let participants become acquainted with one another and to discover participants' goals and frustrations related to the topic (Bhattacharyya et al., 2019). Based on the output of the activity, all participants were asked to introduce their partner to the whole group. Results of this activity can be viewed in Appendix F.

Figure 7

Overview of the Session's Structure

Explanation workshop (ca. 10 minutes)	Introduction activity (ca. 15 minutes)	Discussion (ca. 50 minutes)	Sticker voting (ca. 5 minutes)	Break (ca. 15 minutes)	Superhero activity (ca. 20 minutes)	Scenario playing (ca. 25 minutes)	Evaluation (ca. 20 minutes)	Debriefing (ca. 5 minutes)
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The GS continued with a plenary discussion moderated by the researcher (approximately 50 minutes). To open participants' minds about the topic, participants from Group 1 explained their answers from the sensitizing task in which they had to select images they associated with a PBD. Group 2 was asked to comment on these explanations and associations. Furthermore, all participants shared thoughts and experiences related to a PBD. Comments related to the challenges of maintaining a PBD were documented on a whiteboard by the researcher, and eventually categorized into seven main challenges. Afterward, participants were asked to vote on the two most important challenges by placing dot stickers on their choice. The three challenges that received the most votes were highlighted, as they functioned as guidelines for the scenarios later in the session. After this, participants were allowed to have a break of 15 minutes.

After the break, Group 1 was asked to draw a superhero that would support them in overcoming challenges to adopt a PBD. In addition, participants had to compose specific

characteristics of this superhero (see Figure 6B). Group 2 performed the same activity, however, Group 2 was asked to draw a superhero that could support them while overcoming challenges they perceived due to their PBD. Instead of asking the participants directly what a potential support tool should require, this activity indirectly identified what participants desired and expected in terms of receiving support (Kanafi et al., 2022). In the end, participants presented their superheroes to the whole group briefly. This activity took approximately 20 minutes. The results of this activity can be viewed in Appendix G.

After this activity, participants were asked to visualize scenarios (e.g., “*Lieke is having a Christmas dinner with the whole family, however, she is the only one following a PBD.*”) that were created by the researcher during the break based on the three most important challenges identified during the discussion. Each participant from Group 1 was accompanied by a person from Group 2 to form three pairs in total. Each pair was assigned to one of the scenarios. Based on that scenario, the pairs were asked to show how the superhero would support a main character while maintaining a PBD using Playmobil props, such as dolls, furniture, or food. The characteristics of the superhero were based on the drawings made in the previous activity. By imagining the role of the superhero in different scenarios, participants could indirectly indicate when and how they envisioned support in that context (Kanafi et al., 2022). Therefore, participants’ needs in terms of support during these scenarios could be empathized more in-depth by the researcher. The results of this activity can be viewed in Appendix H.

At the end of the session, all participants were asked to reflect on the research process and their participation in the GS. Afterward, the researcher ended with a short debriefing and handed out a small gift to all participants.

Data Analysis

To compose requirements for an IST later in the research, participants' needs and values for such a tool needed to be understood first (Kaptein et al., 2007). Therefore, the data derived from the sensitizing probe and the workshop was analyzed through a thematic analysis (TA). With a TA, recurring themes and patterns were derived from the data by iteratively assigning codes (Clark & Braun, 2016). The themes in this study were identified using an inductive approach, which means that codes were derived from the data without preconceptions (Willig & Rogers, 2017). The data was only coded by one coder, due to time and human resource constraints.

Data documented on paper from the sensitizing probe and the workshop's activities was coded manually. Audio retrieved from the workshop's recordings was transcribed using Notta.ai and controlled for accuracy by the researcher. Comments unrelated to the topic were excluded from the data set. Afterward, the transcription was exported to Atlas.ti for further analysis. The entire data set was clustered into themes in several iterations.

From the comments retrieved from the sensitizing probe and the GS, a total of seven broad themes were identified: Individual process to adopt a PBD, information seeking, approaches to prepare daily meals, nutritional intake, influence of society, social environment, and experiences of the research tasks. For example, within the theme 'information seeking', comments were focused on a lack of knowledge about implementing a PBD (e.g., "*Take time to get information in order to make the transition more manageable.*"). The following comment was clustered into the theme 'social environment': "*People should create an environment in which people can express their preferences*". For example, the comment "*tofu does not taste the same as egg*" was retrieved from the sensitizing workbook and was clustered within the theme

‘approaches to prepare daily meals’. After clustering all comments into seven themes, sub-themes were classified within six broad themes (see Table 2). While iteratively analyzing the data, themes and sub-themes were reassigned or renamed where required.

Table 2

Overview of the Themes and Sub-Themes Emerged from the Thematic Analysis

Theme	Sub-theme	Description
Individual Process to Adopt a PBD	A Step-by-Step Process	Adopting a PBD is a process, doing it right immediately is not desirable.
	Personal Growth	Participants want to improve their social abilities to uphold personal choices.
Information Seeking	Need for information	Participants lack knowledge related to a PBD.
	Online Research	To maintain a PBD properly, online research is required.
	Interaction with More Experienced People	Interaction with others is a favored way to gain knowledge about a PBD.
Approaches to Prepare Daily Meals	One-to-One Replacement	Participants tend to choose one-to-one replacements when trying a PBD.
	Meal Preparation	Preparing meals in advance could be convenient.
Nutritional Intake	Assumptions Due to Stigma	Due to a stigma, participants associate a PBD with a lack of nutrients.
	Actual Experiences of Supplementation	A PBD does not induce a lack of nutrients when eating properly.
Influence of Society	Ignorance Due to Censorship	Ignorance about aspects of a PBD among society due to censorship.
	Nurture	Participants are raised with certain beliefs that are in contrast with a PBD.

Theme	Sub-theme	Description
Social Environment	Mutual Feeling to Justify Choices	Both groups have the feeling they need to defend their choices to each other.
	Creating an Open Environment	An open environment should be created in which both groups are accepted for their choices.
Experiences of the Research Tasks		How the tasks during this study are perceived by participants.

Note. For each theme and sub-theme, example quotes are presented in Appendix I.

Results

Based on the themes presented in the thematic framework of Table 2, this chapter clarifies the results across each theme and sub-theme. Participants from Group 1 are represented as ‘P1’ (e.g., ‘P1.1’), and participants from Group 2 are represented as ‘P2’ (e.g., ‘P2.1’). Comments from the sensitizing workbook are indicated with an ‘S’.

Individual Process to Adopt a PBD

A Step-by-Step Process

Two participants (P1.1, P2.3) indicated that once someone adopts a PBD, “[...] *you should do it right immediately*” [P1.1]. Therefore, P1.1 indicated that she feels the need to be forgiven once she makes a mistake related to a PBD, “*with his powers, my superhero forgives me when I make a mistake*”. Other participants (P2.1, P2.2) explained that “*people often do nothing when they can not do it perfectly. No, you can not do it perfectly, people should accept that from the beginning already. This does not mean that little steps do not contribute something*” [P2.2].

Another participant (P1.3) admitted that she “*thinks that small changes would be easier than changing everything immediately*”. This sentiment was echoed by P2.2, who often advises people who want to pursue a PBD to “*start with little steps, start with changing breakfast or bread toppings, or something else that is manageable*”. This participant (P2.2) also explained that “[...] *it is important to just start instead of overthinking everything. People should start doing and make adjustments once being in action*”.

Personal Growth

To pursue a PBD, most participants (P1.1, P1.2, P2.1, P2.3) indicated that they need to be more “steadfast” [P1.1, P2.3], “decisive” [P1.1], or “confident” [P1.2, P2.1]. To maintain a PBD in a personal setting, participants (P1.1, P2.3) expressed that they might need support to

“[...] get the willpower to do what should be done, [...] even when there is little time to cook, [...] to get the nutrients they need” [P2.3].

In the context of social settings, participants (P1.1, P1.2, P2.1) expressed that they would like to be more confident in communicating personal food preferences once dealing with social pressure, *“under social pressure, I am not strong enough to say that I do not eat that” [P1.1].* A need for support while explaining and defending personal choices was present among three participants (P1.1, P1.2, P2.2). For example, *“this superhero gives the power to convince others and to be confident, he helps her to explain why she made the choice, because it can be hard to defend personal choices once being around adults” [P1.2].*

Information Seeking

Need for Information

Among the participants of Group 1, there was a strong sense of ignorance related to a PBD. One participant (P1.2) explained that she thinks the step to a PBD is too big and that she *“needs to take the time to get information to make the transition more manageable”*. Information was especially required to prepare food more conveniently: *“Then I lack the information to prepare something that is plant-based, [...] with the restrictions I have, I found it difficult to know what is possible” [P1.3].*

Online Research

Doing online research was one strategy discussed by all participants to seek information about a PBD. To maintain a PBD, people need to find information on Google, *“especially when you are the only one in the family” [P2.1].* For example, *“[...] to make sure my pastries do not fall apart when I am not using eggs” [P1.3]* people should *“[...] indeed search a lot of information and take time for that” [P1.3].* Two participants (P1.2, P1.3) indicated that they need

support for searching information. For example, “*my superhero is good at searching on Google, he searches for better options*” [P1.3].

Interaction with More Experienced People

Another way to acquire information was sharing experiences with others, and receiving tips from those who are more experienced. Not only was the session itself (see Figure 9) perceived as helpful by participants for sharing knowledge with each other (“*I liked hearing your point of view on how to make things easier. Now I think cooking plant-based meals can be more doable*” [P1.2]), a need for more interaction with like-minded people was also expressed by all participants. For example, “[...] *my friends are also vegetarians, [...] this way you can share experiences and struggles*” [P1.2], and “*in the beginning, I felt really lonely, I had no one in my family, [...] then it is comfortable to have people around you that are like-minded*” [P2.1]. Support from like-minded people was especially indicated as helpful when “[...] *you get a lot of negative reactions, [...] if you can talk about it with others, it might help you because you hear their experiences and you can feel stronger together*” [P2.1].

Participants from Group 2 mentioned that they would like to “*explain joyfully and constructively to people why you could adopt a PBD*” [P2.3]. Therefore, as a potential support tool, P2.1 brought up the idea to create “*an app with a chat function, that allows you to chat with like-minded people or maybe even to arrange a date*”. Another participant (P2.2) explained that “*connecting people with someone who is doing the same thing, like a buddy who is more experienced*” could help people to “*feel less alone, whereby one might handle the negativity better*”.

Figure 8

Overview of the Completed Sensitizing Workbooks

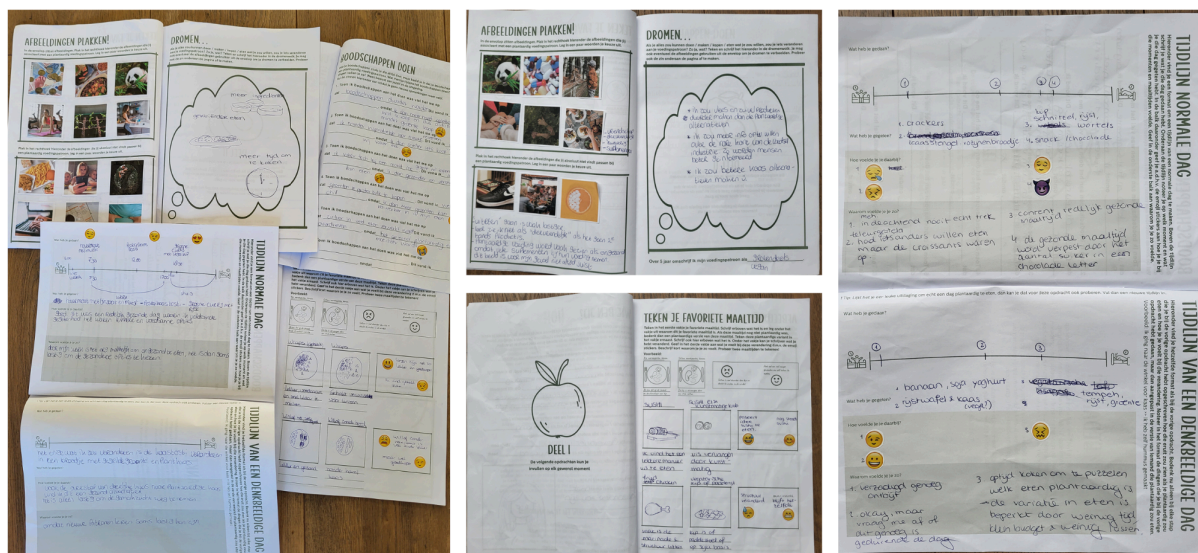


Figure 9

Participants Performing the Activities During the Generative Session



Note. (A) Participants are performing the introduction activity. (B) Participants are performing the superhero activity. (C & D) Participants are visualizing the scenarios with Playmobil.

Approaches to Prepare Daily Meals

One-to-One Replacement

Two participants (P1.2, P1.3) indicated that they “*do not always feel like cooking, especially when working full days and going to college*” [P1.3]. Therefore, once they decide to replace meat or dairy products with plant-based options, these participants indicated that they often choose one-to-one replacements, such as processed meat substitutes, “*if I do not eat meat, [...] then indeed I choose the meat substitute out of laziness*” [P1.3]. In addition to laziness, one participant (P1.3) also explained that she chooses meat substitutes because she does not have the knowledge to choose otherwise when she wants to replace meat, “*[...] someone should also tell you, like have you tried this?*”.

Answers in the sensitizing workbook (see Figure 8) of Group 1 suggested that once participants try a PBD and choose dairy or meat substitutes, they still compare the substitutes with the original non-plant-based products. For instance, “*tofu does not taste the same as egg*” (S)[P1.1], “*I prefer beef over lentils*” (S)[P1.3] or “*plant-based cheese is less tasty*” (S)[P1.2]. As a result, one participant indicated that “*it is difficult to replace dairy products with plant-based alternatives, as dairy products such as eggs and cheese are tasty*” (S)[P1.3]. As a potential solution for this struggle, group 2 agreed on the advice to: “*Start from zero and try new recipes, instead of thinking how you could change your current products with a one-to-one plant-based replacement because that will make it harder*” [P2.1].

Meal Preparation

A PBD was often associated with a healthy diet by all participants. For example, “*I chose to pursue a PBD for my health*” [P2.3], or “*in my head, plant-based meals are healthy*” [P1.3]. However, two participants (P2.1, P2.2) also agreed that “*in both omnivorous and plant-based*

diets, there is healthy and unhealthy food” [P2.2]. Group 2 argued that a PBD is only considered a healthy diet when processed food is limited as much as possible. Since two participants (P1.2, P1.3) often choose processed meat substitutes due to laziness, they explained that *“meal prepping could also be an interesting option”* [P1.2] when easing cooking. Group 2 explained that preparing meals *“should not have to be difficult”* [P2.3]. Still, P1.3 indicated that *“it cost so much time”* and that she has *“a mini fridge”* which makes it difficult to store the preparations. Two participants (P1.1, P1.3) indicated that they struggle with preparing food and that they would like to have *“someone who cooks balanced meals three times a week”* [P1.1]. For example, *“my superhero has a freeze ray, so he can freeze all the food he makes to make sure it does not expire”* [P1.3].

Nutritional Intake

Assumptions Due to Stigma

Two participants (P1.2, P1.3) associated a PBD with *“the lack of essential nutrients”* (S)[P1.3] and the *“intake of supplements”* (S)[P1.2]. This feeling was also acknowledged by other participants (P1.1, P1.2). One participant (P1.2) also explained that the assumption of lacking nutrients is often a reason for people not to adopt a PBD: *“A friend said that she did not want to adopt a PBD because that means she needs to take all those supplements”*.

Participants of Group 2 agreed that the association between a PBD and lacking nutrients is shaped by a *“negative stereotype that has been created by media saying that it is hard to eat plant-based and that you lack nutrients”* [P2.3] and suggested that this negative stereotype is the reason why *“people keep eating the same way because they feel hesitant”* [P2.3]. This reasoning was agreed by P1.2 who explained that *“you are often reminded by various studies about lacking nutrients”*.

Actual Experiences of Supplementation

Group 2 expressed a feeling of frustration towards the stigma of lacking nutrients. For example, “[...] *the so-called scientists that go against a PBD and argue that people should not do it, that is a frustration*” [P2.1]. Group 2 experienced this frustration because they believe that a PBD does not induce a lack of nutrients, which was also agreed by one participant from Group 1: “*I also believe that when you eat a variety of plant-based products, you do not need a lot of supplements every day*” [P1.2].

P2.1 indicated that she “[...] *only supplements vitamin B12 and D*”. In addition, she explained that “*the animals that are used for food production also receive supplements of B12, because they do not get that anymore as they do not come outside and B12 comes from the bacteria in the ground*” [P2.1]. This suggests that people who are eating meat, “*receive B12 supplements indirectly*” [P2.1]. Moreover, P2.1 also expressed that she does not understand why people emphasize nutritional intake once people adopt a PBD, because “*people with a standard diet do not think about how much protein they eat either*”.

Although emphasizing that the lack of nutrients is a stigma, two participants (P2.2, P2.3) expressed that once you integrate a PBD it is important to monitor your nutritional intake, “*and to see how you can make sure that you receive enough calcium or iron*” [P2.2]. The need for support in monitoring nutritional intake was expressed by one participant (P2.3): “*My superhero tells me exactly what I should eat to optimize my health. He can smell when I lack calcium*”. Two participants (P1.2, P2.1) thought that monitoring your nutritional intake and supplementing where needed is important for every kind of diet, and expressed that “*there are only a few people who eat in a way that they do not need supplements at all*” [P1.2].

Influence of Society

Ignorance Due to Censorship

All participants agreed that people's negative associations with a PBD are created by censorship in society. Due to lobbying in the dairy industry, "*we see videos of happy cows at school*" [P2.1], and "*parents do not allow their children to see videos of the slaughterhouses*" [P2.1]. Therefore, "*[...] you grow up thinking that the farmer loves his animals and takes good care of them*" [P1.2], or "*a lot of people do not know that a cow should be pregnant to give milk*" [P2.3]. One participant (P2.1) explained that other people do not see the harm in their omnivorous diets, and "*make fun of a PBD*" because they are "ignorant" [P1.1] and a PBD is something "different" [P2.1]. In the context of balanced meals, people might get their knowledge from the 'Eatwell Guide', however, "*that is not right at all, and it is only created due to lobbying in the dairy industry*" [P2.2]. Still, people might rely on this guide and judge a PBD negatively because "*it is contrasting*" [P1.2] and "*they might not know otherwise*" [P1.1].

Nurture

Group 1 suggests that people might feel hesitant to adopt a PBD because "*you do not know much, as humans we rely on our habits and we are raised in a certain way*" [P1.1]. "*We grow up with certain beliefs, and because a PBD is different, you are doubting if it is good for you*" [P1.2]. One participant (P1.3) explained her habit of eating meat by "*my parents eat both meat, so maybe it is what you grow up with*". "*You have to adjust [...] and realize it, it is not in our systems, [...] I learned it from my daughter, as I only knew what my mother had told me*" [P1.1].

Social Environment

Mutual Feeling to Justify Choices

All participants concluded that *“people who eat meat have the feeling they have to defend themselves towards people who eat plant-based, and people who eat plant-based have to defend themselves towards others”* [P1.3]. Group 1 indicated *“that people who want to try a PBD are often discouraged”* [P1.2] by the *“judgemental attitude of the ones maintaining a PBD”* [P1.1]. Those people might *“blame you for eating a piece of chicken”* [P1.3].

On the other hand, people who pursue a PBD also have to deal with negative reactions that might discourage them from continuing. For instance, *“when you receive comments at a BBQ about you only eating grass, then you also feel like never mind”* [P1.1], or *“when you have a certain opinion, and everyone is against you, [...] then you start doubting yourself”* [P2.1]. In social settings, people with a PBD *“stand out, because they are different”* [P2.1]. Therefore, other people often try to *“find something to depreciate you”* [P2.1].

P1.3 emphasized that both groups should accept each other’s choices: *“It should come from both sides. People with a PBD should be respected for their choice, and [...] others should also be respected for their choice”*. Another participant (P1.2) thinks that *“it is also a matter of live and let live. Nowadays, everyone wants to be right, I think”*.

Creating an Open Environment

Two participants (P1.1, P1.2) did not associate a PBD with eating together, as *“I think it is easier to have an extensive dinner together when it is not plant-based”* [P1.1]. Two participants (P1.1, P2.2) indicated that they found it difficult to communicate their preferences in certain social settings: *“You are invited to a Christmas dinner, and then you have to explain that you are following a PBD. I find that difficult”* [P2.2]. Expressing personal preferences might be

difficult, as *“it is always unsure how people react”* [P2.1]. One participant (P1.2) explained that *“in my house they are handling it very well, [...] but at my friend’s house they ask me to bring my own food because they will not cook for me”*.

To arrange a dinner between people not pursuing a PBD and people who are maintaining a PBD, all participants agreed that *“people should create an environment in which people can express their preferences”* [P1.3]. To create this environment, it is important to *“start a conversation”* [P1.2]. People not following a PBD can for example ask: *“What can I make for you?”* [P2.2]. On the other hand, people maintaining a PBD *“can bring their own food”* [P2.1], *“eventually people will become familiar with your PBD, and then you do not have to bring your own food anymore, they start cooking for you”* [P2.1]. Two participants (P1.2, P2.2) expressed that support could be helpful in starting a conversation: *“Our superhero is placed between her and grandma, to start the conversation and to see how the conversation is going. Is grandma defensive or is she open-minded and is she willing to think about the options?”* [P1.2].

Experiences of the Research Tasks

The evaluation was dominated by P1.2. For this reason, comments within this theme are mostly expressed by P1.2. It was indicated by P1.2 that because of the tasks in the sensitizing workbook, she *“started looking differently at certain aspects. During the task around grocery shopping, you pay more attention. The focus is more on what I see instead of what I came for”*. The superhero activity during the GS was described by P1.2 *“as a way to pull things out even more”* and helped her to *“look deeper at which things are also relevant and for which things I need more help”*. Still, P1.2 also explained that she did not gain new insights about her challenges to adopt a PBD, *“because I already thought about transitioning to a PBD before, so the barriers I encountered then are still the same”*.

Discussion

The present study explored how GR could be performed to discover people's needs in terms of support for maintaining a PBD. A period of sensitization and a GS were performed to identify challenges related to a PBD and to discover what is needed to overcome those challenges. This chapter clarifies to what extent this study's research questions have been answered and provides a list of requirements that may instruct future researchers or designers while developing an IST for supporting PBD behaviors.

Retrieving Insights from the Sensitizing Probe

Based on the answers in the sensitizing probes, participants seemed to perceive the replacement of favored animal-derived food products with plant-based alternatives as difficult when attempting a PBD. In contrast with previous findings (Adise et al., 2015), participants were not pleased with the taste and texture of plant-based alternatives. Participants also expressed concerns about the growing prices of groceries. Vegetables and meat substitutes were seen as expensive, which made it sometimes difficult for participants to buy plant-based products.

The task in which dreams were expressed yielded particularly valuable insights, as participants' desires for the future indicated in which contexts challenges were encountered and what was needed to overcome those challenges (Sanders & Stappers, 2018). Participants' responses indicated that the preparation of plant-based meals was perceived as time-consuming and that participants desired more time or someone who prepares meals for them once adopting a PBD. Participants' explanations about what they would change about their diets if everything was possible also conveyed that participants desired to be more steadfast in resisting favored animal-derived foods, which is also discussed by Bryant et al. (2022). Participants' responses to the two tasks in which participants had to report daily routines indicated that participants found it

important to eat healthfully. Participants were unsure whether the products they consumed were healthy enough and if they consumed enough nutrients. Participants also highlighted that workspace environments made it difficult to choose healthy foods, recognizing that people's eating behaviors are influenced by food options available at work (Quintiliani et al., 2010).

Thus, although sensitizing probes are normally not intended to be used for data analysis (Gaver et al., 2004), the answers in this study's sensitizing workbook did yield valuable insights into participants' challenges related to a PBD. This might be due to the design of the tasks. To enhance the process of sensitization, Gaver et al. (2004) stated that the instructions of a probe should be ambiguous to let participants explore freely. However, the tasks in this study's probe were unambiguous and clearly instructed to the participants. Unambiguous tasks might have been more valuable for retrieving insights but might have been less useful for sensitization.

Usefulness of Sensitization

Participants' Evaluation

In line with the aim of sensitization to make participants more aware of the contexts in which their emotions emerge (Cradock et al., 2021), one participant perceived the sensitizing tasks as helpful for paying more attention to the contextual problem space. For example, the task around grocery shopping was helpful for focusing on aspects of the environment instead of focusing on doing the groceries. However, during the evaluation at the end of the GS, other participants did not communicate their opinions regarding the sensitizing tasks. A lack of contribution among participants might be explained by the set-up of the evaluation.

Firstly, the evaluation consisted of a semi-structured plenary discussion. To gather more insights about participants' opinions and experiences related to the sensitizing tasks, integrating a researcher-led focus group or a one-to-one interview with structured questions might be more

appropriate (Rabiee, 2004). Secondly, the evaluation took place at the end of the session when participants could have been tired of talking. Thus, sending participants an exit survey in which they could provide feedback in their own time could have been more effective.

Participants' Productivity

Since sensitization includes an underlying process in which unconscious knowledge is translated into conscious knowledge through self-reflection (Sengers et al., 2005), participants could have found it difficult to communicate the effectiveness of sensitization explicitly during an evaluation. Therefore, as sensitization aims to prepare participants for expressing their needs during a GS (Sleeswijk Visser et al., 2005), examining participants' productivity might be a valuable alternative to explore how participants' contributions have been enhanced by sensitization.

The responses in Group 1's sensitizing workbooks were similar to their expression in the session. Group 1 felt comfortable communicating their barriers towards adopting a PBD and was able to express which support was needed to overcome those barriers. For this reason, it could be argued that sensitization was indeed helpful, as sensitization should familiarize participants with present experiences, making them feel comfortable to explore and communicate personal contexts and feelings (Kwiatkowska et al., 2015). However, during the session, Group 2 seemed to be as capable of communicating their challenges and needs as Group 1 without being sensitized. Thus, within this study, it is difficult to conclude whether a period of sensitization helped Group 1 to communicate their needs. To investigate this more in-depth, future research could conduct a quantified study, comparing the productivity of a sensitized group with a control group.

These insights provide answers to SQ1 (“*How can sensitizing participants with tasks beforehand help them to formulate their needs during a generative session?*”) and SQ2 (“*How can a sensitizing probe be used to gain more insights into challenges related to a plant-based diet?*”).

Usefulness of Generative Techniques and Tools

In line with findings by Willett et al. (2022), participants indicated that the superhero activity was helpful for realizing which aspects of a PBD were most challenging and for which challenges more support was needed. The results of the activity showed that support for self-improvement was most desired. Almost all superheroes projected a better version of the participants themselves. For example, a superhero was more confident while explaining personal food preferences, or the superhero was more steadfast in choosing plant-based foods. The need for support in sustaining PBD behaviors might be reasoned by Bryant et al. (2022), who argue that people’s commitment to a PBD is influenced by external (e.g., appealingness of meat or reactions of others) and individual factors (e.g., reasoned intentions). The need for self-improvement might be explained by the idea that improving personal characteristics enhances the ability to habituate new behaviors (Sedikides & Hepper, 2009).

As suggested by Carroll (1997), performing scenarios seemed to stimulate participants to envision potential challenges during the scenario and which support might be needed to overcome these challenges. In addition, in line with Parkin (2023), the results indicated that the use of Playmobil props stimulated participants to generate perspectives for unencountered situations. Stimulating participants to think about what is needed during situations they have not encountered personally, might have been valuable for accessing latent needs (Yang, 2013).

However, more research is needed to conclude whether participants indeed expressed latent knowledge during the activities or that they still communicated higher levels of knowledge.

Participants agreed that the interaction with more experienced people during the session was helpful for understanding and articulating their needs. During the GS, participants from Group 1 concluded that they are still ignorant about several aspects of a PBD (e.g., preparing plant-based meals or consuming nutrients), which reduces their willingness to adopt a PBD. In line with the suggestion that receiving sufficient information about several practices is important for adopting a PBD (Laakso et al., 2021), Group 1 indicated that the information provided by Group 2 made the transition to a PBD seem less frightening.

These findings provide answers to SQ3 (“*Which generative techniques and tools during a generative session are perceived as helpful by participants for understanding their challenges and needs?*”) and could inform future research that seeks to implement similar activities in a GS.

Requirements for an IST for Maintaining a PBD

To address the main research question (“*How can generative research be performed to elicit requirements for an interactive support tool for maintaining a plant-based diet in the Netherlands?*”), a list of eight requirements for a dedicated IST for supporting PBD behaviors has been interpreted from the results.

1. Allow users to interact with like-minded people and people more experienced with a PBD, either online or offline. For example, by integrating a chat function or by allowing users to arrange speed dates.
2. Allow users to efficiently acquire knowledge about preparing convenient and healthy plant-based meals.

3. Allow users to acquire information regarding different aspects of a PBD (e.g., plant-based products, restaurants with plant-based options, nutritional values of products, etc.) in one place by clustering information about various topics on one platform.
4. Allow users to explore whether their assumptions regarding a PBD are accurate. For instance, a card game could present a common assumption on each card along with contextual information that either refutes or confirms the assumption.
5. Allow users to improve their self-confidence to act in line with personal goals by offering exercises or challenges that help to build confidence.
6. Allow users to improve their abilities to cope with negative reactions towards their PBD. For example, by offering simulations of conversations in which users can discover and practice different strategies for dealing with negative comments.
7. Allow users to explore which steps regarding the transition to a PBD are executable within their daily lives. For example, by informing users about potential steps and allowing users to systemize manageable steps in a personal road map.
8. Allow users to detect which nutrients need to be supplemented by monitoring their daily nutritional intake.

Limitations

Although the number of participants (N=6) was ideal for generative research (Sleeswijk Visser et al., 2005), it is still a small sample size. Therefore, the results might not be generalizable to a larger population. Furthermore, since five out of the six participants were female, it is unclear whether different answers would have been produced when more participants were identified as male or other genders. Although being part of the target group, four participants were closely related to the researcher (i.e., either friends or family). This might

have influenced their contributions to the study, as they could have been more motivated to participate in order to please the researcher.

As the total number of participants was divided into two groups, only three people were sensitized before participating in the GS. Therefore, it is difficult to draw conclusions about the effectiveness of sensitization in general, especially as participants did not express much about their experiences with the sensitizing probes. In addition, the sensitizing tasks could have been too specific, leaving no room for participants to explore their experiences freely. Unambiguous tasks could have affected the effectiveness of sensitization negatively (Gaver et al., 2004).

Due to time constraints, the GS was not pilot-tested. If the GS had been pilot-tested, low contributions to the evaluation could have been discovered in advance and other options could have been executed. In addition, the TA was only conducted by one coder, allowing the results to be influenced by the researcher's biases (see Appendix A). Lastly, since the session was only facilitated by one researcher, participants' answers might have been less thorough. Sleeswijk Visser et al. (2005) highlighted that a session should be facilitated by two researchers to receive a deeper understanding, as one researcher should observe and listen, while the other researcher should focus on asking follow-up questions.

Future Research

Future studies could investigate the effectiveness of sensitization in greater depth by examining participants' expressions before and after being sensitized. Subsequent work could also conduct a similar study with only people from Group 1 as the conversations with experienced participants from Group 2 could have influenced participants' contributions. A focus group could be conducted in future studies to examine and quantify how activities during a GS are perceived by participants, and how the different activities compare in terms of usefulness. To

further examine if GR yields more insights into people's challenges and needs, further research could investigate if other methods such as interviews or focus groups elicit the same results. Lastly, future research could implement the IST requirements into a prototype and evaluate participants' attitudes towards the prototype and the prototype's effectiveness in terms of supporting PBD behaviors.

Conclusion

This study explored how challenges and needs regarding a PBD could be discovered through GR to compose requirements for an IST. Since both the sensitizing workbook and the GS yielded valuable insights into participants' challenges and needs, it can be concluded that GR is a useful approach for eliciting requirements. Still, future research is needed to conclude whether GR is more effective for eliciting deeper levels of knowledge compared to other methods such as focus groups. Additionally, more research is needed to examine to what extent participants expressed latent needs.

Apart from obtaining insights related to participants' needs, this study also investigated how sensitization could enhance the expression of latent needs. Although participants seemed to be well prepared to communicate their experiences and needs during the GS, more research is required to conclude to what extent participants' performances were enhanced by sensitization.

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Appendix A

Bracketing Statement

Since I was the only researcher conducting this research, it might be valuable to acknowledge that the study's materials and the interpretations of the results might have been biased by my personal circumstances (Creswell & Miller, 2000). For the last two years, I have been pursuing a PBD myself. Therefore, my personal challenges, opinions, or motivations in terms of a PBD could have affected my objectivity regarding the materials and the data analysis negatively. Although I conducted this study with full awareness of this personal bias and sought to guarantee an objective analysis, one should consider the above acknowledgment while validating this study. My personal experiences and perspectives in terms of my PBD are described in the following paragraphs.

Personal Experiences and Perspectives Regarding a PBD

Since I started pursuing a PBD, I have learned that most negative associations with a PBD can be explained by a lack of knowledge. When my boyfriend told me he wanted to integrate a PBD, my reaction was also negative. However, after he explained more about the advantages and practicalities of a PBD, I acknowledged that a PBD was not as difficult as I expected. In addition, as I started eating more plant-based meals with him, I discovered that my energy levels started to increase. After this realization, I decided to adopt a PBD myself.

The same happened when I told my mother I wanted to integrate a PBD. After communicating my decision, we had several conflicts. My mother had heard some negative things about a PBD and was concerned that a PBD would induce a lack of nutrients. At that time, I did not have enough knowledge to disprove her negative comments and concerns, which made me feel insecure and unsupported. During that time, it was helpful that my boyfriend possessed

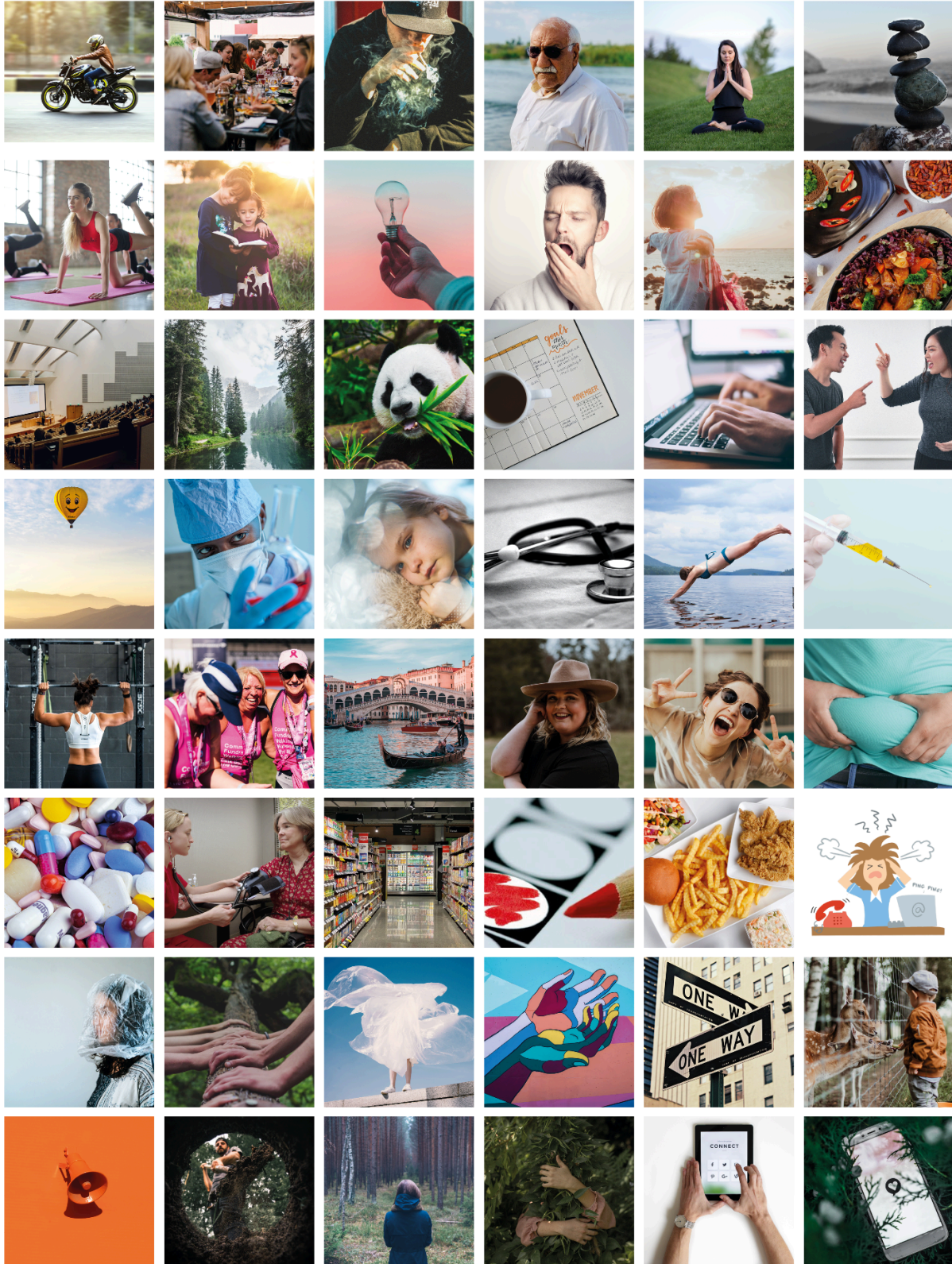
the relevant knowledge to convince my mother about the advantages of a PBD, after which my mother decided to integrate a PBD herself. The fact that both my mother and I decided to adopt a PBD after learning more about it in practice, made me realize that people might need information first before being able to adopt a PBD.

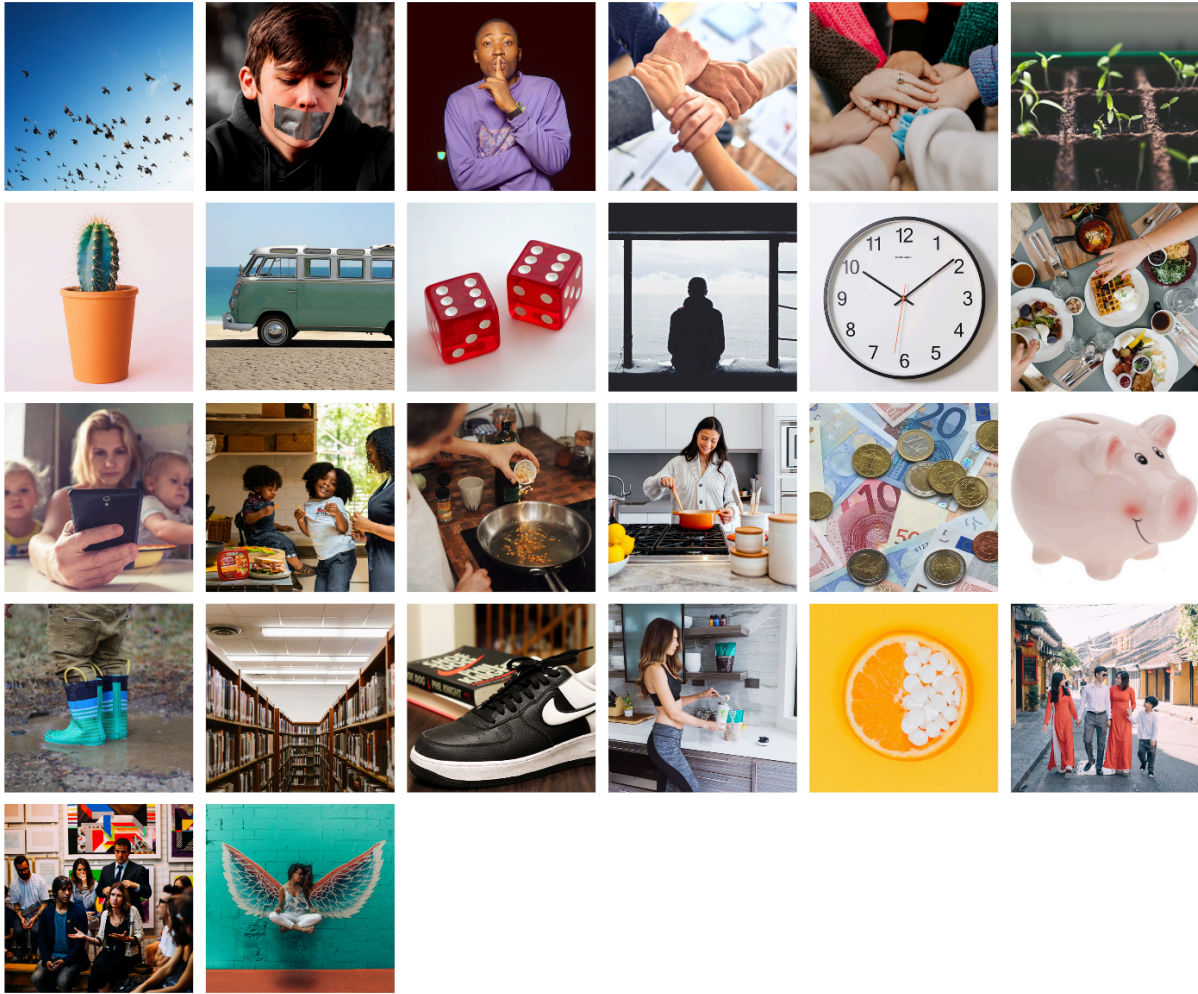
For example, I often hear that people are afraid they will lack calcium when they stop eating dairy products, but I have learned that even leaf vegetables are high in calcium. People also often indicate that they do not like the taste of legumes, but I have discovered that my body adapts to my new food choices, making me dislike foods I preferred before and making me like ingredients that were disgusting at first. Similarly, people often explain that they might not be able to resist cheese. However, I discovered that my body craves the foods I often eat. So, when I was eating a lot of cheese, my body craved more cheese. But when I stopped eating cheese and ate more vegetables, my body stopped craving cheese and started craving vegetables.

I understand that people might not expect to be able to maintain a PBD if they are not aware of the idea that their body might adapt itself in accordance with their new food choices. In addition, I am aware that I perceive a PBD as simple because my boyfriend does a lot of research about the practicalities of a PBD (e.g., preparing plant-based meals and consuming sufficient amounts of nutrients). So, I understand that for other people, it could be difficult to pursue a PBD healthfully when those people do not receive support or knowledge from others. Based on this conclusion, I was interested in learning more about people's barriers to pursuing a PBD. Thus, I decided to start this research. Also, although I normally do not propagate my beliefs in terms of a PBD actively, I hope that the experiences presented in this study might inspire other people and eventually lower their barriers to integrating a PBD.

Appendix B

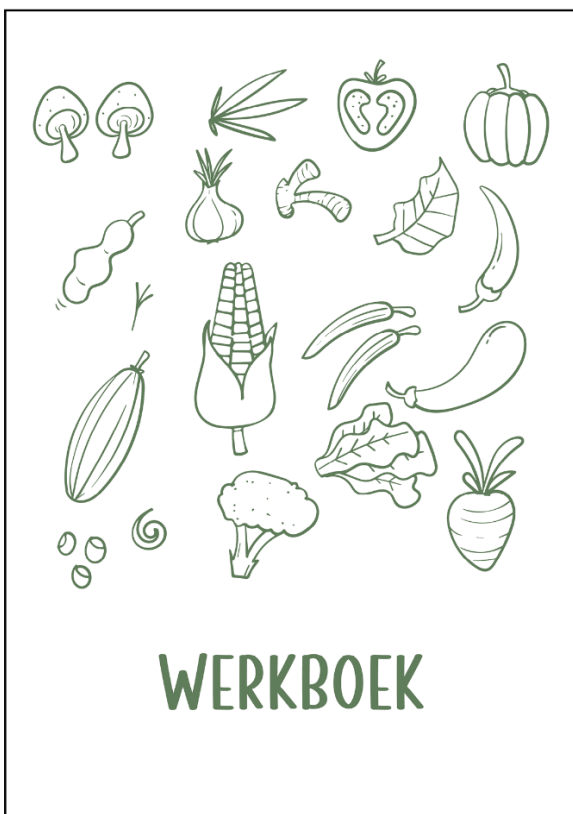
Images Included in the Sensitizing Probe





Appendix C

Pages and Templates of the Sensitizing Workbook



HOI!

WIE BEN IK?

Ik ben Julianne en ik ben mijn master New Media Design op de Universiteit van Tilburg aan het afronden. Ik ben 24 jaar en dol op kamerplanten. Ongeveer twee jaar geleden ben ik samen met mijn vriend plantaardig gaan eten, maar van de kamerplanten in huis blijf ik af hoor :)

WAT IS DIT?

Dit werkboekje zal helpen om inzichtelijk te krijgen hoe jij je voelt bij je huidige voedingspatroon en hoe je je weerhoudt tot een plantaardig voedingspatroon. Door kleine opdrachten te doen, ontdekken we gevoelens en ervaringen waar jezelf niet altijd bewust van bent. De antwoorden worden verder besproken in de workshop om te ontdekken hoe een hulpmiddel kan bijdragen aan het overwinnen van uitdagingen.

HOE WERKT HET?

In dit werkboekje vind je zeven opdrachten. Vier opdrachten kun je invullen wanneer jij dat wilt. De andere drie vul je in op een specifiek moment of dag. Lees het boekje dus van tevoren goed door zodat je kan inplannen wanneer je die opdrachten gaat maken. Neem de tijd voor de opdrachten, en geloof me, je hoeft er echt geen uur per dag mee bezig te zijn. Het gaat om jouw gevoelens en ervaringen dus niets is goed of fout. Schrijf op wat jij denkt of voelt.

INBEGREPEN IN HET PAKKET:

Plantaardige snack voor tussendoor
Afbeldingen voor de opdrachten
Lijm om de afbeeldingen vast te plakken
Emoji stickervellen om emoties weer te geven
Pen en pottloden
Dit werkboek

WIE BEN JIJ?

Vertel wat over jezelf door hieronder de zinnen aan te vullen. Soms moet je eerst kiezen tussen de opties die weergegeven zijn tussen de schuine strepen. Jouw keuze kan er dan voor zorgen dat je de streep erna niet hoeft in te vullen.

Voorbeeld:

Ik heb nooit / ooit iets anders geprobeerd qua voedingspatroon, namelijkXXXX......

Ik ben _____ en ik ben _____ jaar oud. Ik omschrijf

mijn geslacht als _____. Ik woon in _____.

Hier woon ik alleen / samen met mijn _____. Op dit moment

studeer ik / werk ik als _____.

Mijn hoogst genoten opleiding is _____.

Op dit moment omschrijf ik mezelf als een carnivoor / flexetariër / pescotariër / vegetariër / veganist. Ik eet als zo sinds _____.

Ik heb nooit / ooit iets anders geprobeerd qua voedingspatroon,

namelijk _____.

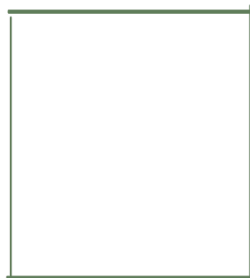
Thuis ben ik de enige / niet de enige die zo eet, want mijn _____ heeft

hetzelfde voedingspatroon als ik.

Ik ben geïnteresseerd in een

plantaardig dieet omdat _____

Teken hier een zelfportret!



DEEL I

De volgende opdrachten kun je invullen op elk gewenst moment

TEKEN JE FAVORIETE MAALTIJD

Teken in het eerste vakje je favoriete maaltijd. Schrijf erboven wat het is en leg onder het vakje uit waarom dit je favoriete maaltijd is. Als deze maaltijd nog niet plantaardig was, bedenk dan een plantaardige versie van deze maaltijd. Teken deze variant in het vakje ernaast. Schrijf ook hier erboven wat het is. Onder het vakje kan je schrijven wat je hebt veranderd. Geef in het derde vakje aan wat je voelt bij deze verandering d.m.v. de emoji stickers. Beschrijf kort waarom je je zo voelt. Probeer twee maaltijden te tekenen!

Voorbeeld:



<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>

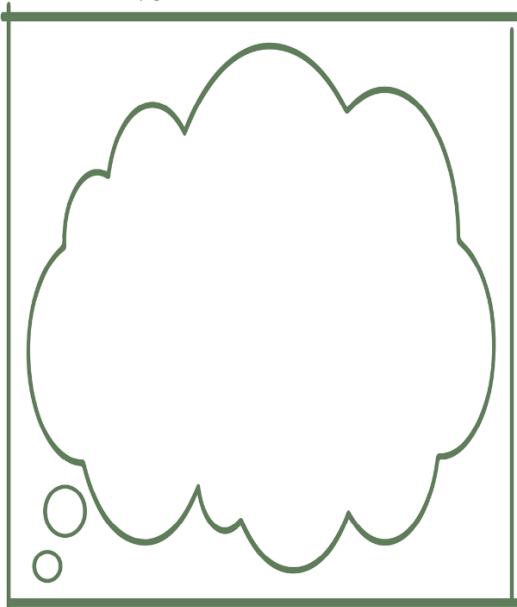
AFBEELDINGEN PLAKKEN!

In de envelop zitten afbeeldingen. Plak in het rechthoek hieronder de afbeeldingen die jij associeert met een plantaardig voedingspatroon. Leg in een paar woorden je keuze uit.

Plak in het rechthoek hieronder de afbeeldingen die jij absoluut niet vindt passen bij een plantaardig voedingspatroon. Leg in een paar woorden je keuze uit.

DROMEN...

Als je alles zou kunnen doen / maken / kopen / eten wat je zou willen, zou je iets veranderen aan je voedingspatroon? Zo ja, wat? Teken en schrijf het hieronder in de dromenwolk. Je mag ook eventueel de afbeeldingen gebruiken uit de envelop om je dromen te verbeelden. Probeer ook de zin onderaan de pagina af te maken.



Over 5 jaar omschrijf ik mijn voedingspatroon als _____.



DEEL II

De volgende opdrachten maak je op een specifiek moment.

Één opdracht doe je na de boodschappen. Bedenk dus wanneer je boodschappen gaat doen en lees de opdracht goed door voor je gaat.

Twee opdrachten maak je gedurende een gehele dag. Kies hiervoor een specifieke dag uit.

BOODSCHAPPEN DOEN

Doe je boodschappen zoals je die altijd doet, maar beeld je in dat je boodschappen doet voor een plantaardig voedingspatroon. Wat merk je tijdens het boodschappen doen? En welke dingen vallen je op? Wees bewust van jezelf en de omgeving.

Vul de zinnen hieronder aan totdat je geen nieuwe opmerkingen meer hebt.

1. Toen ik boodschappen aan het doen was viel het me op

dat _____, Dit vond ik _____
_____, omdat _____.

2. Toen ik boodschappen aan het doen was viel het me op

dat _____, Dit vond ik _____
_____, omdat _____.

3. Toen ik boodschappen aan het doen was viel het me op

dat _____, Dit vond ik _____
_____, omdat _____.

4. Toen ik boodschappen aan het doen was viel het me op

dat _____, Dit vond ik _____
_____, omdat _____.

5. Toen ik boodschappen aan het doen was viel het me op

dat _____, Dit vond ik _____
_____, omdat _____.

6. Toen ik boodschappen aan het doen was viel het me op

dat _____, Dit vond ik _____
_____, omdat _____.

TIJDLIJN NORMALE DAG

Hieronder vind je een format om een tijdslijn van een normale dag te maken. Boven de tijdslijn schrijf je wat je die dag gedaan hebt. Onderaan de tijdslijn noteer je op welk moment en wat je die dag gegeten hebt. In de balk daaronder geef je a.d.h.v. de emoji stickers aan hoe je je bij die momenten en maaltijden voelde. Geef in de onderste balk aan waarom je je zo voelde.

TIJDLIJN VAN EEN DENKBEELDIGE DAG

Hieronder vind je hetzelfde format als bij de vorige opdracht. Bedenk nu alleen bij elke stap die je bij de vorige opdracht hebt opgeschreven hoe die eruit zou zien als je plantaardig zou eten en hoe je je voelt bij die verandering. Noteer in het format de dingen die je bij de vorige opdracht hebt gedaan, maar dan aangepast in de versie van iemand die plantaardig zou eten. Voorbeeld: Ik ging naar de winkel voor kaas >> ik heb zelf hummus gemaakt

! Tip: Likt het je een leuke uitdaging om echt een dag plantaardig te eten, dan kan je dat voor deze opdracht ook proberen. Vul dan een nieuwe tijdslijn in.

BEDANKT!

Hopelijk vond je het een leuke ervaring. Tijdens de workshop zullen we verder ingaan op jouw ervaringen en uitdagingen. Ook zullen we de resultaten van dit werkboekje meegenomen worden naar de volgende stap waarin we gaan nadenken hoe eventuele uitdagingen overwonnen kunnen worden.

Wil je nog iets delen of heb je vragen, dan kan dat tijdens de workshop of je kan persoonlijk contact met mij opnemen via juliannehoekstra@gmail.com.

**! Breng dit werkboekje mee naar de workshop !
De andere spulletjes mag je houden.**

Tot bij de workshop!

Appendix D

Informed Consent Group 1

Beste deelnemer,

Bedankt voor uw interesse om mee te doen aan dit onderzoek. Dit onderzoek is onderdeel van een masterthesis voor de master New Media Design aan de Tilburg University. Met dit onderzoek wil ik ontdekken waar de uitdagingen liggen omtrent het integreren en volhouden van een plantaardig eetpatroon.

Wat gaat u doen?

Een week voor een workshop ontvangt u thuis een werkboekje waarin u een aantal kleine opdrachten invult om uw ervaringen en gevoelens te achterhalen omtrent het integreren van een plantaardig eetpatroon. Vervolgens neemt u deel aan een workshop waar u en andere participanten ervaringen uitwisselen. Op basis van de bevindingen voert u verschillende creatieve activiteiten uit. Hierdoor wordt duidelijk welke relevante uitdagingen er bestaan rondom het volgen van een plantaardig eetpatroon.

Hoe lang duurt uw deelname?

Het invullen van het werkboek zal ongeveer 3 tot 4 uur duren. Deze uren kunt u zelf indelen gedurende één week voor de workshop. De workshop zal ongeveer 3 uur duren, en vindt plaats in een ruimte op de Universiteit van Tilburg. Houd dus rekening met eventuele reistijd.

Welke voordelen haalt u uit dit onderzoek?

Door het invullen van het werkboek en uw deelname aan de workshop ontdekt u waar uw uitdagingen liggen. Door deze uitdagingen concreet te maken, gaan er ook deuren open voor eventuele oplossingen. Ook zullen er tijdens de workshop deelnemers aanwezig zijn die een

plantaardig eetpatroon aanhouden. Zij kunnen tips en trucs delen waar u informatie uit kunt vergaren.

Wat zijn de risico's van uw deelname?

Er zullen geen risico's verbonden zijn aan uw deelname. Ondanks dat discussies tijdens de workshop begeleid zullen worden om een vertrouwde en gemoedelijke sfeer te handhaven, zou het kunnen zijn dat de inhoud soms negatieve emoties op kan wekken. Mocht dit het geval zijn, meld dit dan bij de onderzoeker zodat er ingegrepen kan worden.

Hoe wordt uw data bewaard?

Er zal strikt vertrouwelijk met uw data omgegaan worden. De workshop zal worden gefilmd. Het beeldmateriaal zal niet worden gedeeld en is alleen zichtbaar voor de onderzoeker voor transcriptie. Nadat de tekst is getranscribeerd, zal het beeldmateriaal verwijderd worden. Ook zullen er foto's gemaakt worden tijdens de workshop. Een selectie van deze foto's zou weergegeven kunnen worden in het thesis document. Echter zullen er geen persoonlijke gegevens worden gekoppeld aan het beeldmateriaal of opmerkingen. Mocht u toch willen dat u onherkenbaar gemaakt wordt, geef dit dan voorafgaand aan bij de onderzoeker. Data vergaard vanuit het werkboek zal alleen bekeken worden door de onderzoeker. Interessante opmerkingen hieruit worden opgenomen in het thesis document zonder persoonlijke gegevens, zodat data niet persoonlijk te traceren is. Data in het thesis document zal toegankelijk zijn voor de onderzoeker (Julianne Hoekstra), de supervisor (Simone Ashby), en de tweede beoordelaar (Alwin de Rooij).

Meedoen aan dit onderzoek is op vrijwillige basis. Als u instemt om mee te doen, kunt u alsnog op elk moment afhaken zonder consequenties. Ook kunt u verzoeken om uw data te laten verwijderen op elk gewenst moment. Mocht u vragen hebben dan kunt u contact opnemen met Julianne Hoekstra: [e-mailadres]

Hierbij verklaar ik dat ik 18+ ben. Daarbij stem ik toe dat er beeldmateriaal wordt opgenomen tijdens mijn deelname en dat dit gedeeld mag worden in de verslaglegging van dit onderzoek, tenzij ik hier voorafgaand bezwaar op heb gemaakt. Ik heb dit document zorgvuldig gelezen en begrijp wat het onderzoek inhoudt.

Als u instemt met uw deelname, selecteer dan “Ja, ik geef toestemming.” en klik op de knop versturen.

- Ja, ik geef toestemming
- Nee, ik geef geen toestemming

Naam: _____

Datum: _____

Appendix E

Informed Consent Group 2 and Demographic Survey

Beste deelnemer,

Bedankt voor uw interesse om mee te doen in dit onderzoek. Dit onderzoek is onderdeel van een masterthesis voor de master New Media Design aan de Tilburg University. Met dit onderzoek wil ik ontdekken waar de uitdagingen liggen omtrent het volhouden van een plantaardig eetpatroon.

Wat gaat u doen?

U neemt deel aan een workshop waarin uitdagingen omtrent het integreren van een plantaardig eetpatroon worden besproken en ontdekt. Omdat u ervaring heeft met een plantaardig eetpatroon, kunt u waardevolle kennis delen.

Hoe lang duurt uw deelname?

De workshop zal ongeveer 3 uur duren, en vindt plaats in een ruimte op de Universiteit van Tilburg. Houd dus rekening met eventuele reistijd.

Welke voordelen haalt u uit dit onderzoek?

Tijdens de workshop kunt u kennis delen vanuit uw eigen ervaringen en anderen inspireren. Ook kunt u ontdekken waar er voor u nog uitdagingen liggen.

Wat zijn de risico's van uw deelname?

Er zullen geen risico's verbonden zijn aan uw deelname. Ondanks dat discussies tijdens de workshop begeleid zullen worden om een vertrouwde en gemoedelijke sfeer te handhaven, zou het kunnen zijn dat de inhoud soms negatieve emoties op kan wekken. Mocht dit het geval zijn, meld dit dan bij de onderzoekers zodat er ingegrepen kan worden.

Hoe wordt uw data bewaard?

Er zal strikt vertrouwelijk met uw data omgegaan worden. De workshop zal worden gefilmd. Het beeldmateriaal zal niet worden gedeeld en is alleen zichtbaar voor de onderzoeker voor transcriptie. Interessante opmerkingen hieruit worden opgenomen in het thesis document zonder persoonlijke gegevens, zodat data niet persoonlijk te traceren is. Nadat de tekst is getranscribeerd, zal het beeldmateriaal verwijderd worden. Ook zullen er foto's gemaakt worden tijdens de workshop. Een selectie van deze foto's kan weergegeven worden in het thesis document. Echter zullen er geen persoonlijke gegevens worden gekoppeld aan het beeldmateriaal. Mocht u toch willen dat u onherkenbaar gemaakt wordt, geef dit dan voorafgaand aan bij de onderzoeker. Data in het thesis document zal toegankelijk zijn voor de onderzoeker (Julianne Hoekstra), de supervisor (Simone Ashby), en de tweede beoordelaar (Alwin de Rooij).

Meedoen aan dit onderzoek is op vrijwillige basis. Als u instemt om mee te doen, kunt u alsnog op elk moment afhaken zonder consequenties. Ook kunt u verzoeken om uw data te laten verwijderen op elk gewenst moment. Mocht u vragen hebben dan kunt u contact opnemen met Julianne Hoekstra: [e-mailadres]

Hierbij verklaar ik dat ik 18+ ben. Daarbij stem ik toe dat er beeldmateriaal wordt opgenomen tijdens mijn deelname en dat dit gedeeld mag worden in de verslaglegging van dit onderzoek, tenzij ik hier voorafgaand bezwaar op heb gemaakt. Ik heb dit document zorgvuldig gelezen en begrijp wat het onderzoek inhoudt.

Als u instemt met uw deelname, selecteer dan “Ja, ik geef toestemming.”

- Ja, ik geef toestemming
- Nee, ik geef geen toestemming

Persoonlijke gegevens:


Naam: _____

Datum: _____

1. Wat is uw leeftijd: _____
2. Met welk geslacht identificeert u zich?: _____
3. Wat is uw hoogst genoten opleiding? _____
4. Waarom bent u plantaardig gaan eten?: _____
5. Hoelang eet u al volledig plantaardig?: _____
6. Heeft u hiervoor al eens eerder een plantaardig eetpatroon geprobeerd en dit toen niet volledig volgehouden?: _____
7. Zo ja, waarom heeft u het toen niet volgehouden?: _____

Appendix F

Results of the Introduction Activity

	NAAM: _____ 51 jaar _____
TEKEN HIER JE PARTNER	
KARAKTEREIGENSCHAPPEN: Control freak Zorgzaam doener pietje piewie	DOELLEN: achter eigen keuzes blijven staan
FRUSTRATIES: Vn pad afgebracht worden door sociale druk	

	NAAM: _____ 51 jaar _____
TEKEN HIER JE PARTNER	
KARAKTEREIGENSCHAPPEN: Zorgzaam inhoudert open-minded	DOELLEN: Een harder schild
FRUSTRATIES: Zogenaamde "wetenschappers" "deskundige"	

- 24 _____ - ricky cola - student en wakt	NAAM: _____ _____
TEKEN HIER JE PARTNER	
KARAKTEREIGENSCHAPPEN: - hulpvaardig a	DOELLEN: - wil een leuke baan van haar waste - gewaard etc. -
FRUSTRATIES: - droeg en weinig smaak - zin om te beden. - vooral wil divessa etc.	

- 28 _____ deal ↳ redacteur ↳ zijn rabshtiek - sportief ↳ wielrennen - koken - graag buiten	NAAM: _____ _____
TEKEN HIER JE PARTNER	
KARAKTEREIGENSCHAPPEN: - rustig - leeg fat hoog ↳ verbeteren zelf	DOELLEN: - goede start nieuwe baan ↳ goede balans vinden - goed blijven eten ↳ voornamelijk wnn drukker of lu.
FRUSTRATIES: - tijd rovend ma-ur wat eten. ↳ meal prep's vrije dag - kookt niet voor alleen. - plantaardig eten heeft stereotype ↳ vaak negatief - soms weinig plekken vegetarisch. voor uit eten.	


	NAAM: _____ _____
TEKEN HIER JE PARTNER	
KARAKTEREIGENSCHAPPEN: Speels graag contact extravert nieuwsgierig zorgzaam	DOELLEN: Afbouwen in 5 jaar naar volledig plantaardig Informeren
FRUSTRATIES: Oordeel van anderen	

	NAAM: _____ _____
TEKEN HIER JE PARTNER	
KARAKTEREIGENSCHAPPEN: jltto velt rustig bestichtzaam doorzetter / fanatiek	DOELLEN: - hulp bieden in de verandering naar veganisme
FRUSTRATIES:	

Appendix G

Results of the Superhero Activity

NAAM SUPERHELD: miss Vegas

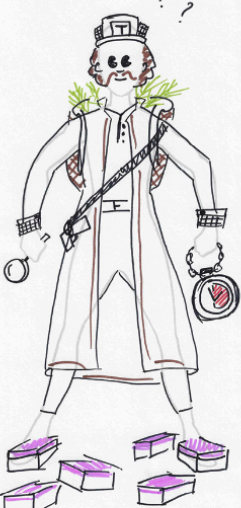


KRACHTEN / EIGENSCHAPPEN:
Positief
vriendelijk
overtuigend
respectvol

ZWAKKE PUNTEN:
heeft altijd gelijk

WAT MAAKT JOUW SUPERHELD SPECIAAL:
Met de kalme omge-
heid van deze super-
held, wordt iedereen
in zijn omgeving
zich bewust van de
impact van hun
vredingskeuzes

NAAM SUPERHELD: detective
Tupperware
man.




KRACHTEN / EIGENSCHAPPEN:
- goed googlen
- beter
- time
- manage
- mand
- kan dingen
- bevroren
- unlimited
- tupperware

ZWAKKE PUNTEN:
- spullen die
- bevroren
- zijn ont-
- dooien
- limited
- time

WAT MAAKT JOUW SUPERHELD SPECIAAL:
- zoekt
- goede
- ideeën.
- voor
- eten
- goed eten
- lang goed

NAAM SUPERHELD: Mr. Love

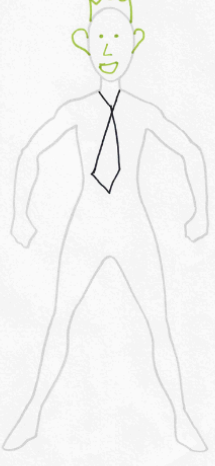


KRACHTEN / EIGENSCHAPPEN:
- te vergeven
- standvastig
- ruimhartig
- doorba sterd
- voorlopende
- oorzakeelheid.

ZWAKKE PUNTEN:

WAT MAAKT JOUW SUPERHELD SPECIAAL:
- dat hij er
- onvoorwaardelijk
- is, en altijd
- het beste met
- mij voor heeft.

NAAM SUPERHELD: _____

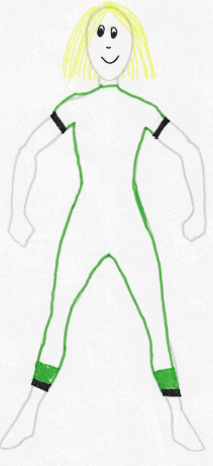


KRACHTEN / EIGENSCHAPPEN:
- Standvastig
- weet precies
- wat ik moet doen
- danka voor grimek
- grontheid
- heeft geen mening

ZWAKKE PUNTEN:
- wil te graag
- dat meer mensen
- mekaar nodig
- gaan eten

WAT MAAKT JOUW SUPERHELD SPECIAAL:
- kan op een
- leuke en constructie
- beve manier uitlegen
- waarom je een plant-
- sardige levenswijze
- zou kunnen volgen,
- overwegen.

NAAM SUPERHELD: _____

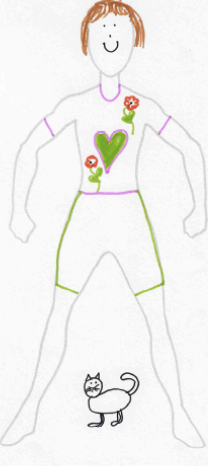


KRACHTEN / EIGENSCHAPPEN:
- zelfverzekerd
- kennis
- smaken versterkend
- planten van
- maaltijden

ZWAKKE PUNTEN:
- soms te veel
- mee gaan in discussie

WAT MAAKT JOUW SUPERHELD SPECIAAL:
- de kracht om
- werk zichzelf op te
- nemen
- kennis over andere
- voedings keuzes.
- Vega alternatieven
- qua smaak meer
- laten horen op de
- "echte" versie

NAAM SUPERHELD: miss green



KRACHTEN / EIGENSCHAPPEN:
- sterk in de
- schenen staan
- vergoingsgezind
- overwicht
- dingen kunnen
- filteren / laten gaan
- kan met iedereen
- goed overweg

ZWAKKE PUNTEN:
- Dat heeft een
- superheld niet

WAT MAAKT JOUW SUPERHELD SPECIAAL:
- Brengt mensen
- tot andere
- inzichten /
- gedrag

Appendix H

Results of the Scenario Playing Activity

Figure H1

The First Scenario



Note. Scenario: “Lieke wants to pursue a PBD and wants to make sure she gets all the nutrients she needs. However, she works a lot so taking the time to prepare meals is often difficult and sometimes she does not know what she needs in terms of nutrients.”

Figure H2

The Second Scenario



Note. Scenario: “It is almost Christmas and Janneke has plans to eat at her grandmother’s house with the rest of the family. Janneke is the only one following a PBD, everyone else eats meat.”

Figure H3

The Third Scenario



Note. Scenario: “Tom often hears that it is better to adopt a PBD, but he does not understand why exactly. He wants to obtain more knowledge about it but he does not know where to start looking for it.”

Appendix I

Results of the Thematic Analysis

Table I1

Overview of Quotes within Themes

Theme	Sub-theme	Description	Example quote
Individual Process to Adopt a PBD	A Step-by-Step Process	Adopting a PBD is a process, doing it right immediately is not desirable.	<p><i>“Yeh, for me it is like, if you want to do it, you should do it right immediately. I do not want to do it half-heartedly. I sometimes think that when I fail in the morning, I mess up the whole day. But you can also think, now it went wrong, but we are going to try to do it right the next time.” [P1.1]</i></p> <p><i>“It is not completely ruined when you eat something and you figure out it did include something like milk. No, just continue, it does not matter, it can happen.” [P2.1]</i></p> <p><i>“Sometimes you have to keep improving. Sometimes things can not go right immediately.” [P1.3]</i></p> <p><i>“I think that I will not succeed in shifting immediately from the start. I will not like that. I also think that adopting a PBD is too difficult for me, but going vegetarian might be doable maybe.” [P1.3]</i></p>

Theme	Sub-theme	Description	Example quote
	Personal Growth	Participants want to improve their social abilities to uphold personal choices.	<p><i>“Her goal is to stand by her own choices and her frustration is that she struggles to hold on to her choices due to social pressure.” [P2.1]</i></p> <p><i>“I can say for myself that under social pressure, I am not strong enough to say that I do not eat that, and then I think well I will not die from eating it or it is already dead now. Then I am not steadfast, I admit that.” [P1.1]</i></p> <p><i>“He gives you the power to be steadfast. He is generous and decisive, and encourages you to persevere.” [P1.1]</i></p> <p><i>“I have made Miss Green, her characteristics are that she is confident. Forgiving. [...] These things I wish for myself, that I was more confident.” [P2.1]</i></p> <p><i>“I have made [Name participants] 2.0 because I believe in being your own superhero. Her power is to be confident. [...] To stand up for your own choices and food preferences.” [P1.2]</i></p> <p><i>“And sometimes she does not have the willpower to do it. And the unicorn is the superhero and he gives positive energy to Lieke through his horn. This way Lieke still has the decisiveness to do what she has to do and therefore gets the nutrients she needs.” [P2.3]</i></p>

Theme	Sub-theme	Description	Example quote
Information Seeking	Need for information	Participants lack knowledge related to a PBD.	<p><i>“To adopt a PBD, she still feels a little ignorant. And she thinks that she needs more information to do so, to make sure she does not fall back into her old habits.” [P2.2]</i></p> <p><i>“I lack information for myself about how I can make something with my limited tools because it is not that we do not want to it, but with my limited tools I find it difficult to know what is possible.” [P1.3]</i></p> <p><i>“And some things you just do not know.” [P1.1]</i></p> <p><i>“Information. Just read things about how to do it. [...] Last time I tried to adopt a PBD it went really bad, but I did not read up on things. That does not work. If I do it, I want to do it after being informed, to make sure I do not make mistakes, like oh I should have known this.” [P1.2]</i></p>
	Online Research	To maintain a PBD properly, online research is required.	<p><i>“But it is indeed a lot of research. And you should take the time to do that at a moment when you feel comfortable and have the time.” [P1.3]</i></p> <p><i>“There are tablets, and mobile phones on which you can also find a lot of information on social media.” [P2.1]</i></p> <p><i>“I just Google a lot.” [P2.1]</i></p>

Theme	Sub-theme	Description	Example quote
	Interaction with More Experienced People	Interaction with others is a favored way to gain knowledge about a PBD.	<p><i>“Those are things that make you think, someone should tell you.” [P2.3]</i></p> <p><i>“And we visualized the idea of gathering information with multiple people. [...] We chose a chef because he can explain how to cook delicious plant-based meals.” [P1.1]</i></p> <p><i>“I want to adopt a PBD eventually, but the first step feels far away. [...] So I was interested in how experienced people do it. How do they see it? And does it indeed feel like a big step?” [P1.2]</i></p> <p><i>“For me it just that I have to start the conversation with people who have experiences with a PBD about how they handle certain aspects.” [P1.2]</i></p> <p><i>“I found it really nice to hear from you like have you tried this? It gives me more insights, like maybe I can try this to see if it works out.” [P1.3]</i></p> <p><i>“It might also help if you can talk about with others, then you can share experiences or tips with like-minded people which might make you feel stronger.” [P2.1]</i></p>
Approaches to Prepare Daily Meals	One-to-One Replacement	Participants tend to choose one-to-one replacements when trying a PBD.	<i>“If I do not eat meat, [...] then indeed I choose the meat substitute out of laziness.” [P1.3]</i>

Theme	Sub-theme	Description	Example quote
			<p><i>“I do eat meat substitutes more often, also due to laziness.”</i> [P1.2]</p>
			<p><i>“I would make better alternatives for cheese.”</i> (S) [P1.2]</p>
			<p><i>“And indeed, do not try to replace what you have now with something that is similar, but just try to make something completely different. Start from zero and try new recipes, instead of thinking how you could change your current products with a one-to-one plant-based replacement because that will make it harder.”</i> [P2.1]</p>
			<p><i>“You can better throw away everything you have in your house and start over again. Get a new cookbook.”</i> [P1.1]</p>
	Meal Preparation	Preparing meals in advance could be convenient.	<p><i>“In my head, plant-based meals are healthy. I think that nature plays a major role, the healthy lifestyle, fitness, that kind of things.”</i> [P1.3]</p>
			<p><i>“I indeed prepare my meals in advance, but that is because I also eat a warm meal during lunch when I do not need to work. But I always have boxes of beans ready. I cook them myself and store them in my fridge.”</i> [P2.1]</p>
			<p><i>“It should not have to be difficult. You can prepare some sweet potatoes, different</i></p>

Theme	Sub-theme	Description	Example quote
			<p><i>vegetables, and then you can make three sauces or something. You can mix everything with something like couscous and then you have a meal.” [P2.3]</i></p> <p><i>“Yeh the time you need for cooking something that is not simple. So the time for cooking you do not have and that cooking can take some time sometimes when you need to put more effort into it.” [P1.3]</i></p>
Nutritional Intake	Assumptions Due to Stigma	Due to a stigma, participants associate a PBD with a lack of nutrients.	<p><i>“I also added an image of medications because I also associate it with supplements. As you are often reminded by various studies about lacking nutrients.” [P1.2]</i></p> <p><i>“Yeh that whining about lacking this and that. Then I think, have you ever tested your own blood values.” [P2.1]</i></p> <p><i>“A friend said that she did not want to adopt a PBD because that means she needs to take all those supplements.” [P1.2]</i></p> <p><i>“In terms of a PBD, I think that it has a negative stereotype that has been created by media saying that it is hard to eat plant-based and that you lack nutrients, and that is why people keep eating the same way because they feel hesitant.” [P2.3]</i></p>

Theme	Sub-theme	Description	Example quote
	Actual Experiences of Supplementation	A PBD does not induce a lack of nutrients when eating properly.	<p><i>“I also believe that when you eat a variety of plant-based products, you do not need a lot of supplements every day.”</i> [P1.2]</p> <p><i>“And just do not think too hard about it. Because people with a standard diet do not think about how much protein they eat either. Yes, unless you are a top athlete. Before changing your diet, you did not do that either. So why should there be such an emphasis on it?”</i> [P2.1]</p> <p><i>“And to see how you can make sure that you receive enough calcium or iron. That you pay attention to that as well.”</i> [P2.2]</p> <p><i>“My superhero tells me exactly what I should eat to optimize my health. He can smell when I lack calcium.”</i> [P2.3]</p>
Influence of Society	Ignorance Due to Censorship	Ignorance about aspects of a PBD among society due to censorship.	<p><i>“Yes, but actually speaking for myself. I always said, I do not need to see all those videos of the slaughterhouses, because then I do not want to eat meat anymore. And now I think, but why? A lot of people do that, I also see that in my family. Or that parents do not allow their children to see videos of the slaughterhouses. But why do we have to maintain that?”</i> [P2.1]</p> <p><i>“Yes, there are so many lobbies behind the dairy industry. What we saw at school were smiling</i></p>

Theme	Sub-theme	Description	Example quote
			<i>cows. We were brainwashed actually.” [P2.1]</i>
			<i>“It does not matter where it comes from, it is what everyone gets to see and where we base our beliefs on.” [P1.1]</i>
	Nurture	Participants are raised with certain beliefs that are in contrast with a PBD.	<i>“When we were young, it was just not done. It was all weird back then. So, you are just not used to it, it is different.” [P1.1]</i>
			<i>“We have to alter the way we think, it is just not in our systems.” [P1.1]</i>
			<i>“We grow up with certain beliefs, and because a PBD is different, you are doubting if it is good for you.” [P1.2]</i>
Social Environment	Mutual Feeling to Justify Choices	Both groups have the feeling they need to defend their choices to each other.	<i>“That was also a shock for me. I also had several friends who were vegetarian or maintained a PBD. That they blame you for eating a piece of chicken. That you also think well if that is my impression of people with a PBD, then you can never do it right.” [P1.3]</i>
			<i>“Yes, but without saying anything, you can still get that label of being judgemental. Just by eating a plant-based meal, someone who does not eat plant-based meals then has the idea that he is doing something wrong.” [P2.2]</i>
			<i>“The fact that you are saying that people who eat meat are</i>

Theme	Sub-theme	Description	Example quote
			<p><i>blind, is also a negative connotation for people who eat meat.” [P1.3]</i></p> <p><i>“When you have a certain opinion, and everyone is against you, [...] then you start doubting yourself.” [P2.1]</i></p> <p><i>“Those are often the persons who want to defend themselves and try to find something to depreciate you.” [P2.1]</i></p>
Creating an Open Environment	An open environment	should be created in which both groups are accepted for their choices.	<p><i>“I am always very clear to people in advance that I do not eat meat or fish. This way I create a setting in which they know I do not eat that.” [P1.2]</i></p> <p><i>“And then people should create an environment in which people can express their preferences.” [P1.3]</i></p> <p><i>“What I experienced as difficult during the transition were the social settings. When you are invited to a Christmas dinner, and then you have to explain that you are following a PBD. I find that difficult.” [P2.2]</i></p> <p><i>“Before a Christmas dinner, I would always make sure that I explained my food preferences. After that, you can see how people react. Are they more like, ok help me with finding something you would like to eat or are they more like, ok we are not doing that. It is important to start a conversation. Or I bring</i></p>

Theme	Sub-theme	Description	Example quote
Experiences of the Research Tasks		How the tasks during this study are perceived by participants.	<p><i>something myself, it depends on the relationship to that person and it depends on how that person reacts.” [P1.2]</i></p>
			<p><i>“Those are things that get your attention more because you are focussing on it more actively.” [P1.2]</i></p>
			<p><i>“You started looking differently at certain aspects. During the task around grocery shopping, you pay more attention. The focus is more on what I see instead of what I came for.” [P1.2]</i></p>
<p><i>“For example with the superhero activity. I am not very creative with reflecting on my thoughts. But through this activity, you start to look deeper at which things are also relevant and for which things I need more help.” [P1.2]</i></p>			