



### **Healing Alps:**

Tourism based on natural health resources as strategic innovation for the development of Alpine regions

ASP815

## **Synthesis Report on HEALPS' main outputs: WP 3: Health Tourism Potential**

WP T1:

Assessment of Alpine regions' Health Tourism Policy and Development Process

D.T1.1.1:

Synthesis report on HEALPS' main outputs (II/IV)

Project Partner 6

University of Applied Sciences of the Grisons

Department Lived Environment / Institute for Tourism and Leisure

*Authors:* Jan Mosedale, Christopher Jacobson, Nina Rupp

# Content

<b>1</b>	<b>Report context</b>	<b>4</b>
	ARPAF project HEALPS	4
	Alpine Space Project HEALPS 2	5
<b>1.</b>	<b>Introduction</b>	<b>7</b>
	Study objectives and research questions	7
<b>2.</b>	<b>Methods</b>	<b>9</b>
2.1.	Qualitative methods	9
2.2.	Quantitative methods	10
<b>3.</b>	<b>Case Studies</b>	<b>11</b>
3.1.	Learning from existing cases	11
3.1.1.	Bad Reichenhall	11
3.1.2.	Bad Ragaz	16
3.1.3.	Hohe Tauern Health	18
3.2.	Analysing potential cases	23
3.2.1.	Lower Engadine	23
3.2.2.	Viamala	26
3.2.3.	Tourism development	27
3.2.4.	Cooperation within tourism destinations	27
3.3.	Education & Learning	28
3.4.	Technology	29
3.5.	Discussion	29
<b>4.</b>	<b>Perceptions of nature-based health tourism</b>	<b>31</b>
4.1.	Sample demographics	31
4.2.	Attitudes to nature	33
4.3.	Nature-based health tourism	36
4.4.	State of health	41

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



4.5. Needs and expectations of potential tourists .....	47
4.6. Technology.....	56
4.7. Key findings .....	62
5. Strengths and limitations of the study .....	65
6. Literature .....	67

Healing Alps:  
Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



## 1 Report context

The present synthesis report summarizes the results of work package 3 - within the ARPAF project HEALPS for the integration in the Health Tourism Assessment and Benchmarking Tool (HTAB) of the Project HEALPS2. The analysis was carried out by the Department Lived Environment and the Institute for Tourism and Leisure at the University of Applied Sciences of the Grisons

### ARPAF project HEALPS

HEALPS was a project funded by the Alpine Region Preparatory Action Fund (ARPAF) and built the base for the Alpine Space Project HEALPS2.

#### Project Title:

HEALPS - Alpine Health Tourism - Positioning the Alpine region as globally attractive health promoting place

#### Project Partners:

- Innovation and Technology Transfer Salzburg (AT, Lead)
- Foundation Cluster Technologies For Living Environments (IT)
- University of Applied Sciences Chur (CH)

#### Funding:

The project is co-financed by the European Union (Alpine Region Preparatory Action Funds - ARPAF)

#### Start and closure dates:

January 2018 to June 2019

#### Project Outline:

Outdoor recreation in natural environments is becoming an important aspect of healthy living and a remedy against the deficiencies of urban life separated from nature. With its exceptional nature, cultural heritage, healthy climate and long tourism tradition, the Alpine region possesses significant prerequisites to benefit from this trend. However, to date there is no awareness of the unique health-promoting potential of the Alpine region. Major reasons for this lack of awareness are insufficient visibility and knowledge of health-promoting Alpine assets.

In contrast to the current, fragmented approaches towards the promotion of Alpine assets, the project HEALPS aims to develop a common basis for the positioning of

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



the Alpine region as an attractive health-promoting place through data compilation, generation and the visualisation of unique Alpine assets related to health. The project incorporates four different perspectives: Alpine resources, customers and providers as major stakeholders, education and technology.

This approach addresses EUSALP's strategy of a better utilisation of Alpine-specific resources and creates a basis for the development of Alpine health tourism value chains to drive job creation and growth in remote Alpine areas. In this way, it counteracts depopulation in these areas through new business opportunities and positions the Alpine region as healing environment for tourists and as an attractive environment for working and residing. The project covers six work packages (see Figure 1)

The present report summarizes the findings of work package 3 as a basis for evidence-based health tourism development that can be integrated in hands-on tools within the Alpine Space Project HEALPS2.

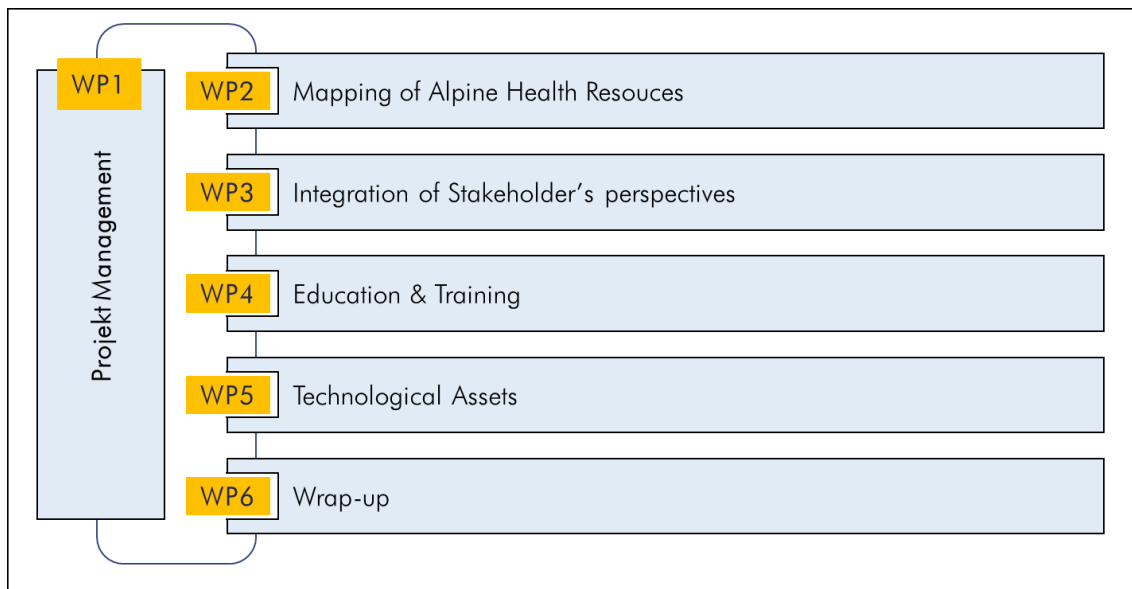


Figure 1: HEALPS work packages

## Alpine Space Project HEALPS 2

Tourism is a major engine for job creation and a driving force for economic growth and development in the Alpine programme area. Yet alpine tourism is currently experiencing challenges such as climate change and is often only focussed on specific regions. Global trends such as a thirst for nature-based experiences and increased

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



health consciousness hold considerable opportunities for developing innovative nature-based health tourism experiences. To fulfil this potential, the project will provide policy-makers, regional developers, Alpine regions and SMEs access to innovation knowledge and to implementation tools.

Building on the ARPAF project HEALPS, the aim is to improve framework conditions for utilising Alpine natural health resources by developing health tourism products and service chains. Lessons learnt from existing innovative, but fragmented cases will be elevated to a transnational level. Supported by the combination of the latest research results with digital solutions, the nature-based health tourism approach will be tested in pilot regions and the experiences then translated into relevant tools for Alpine regional development. By engaging quadruple helix stakeholders, cross fertilisation between tourism, health and other relevant sectors and co-learning is stimulated at transnational level. This shared knowledge at various scales facilitates framework conditions for value generation based on location-bound Alpine assets.

Recommendations for different policy levels as well as guidelines & implementation toolkits for product and service chain development reflect the purpose of a broad implementation of hands-on knowledge for the stimulation of SME- and destination driven innovation. Two international conferences on Alpine health tourism will allow transnational & transversal knowledge transfer from academia to regions and SMEs. Thus, the project contributes to the positioning of the Alpine Space as globally attractive health promoting place.

HEALPS2 lasts from October 2019 to June 2022 and is co-financed by the European Regional Development Fund through the Interreg Alpine Space programme (Total budget: 2.169.952,65€ - ERDF grant: 1.844.459,74€).

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



## 1. Introduction

### Study objectives and research questions

This work packages explored the needs and expectations of the most important stakeholders of nature-based health tourism products, services and activities. The level of interest, needs and expectations of tourists regarding the health benefits of environmental resources in the Alpine region provides a basis for assessing the feasibility of such products. The perspective of tourism service providers is equally important to increase the economic potential of the Alpine region.

The following driving questions formed the basis of the work package:

- What are the needs & expectations of tourists interested in nature-based tourism?
- Which Alpine health promoting factors are important resp. relevant for booking decisions?
- What are attraction and avoidance factors in choosing nature-based health tourism services?
- What are the needs & requirements of alpine destinations and tourism providers for developing and promoting nature-based health tourism products?
- Which Alpine health promoting factors have potential for specific product development?

In recent years, health tourism offerings have experienced a rising demand. One possible explanation for this is the global and ongoing trend towards urbanization: Whereas in 2018, 55% of the global population was living in cities, this number is projected to grow to 68% in 2050. In Europe, urbanization rates are among the highest in the world, with 74% of the population living in urban areas (Hartl, 2016). In this context, studies predict that with ongoing urbanization, increasing numbers of people will suffer from a sensation of longing for nature (Hartl, 2016).

The continuing urbanization has led to an increased research interest into how individuals nowadays perceive and value health. Evidently, the interest in health-related topics has risen over the past decades (Hartl, 2016). In this context, some studies label health as one of the new megatrends in today's society (TMB 2018). Health has obtained the status of a lifestyle, with people nowadays being increasingly health conscious. In light of the above, it is not surprising that an increasing number

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



of destinations have recognized the market potential of products that cater to tourists' desire to increase their physical and emotional well-being while on vacation. These, so-called health tourism products can either target disease prevention or the alleviation of existing conditions (Glatzel, 2017).

Trend forecasts have long predicted an increasing likelihood of Europeans to view nature as an idyllic place for relaxation and withdrawal (Lüdi, 2009). A recent trend-survey that analysed the most discussed online topics among German speakers has now shown that in 2018, nature has replaced health as the value considered most important by users. In particular, nature is valued highly as a source of peace of mind, strength and integrity (Trendbüro & Kantar, 2017). In a study examining what people living in Swedish towns would recommend to a friend who is feeling stressed, the respondents' first choice was to recommend a walk in the forest (Grahn & Stigsdotter 2003). Research confirms the positive effect of nature on human well-being: For example, being exposed to nature leads to positive emotions and increases human reflection capacities and the ability to complete attentional tasks (Mayer *et al.*, 2009). Another study found that being exposed to natural sounds led to significantly faster recoveries from physiological stress than exposure to noise (Alvarsson *et al.*, 2010). Research also points to the long- and short-term health benefits obtained through exercise in nature (Barton & Pretty, 2010).

The apparent rise in interest in nature and its potential as a resource for growth and healing opens new opportunities for offers that integrate nature based resources into health tourism products.

There exists ample evidence that shows that natural environments and resources benefit human health: For example, a Dutch study has shown that people who live in a green environment perceive both their physical as well as their mental health to be better than people who live in urban settings (de Vries *et al.*, 2003). Another study has shown that as tree numbers diminish in a given country, mortality rates due to respiratory and cardiovascular diseases increase (Donovan *et al.*, 2013). Additional research suggests that even just taking a walk in a forest has measurable effects on the human body such as lower concentrations of cortisol or lower blood pressure (Park *et al.*, 2009).

Due to alpine-specific resources and its nature spaces, the Alpine region possesses a high potential for the development of evidence-based and authentic nature-based health tourism products (Hartl *et al.*, 2016). At the same time, nature-based health tourism provides a promising opportunity for Alpine destinations who wish to differentiate their offer away from the concentration on activities such as skiing or snowboarding in the winter and hiking in the summer. Currently, many Alpine



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



destinations who are competing for these offers are facing a shrinking demand and considerable price pressures (Schalber *et al.*, 2011).

One example for an already well-established nature-based health tourism product are the Krimml waterfalls in the national park of Hohe Tauern in Austria. The health-promoting effects of these waterfalls are due to small aerosols, which exhibit a purifying and cleansing effect on the respiratory system. A study on these waterfalls has established the positive effect of these aerosols on the human pulmonary function and immune system. The same study concluded that exposure to the Krimml waterfalls can be an effective cornerstone in the therapy of asthma bronchialis (Hartl, 2010).

The example of the Krimml waterfalls shows that the combination of health tourism offers with natural resources can result in innovative, highly sought-after products. A study confirms that health and tourism experts predict the demand for evidence-based natural resources that are beneficial to human health to rise (Hartl *et al.*, 2016). Therefore, the development of nature-based health tourism products could constitute a key impulse for stimulating economic growth, creating new jobs and countering depopulation in the Alpine region.

## 2. Methods

### 2.1. Qualitative methods

Data for the case study analysis was generated via desk research, which was supplemented by 24 semi-structured interviews across the five case studies. Interviews were held with regional developers, hotel managers, managers of tourism organisations, healthcare service providers and political representatives. Nature-based health tourism is an innovative type of tourism product with very few tourism actors currently offering such products. Due to the novel nature of the products, interviews were flexible (semi-structured) and offered opportunities to explore unanticipated issues (Rowley, 2012).

The interview duration ranged from 30 minutes to 1 hour 10 minutes. Most interviews were held face-to-face; only when a face-to-face interview was not possible, were telephone interviews undertaken. All interviews were recorded for subsequent analysis. The analysis method used was a thematic analysis following Guest *et al.* (2011), with a focus on the following themes: cooperation, regional development, education & training, technology and critical success factors.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



## 2.2. Quantitative methods

The perceptions of nature-based health tourism were gathered by means of an online questionnaire. Online questionnaires allow researchers to gather information from a large, heterogeneous number of respondents and they are therefore best suited for exploring the potential of nature-based health tourism in the Alps from the perspective of tourists.

The questionnaire developed for this study consisted of 31 questions that were divided into six groups. Group 1 contained socio-demographic questions relating to the respondents gender, age and country and city of main residence. Group 2 contained a question where respondents were asked to answer several statements regarding their personal attitude towards nature. Group 3 contained questions about health tourism in the Alps and Alpine resources. Group 4 enquired about respondents attitudes towards health and illness and about their state of health in general. In group 5, respondents were asked to rate the importance of several factors during a nature-based health holiday. Group 6 contained questions about health planning and monitoring devices used by respondents. Before distributing the questionnaire, two test runs were carried out. The test respondents were asked to go through the questionnaire and state for each question whether they could understand the questions, whether the answer options made sense and whether certain answer options were missing. After each test run, the questionnaire was adapted according to the feedback of the test respondents.

The Alpine region includes a variety of countries, languages and Alpine destinations. Because the HEALPS project was designed to account for these multi-national characteristics of the Alpine region, the questionnaire was offered in an English, German, French and Italian version. To reach a broad audience, potential distributors in the health industry, such as DMOs, associations and insurances were identified and asked to distribute the questionnaire through their newsletters and social media channels. In addition, the questionnaire was distributed through the social media channels of the project partners and on several health-related forums. As the sampling was a form of convenience sampling, the sample is not representative of the wider population. In total, 356 respondents filled out the questionnaire.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



## 3. Case Studies

### 3.1. Learning from existing cases

Nature-based health tourism is not a new phenomenon as it was particularly popular in 19<sup>th</sup> century. While the trend has faded with the increasing popularity of medical interventions and better medicines, some destinations (particularly those with considerable infrastructure) have continued to offer nature-based health tourism products albeit often in combination with other tourism products. Other destinations have only recently developed tourism products based on the health benefits of natural resources. Three destination were analysed in order to determine critical success factors as basis for destinations who are considering creating nature-based health tourism products.

The three case studies (Bad Reichenhall, Bad Ragaz and Hohe Tauern Health) were chosen due to being located in three different alpine countries to be able to include regulation specific factors. While the background information to the case study include aspects of a regulatory nature, a detailed analysis of the regulation of health care with a particular focus on natural resources was beyond the scope of this study.

All three existing case studies use water as health beneficial resource, yet the characteristics and use of the water differ across the three cases. A follow-up study would definitely benefit from the inclusion of several different natural resources.

#### 3.1.1. Bad Reichenhall

In a more than 150-year tradition, Bad Reichenhall has gained an excellent reputation in the treatment of respiratory diseases. Alpine brine (26% of salt), thermal water, salt slick as well as the air (salt ions) are the most important natural resources for the tourism destination Bad Reichenhall.

Bad Reichenhall has been shaped by the history of salt in Germany and Austria. The salt deposits in Bad Reichenhall have been used since the early middle Ages. As the salt occurs as natural brine (a water-salt mixture) springs, the extraction of salt was relatively easy compared to its mining and was the reason for the monopoly of the saline in Reichenhall in Central Europe up to the high middle Ages. However, with the destruction of the city by the Archbishop of Salzburg in 1196, the monopoly was broken up, triggered by the opening of salt works in neighboring areas in Germany and Austria.

The Reichenhall salt works suffered a continuous decline since then and were in danger of being closed permanently. At the end of the 15th century, the Bavarian Duke bought all the salt works, modernized the saline and thus ensured state ownership of the Bavarian salt industry (Lang 2009, n.d.). Reacting to the further

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



decline of Reichenhall in the salt industry, it re-positioned itself as a health resort based on the natural resources (Steckenbauer *et al.*, 2019), particularly salt brine. Already in 1786, brine baths had been administered for health reasons but it took another 60 years before the first spa was built and the dependence of Bad Reichenhall on the waning salt industry was reduced (Lang 2009, n.d.). Another use of the salt brine for health purposes was the inhalation of salt ions in the air. Owing to the large amount of wood burnt to extract the salt from the brine, grading houses were built to counteract the ever-increasing wood shortage. Due to the slow trickle-down of the salt brine onto blackthorn branches and because of the wind, the water slowly evaporates and the salt concentration in the brine increases. The higher the salt content, the less wood is necessary to boil off the remaining water and to claim the pure salt. In this grading process, the air around the grading house is infused with salt and has beneficial effects on people suffering from respiratory diseases.

In addition to the natural resources, primary (e.g. accommodation and the Bayrisches Staatsbad) as well as secondary tourism infrastructure (park landscapes, hiking trails on brine pipeline routes) were developed, financed by the Bavarian King. Due to the rapid growth in tourism between the 1850s and 1900s, royal backing was further needed to support local infrastructure development. The grading houses for example had to be restored and renovated several times since 1900 due to fires. Due to the increased interest in health treatments, several spa hotels and clinics were opened, numerous private villas were built and Reichenhall changed from an industrial town to an internationally renowned spa during the 1900s. Reichenhall became well known as a health spa resort, offering conventional as well as nature-based medical treatments and, in 1890, the city acquired the addition Bad (meaning "bath" or "spa") by royal order. Since 1899, Bad Reichenhall is a Bavarian state bath. Its popularity as a sophisticated meeting place of the European elite reached a climax shortly before the First World War.

At the end of the 20<sup>th</sup> century, after further investment in infrastructure as well as tourism development and a continuous increase of overnight stays, social health care reforms Germany (a considerable increase of the personal contribution for convalescent care treatments) had a severe impact on the regional development of Bad Reichenhall. The region therefore had to reposition itself one more time. Tourism providers shifted their positioning strategy from health towards wellness and relaxation and the staging of experiences surrounding salt and water (see Steckenbauer *et al.*, 2019 for further detail).

The thermal spa "Rupertustherme" the former "Bayrisches Staatsbad" exemplifies the positional shift of the tourism region Bad Reichenhall. The strict focus on the resource of alpine brine and brine-mineral silt, used for packs and massages as well as the

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



development of brine for beauty products, led the positioning shift towards relaxation. Since the renovation of the thermal spa, which was completed in 2005, 95% of the guests are booking wellness-related products. Only 5% of their guests are currently attending treatments, even though a study shows that balneotherapy in alpine sole of Bad Reichenhall is beneficial to human health (Berchtesgadener Land Tourismus, n.d.).

Another focus of Bad Reichenhall is evidence- and nature-based health tourism. Drawing on scientific studies to gather evidence for the health benefits of natural resources and nature-based health tourism products are developed. Thus far, studies have been undertaken for stress and for products have been developed for the following conditions: weakened immune system, poor balance and stress.

- Weakened immune system and poor balance

The study focused on the elderly (65-85 years with a typical disease of the elderly such as hypertension or osteoporosis) to determine whether targeted movement therapy (hiking) and balneotherapy (bathing in water with high mineral content) can strengthen the immune strength and balance of elderly people. Both the test and control group spent seven days in the test region. While the test group went on daily hikes or Nordic walking tours and bathed in the natural water (alpine brine in Bad Reichenhall, water rich in iodine sulfur in Tegernsee & Bad Wiessee), the control group went on trips to local attractions. The approximately 140 participants of the study were randomly divided into the different groups. To analyse the long-term effects of the holiday follow-up tests were conducted after 3 and 6 months of the treatment. Various measurements were taken to judge the state of the immune system as comprehensively as possible. Both the state of the innate and the acquired immune system were analysed; and both the dynamic and static balance were measured. In addition, a variety of inflammatory levels, blood pressure, oxygen saturation and handgrip strength were determined (Prosegger *et al.* 2019).

The results of the study show that a one-week spa and hiking holiday in Bad Reichenhall has a positive effect on the elderly. As shown by the results of the test group, the activity and balneotherapy stimulates the immune system and has an anti-inflammatory effect in comparison with the control group. In addition, the balance, the ability to concentrate and the quality of life is significantly increased. These positive effects were measurable even after 3 and 6 months.

- Stress

Another study analysed the effectiveness of a stress reduction programme in Bad Reichenhall. In the randomized, controlled study 96 adults with increased chronic

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



stress levels were divided into three groups: the test group spent seven days in Bad Reichenhall and completed a specific stress prevention programme; control group 1 spent the same seven days in Bad Reichenhall but could spend their days at their leisure; control group 2 stayed seven days at home in their familiar environment. The subjective stress and stress experience, chronic stress as well as personal well-being were measured for all participants using several standardized international questionnaires. Compared to those who stayed at home, participants in the prevention program reported a significantly lower level of stress after one and six months respectively (Squarra *et al.* 2015).

Based on the results of the study, Bad Reichenhall is offering one-week stress prevention packages with proof of effectiveness. The package involves a fixed daily rhythm based on the circadian rhythm (i.e. body clock), exercise units, daily health coaching, ritualized periods of rest, cold and warm treatments, baths in alpine brine, as well as nature experiences (Berchtesgadener Land Tourismus, n.d.).

### *Organisation*

The foundation for the early tourism development of Bad Reichenhall was mainly influenced by the Bavarian state, which was enabling and completing the construction of local tourism infrastructure such as magnificent buildings, parks or for example operating the thermal spa “Bayrisches Staatsbad” even before the 1840s.

State funded organisations further shaped the tourism development in the 20<sup>th</sup> century by setting nationwide marketing campaigns in motion or by bundling regional marketing activities. Furthermore, the interview partners of the region mentioned that such organisations have generated the fundamental basis for a stabile tourism network with the most important local as well as regional players. Even though they were officially in charge for their own business development.

In 2005, all three regional tourism organisations merged to become the Berchtesgadener Land Tourismus GmbH, which is responsible for local product development, tourism and city marketing as well as for the information exchange between local stakeholders. Furthermore, they launched a core brand positioning process that also included for example mission statements and guidelines: “The most famous holiday region of Germany stands for nature experiences and health with high quality” (Berchtesgadener Land Tourismus, 2010). Finally, the destination also had to overcome challenges that have derived from the German social reforms for the outpatient cure. Via a transformation process, Bad Reichenhall was repositioned as a more wellness and relaxation oriented destination. During that challenging period, key players of the destination also have worked at state supported

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



organisations. The transformation process therefore was also concluded in state owned tourism organisations.

Local tourism service providers also are supporting and strengthening the tourism network as well as the destination by creating individual platforms for trips, hotel as well as thermal packages. Due to their effort, they have created organisational and regional added value of which guest are also benefitting.

Bad Reichenhall is part of the brand “Gesundes Bayern” (healthy Bavaria), managed by the organisation of Bavarian therapeutic baths, which guarantees strictly defined, transparent and regularly checked quality standards in medicine, hospitality and gastronomy.

### *Regional Development*

The main task of the regional development was to enable tourism service providers as well as the destination to overcome the challenges of the German social health care reforms even though the agency did not actively initiate the transformation process of Bad Reichenhall. Next to this support in locating appropriate funding sources, the tasks of the regional development agency are to provide support for setting up networks and collaborative project teams. The EU-Interreg Austria-Bavaria “Trail for Health Nord” project was instrumental in developing the competencies in health tourism of regions and SMEs and included a clinical study about the effects of balneotherapy in the alpine brine of Bad Reichenhall for best agers. Such international projects are the basis for the further development of Bad Reichenhall as a successful health tourism destination.

### *Critical factors for success*

- Due to the financial support of the state, the development of infrastructure such as buildings, parks as well as the further development of the public health resort were possible. In addition to the financial support, the creation of state owned companies to support tourism development had a positive impact on Bad Reichenhall. Nonetheless, the restoration and renovation of the remaining architecture will be essential for the future success for the region.
- The analysis of the interviews also shows that the collaboration between the main tourism players as well as the destination management organisation had an influence on the identification of potential challenges and opportunities. Without anticipating a potential decrease in overnight stays and the trend of relaxation and wellness, the successful transformation process of the destination after the paradigm change in the early 21th century might not have occurred in the same timeframe or at all. Furthermore, that transformation



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



process has been managed and realized by the most important tourism players, creating an even more intense sense of identity as a tourism destination.

- An element that might be even more challenging in the future is the lack of well-qualified health care service employees for health-related hotels or clinics. One option to deal with that challenge might be to keep the separation of therapy and wellness services intact. For example, health-related hotels might only be marketing in-house services for their individual target groups since a dependence on other service providers is not taken into consideration for legal or liability reasons. However, information about supplementary services need to be improved in the future, so that guest do not have to plan and coordinate their stay individually.
- Last but not least, it has been argued during the interviews that the results of the clinical study had an influence on the tourism development of Bad Reichenhall. Even though the Berchtesgadener Land Tourismus and the Rupertustherme mainly market the results, the evidence base still represents a unique selling proposition.

### 3.1.2. Bad Ragaz

Similar to the case of Bad Reichenhall, Bad Ragaz has a long history to look back on. The hot spring was discovered in a hard to reach gorge in 1240. In 1244, the abbot of the nearby monastery Pfäfers had recesses hewn into to the rock and had water channelled into these to act as bathtubs. The sick were lowered with ropes to lie in the hot water. Often, they stayed in the gorge for six to seven days. Only in the second half of the 14th century was a bathhouse built on a bridge across the gorge. Dr Theoprastus Paracelsus became the first medical assessor and promotes the healing powers of the spring water in 1536. Various modifications were undertaken in the 16th century until the bath consisted of four buildings. After one of the buildings burnt down in 1611 and another destroyed by rock fall in 1627, the Abbot decided to relocate the bath further away from the gorge in a building with 100 guest rooms. The bathhouse became an important revenue generator for the monastery as it was well visited from spring until autumn. When the monastery was closed in 1838, the infrastructure and the spring became the property of Canton St Gallen. Shortly afterwards, the government built a road from Ragaz to Bad Pfäfers and directed the thermal water along the new road to the village of Ragaz in the valley. On Mai 31st 1840, the thermal water surged into Ragaz for the first time. This was the starting point of the transformation of the rural village of Ragaz into Bad Ragaz a world-renowned spa (Becker, 1981; Grand Resort Bad Ragaz, 2019). As the



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



upkeep of the infrastructure was costly, the government of St Gallen kept looking for a potential buyer. In 1868, the bath house and hotel Hof Ragaz was sold to a private investor who built the hotel Quellenhof, an entertainment hall, Europe's first indoor swimming pool and the medical institute and thus continued the development of Ragaz into a medical spa. Due to the absence of international guests during the Great Depression and the two world wars, the health resort experienced financial difficulties (Becker, 1981; Grand Resort Bad Ragaz, 2019). After the Second World War, the Grand Hotel Quellenhof was expanded, the thermal pools renovated and a new medical centre was built to combine medicine and luxury hotels with a new focus on outpatient therapy services. As many European social health care systems increased the personal contribution for convalescent care treatments. The Grand Resort Bad Ragaz incorporated wellness in its strategy and positioned itself as a contemporary luxury wellbeing resort with preventative medicine, all-inclusive offers and luxury hotels. In the last twenty years, the Grand Resort Bad Ragaz has taken a holistic perspective on health becoming the "leading health, spa & golf resort" and opening the Casino Bad Ragaz (Grand Resort Bad Ragaz, 2019).

The Grand Resort Bad Ragaz Group with its clinic, medical centre, the Tamina Spa, Golf Club Bad Ragaz, Golf Club Heidiland, the Casino Bad Ragaz, Grand Resort Bad Ragaz, Palais Bad Ragaz and Hotel Schloss Wartenstein is one of the main tourism stakeholders in the tourism region Heidiland. It is the main driver of health tourism in a relatively small town.

### *Critical success factors*

- The Grand Resort Bad Ragaz is the main driver of health tourism in a relatively small town. As an integrated company owning and managing hotels, restaurants, the spa, golf courses and a casino, it is not dependent on cooperation with other tourism or medical stakeholders but can transform its positioning of its own accord.
- A focus on the luxury segment, the Grand Resort Bad Ragaz is less dependent on contributions from social health care systems.
- The early shift towards well-being and lifestyle has resulted in a continued visitor numbers and the necessary access to capital for the regular renewal of the infrastructure.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815

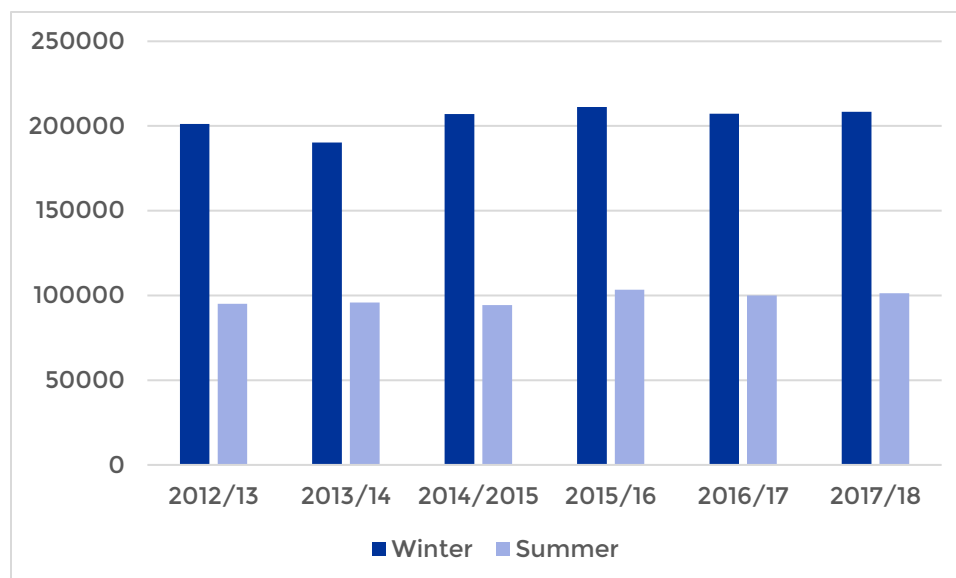


### 3.1.3. Hohe Tauern Health

Krimml is a small municipality of about 850 inhabitants located in the Austrian Alps within the National Park Hohe Tauern. Winter is the main tourism season in Krimml with about double overnight stays compared to the summer (see Figure 3.1.1). However, Krimml possesses a natural attraction in a waterfall of 380m height. This, arguably, highest waterfall of Europe attracts more than 350,000 visitors annually (Salzburger Land Tourismus, n.d.), the large majority day visitors. In order to increase the occupancy rates in the summer period, the anecdotal claims dating back to over 200 years that the waterfall was beneficial to human health were tested via a clinical study by a research team of the Paracelsus Medical Private University Salzburg. The impact of the waterfall divides the individual water molecules into tiny fragments. The result is negatively charged, respirable, nanometre-sized water fragments, the so-called nano- or waterfall aerosols. Due to their small size, they can penetrate particularly deeply into the respiratory tract, where they develop their purifying and immune-modulating effect (Hohe Tauern Health, n.d., Kolarz *et al.*, 2012).

In a pre-clinical study involving mice, a research team from the Paracelsus Medical Private University Salzburg undertook research on asthmatic mice with a birch pollen allergy at the waterfall, in Krimml itself (a few kilometres from the waterfall) and in the city of Salzburg (Hartl, 2010). In a second step, a randomised controlled trial consisting of 54 children suffering from asthma, the research team from the Paracelsus Medical Private University Salzburg demonstrated that a three-week stay with one hour per

Figure 3.1.1: Overnight stays in Krimml, 2012/13-2017/18



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Source: Land Salzburg (n.d.)

day spent exposed to the water aerosol of the waterfall had a beneficial effect on asthma symptoms, lung function, and airway inflammation for four months (Hartl, 2010, Gaisberger *et al.*, 2012, Kolarz *et al.*, 2012).

Following the scientific evidence that the aerosols of the Krimml waterfalls help in reducing allergies and asthma symptoms, in cleansing the respiratory tract and in alleviating allergic inflammation, tourism products were developed and marketed to key target groups. The organization Hohe Tauern Health, an organization consisting of the local and regional tourism organization, regional development as well as regional political representatives, local hoteliers and the Paracelsus Medical Private University Salzburg, was created in order to guarantee wide-spread cooperation. This cooperation across various geographic scales and private-public institutions has been identified as one of the critical success factors of the project. This multiple helix of stakeholders follows the view of regions being “agglomerations of organizational and institutional entities or stakeholders with socio-technical, socio-economic, and sociopolitical conflicting as well as converging (co-opetitive) goals, priorities, expectations, and behaviors that they pursue via entrepreneurial development, exploration, exploitation, and deployment actions, reactions and interactions” (Carayannis *et al.*, 2018: 148). In this case, the initiative of all the stakeholders participating in Hohe Tauern Health was a key factor in the waterfall receiving the certification as a recognised health remedy by the regional government. This certification is instrumental in health insurances partly funding the treatment. According to the EU Directive on patients’ rights in cross-border healthcare all insured persons may be treated in another member state, expanding the potential reach of Hohe Tauern Health to the international markets.

The strong cooperation between the local and regional stakeholders led to the development of a specific nature-based health tourism product with the aim of reducing the seasonality of tourism in Krimml and of creating additional employment for local graduates.

The product is centred on three pillars: the waterfall therapy, accompanying medical monitoring and allergen-free environments:

- During the waterfall therapy, guests spend at least an hour per day at the waterfall a Hohe Tauern Health staff member offers support, regular breathing and relaxation exercises.
- The health tourists receive medical monitoring administered by a staff member of the Paracelsus Medical Private University Salzburg during their

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



stay. Upon arrival, the pulmonary function of the guest is tested and her breath analysed in an initial asthma control session. During their stay, guests fill out a therapy diary and with the help of smart watches and a peak flow meter are able to monitor their progress. The therapy diary is then discussed with the resident scientist from the Paracelsus Medical Private University Salzburg upon departure.

- Hotels that are part of Hohe Tauern Health offer allergen-free rooms. These rooms have been renovated according to scientific specifications to minimise the occurrence of allergens. Part of the renovation costs was supported by funding from the European Union, thus reducing the financial barrier for hoteliers. The rooms are regularly tested for fine dust and indoor allergens such as pet dander, dust mites, etc. by a staff member of the Paracelsus Medical Private University Salzburg and the housekeeping staff are trained in room care and hygiene regulations. In addition, the kitchen staff of partner hotels are trained to prepare hypoallergenic food (Steckenbauer et al., 2017).

In addition to these three pillars, guests are provided with accompanying offers such as exercise therapy (hiking, e-mountain biking), breathing therapy, seminars (such as nutrition, herbs etc.) and regular (i.e. non-health) water attractions such as:

- Waterfall Center with underwater adventure world;
- House of Water, an exhibition with water experiments and an interactive water cinema
- Outdoor Aqua park with aqua table football, water garland, play and experimentation stations and Kneipp facility.
- Kristallbad, a swimming pool and spa in the region (Großglockner-Hochalpenstraßen-Aktiengesellschaft, n.d.).

The health tourism product offered by Hohe Tauern Health is not an isolated tourist offer, but is incorporated within the wider strategy of the regional tourism-marketing organisation. The main aim of a new regional tourism strategy was to reduce seasonality and offer tourism products year-round; wellness and health tourism with an emphasis on the shoulder seasons were chosen as a type of tourism with potential to achieve the goal (Bott 2018). To that end, the regional government launched a project in 2012 to map natural health resources and evaluate them according to their potential for tourism development (Pichler *et al.*, 2017). Following the mapping and evaluation of around 200 natural resources in the region, the regional government adopted the strategy to position itself as a major health tourism region and to market itself as the “Alpine Health Region Salzburg”. The following three key segments were identified:

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



- *Alpine Thermal baths und Wellness*: Thermal and wellness offers with a clear focus on health or wellness.
- *Nature and Health*: Network of specialized and evidence-based health tourism offers based on location-specific natural resources. The Gastein Valley, for instance, thermal springs enriched with Radon are beneficial for persons suffering from rheumatism and allergic skin problems (SalzburgerLand Tourismus, n.d.). A network of location-specific natural resources is useful in the spread of nature-based and evidence-based health tourism and for cross-marketing.
- *Medical Health Care*: Focus on medical health tourism linked to diagnosis, healing and rehabilitation (Bott, 2018).

The three health tourism segments are positioned in a health tourism continuum from wellness to illness (see Didaskalou & Nastos, 2003) to serve the differing needs of the following target groups:

- The "proactive health conscious" 30 +: the main motives for the holiday are relaxation and well-being, with staying healthy or lifestyle change for health reasons.
- The "chronic sufferers": the main motive is a medium- to long-term improvement or stabilization of their quality of life. Although chronic conditions may affect all age groups, they are particularly common in the 50+ age group. Persons on holiday with a special handicap needing special on-site medical care such as Dialysis patients are also in this target group.
- And finally, "people with acute medical problems" needing conventional medical health tourism services such as diagnosis, healing and rehabilitation (Bott, 2018).

The development of nature-based health tourism is relatively recent in Krimml and the project Hohe Tauern Health has shown that it is possible to develop a health tourism product without prior specific health tourism infrastructure.

#### *Critical Success factors:*

- Location-based natural resource with evidence from specific studies (pre- & clinical)  
Above all, nature-based health tourism products that are based on scientific evidence and that are location-based (i.e. that cannot be implemented in other destinations due to the specific characteristic of the natural resource in that particular location) can become unique selling propositions and distinguish from national and international competitors.
- Initial interest from hotel owners/managers

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



The local tourism stakeholders realised the importance of new products in compensating for a declining interest in ski tourism and in providing offers in the summer and the shoulder seasons. Without the vision of hoteliers and the local tourism marketing organisation, such innovative projects are doomed to fail.

- **Collaboration in a quadruple Helix**  
A key factor for the success of Hohe Tauern Health has been the network of collaboration that spans different sectors (medical and tourism), the public-private divide and covers different geographical spaces (local & regional). Of particular importance during the development of the project was the Paracelsus Medical Private University Salzburg as an independent, scientific partner that undertook the studies and thus provided the evidence base but also in developing and selecting services provided by tourism stakeholders and, in the absence of a local clinic, in monitoring the health of guests during their stay.
- **Political support within the village and the region**  
Political representatives at local and regional levels fully supported the project and lent their support. This support is instrumental in lobbying for and receiving funding.
- **Financial support from the EU for infrastructure amelioration**  
The participating hotels had to renovate at least some rooms in compliance with the guidelines devised by the Paracelsus Medical Private University Salzburg to guarantee allergen-free rooms. This initial investment by the SMEs was only possible due to the subsidies received from the EU.
- **Official recognition of the waterfall as a natural remedy by the regional government**  
This recognition allowed the subsidisation of nature-based health treatment at the waterfall by the health insurance, thus reducing the overall cost of the holiday for tourists.
- **Regional Focus on Health Tourism**  
Finally, the focus of the wider region on health tourism (even though not specific to nature-based health tourism) resulted in marketing synergies between the local and regional tourism marketing. The tourism organisation Krimml-Hochkrimml is not only member of the Zillertal Arena but is also represented via SalzburgerLand Tourismus with its focus on health tourism.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



### 3.2. Analysing potential cases

In the following section, two different tourism destinations in the canton of Grisons, Switzerland are analysed to determine the needs and expectations of stakeholders when potentially introducing nature-based health tourism. Both the Lower Engadine and the Viamala region are currently facing similar regulatory framework conditions, which will be implemented in 2020.

In 2018, the cantonal government of Grisons has set up a steering committee health tourism, which is responsible for developing a cantonal strategy for health tourism. The overarching goal of the cantonal health policy is to maintain the decentralized health care structures in the canton. Due to the double factors of population decline and an aging demographic in peripheral areas, health tourism is seen as a way to generate additional income for health care institutions and value added for regions (Departement für Justiz, Sicherheit und Gesundheit, Kanton Graubünden, 2017). Vital for the development of health tourism is the cooperation between the stakeholders of the two sectors (tourism as well as public and private health care providers).

The Canton of Grisons is an interesting case study for determining the needs of various stakeholders concerning nature-based health tourism, as the development of health tourism is at the initial stages of strategy development and few health tourism products exist.

#### 3.2.1. Lower Engadine

The mineral springs of Scuol and Tarasp have been attracting guests to the Lower Engadine for centuries. The area around Scuol, Tarasp and Vulpera features more than 20 mineral as well as carbon dioxide springs. The mineral springs and their healing properties were first mentioned in 1369 and were the basis for an early development of health tourism. Balneotourism in the Lower Engadine reached its peak in the second half of the 19<sup>th</sup> century, during which hotels, spa facilities, and drinking halls were built. Many tourists, aristocrats from all over Europe, industrialists, artists and well-known politicians, travelled to Scuol not just “to take the waters” but also to engage in social activities and to do business (Gäste Information Scuol, n.d.).

Besides the mineral springs (see Table 3.2.1 and Table 3.2.) for the health characteristics of the minerals) and fumaroles, a mineral spa, historical drinking halls along the Inn river as well as other tourism and culinary highlights are therefore currently attracting regional, national and international guests (Engadin Scuol Zernez, 2019a).

Table 3.2.1: List of the mineral springs in and around Scuol



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



Name of the mineral springs	Included minerals
Bonifacius, Funtana da Suolper	Sodium-gydrogencarbonate-chloride-sulphate gaseous mineral water
Carola, Chalzina, Clozza, Fuschna, Rablönch, San Jon Dadaint, Sotsass, Vi	Calcium-hydrogencarbonate-iron gaseous mineral water
Emerita, Lucius, Sfondraz	Sodium-calcium-Hydrogencarbonate-chloride-sulphate gaseous water
Lischana	Sodium-magnesium-hydrogencarbonate-Sulphate gaseous water

Source: Engadin Scuol Zernez (2019a).

Table 3.2.2: List of health characteristics attributed to individual minerals

Mineral	Characteristics
Iron	Iron is necessary for the formation of blood and the transport of oxygen into the tissues. Average daily requirement of an adult is 14 mg, yet iron can only be absorbed to some extent by drinking.
Calcium	Calcium is a vital mineral for the development of bones and teeth and plays an important role in the transmission of stimuli in the nervous system. The average daily requirement of an adult is 800 mg.
Magnesium	Magnesium is also an element of bones and teeth. It is essential for normal muscle function and energy metabolism. The average daily requirement of an adult is 300 mg.
Sulphate	Sulphate is effective in the gastrointestinal tract, it stimulates digestion and in higher concentrations has a laxative effect.

Source: Engadin Scuol Zernez (2019a).

The daily intake of 6 dl of water from the Lischana spring leads to a significant increase of magnesium levels in the serum in a short time, but does not have an effect on gastric, small intestinal and colon transits (Leu, 2012 as cited in Casanova, n.d.).



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Following the peak of spa tourism at the beginning of the 20<sup>th</sup> century, other tourism activities, such as skiing and hiking became more popular and the historical health tourism infrastructure such as the drinking halls were no longer used. While the historic drinking halls and pavilions still exist, they had to be closed due to security reasons and the high cost of renovation.

In the last ten years, a shift in the tourism positioning of the destination occurred with wellness and health becoming promoting factors. These were combined with regional outdoor activities like hiking, biking, golfing, water sports, skiing, snowboarding to create a year-round tourism destination.

The Lower Engadine is marketing itself as first health region of Switzerland and offers the following health tourism products, mainly in Scuol:

- **Water consultation**  
The water consultation is an individual kinesiological session, during which the optimal mineral water is determined specifically for you.
- **Holidays with health coaching**  
A tailor-made revitalising holiday accompanied by a personal health coach. The relationship with the health coach continues after the holiday in order to keep the positive habits established during the holiday.
- **Gluten- and lactose-free holidays**  
Over 30 hoteliers and service providers offer services for these dietary requirements. Within the wider Lower Engadine, six restaurants and hotels as well as a mountain restaurant are offering special lactose- and gluten free dishes on a daily basis. Furthermore, many shops are selling lactose- and gluten-free products, which can be prepared in one of the six holiday apartments that offer gluten-free kitchen facilities (Engadin Scuol Zernez, 2019b).

Further tourism products around the topic Water have been developed in and around Scuol:

- **Mineral water trail Scuol**  
On a stretch of only six kilometers in the Scuol-Tarasp-Sent region over twenty mineral springs can be seen on both sides of the river En. This leisurely walking trail combines some of these springs to a 13 km circular walk.
- **Fountain tour in Scuol**

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



For those less mobile the fountain tour offers a good opportunity to taste the water from the surrounding mineral springs. The tour leads past five village fountains, where natural mineral water can be tasted directly from taps at the fountains.

- **Audio guide mineral springs**  
In cooperation with myclimate, a Swiss non-profit organisation, tourists can listen to three stories, including one on the mineral springs, while exploring Scuol.
- **Bogn Engiadina**  
The wellness spa with mineral water is located in Scuol and caters to both locals and tourists.

The destination management organisation is in the process of developing an overarching concept for the positioning of (mineral) water as a tourism resource (TESSVM, 2019). The history of water in Scuol is entering a new chapter and can benefit from the analysis of existing cases as presented earlier.

### 3.2.2. Viamala

The tourism destination Viamala (literal translation “bad path”) is located in the southeast of Switzerland, bordering Italy. The name of the destination is derived by the dreaded, approximately eight-kilometre stretch along the river Hinterrhein. This deep gorge is the most difficult part of the old road across the Alps. During the Middle Ages, trading parties therefore stayed in the region to relax their bodies and minds before or after the crossing.

Water as well as bathing has always played an important role in the long cultural history of the region. The mineral spring Funtana Nera was transported to Andeer in wooden pipes. During the 19<sup>th</sup> and the 20<sup>th</sup> century, spa and health tourism enabled the destination to flourish. Throughout that period, tourism development increased but at a moderate pace. The mineral bath, for example, was built and run by the Fravi family in the early 19<sup>th</sup> century. Yet as the family were unable to bear the renovation costs for the mineral bath due to decreasing overnight stays. The bath was bought and renovated by the local authority, while the adjacent hotel and the mineral spring still belong to the Fravi family (Mühlethaler, 2009).

The destination itself reacted to the declining number of overnight stays in spa and health tourism with the promotion of outdoor oriented activities like long distance hiking (for example the viaSpluga), mountain as well as road and gravel biking during summer. In winter, cross-country and backcountry skiing as well as downhill skiing

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



are the most popular activities. Despite the combination of different activities and for example combi-tickets for the mineral bath and ski resort, the destination is currently facing some severe challenges like the closing of an important ski resort.

### 3.2.3. Tourism development

The destinations Lower Engadine and Viamala share a background in health and spa tourism whereas both regions have changed their positioning strategy. In the following the major similarities as well as differences are discussed and the most important findings described.

The tourism destination Lower Engadine as well as Viamala have a background in health as well as spa tourism since the Middle Ages. Nonetheless, the individual dependence on regional tourism development of the destinations differ. The destination Viamala has experienced relatively little tourism development from the beginning of the 20<sup>th</sup> century onwards in comparison to the Lower Engadine. Yet the Lower Engadine has been dependent on a more or the less stable tourism development or slight growth in order to be able to counteract the outmigration of inhabitants to major cities in Switzerland as well as neighbouring countries.

Both tourism destinations also had to change their positioning strategy from health oriented spa destinations towards outdoor oriented activities, like for example skiing, hiking and/or mountain biking. Currently both destinations are favouring a positioning strategy that focuses on a combination of spa, health as well as outdoor oriented activities. Regional tourism service providers in both destinations have mentioned during the interviews that they want their guests to perceive their destinations as locations that offer outdoor oriented activities and treatments that have a positive influence on guests' health.

### 3.2.4. Cooperation within tourism destinations

The cooperation between tourism service providers in Lower Engadine in general is characterised by a strong connection between the major tourism players such as the cable car company, the national park as well as the wellness and spa organisation. Furthermore, there is a particularly strong connection and cooperation between one of the leading hotel groups and the wellness and spa organisation. Thus, guests of one hotel of that hotel group are able to enter the wellness and spa organisation directly via a gangway. Due to the close cooperation between both players, the entry fees are lower than for other guests that stay overnight in the destination. Some other accommodation providers in contrast are displeased about their disadvantage.

Tourism players in the Viamala region are strongly connected to the major players like the regional park, the bathhouse as well as the cable car companies but only if

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



they are located close by. Tourism service providers that are located further away are less integrated and less informed. Due to the bundling of products, guests perceive a strong connection and cooperation between the bathhouse and the cable car company.

In the Lower Engadine tourism service providers are partly cooperating with health care service providers and only if their guests would like to benefit from health care services. The tourism players in Viamala on the other side are not actively cooperating with healthcare service providers, but are mentioning that a cooperation would be of interest.

Major tourism service providers and academic research institutions mainly drive tourism product development in the Viamala. During recent development processes, other stakeholders were either not well informed or did not actively participate in further development processes of the region. Health related tourism services or additional products were therefore either rarely developed or not developed at all. Despite that fact, the regional development agency is planning to initiate a product development process with the major tourism as well as health care service providers in the near future. Other stakeholders will be informed and integrated in the regional development process to enhance the competitiveness of the region.

The perception of tourism stakeholders in the Lower Engadine that no further cooperation between the tourism service providers is needed is evaluated as a major challenge by the tourism destination agency. Nevertheless, the major tourism stakeholders initiated measures to focus on health and spa tourism in an integrated manner. During recent product development processes, the activities of the tourism destination agency were perceived by the interview partners as being too broad. Therefore, some of the service providers have not actively participated leading to a growing gap between strategy development and the operative side of tourism.

### 3.3. Education & Learning

On the one hand, health care oriented tourism service providers are training and developing their tourism staff in regards to a basic knowledge about the in-house provided health care services. A basic knowledge is necessary for tourism staff so that they are able to inform guests about the major products at the point of sale. Such training includes for example information about potential medical massages as well as other treatments. The interview partners across the case studies mention that further, more detailed training provided by external companies or service providers

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



is not needed as they either have specialist medical staff or they outsource the medical treatment to external service providers.

On the other hand, health care oriented tourism service providers are training their health care employees in regards to their tourism service offers within the company. No training or further education is provided for tourism services, which are offered by other tourism players. Training on the job is highly appreciated by the interview partners. They also partly fund the further education of their medical employees, which is offered by regional, national and international organizations. Nonetheless, the individual educational level of an employee is perceived as the fundamental reason why a person is being hired.

Most interview partners additionally mention that they face a difficult time when it comes to the employment of highly skilled tourism or health-care employees.

### 3.4. Technology

The usage of technology depends on the current technological need of the tourism as well as the health care service provider with little thought about the additional services that could be offered to guests with the application of wearables and cloud technology. Generally, health care service providers employ only a few different technologies that enable their employees to fulfil their current tasks or provide current services. Tourism service providers are mainly focusing on the usage of technologies and tools to evaluate or implement marketing activities. Besides the field of marketing, technologies are used for example in hotels to communicate personally with their guests. Most interview partners are very cautious when it comes to the use of new technologies to measure natural resources or the actual health status of guests, as long as the business does not directly benefit from these technological tools. Those technologies are mostly not taken into consideration due to the perceived high financial risks even though the service providers may potentially profiting the most by incorporating technology.

Nevertheless, a group of tourism and health care service providers in the Lower Engadine is investing in technologies. They want to implement a pre- during and post-state measurement of the health status of their guests.

### 3.5. Discussion

In the absence of an individual, large-scale investor as is the case with the Grand Resort Bad Ragaz, tourism destinations that want to develop nature-based health tourism products need certain factors in order to be successful:

## Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



- A combination of local tourism (and potentially medical) stakeholders that are interested in diversifying the existing tourism product portfolio.
- Support from the local destination management or marketing organisation.
- Collaboration with a medical research institution that can provide either existing secondary evidence of the particular natural resource or, ideally, can undertake a clinical study of the particular, location-specific natural resource in question. This evidence is crucial in demonstrating the effectiveness of the tourism product to the potential target groups.
- Funding support from regional, national or international agencies is necessary to help with the initial project costs, the clinical study and market study. Depending on guest requirements funding support for infrastructure renovations (as in the case of Hohe Tauern Health) may be necessary.
- Last but certainly not least, as nature-based health tourism is a relatively new phenomenon in its new, modern phase, tourism destinations will benefit from guidelines & implementation toolkits for product and service chain development. Neither tourism nor medical stakeholders tend to have much experience with the other sector. Guidelines and toolkits devised from real experiences will go a long way to explain the potential of nature-based health tourism and guide interested stakeholders in the process of product development.
- At the same time, staff of the two different sectors will require an awareness of the respective other sector. See results of work package four for further information.

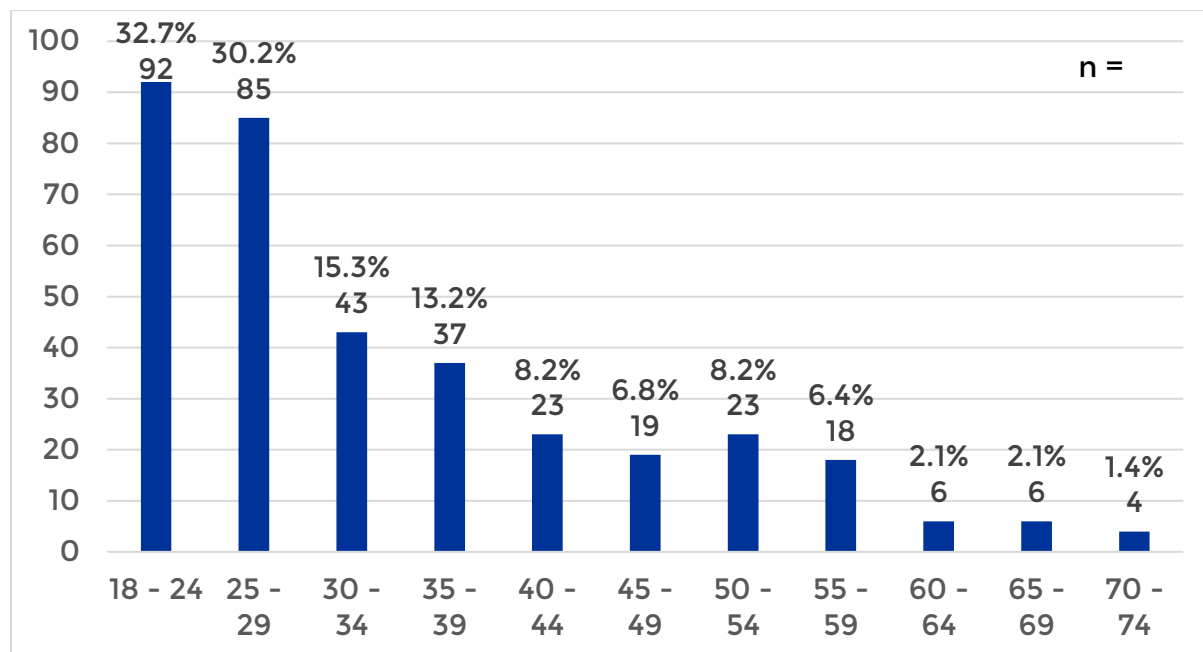
## 4. Perceptions of nature-based health tourism

### 4.1. Sample demographics

In the beginning of the questionnaire, respondents were asked to indicate some general information regarding their gender, age and main residence. This section aimed to generate an overview of the socio-demographic characteristics of the respondents.

- The majority of the respondents were between 18 and 24 years old (32.7%), closely followed by respondents that indicated to be between 25 and 29 years old (30.2%). Older age groups were less well-represented in the sample, with respondents aged 55 and up only accounting for 12% of the overall sample (See figure 4.1.1). Not only is the sample skewed towards young respondents, the prevalence of health conditions increases with age, so a number of health conditions are likely to be under-represented in the sample.

Figure 4.1.1: Age distribution in the sample



- The large majority of the respondents were female (see Figure 4.1.2). This skewed distribution may also lead to the over-representation of health conditions primarily suffered by women.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815

Figure 4.1.2: Gender distribution in the sample

- The large majority of the respondents (63.5%) indicated that their country of main residence was Switzerland, followed by Italy (11.8%) and Austria (9.8%) (see figure 4.1.3). The sample is skewed towards residents of Switzerland.

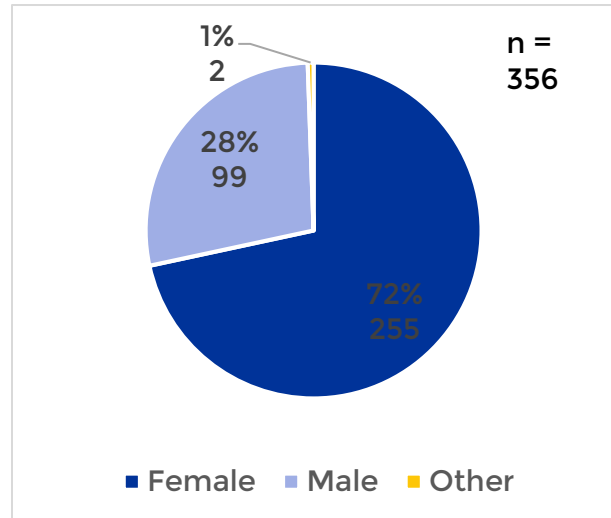
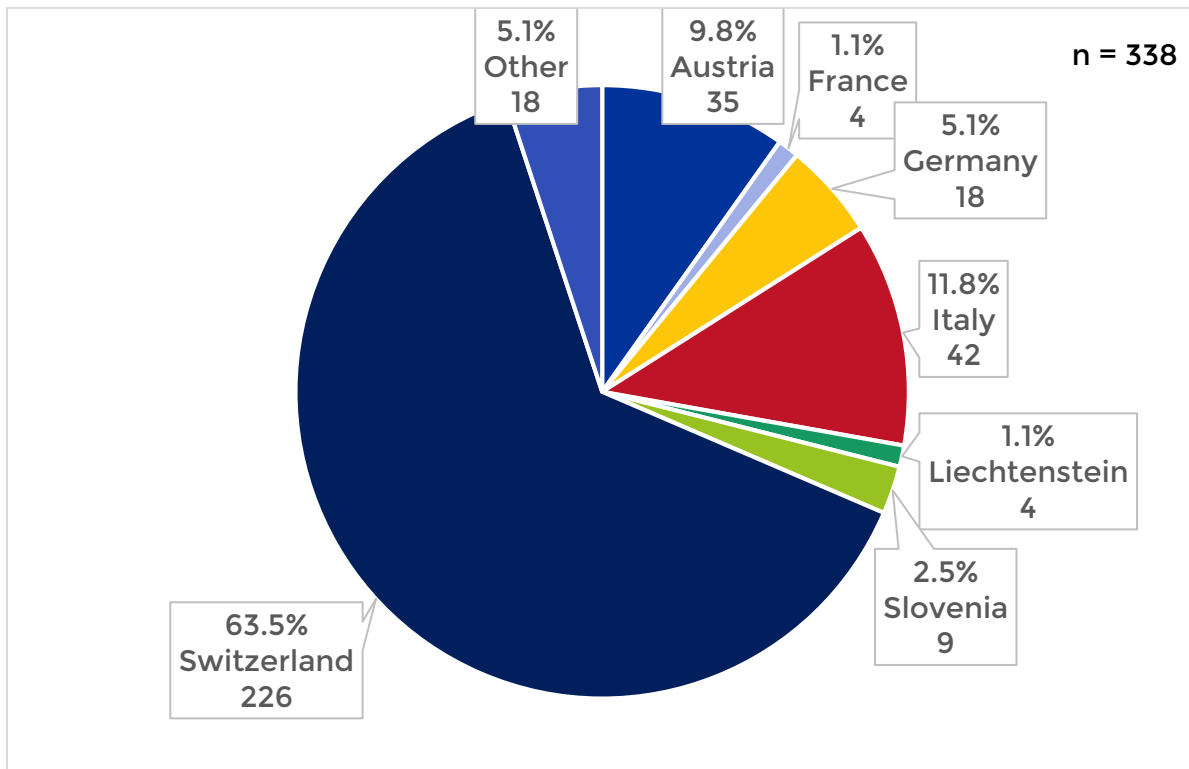


Figure 4.1.3: Country of main residence





Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



## 4.2. Attitudes to nature

Nature relatedness is a concept that accounts for the relationships different individuals have with nature. The nature relatedness-scale developed by Nisbet et al. (2009) measures these relationships by distinguishing between high nature relatedness or connection to nature and low nature relatedness or disconnection from nature. Nowadays, individuals often spend their lives both physically and psychologically separated from nature, which can negatively affect the psychological well-being of humans and the state of the environment. In turn, connectedness to nature is associated with improved psychological well-being and concern for the environment. In this context, the nature relatedness-scale is a useful measure to assess to what extent individuals feel connected to nature (Nisbet & Zelenski, 2013).

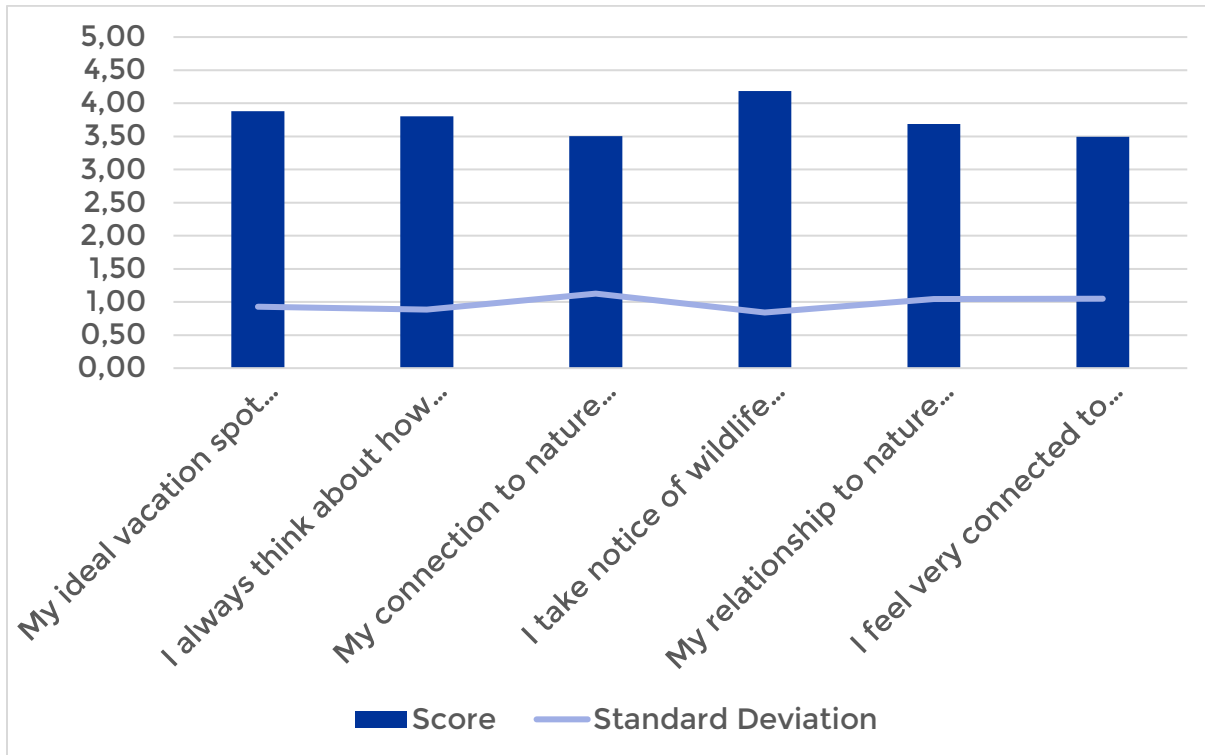
The aim of this question group was to get insights into the respondents' attitudes towards nature by means of the nature relatedness scale (NR), a construct that measures different aspects of people's connection to nature. The scale measures nature relatedness by asking respondents to answer 21 statements about their connection to nature on a 5-point Likert scale that ranges from 1 (strongly disagree) to 5 (strongly agree) (Nisbet et al., 2009). For this study, a shorter version of the nature relatedness scale was included in the questionnaire, which contains a selection of six nature relatedness items. For each respondent, it was possible to calculate a personal nature relatedness score. This score was based on the average score a respondent achieved on all six items. The higher the average score, the stronger a given participant's connectedness to nature (Nisbet & Zelenski, 2013).

The respondents received an average personal nature relatedness score of 3.76 (sd = 0.72), which indicates a tendency for nature connectedness. The item with which respondents on average agreed the most was *I take notice of wildlife wherever I am* with an average score of 4.18 (sd = 0.84) (see figure 4.2.1). The tendency of respondents to agree the most with this item can also be seen in figure 4.2.2, with a total of 85.6% of respondents indicating that they either strongly agree or agree with this statement. The items with which respondents on average agreed the least were *I feel very connected to all living things and the earth* (average = 3.49; sd = 1.05) and *my connection to nature and the environment is a part of my spirituality* (average = 3.50; sd = 1.13) (see figure 4.2.1). However, as the diagram shows, even though respondents tended to agree the least with these items, a total of 54.5% and 58.7% of all respondents in the sample still indicated that they agree or strongly agree (see figure 4.2.2).

## Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815

Figure 4.2.1: Average responses for nature relatedness score with standard deviation



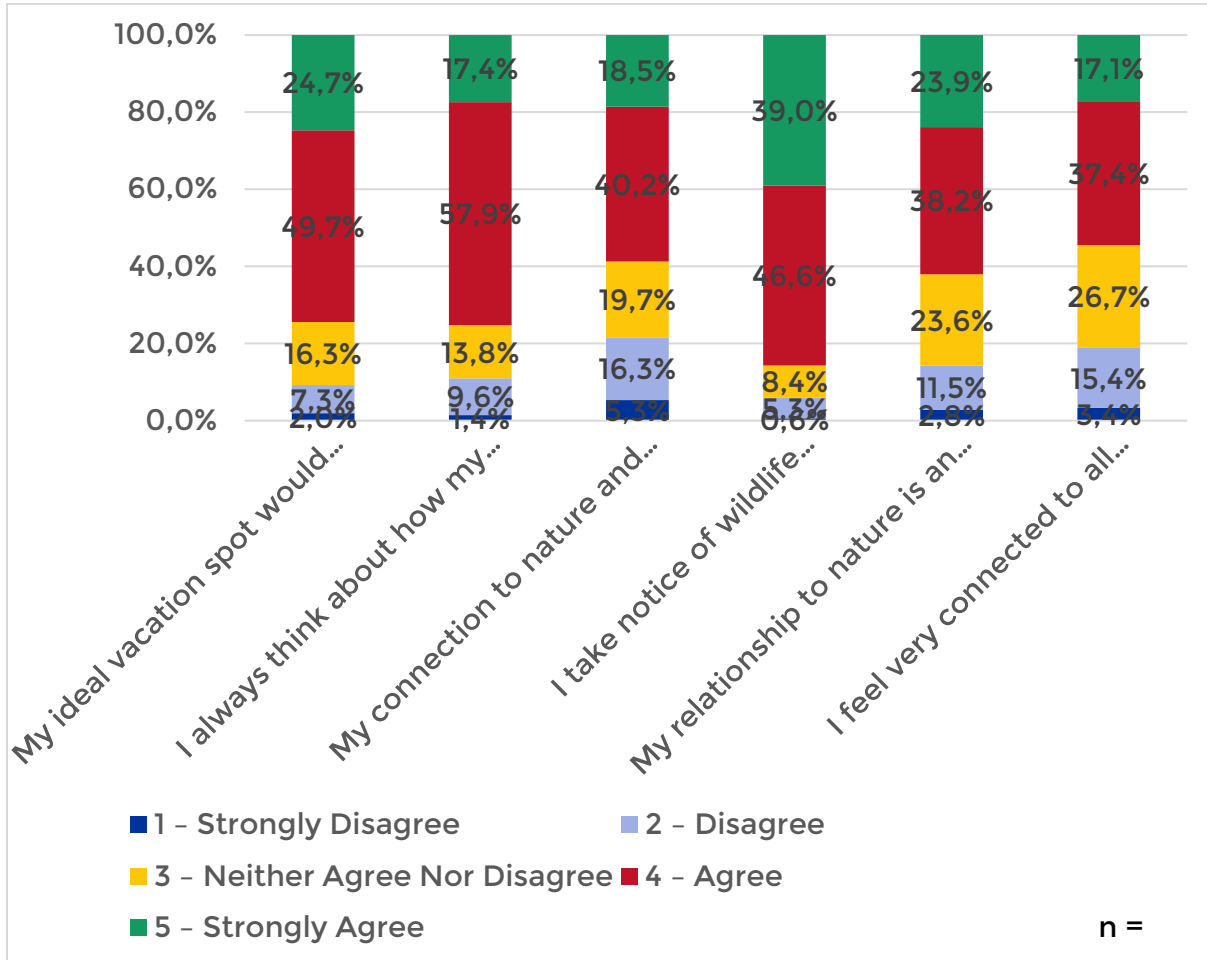
Overall, these results show that, on average, respondents tend to express a tendency for nature connectedness. In addition, the majority of the respondents tend to agree or strongly with all six statements regarding their attitudes to nature. A higher nature relatedness score may indicate a higher affinity to taking nature-based health holidays. Further analysis is needed to clarify whether such a relationship exists.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Figure 4.2.2: Results for the nature relatedness questions



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



### 4.3. Nature-based health tourism

Following their self-assessment of nature relatedness, respondents were asked to rate their agreement with four statements regarding the Alps, natural environments and health and the meaning of health while on holiday. The aim of this question was to find out to what extent respondents associated the Alps and natural environments in general with health, and what role health played in general when going on holiday. In the subsequent question, the respondents were asked to rate to what extent they agreed that seven previously identified Alpine-specific resources were beneficial to their health.

Due to its richness with natural resources, the Alpine region offers a high potential for the development of health tourism products. In a Swiss report on the future of health tourism in the Alps, the authors highlight the importance to build Alpine health tourism products around evidence-based treatments. On one hand, this is to ensure that the treatments yields the promised effects and can be distinguished from wellness offers. On the other hand, treatments based on scientific evidence are key for ensuring the accreditation of Alpine health tourism products by health insurance companies (Hartl *et al.*, 2016).

An example for an existing Alpine health-tourism product based on a natural resource are the Krimml waterfalls. Medical evidence suggests that exposure to the waterfalls can provide relief for patients suffering from asthma bronchialis (Hartl, 2010). The positioning of the Alps as a destination with Alpine-specific resources with scientifically proven health benefits could go a long way to reach both health-conscious individuals interested in prevention as well as individuals searching treatment for an existing condition.

Among the four statements related to health and holiday, the ones which respondents clearly agreed with the most were *Natural environments provide health benefits* (94.3% of respondents either agreed or strongly agreed, average score of 4.4) and *The Alps are a good health tourism destination* (92.1% of respondents either agreed or strongly agreed, average score of 4.5) (see figure 4.3.1). The strong positive perception that natural environments provide health benefits is a key basis for the development of nature-based health tourism products. Yet only 44.1% of respondents positively respond to the statement that they consider possible health benefits when choosing a holiday destination. This could have three reasons: first, that health benefits are not the main reason for travelling; second, that they do not equate health with relaxation; and third, that they have too little information regarding health benefits in order to be able to consider these when planning a holiday. That the Alps are seen as a good health tourism destination may be because the majority of respondents live in Alpine countries. A wider study including other countries and

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



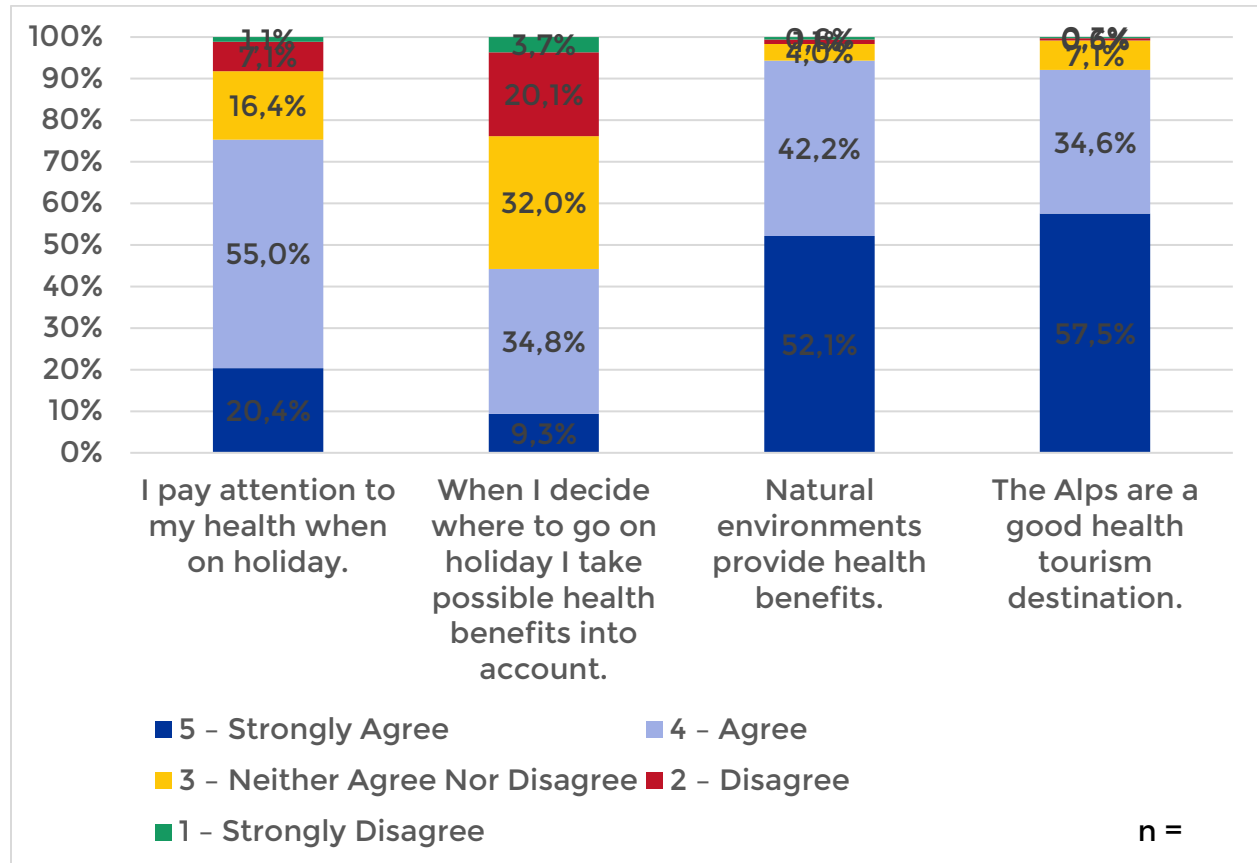
metropolitan areas is needed in order to gain a more comprehensive understanding of the perception of the Alps when it comes to being healthy landscapes.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Figure 4.3.1: Responses to the questions regarding health and tourism



In a more detailed question regarding the perceived health benefits of the Alps, all of the alpine resources received a relatively high average score and were rated by the majority of respondents as being beneficial to health. 96.1% of respondents considered fresh air/low fine dust concentration beneficial to health (see figure 4.3.2). This alpine resource received an overall score of 4.7 (sd = 0.7) (see figure 4.3.3). This response may have been triggered by the recent diesel emissions scandal and the discussion surrounding nitrogen oxide and clean air. Even though some of the alpine resources scored lower, they still received a relatively high average score. The lowest average score was reached by moderate to high altitude (3.8; sd = 0.9), alpine plants (3.9; sd = 0.8) and food from the Alps (3.9; sd = 0.9). Yet the lowest percentage of respondents agreeing or strongly agreeing that they were beneficial to health was 68.8% (Food from the Alps).

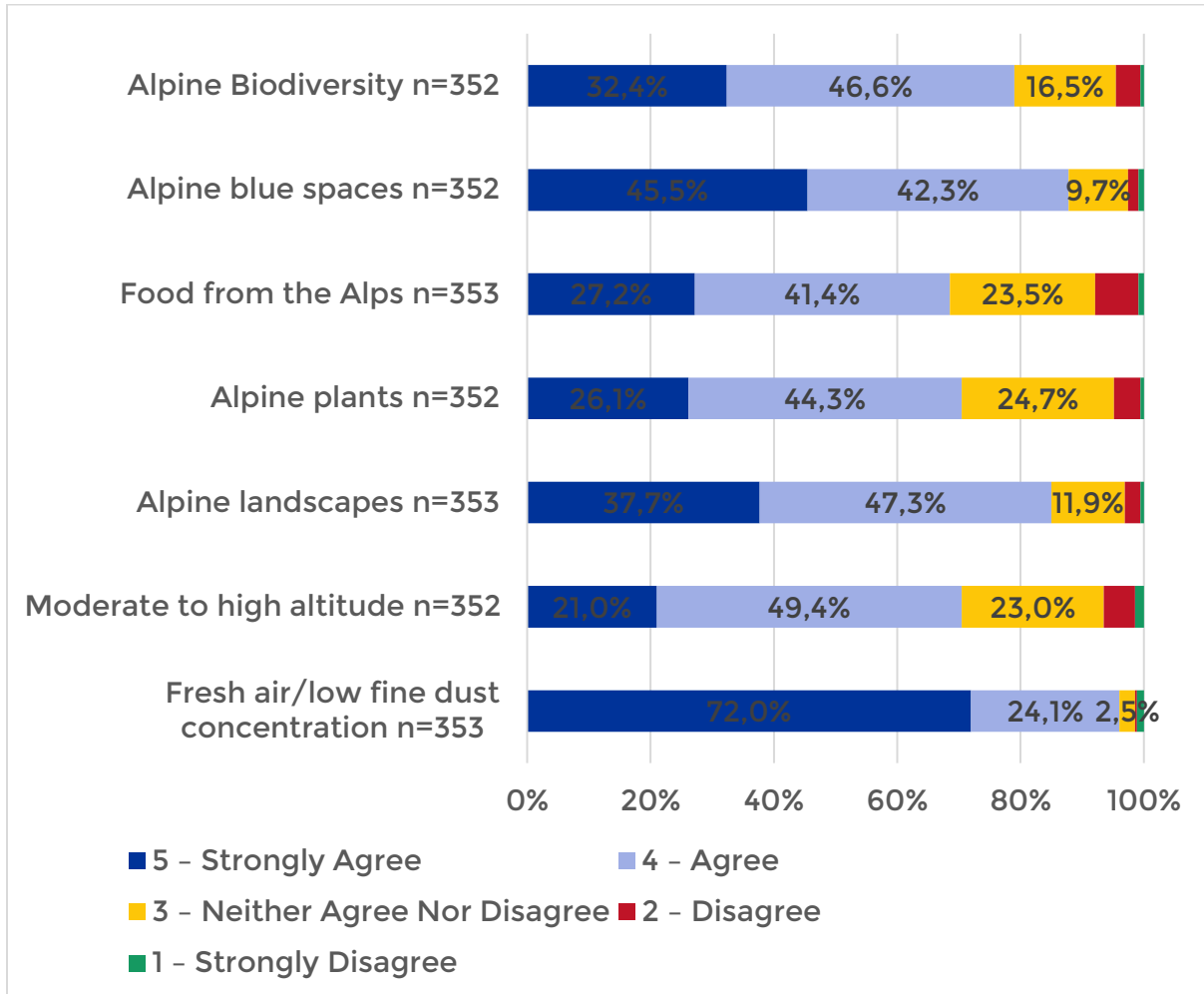
Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



Figure 4.3.2: Perceptions of health benefits derived from alpine resources in percentages



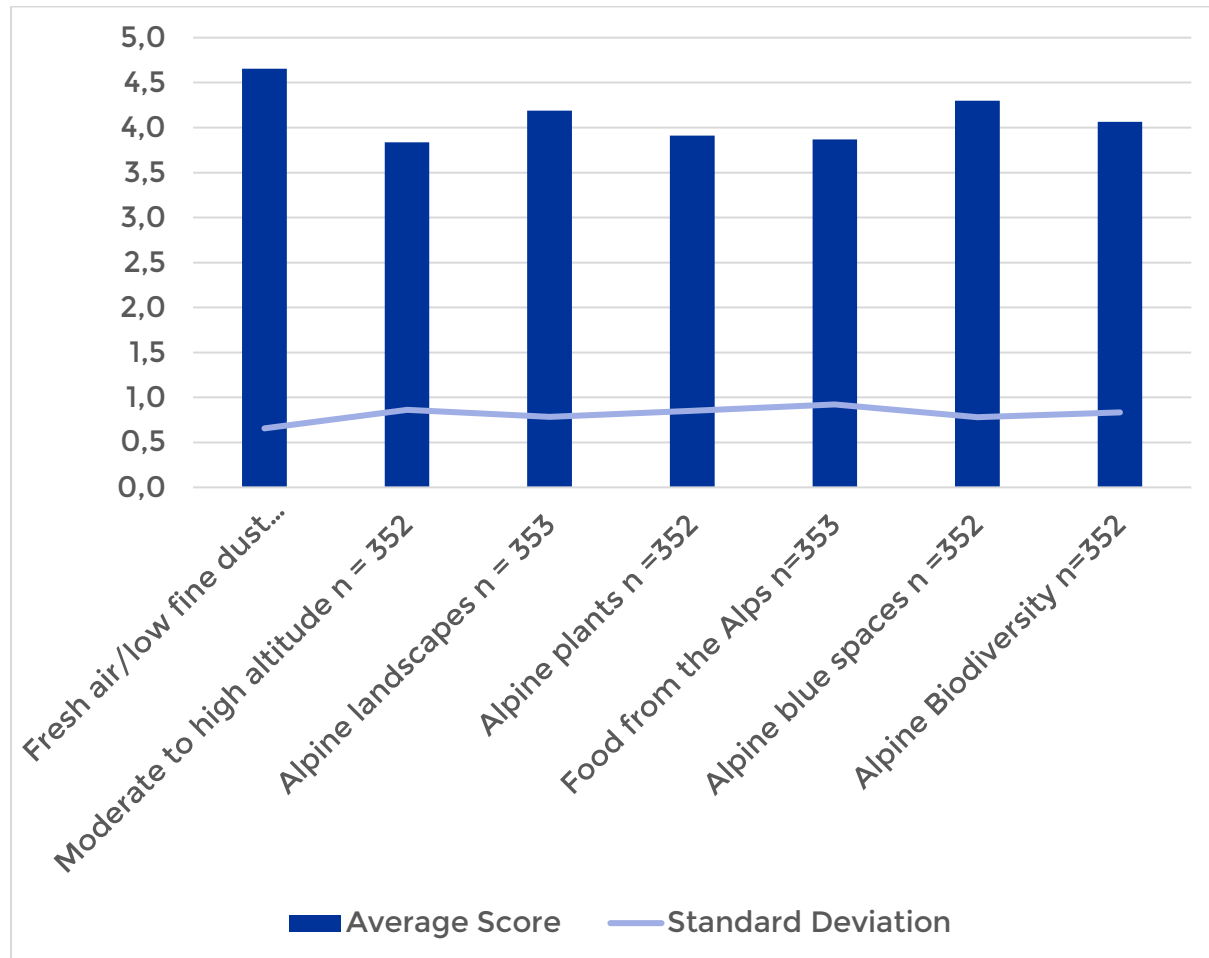
## Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



Figure 4.3.3: Perceptions of health benefits derived from alpine resources, average score and standard deviation



The results discussed above show that respondents agree that the Alps have a high potential as a health tourism destination. More than 9 out of 10 respondents agreed or strongly agreed that the Alps are a good health tourism destination. This can also be seen from the high tendencies to agree or strongly agree with the health benefits of the Alpine-specific resources listed. Health benefits are perceived particularly strongly for alpine-specific resources such as fresh air/low fine dust concentration, alpine blue spaces, alpine landscapes and alpine biodiversity. Overall, the results discussed above also show that even though respondents consider natural environments and especially the Alps beneficial to one's health, when choosing a holiday destination, only around four out of ten respondents consider possible health



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



benefits. This suggests that for the majority of respondents, health and health benefits are not necessarily a decisive factor when deciding on a holiday destination.

#### 4.4. State of health

The aim of the questions in question group *state of health* was to find out about respondents' general attitudes towards health and illness and about their actual state of health. In the first question, respondents were asked to reply to a series of statements regarding the extent to which they believe that they can control their state of health on a scale from 1 to 6. In the second question, respondents were asked to indicate which conditions they are currently suffering from. For each of the conditions selected in this question, the respondents were subsequently asked whether they would be interested in seeking treatment during a nature-based health holiday. For each condition not selected, the respondents were asked whether they would be interested in taking preventative action during a nature-based health holiday. Lastly, respondents that were not interested in seeking treatment or taking preventative action during a nature-based health holiday for any of their conditions were asked to indicate their reasons for not being interested.

The health locus of control concept developed by Ferring and Filipp (1989) measures an individual's attitudes towards health and illness. In the short version, which was used in this study, respondents are asked to indicate to what extent they agree with 10 statements dealing with health and illness. The scale distinguishes between an external and an internal health locus of control, which essentially determines whether an individual believes that its own behaviour or external factors are responsible for its state of health (Ferring, 2003).

On average, the respondents' health locus of control was 3.7 (sd = 0.5) (see figures 4.4.1 and 4.4.2 for details). The average health locus of control was calculated by reverse-scoring items that expressed an external health locus of control. Therefore, a value of 3.7 indicates that, on average, respondents tend to somewhat agree that their own behaviour is responsible for their state of health. With a standard deviation of 0.5 the sample is relatively homogenous.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Figure 4.4.1: Health locus of control: percentages

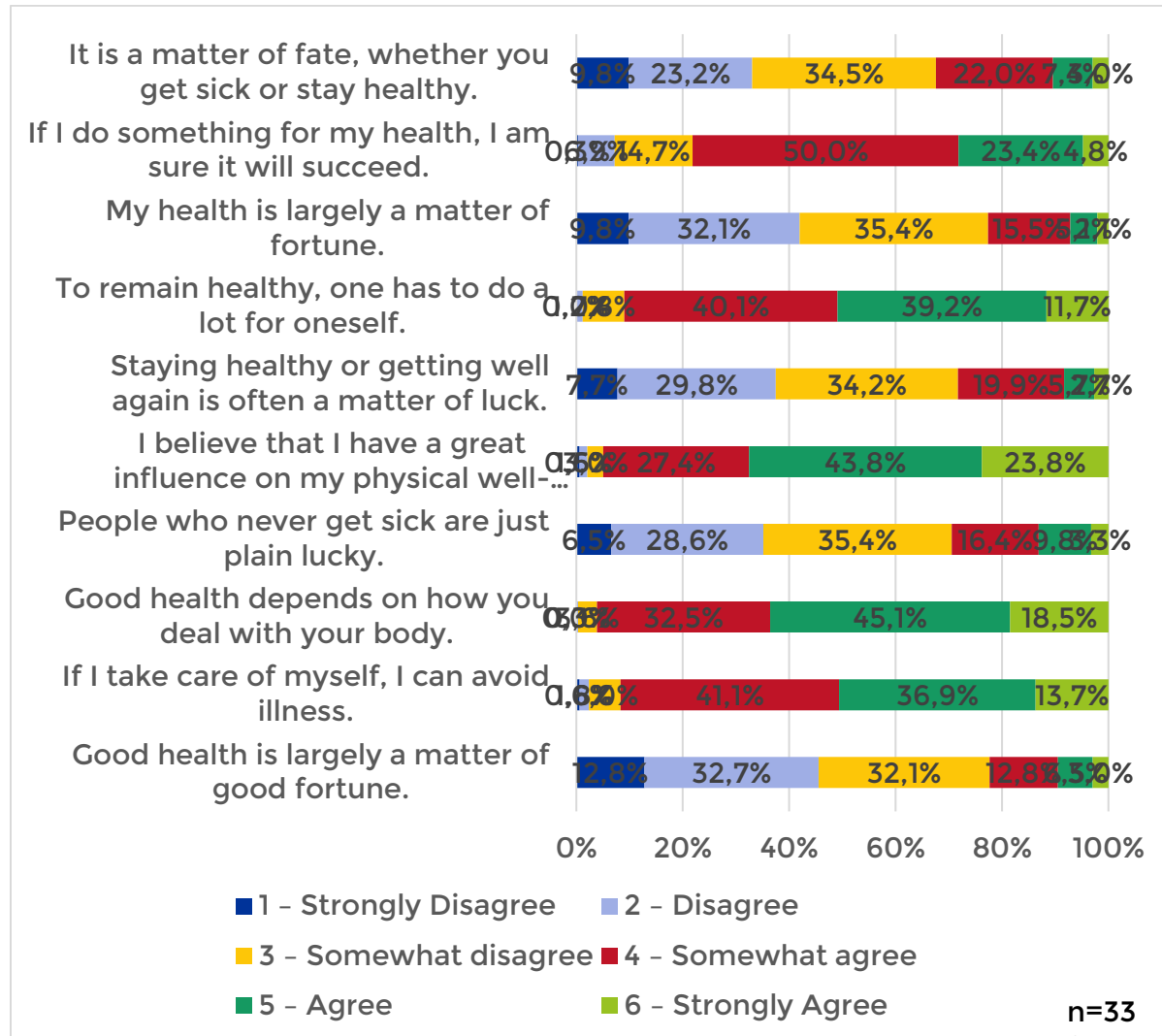
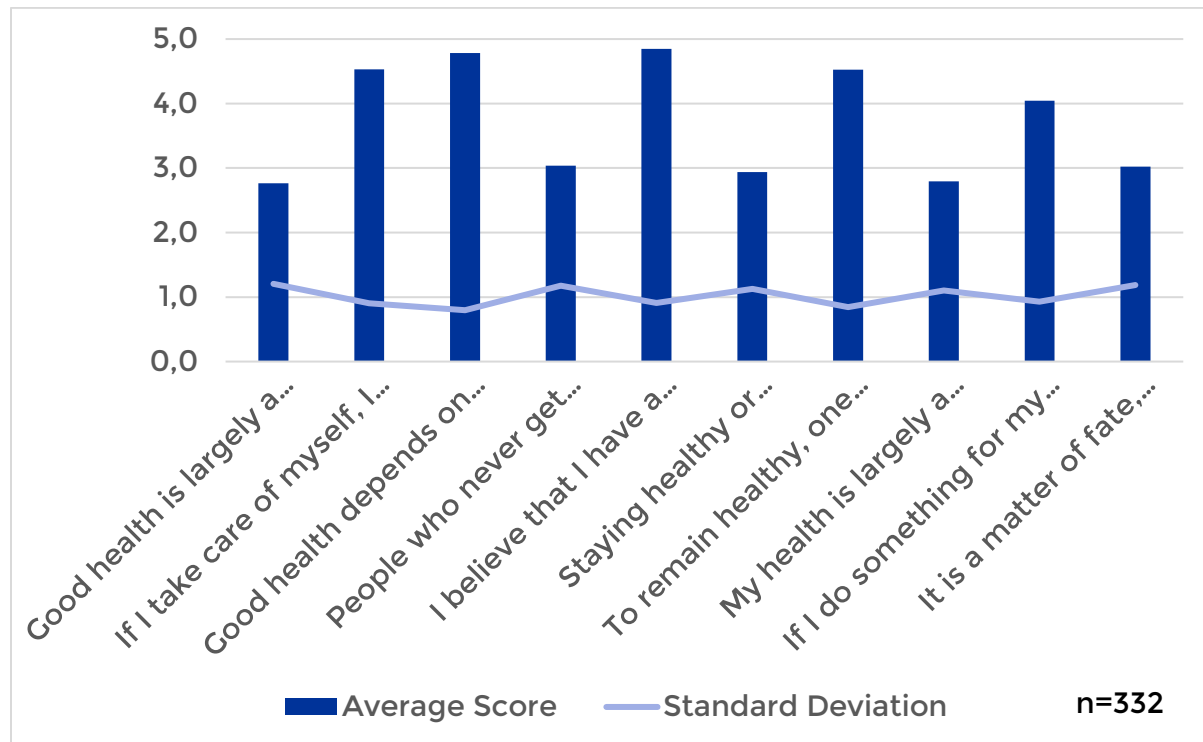


Figure 4.4.2: Health locus of control: average scores and standard deviation



In another question, respondents were asked which health conditions they are currently suffering from. The conditions that was most selected is tension/stress (57%), with more than half of the respondents indicated to be suffering from (see figure 4.4.3). This was followed by fatigue (45%) and lack of physical fitness (33%). Conditions such as cardiovascular diseases (3%), balance problems (4%), high blood pressure (5%) and bladder weakness (5%) were reported by relatively few respondents. This can be explained by the young sample and that these conditions are particularly prevalent in older persons.

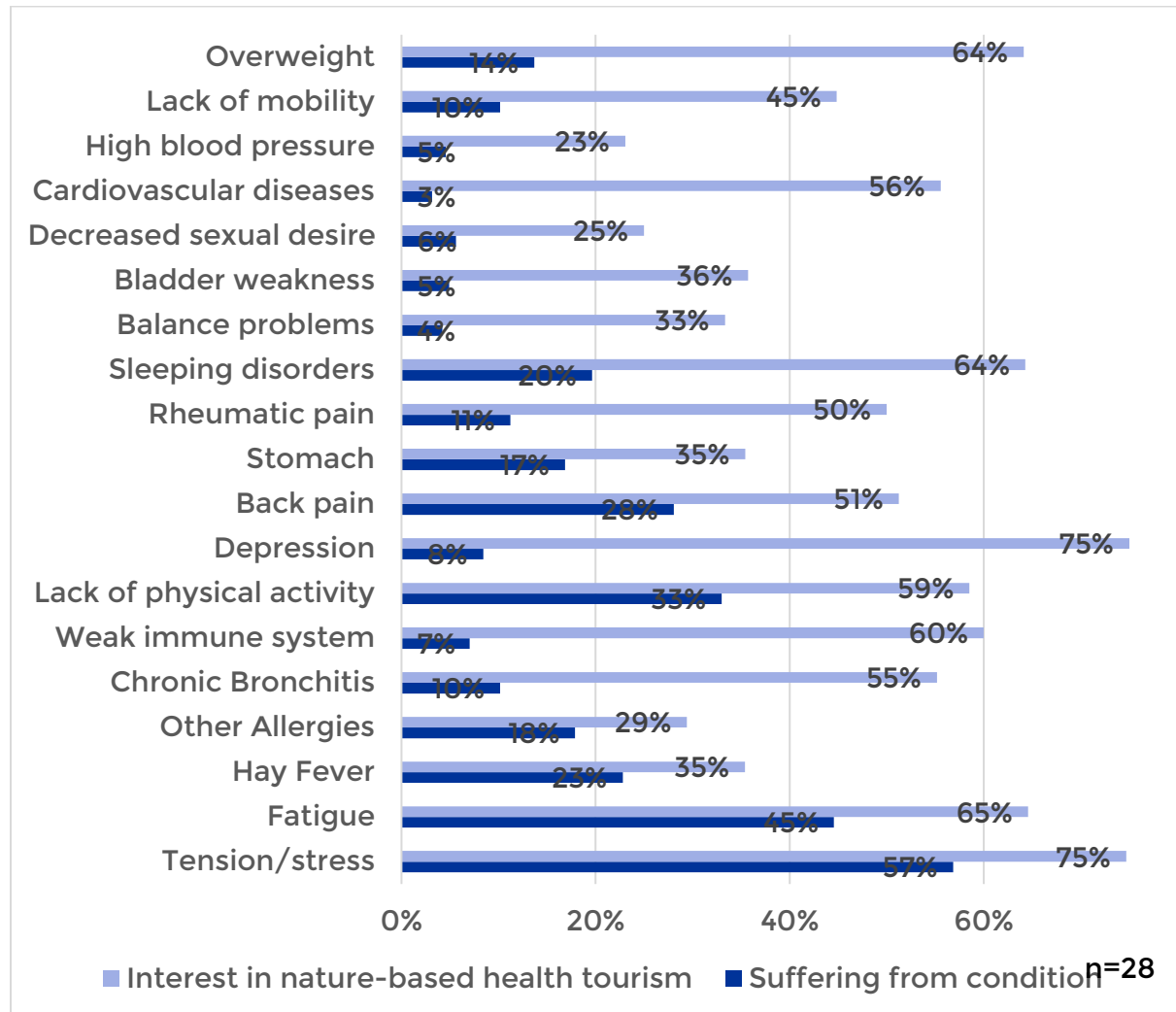
Of particular interest is the information on the prevalence of conditions with the interest in treating the condition during a nature-based health holiday. While respondents suffering from cardiovascular diseases are the most interested in treating it during a nature-based health holiday, the occurrence of the condition in the sample is low. The conditions with high prevalence in the sample and high interest in treating the condition during a nature-based health holiday are: tension/stress, fatigue and lack of physical activity (see figure 4.4.3).

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Figure 4.4.3: Conditions respondents are suffering from linked with percentage of those interested in treating the condition on a nature-based health tourism holiday



When asked whether respondents would be interested to take preventative action during a nature-based health holiday for conditions that they did not suffer from, the conditions that received the highest relative interest were tension/stress (66%), lack of physical fitness (44%) and fatigue (38%) (see figure 4.4.4). The conditions lack of mobility (27%), depression (26%), weak immune system (25%), sleeping disorder (24%) and back pain (24%) represent a middle ground of interest. A total of 27% of respondents indicated that they are not interested in taking preventative action on a nature-based health holiday for any of the conditions. This demonstrates that nature-based health holidays to prevent health conditions holds considerable interest.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Figure 4.4.4: Interest in preventative treatment during nature-based health holiday according to condition

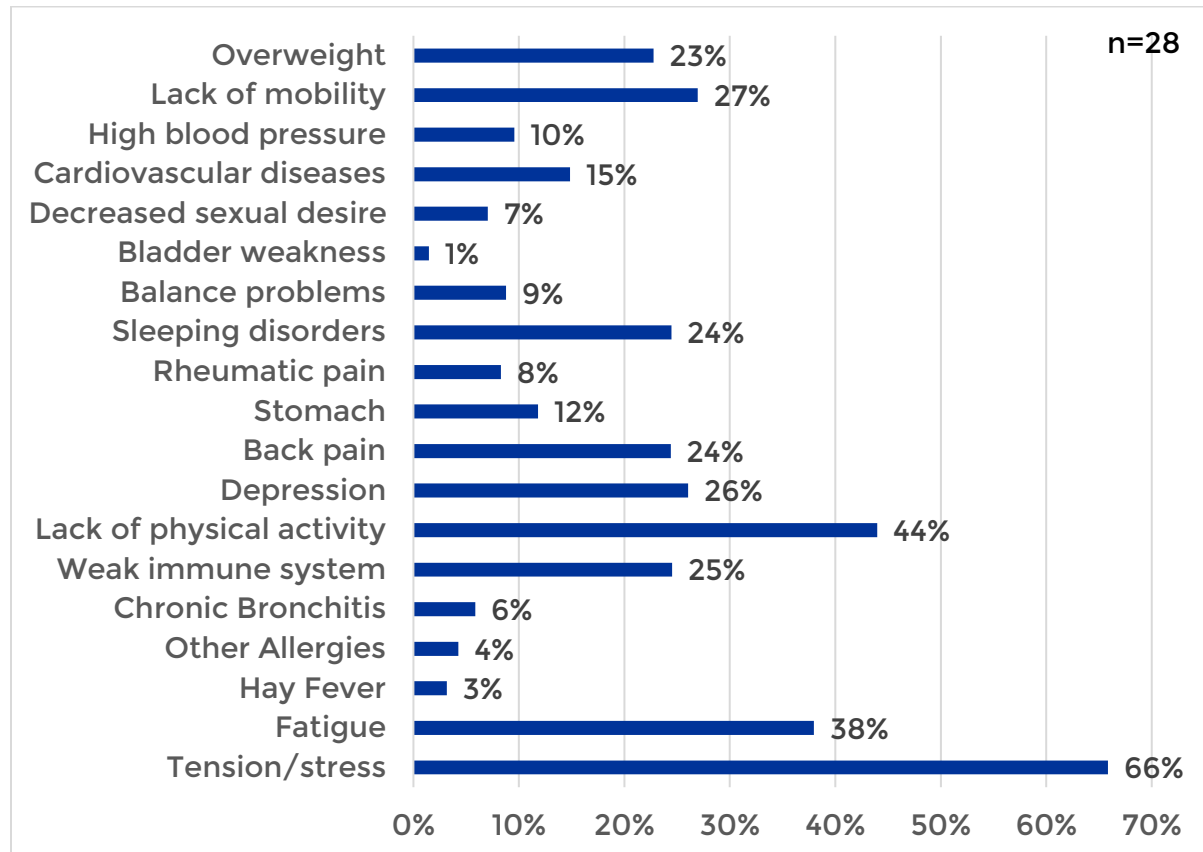


Figure 4.4.5 shows the reasons indicated by respondents who expressed no interest in treating or preventing their conditions on a nature-based health holiday. Interestingly, only few respondents are not convinced that nature-based resources will benefit their condition. Comments under 'other' include other priorities when going on holiday, that being on holiday is already beneficial to reduce stress and fatigue so there is no need for a specific nature-based health holiday and a perceived lack of control: "These are diseases that I have to live with whether I want to or not". However, the low n for this question does not allow for any meaningful analysis.

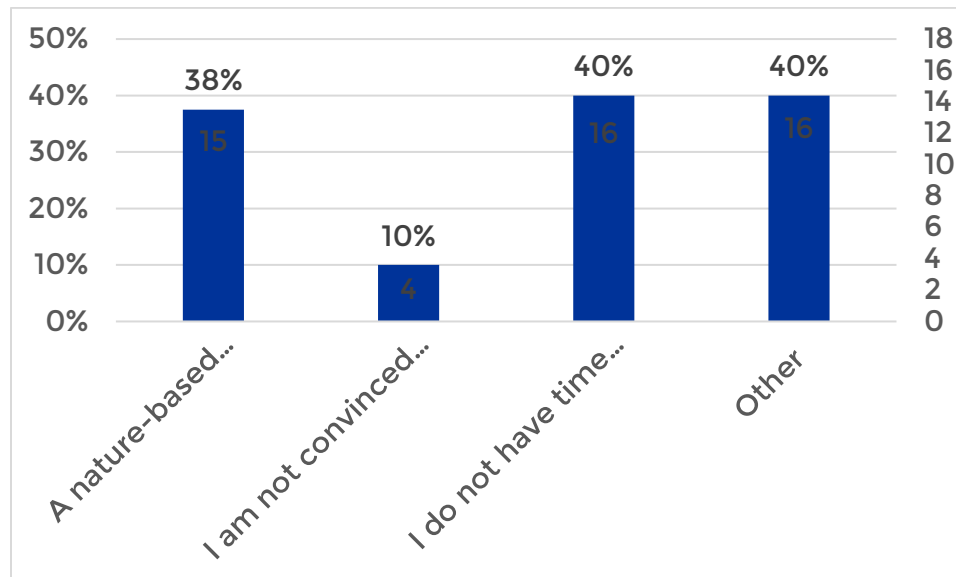
## Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



Figure 4.4.5: Reasons for not being interested in nature-based health holidays



The results for this group of questions show that, on average, respondents have a tendency to agree that their own behaviour is responsible for their state of health. This makes sense when taking into account the recent popularity of health tourism offers, where tourists take action in order to improve their health or prevent conditions.

When looking at the conditions respondents indicate to be suffering from, it becomes evident that conditions such as tension/stress, fatigue or lack of physical fitness rank the highest. The high prevalence of stress is problematic insofar as that chronic stress can have further negative health impacts (Mariotti, 2015). When looking at these results, it is important to keep in mind that the conditions respondents indicated to be suffering from have not necessarily been diagnosed by a doctor. In addition, some conditions might have been selected by few respondents because of the relatively low prevalence of respondents aged 55 years and up in the sample. When looking at the interest for treating or seeking prevention for a given condition, it becomes evident that respondents express more interest in treating existing conditions than in taking preventative action. For example, one fourth of all respondents indicated that they are not interested in taking preventative action for any of the conditions listed. Interest in treatment is particularly high for cardiovascular diseases, depression, tension/stress, sleeping disorders, weak immune system and overweight. In prevention, interest is highest for tension/stress, with almost half of the respondents that are currently not suffering from tension/stress indicated to be interested in taking preventative action for this condition. When looking at the

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



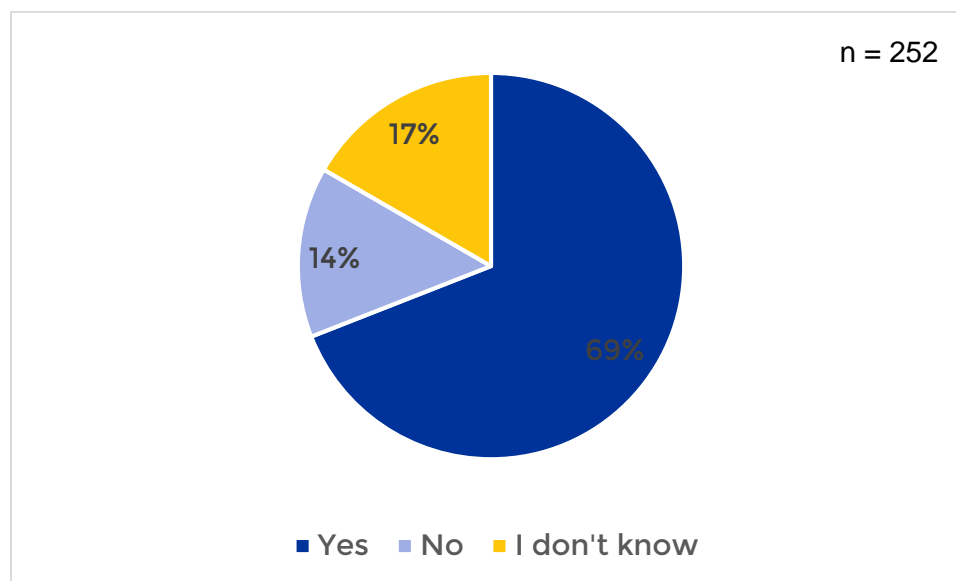
reasons for not being interested in taking a nature-based holiday, it becomes evident that a lack of time or the high cost factor of a nature-based health holiday are the most cited reasons. Only one out of ten respondents indicated that they are not convinced a nature-based health holiday will benefit their condition. This points to a high acceptance of nature-based health holidays as a measure for treating existing conditions.

#### 4.5. Needs and expectations of potential tourists

This question group aimed to generate insights into the needs and expectations of tourists interested in nature-based health holidays. Questions asked included the importance of different factors for booking decisions, the importance of medical factors and courses, applications and complementary activities and the willingness to pay for these services.

As shown in figure 4.5.1, 14% of the respondents stated that they would not be interested to go on a nature-based health holiday during winter, whereas 69% of the respondents stated that they are interested. 17% of respondents did not know whether they were interested in going on a nature-based health holiday during winter.

Figure 4.5.1: Interest in nature-based health holidays in the winter season



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



When asked about their preferred accommodation type during a nature-based health holiday, the 36% of respondents stated that they would prefer to stay at a specially designated health hotel (see figure 4.5.2). 20% of all respondents shared the opinion that the type of accommodation is not important, followed by 17% of respondents who indicated that they would prefer to stay at a regular hotel. The least preferred accommodation type was clinic, which was only selected by 1% of respondents.



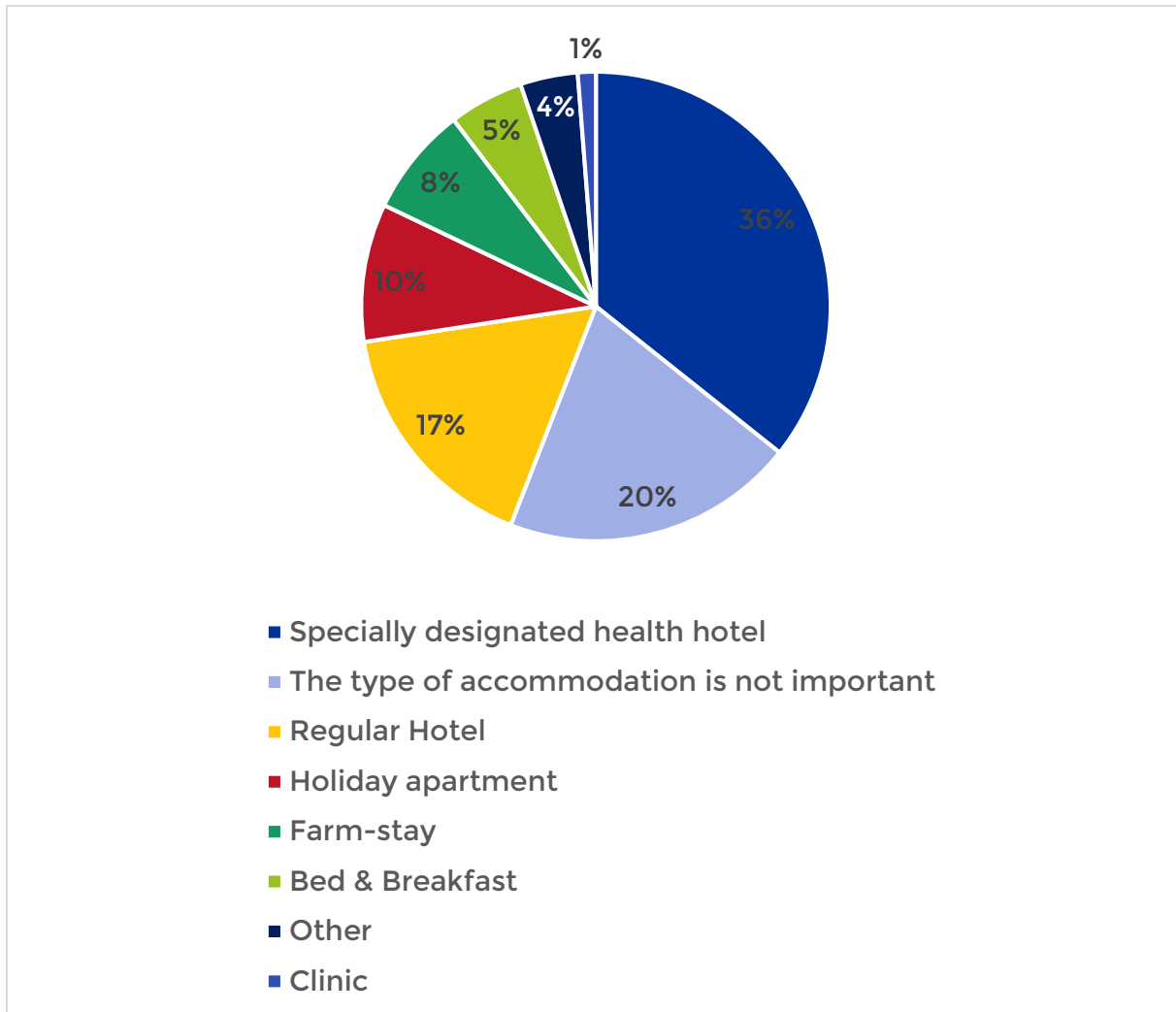
Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



Figure 4.5.2: Preferred accommodation type during nature-based health holidays



In order to develop appropriate tourism products, it is necessary to understand the importance of several factors for decision-making. As figure 4.5.3 shows, the factor that was rated by most respondents as very important when booking a nature-based health holiday was *good price performance ratio* (85%), followed by quality of accommodation (77%) and *health benefit of surrounding natural landscape* (72%). This highlights the importance of marketing the health beneficial natural resources.

Figure 4.5.3 also shows that there are some factors that only few respondents considered very important when booking a nature-based health holiday. Among these factors are *short travel time* (19%), *accommodation specially designated for health holidays* (27%) – contrary to the response of shown in figure x, where specially

Healing Alps:

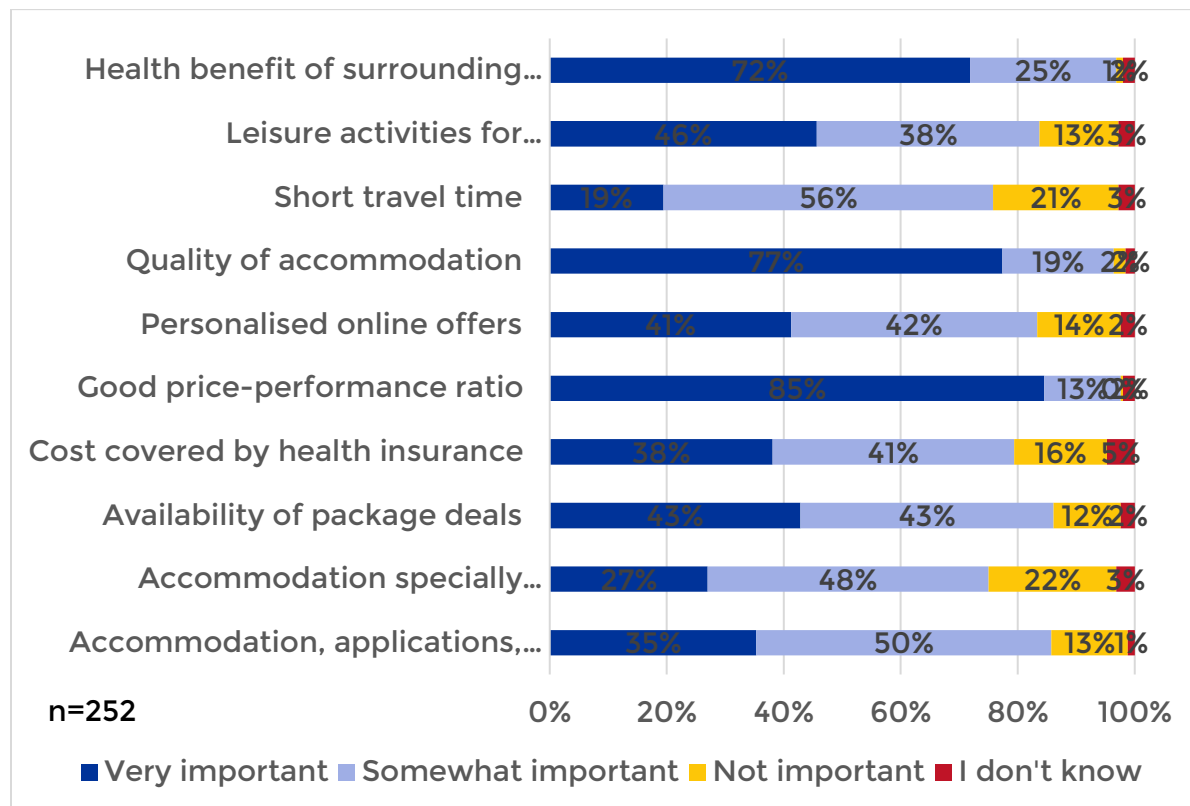
Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



designated health hotels were the top answer and *accommodation, applications and activities under one roof* (35%). Yet all factors received over 75% on their overall importance (very important and somewhat important). A choice-based conjoint analysis would offer more details on the relative importance of the factors in comparison to each other.

Figure 4.5.3: Importance of factors for the booking decision



Respondents were also asked to rate the importance of several medical factors during a nature-based health holiday. As shown in figure 4.5.4, the factor *Personal aptitude of staff (appearance, communication skills, empathy)* was rated by most respondents as very important (80%), followed by *Quality of medical care* (73%), *certified medical and therapeutic expertise of staff* (71%) and *staff trained at all levels* (67%). The factors *medical infrastructure (access to doctors, medical equipment, proximity to a hospital)* and *continued support by the holiday destinations' medical team after holiday* were only rated by relatively few respondents as very important

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



(34% and 18% respectively). Instead, these factors received the highest overall share of respondents classifying them as somewhat important (45% and 42% respectively).

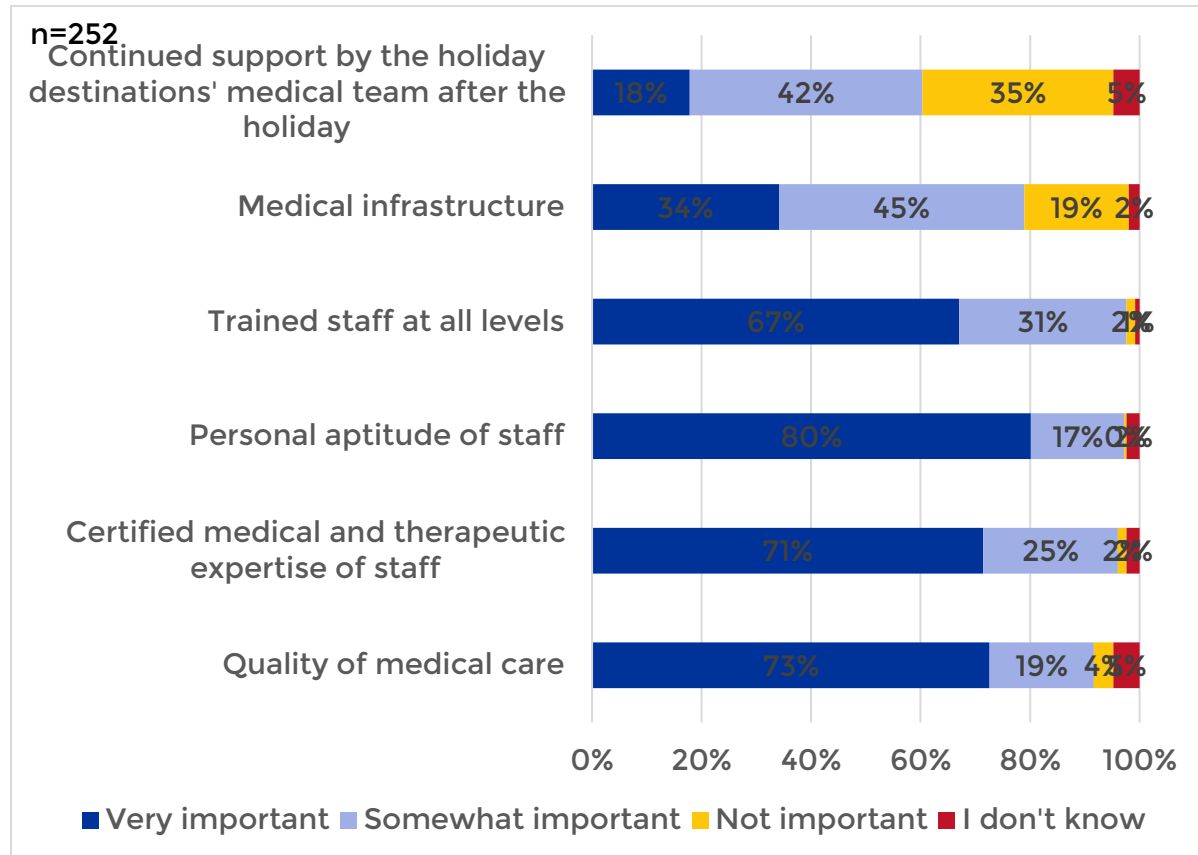
Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815

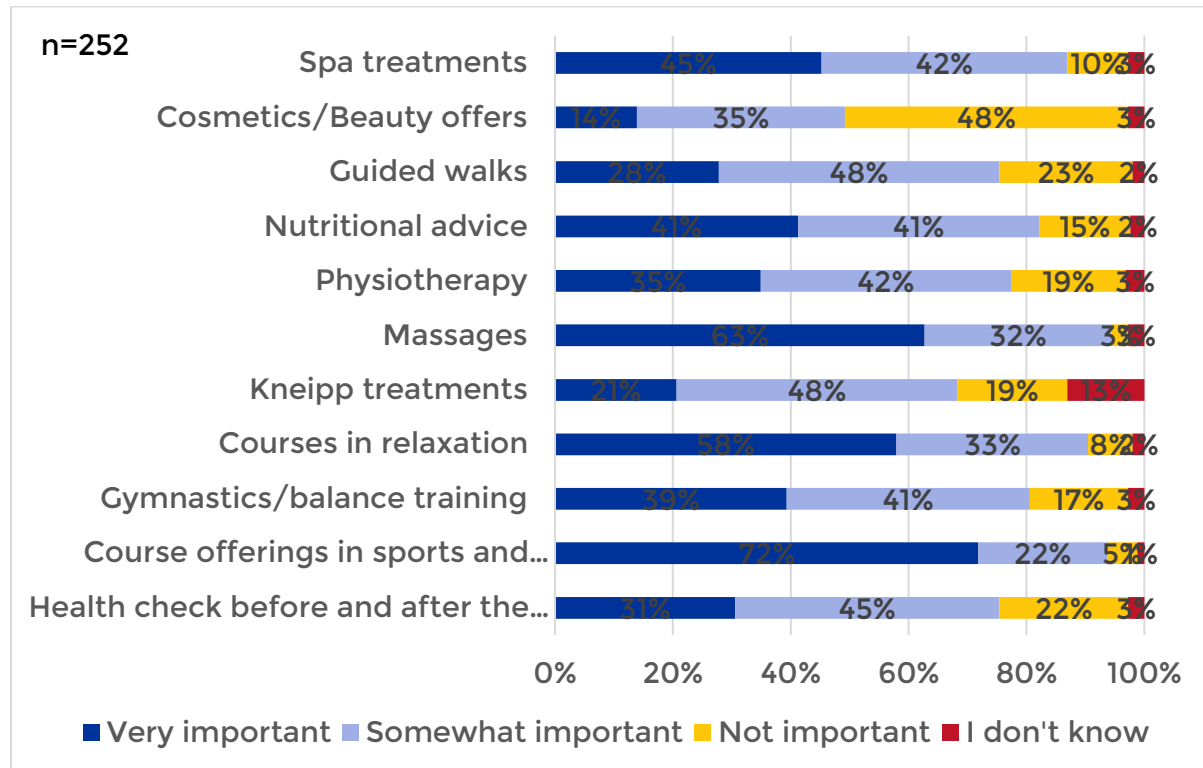


Figure 4.5.4: Importance of medical factors for the booking decision



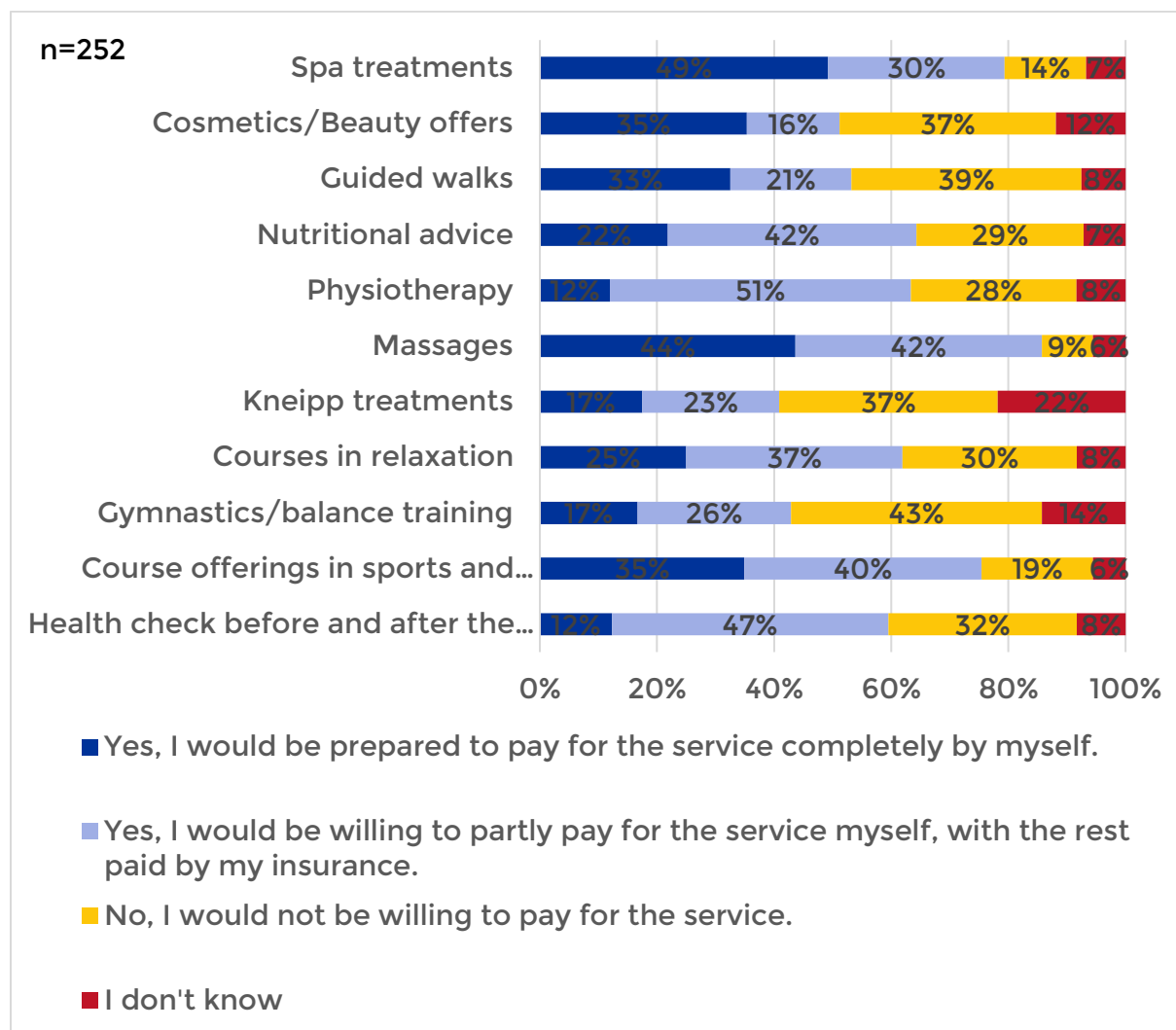
Respondents were also asked to rate the importance of different treatments, courses, applications and complementary activities during a nature-based health holiday, as shown in figure 4.5.5. The highest number of respondents considered *course offerings in sports and exercise* (72%) very important, followed by *massages* (63%) and *courses in relaxation* (58%). Interestingly, the factors *physiotherapy* (35%), *spa treatments* (69; 29%) and *gymnastics/balance training* (39%) were rated by relatively few respondents as very important.

Figure 4.5.5: Importance of treatments, courses, applications and complementary activities



In another question, respondents were asked to indicate their willingness to pay for these services during a nature-based health holiday (see figure 4.5.6). Respondents expressed the highest willingness to pay completely by themselves for *spa treatments* (49%), *massages* (44%), *course offerings in sports and exercise* (35%) and *cosmetics/beauty offers* (35%). These services are not usually claimable on from the health insurance, so it may be that society is used to having to pay for these. For more medical services, which are typically at least partially reimbursed by health insurance such as *physiotherapy* (12%), and *health checks before and after the holiday* (12%), respondents were least willing to pay completely by themselves. Instead, a large share of respondents expressed that they would be willing to partly pay for these services with the rest paid by their insurance. Respondents were least willing to pay for *gymnastics/balance training* (43%), *guided walks* (39%) and *Kneipp treatments* (37%).

Figure 4.5.6: Willingness to pay for services during a nature-based health holiday



Respondents were also asked to rank the three sources they trust most when planning a nature-based health holiday according to their trustworthiness.<sup>1</sup> As figure 4.5.7 shows, respondents trust recommendations from friends and relatives the most

<sup>1</sup> This question was analyzed by counting for each source how many times it was selected. Every time a source was selected on the first rank, it was multiplied by three. Sources selected on the second rank were multiplied by the two whereas sources selected on the third rank were multiplied by one. This method ensured that sources selected on the first rank (therefore considered the most trustworthy by a given respondent) were weighed three times as much as sources selected on the third rank. The maximum achievable score is 753 (n\*3).

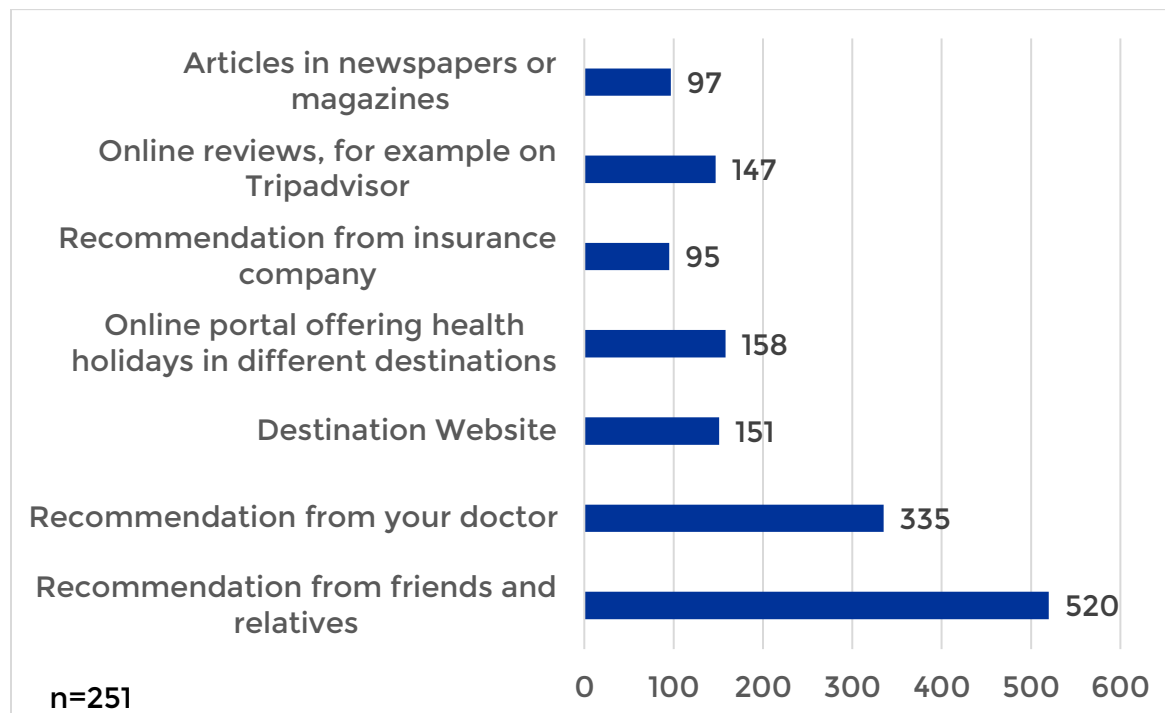
## Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



when planning a nature-based health holiday. This is followed by recommendations from the doctor and online portals offering health holidays in different destinations. The source respondents trust least are recommendation given by insurance companies.

Figure 4.5.7: Sources respondents trust the most when planning a nature-based health holiday



These results give important insights into the needs and expectations of tourists interested in nature-based health holidays. When asked whether they would be interested to go on a nature-based health holiday during winter, most respondents indicate that they would. This suggests that the season might not necessarily be decisive for the attractiveness of nature-based health holidays, but rather that the offer itself is more important. When going on a nature-based health holiday, tourists prefer to stay at a specially designated health hotel. The least favoured option for accommodation during a nature-based health holiday is a clinic. However, one out of five tourists does not consider the accommodation type important. This is particularly interesting, since the quality of the accommodation is among the factors considered most important for the booking decision. This suggests that for many tourists quality of accommodation is the decisive factor whereas the type of accommodation does not necessarily matter. Apart from the quality of

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



accommodation, a good price-performance ratio and the health benefits of the surrounding natural landscape are the factors most respondents consider very important for their booking decision.

The medical factor that most respondents consider very important during a nature-based health holiday is personal aptitude of staff. This factor even ranked slightly higher than quality of medical care. Among the other medical factors that ranked highly were certified medical and therapeutic expertise of staff and trained staff at all levels. This shows that overall, staff are considered the most important factor during a nature-based health holiday, even before factors such as medical infrastructure or continued medical support after the holiday.

The courses, applications and complementary offers that most respondents consider very important during a nature-based health holiday course offerings in sports and exercise, massages and courses in relaxation. With the exception of courses in relaxation, the highest share of respondents indicated the willingness to pay for these service completely by themselves. For health checks before and after the holiday and physiotherapy, the highest share of respondents indicated the willingness to pay partly for the service, with the rest paid by an insurance. Respondents were least willing to pay for gymnastics/balance training, guided walks, cosmetics/beauty offers and Kneipp treatments.

Regarding the most trusted sources when planning a nature-based health holiday, it is not surprising that recommendations by friends and family rank highest. This suggests that word of mouth is important when marketing nature-based health tourism products. Recommendations from doctors rank second as the holiday contains a medical element, traditional sources of information such as TripAdvisor, articles and magazines are perceived to be less trustworthy.

#### 4.6. Technology

As discussed in the Hohe Tauern Health case study, technology represents one of the critical factors of nature-based health tourism. On the one hand, technology can provide information on the local environmental conditions at the destination. Yet 59% of respondents state that they never or rarely check local environmental conditions related to health before choosing a destination or the time of travel (see figure 4.6.1).

Smart technologies allow tourists to track their improvement over the course of the holiday, an important motivational element. Yet figure 4.6.2 shows that 63% of respondents do not use wearable devices or apps to plan or monitor their health. Only 28% of respondents use wearable devices or apps to monitor their health whereas 3% plan their health with the aid of technology and 6% use wearables and/or



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



apps to plan *and* monitor their health. Due to the low percentage of respondents using technology to plan their health (see figure 4.6.2), only the questions regarding the monitoring of health will be further analysed.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



Figure 4.6.1: Respondents checking for local environmental conditions related to health before choosing a destination or the time of travel

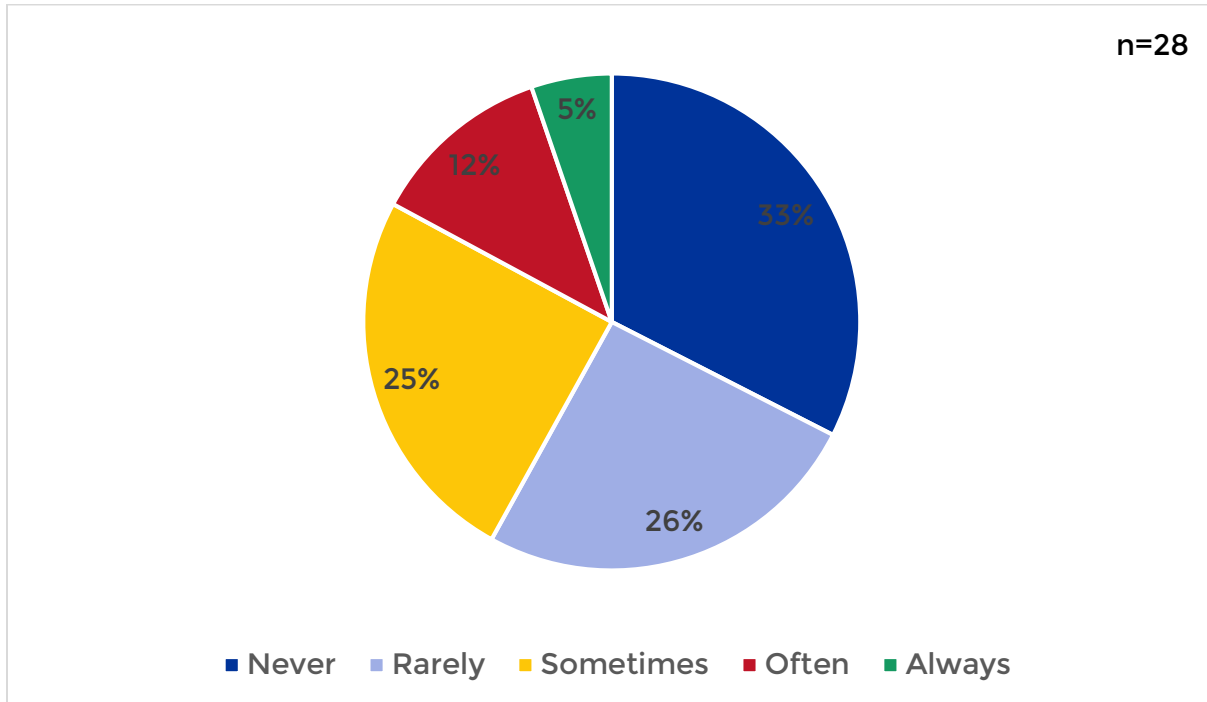
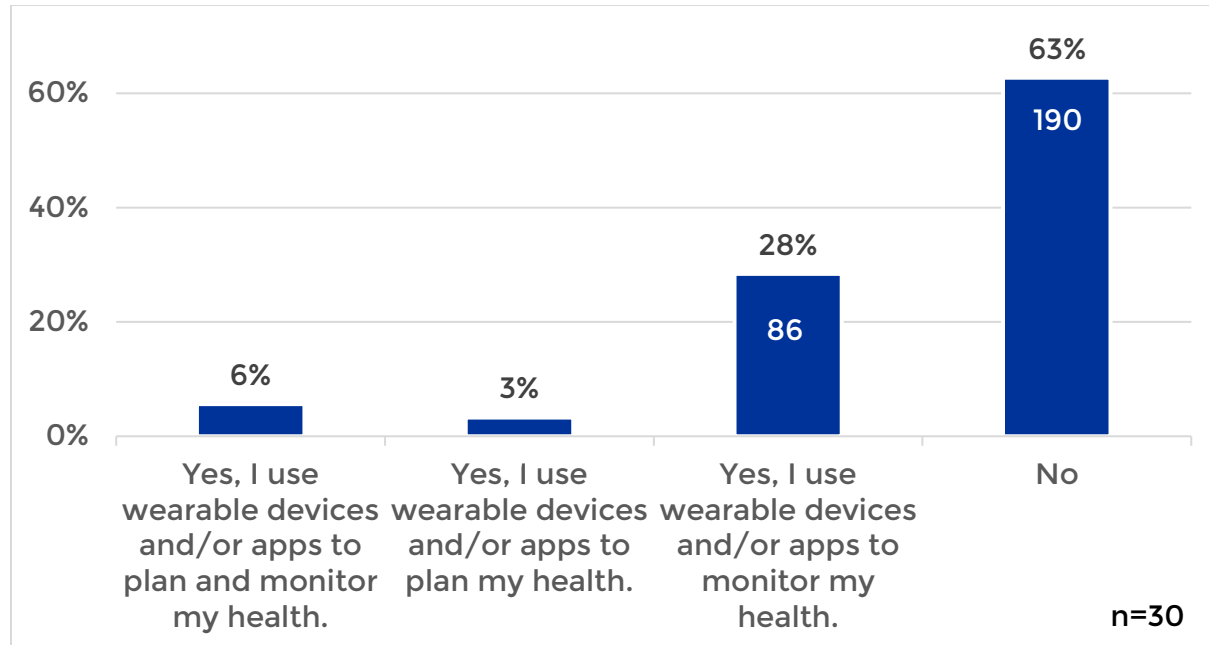


Figure 4.6.2: Use of wearable devices/apps to plan or monitor health

## Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



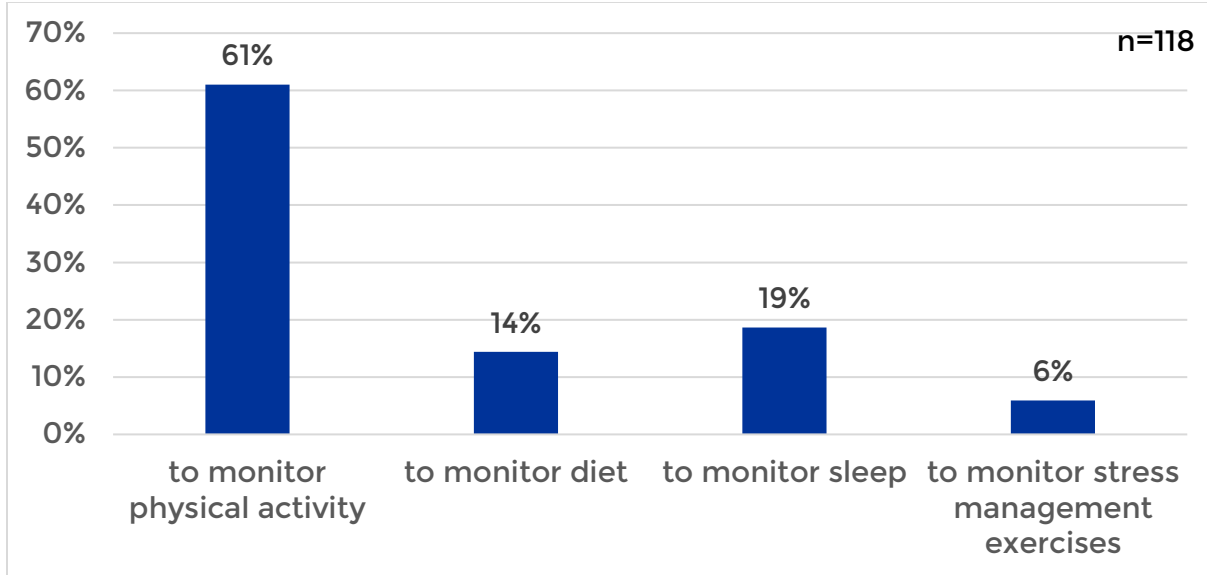
The majority of respondents use wearables and/or apps to monitor their physical activity (61%) followed by sleep (19%), diet (14%) and stress management (6%) (see figure 4.6.3). The frequency of use is highest for monitor sleep, followed by physical activity (see figure 4.6.4). Combining this information with the results from the needs and expectations of tourists, showing that course offerings in sports and exercise as being very important (see figure 4.5.5) demonstrates a real opportunity to use technology to monitor physical activity and their improvement over time. This could be done in conjunction with measuring stress levels over the span of the holiday. The data from the devices/apps could be shared with medical professionals to optimise exercises and continue the treatment/exercises once the guests have returned to their home environment and with insurance companies to earn points or premium reductions. However, in order to do this, guests must be prepared to share their data. As shown in figure 4.6.5, very few respondents currently share their data. Guests will therefore need a real incentive to share their personal health data.

Figure 4.6.3: Monitoring activities with the use of wearables or apps

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



Figure 4.6.4: Frequency of use of wearables or apps to monitor health

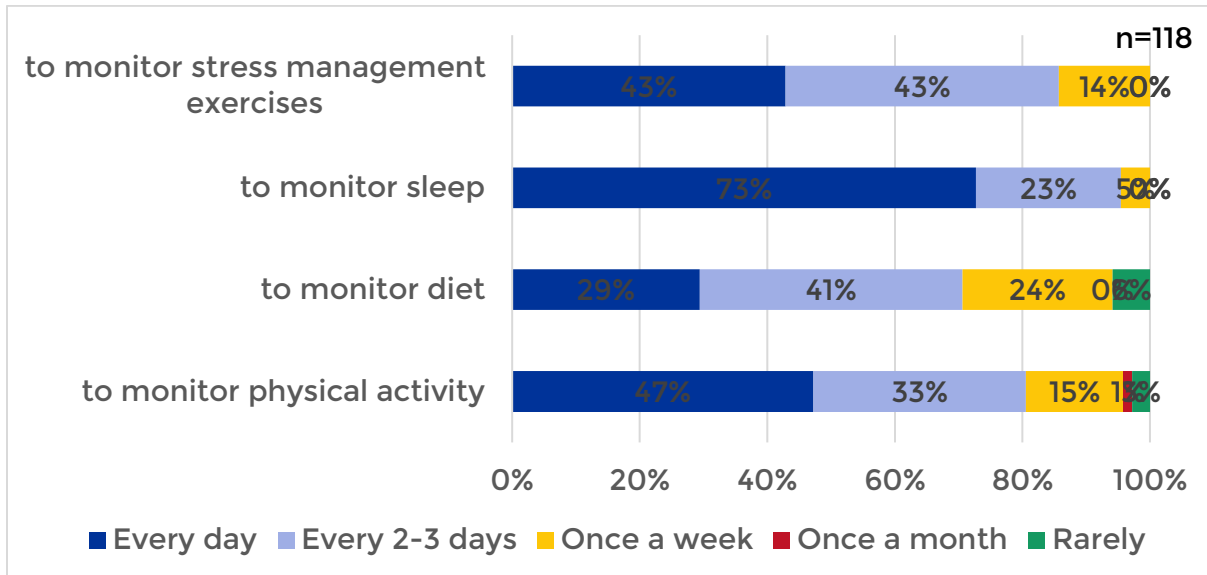
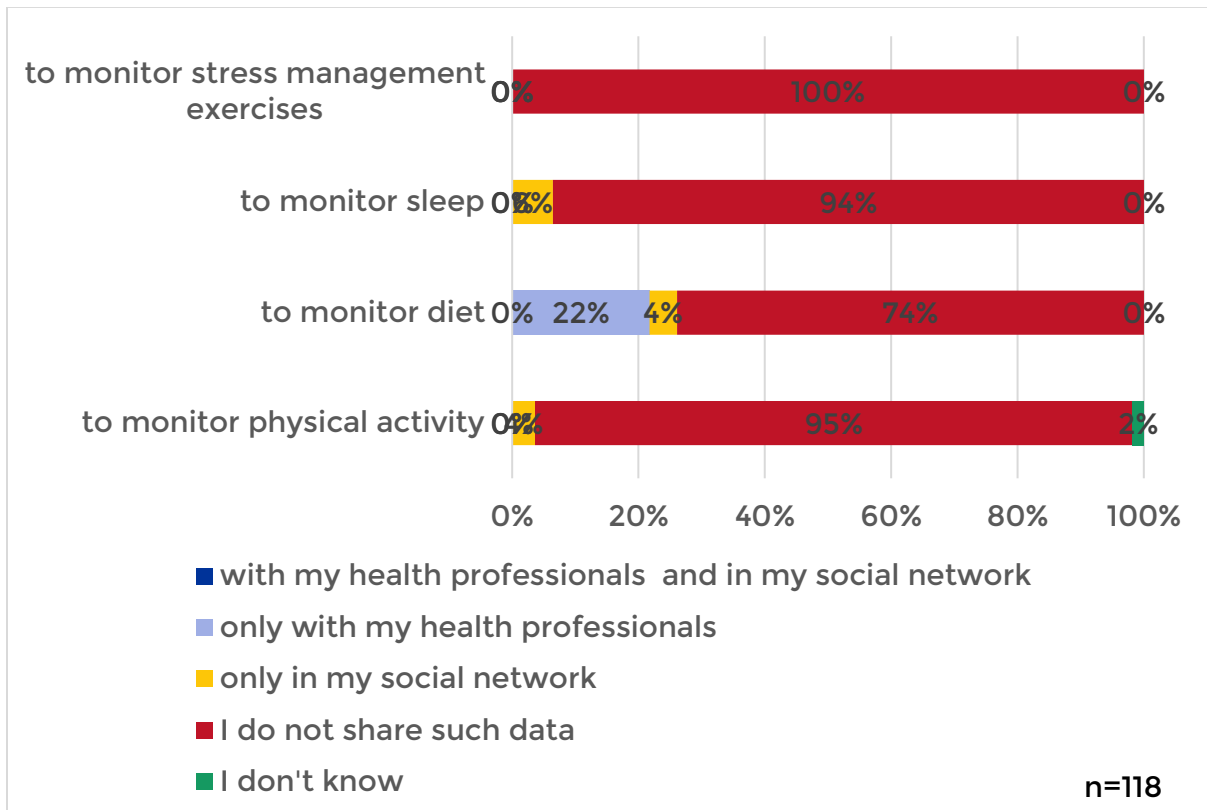


Figure 4.6.5: Sharing data from wearables or apps



Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



## 4.7. Key findings

### **Alpine landscapes, health & nature-based health tourism**

- The sample is not representative of the major source countries of alpine tourism destinations and is skewed towards young, women living in Switzerland. The results should therefore be taken in context of the sample.
- The sample possesses a relatively high average nature relatedness score of 3.76; this may indicate a high affinity to nature-based health tourism.
- 94.3% of respondents either agreed or strongly agreed that natural environments provide health benefits, whereas 92.1% agree or strongly agree that the Alps are a good health tourism destination. The support for these two statements suggests a strong basis for the development of nature-based health tourism products.
- The alpine characteristics perceived by the respondents to be beneficial to human health are fresh air/low fine dust concentration, blue spaces and alpine landscapes.
- An average score of 3.7 in the health locus of control scale indicates that, on average, respondents tend to somewhat agree that their own behaviour is responsible for their state of health. The respondents are not resigned to their state of health, but think that their behaviour, such as going on a nature-based health holiday, may have an influence on their health.
- In the sample, the conditions with high prevalence and high interest in treating the condition during a nature-based health holiday are: tension/stress, fatigue and lack of physical activity. These two conditions are also the ones that respondents would be willing to treat preventatively on a nature-based health holiday and tourism destinations should consider these two conditions when developing nature-based health tourism products.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



### **Needs & expectations of potential tourists**

- The preferred type of accommodation is a specially designated health hotel, this could be similar to the case of Hohe Tauern Health, where a university institute regularly tests the hotels. 20% of respondents do not think that the type of accommodation is important. Clinics are not the preferred accommodation for nature-based health tourism.
- The top three factors for decision-making were good price performance ratio (85%), quality of accommodation (77%) and health benefit of surrounding natural landscape (72%).
- The top three medical factors were the personal aptitude of staff (80%), quality of medical care (73%) and certified medical and therapeutic expertise of staff (71%).
- The three most important treatments, courses, applications or complementary activities were course offerings in sports and exercise (72%), massages (63%) and courses in relaxation (58%).
- While respondents expressed the highest willingness to pay completely by themselves for spa treatments (49%), massages (44%), course offerings in sports and exercise (35%) and cosmetics/beauty offers (35%).
- Respondents seem to be expecting health insurances to partly pay for medical services such as physiotherapy. Any nature-based health tourism project that is based on medical services would therefore need to obtain health insurance support.
- Respondents trust friends and relatives and doctors the most when planning a nature-based health holiday. need to incorporate doctors and self-help groups in marketing strategies

### **Technology**

- As not many respondents technology such as wearables and apps to plan or monitor their health, technology should be neglected in the development of nature-based health tourism products. As the next generation will be much more tech savvy and sharing data may become the norm. Sharing data while on a nature-based health holiday with insurance company (particularly the improvement of particular measurements) may in the future lead to a reduction in health insurance premiums.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815





Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



## 5. Strengths and limitations of the study

The insights generated through this study are important for distributing experiences (made in different case studies) and needs of tourism destination not currently involved in nature-based health tourism. They are also relevant for understanding the potential demand-side of nature-based health tourism. In particular, they contribute to a better understanding of the needs, expectations and willingness to pay of potential nature-based health tourists. These insights form an important basis for supporting tourism professionals in developing innovative products for nature-based health tourism.

However, there are also some limitations to this study that need to be considered:

Firstly, the questionnaire was mainly distributed online with social media platforms such as Facebook and LinkedIn as the main distribution channels. The distribution via electronic channels might be the reason why younger age groups are better represented in the sample. As the sampling was a form of convenience sampling, the sample is not representative of the wider population. With a limited budget, it is not possible to obtain a representative sample of the source market of alpine tourism destinations. However, the exploratory study provides clues for the initial development of nature-based health tourism products. Detailed market studies will have to be undertaken considering the characteristics of the particular product.

Secondly, the respondents of this questionnaire did not answer questions about an actual nature-based health tourism experience. Instead, they were asked to assess their preferences based on the hypothetical situation of taking a nature-based health holiday. It has to be considered that respondents' actual behaviour and preferences when on a nature-based health holiday might diverge from their self-assessment of hypothesized preferences and behaviour.

Thirdly, it should be considered that the data presented in this report comes from a self-assessment of the respondents. This can be problematic in some instances, for example, when respondents have to assess their existing health issues. In such cases, it is possible that respondents report to suffer from a condition without having received proper diagnosis from a health professional.

Similar to the online questionnaire, the stakeholders interviewed in the two case studies Viamala and the Lower Engadine were asked hypothetical questions regarding the development of nature-based health tourism. Experiences of actual implementation projects who are in the process of developing nature-based health tourism (as opposed to destinations with already existing products - such as the

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



existing case studies analysed in the work package) would be beneficial for the development of guidelines and toolkits.

Nevertheless, this exploratory study provides some key insights for destinations wanting to develop nature-based health tourism, while there is certainly the need to delve deeper into the needs and expectations of a sample that is less skewed.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



## 6. Literature

Alvarsson, J., Wiens, S. & Nilsson, M. (2010). Stress Recovery during Exposure to Nature Sound and Environmental Noise. *International journal of environmental research and public health*, 7(3), 1036-1046. doi:10.3390/ijerph7031036.

Barton, J. & Pretty, J. (2010). What is the Best Dose of Nature and Green Exercise for Improving Mental Health? A Multi-Study Analysis. *Environmental science & technology*, 44(1), 3947-3955. doi:10.1021/es903183r.

Becker, H. (1981) *Das Badhotel Tamina in Bad Ragaz*. Rorschach: Löpfe-Benz.

Berchtesgadener Land Tourismus. (n.d.). Ergebnisse der Jungbrunnen BERG Studie. Retrieved June 10, 2019, from <https://www.bad-reichenhall.de/vital-in-der-alpenstadt/jungbrunnen-berg-studie/jungbrunnen-ergebnisse>

Berchtesgadener Land Tourismus (2010). BGL-Strategiepapier2020. Unpublished.

Berchtesgadener Land Tourismus (n.d.) Ihr Programm zum Stressabbau - DurchatemZeit. Retrieved June 4, 2019, from <https://www.bad-reichenhall.de/vital-in-der-alpenstadt/durchatemzeit/programm>

Bott, A. (2018). SalzburgerLand wirkt-Eine Urlaubsdestination geht neue Wege im Gesundheitstourismus. In P. Heise & M. Axt-Gadermann (Eds) *Sport-und Gesundheitstourismus 2030* (pp. 245-258). Springer Gabler, Wiesbaden.

Carayannis, E. G., Grigoroudis, E., Campbell, D. F., Meissner, D., & Stamati, D. (2018). The ecosystem as helix: an exploratory theory-building study of regional co-opetitive entrepreneurial ecosystems as Quadruple/Quintuple Helix Innovation Models. *R&D Management*, 48(1), 148-162.

Casanova, C. (2015). Die Forschung belegt: Heilwasser wirkt. Retrieved on May 28, 2019 from <http://www.mineralquellen-scuol.ch/pdf/PR-Seiten-Wasser.pdf>

De Vries, S., Verheij, R., Groenewegen, P. & Spreeuwenberg, P. (2003). Natural environments - Healthy environments? An exploratory analysis of the relationship between greenspace and health. *Environment and Planning A*, 35(10), 1717-1731. doi:10.1068/a35111.

Departement für Justiz, Sicherheit und Gesundheit, Kanton Graubünden. (2017). Graubünden will sich durch attraktive Angebote im Gesundheitstourismus positionieren. Retrieved June 6, 2019, from <https://www.gr.ch/DE/Medien/Mitteilungen/MMStaka/2017/Seiten/2017091101.aspx>

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Didaskalou, E. A. & Nastos, P. (2003). The role of climatic and bioclimatic conditions in the development of health tourism product. *Anatolia*, 14(2), 107-126.

Donovan, G., Butry, D., Michael, Y., Prestemon, J., Liebhold, A., Gatzolis, D. & Y Mao, M. (2013). The Relationship Between Trees and Human Health. *American journal of preventive medicine*, 44(2), 139-145. doi:10.1016/j.amepre.2012.09.066.

Engadin Scuol Zernez (2019a, January 22). Wissenswertes zum Mineralwasser. Retrieved on May 25, 2019 from <https://scuol-zernez.engadin.com/de/unterengadin/mineralwasser/wissenswertes-zum-mineralwasser>

Engadin Scuol Zernez. (2019b). Gluten-free and lactose-free holidays. Retrieved on June 15, 2019 from <https://scuol-zernez.engadin.com/en/wellness-health/gluten-free-and-lactose-free-holidays>

Ferring, D. & Filipp, S.H. (1989). Der Fragebogen zur Erfassung gesundheitsbezogener Kontrollüberzeugungen (FEGK). *Zeitschrift für Klinische Psychologie*, 3, 285-289.

Ferring, D. (2003). Kurzbeschreibung und Forschungsbericht zum „Fragebogen zur Erfassung gesundheitsbezogener Kontrollüberzeugungen“ (FEGK). Luxembourg: University of Luxembourg.

Gaisberger, M., Šanović, R., Dobias, H., Kolarž, P., Moder, A., Thalhamer, J., Selimovic, A., Huttegger, I., Ritter, M. & Hartl, A. (2012). Effects of ionized waterfall aerosol on pediatric allergic asthma. *Journal of Asthma*, 49(8), 830-838.

Gästeinformation Scuol (n.d.) Die Mineralquellen von Scuol und Umgebung. Unpublished.

Glatzel, H. (2017). Chance Gesundheitstourismus. Ein Praxisleitfaden für Oberfranken und die Nordoberpfalz. IHK für Oberfranken Bayreuth. IHK Regensburg für Oberpfalz / Kelheim. Retrieved from [https://www.bayreuth.ihk.de/upload\\_ihk\\_alless01/Chance\\_Gesundheitstourismus\\_Ein\\_Praxisleitfaden\\_364110.pdf](https://www.bayreuth.ihk.de/upload_ihk_alless01/Chance_Gesundheitstourismus_Ein_Praxisleitfaden_364110.pdf)

Grahn, P. & Stigsdotter, U. K. (2003). Landscape planning and stress. *Urban Forestry and Urban Greening*, 2(1), 1-18. doi:10.1078/1618-8667-00019

Grand Resort Bad Ragaz (2019) *150 Jahre Quellenhof*. Grand Resort Bad Ragaz.

Graubünden Ferien. (2019a, 06 30). Gesundheitsferien in der Nationalparkregion - gluten- und laktosefrei. Retrieved from <https://www.graubuenden.ch/de/news-tipps/2016/06/gesundheitsferien-nationalparkregion-gluten-und-laktosefrei>

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Graubünden Ferien. (2019b, 06 30). Viamala-Schlucht. Retrieved from <https://www.graubuenden.ch/de/regionen-entdecken/viamala/viamala-schlucht>

Graubünden Ferien. (2019c, 06 30). Mineralbad Andeer. Retrieved from <https://www.graubuenden.ch/de/regionen-entdecken/viamala/mineralbad-andeer>

Großglockner-Hochalpenstraßen-Aktiengesellschaft (n.d.) WasserWelten Krimml. Retrieved June 3, 2019 from <https://www.wasserwelten-krimml.at>

Guest, G., MacQueen, K. M., & Namey, E. E. (2011). Applied thematic analysis. Sage Publications.

Hartl, A. (2010). Krimml Wasserfälle Therapie von Asthma bronchiale. Unpublished manuscript.

Hartl, A. J. (2010). Krimml Wasserfälle. Therapie von Asthma Bronchiale. Paracelsus Medizinische Privatuniversität. Retrieved from [http://www.wasserfalltherapie.at/docs/2010\\_pmu-studie.pdf](http://www.wasserfalltherapie.at/docs/2010_pmu-studie.pdf)

Hartl, A., Pichler, C., Lyman, R. & Steckenbauer, G. C. (2016). Gesundheitstourismus in den Alpen. Natur als Basis wirksamer Anwendungen. In T. Bieger, P. Beritelli & C. Laesser (Hrsg.) Gesellschaftlicher Wandel als Herausforderung im Alpinen Tourismus. Schweizer Jahrbuch für Tourismus 2015/2016 (p. 27-45). Erich Schmidt Verlag.

Heilstollen Berchtesgaden GmbH. (2019, 30 06). Salzheilstollen. Retrieved from <https://www.salzheilstollen.com/entspannend/vormittagseinfahrt-salzluf-pur/>

Hohe Tauern Health. (n.d.) Inhalations-Therapie bei Allergie und Asthma. Retrieved June 6, 2019, from <https://www.hohe-tauern-health.at/de/wirkung>

Kolarz, P., Gaisberger, M., Madl, P., Hofmann, W., Ritter, M., & Hartl, A. (2012). Characterization of ions at Alpine waterfalls. Atmospheric Chemistry and Physics, 12(8), 3687.

Land Salzburg (n.d.) Tourismusstatistik: Zahlen, Fakten und Daten. Retrieved June 5, 2019, from [https://www.salzburg.gv.at/statistik\\_/Seiten/statistik-tourismus.aspx](https://www.salzburg.gv.at/statistik_/Seiten/statistik-tourismus.aspx)

Lang, J. (2009). *Geschichte von Bad Reichenhall*. Schmidt.

Lang, J. (n.d.) Stadtgeschichte: Kurzer Abriss der Bad Reichenhaller Geschichte. Retrieved June 3, 2019, from <http://www.stadt-bad-reichenhall.de/de/stadtgeschichte/>

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Leu, S. (2012). Die Wirkung von Quellwasser der Lischana-Mineralquelle auf die gastrointestinale Motilität von gesunden Probanden. Unpublished Dissertation at the University Clinic Basel.

Lüdi, N. (2009). Die Zukunft der Natur. Wie sich die Beziehung von Mensch und Natur verändern wird. Gottlieb Duttweiler Institut. Retrieved from [https://www.ub.unibas.ch/digi/a125/sachdok/2009/IBB\\_1\\_005027821.pdf](https://www.ub.unibas.ch/digi/a125/sachdok/2009/IBB_1_005027821.pdf)

Mariotti, A. (2015). The effects of chronic stress on health: new insights into the molecular mechanisms of brain-body communication. *Future Science OA*, 1(3), 1-6. doi:10.4155/fso.15.21

Mayer, F. S., Frantz, C., Bruehlman-Senecal, E. & Dolliver, K. (2009). Why Is Nature Beneficial? The Role of Connectedness to Nature. *Environment and Behavior*, 41(5), 607-643. doi:10.1177/0013916508319745.

Mühlethaler, J. (2009, October 2). Quellen des Wohlbefindens. *NZZ*.

Nisbet, E. K. & Zelenski, J. M. (2013). The NR-6: a new brief measure of nature relatedness. *Frontiers in Psychology*, 4(813). doi:10.3389/fpsyg.2013.00813.

Nisbet, E. K. L., Zelenski, J. M., & Murphy, S. A. (2009). The Nature Relatedness Scale: Linking individuals' connection with nature to environmental concern and behaviour. *Environment and Behavior*, 41(5), 715- 740. doi:10.1177/0013916508318748

Rowley, J. (2012). Conducting research interviews. *Management research review*, 35(3/4), 260-271.

Park, B., Tsunetsugu, Y., Kasetani, T., Kagawa, T. & Miyazaki, Y. (2009). The physiological effects of Shinrin-Yoku (taking in the forest atmosphere or forest bathing): Evidence from field experiments in 24 forests across Japan. *Environmental health and preventive medicine*. 15(1). 18-26. doi:10.1007/s12199-009-0086-9.

Pichler, C., Salletmaier, C., Bauernberger, L., Haas, W., Lehofer, B., Kuhn, W., Botts, A., Steckenbauer, C. & Hartl, A. (2017). The Alpine Health Region Salzburg-an evidence-based health tourism approach for the valorization of natural resources within and outside protected areas. In *Salzburger Nationalparkfonds. Conference Volume. Paper presented at 6th Symposium for Research in Protected Areas, Salzburg. (497 - 499). Mittersill: Salzburger Nationalparkfonds.*

Prosegger, J., Huber, D., Grafetstätter, C., Pichler, C., Weisböck-Erdheim, R., Iglseider, B., Wewerka, G. & Hartl, A. (2019). Effects of moderate mountain hiking and balneotherapy on community-dwelling older people: A randomized controlled trial. *Experimental gerontology*, 122, 74-84.

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions  
ASP815



Salzburger Land Tourismus. (n.d.) Krimml/Hochkrimml - Nationalparkgemeinde an den Krimml Wasserfällen. Retrieved June 15, 2019 from <https://www.salzburgerland.com/de/krimml-hochkrimml/>

SalzburgerLand Tourismus (n.d.) Alpine Gesundheitsregion SalzburgerLand: Das SalzburgerLand wirkt. Press release.

Schalber, C., Zehrer, A. & Schobersberger, W. (2011). Product Development for Health Tourism in Alpine Regions. *Journal of Tourism Challenges and Trends*, 4(2), 13-32.

Squarra, G., Kus, S., Immich, G., Lödermann, S., & Schuh, A. (2015). „DurchatemZeit“-Entwicklung, Durchführung und Evaluierung eines 7-tägigen Präventionsprogrammes zur Entschleunigung, durchgeführt am Kurort Bad Reichenhall. *Das Gesundheitswesen*, 77(08/09), 713.

Steckenbauer, G. C., Tischler, S., Hartl, A., & Pichler, C. (2017). Destination and product development rested on evidence-based health tourism. *The Routledge handbook of health tourism*, 315-331.

Steckenbauer, G. C., Weisböck-Erdheim, R., Tischler, S., Pichler, C., & Hartl, A. J. (2019). Nutzung und Inszenierung natürlicher Ressourcen im Gesundheitstourismus. In D. Wagner, M. Schobert, G.C. Steckenbauer (Eds) *Experience Design im Tourismus-eine Branche im Wandel* (pp. 83-102). Springer Gabler, Wiesbaden.

TESSVM (2019, May 23). Projekt zur Mineralwasserpositionierung. Retrieved June 15, 2019 from <https://scuol-zernez.engadin.com/de/projekt-zur-mineralwasserpositionierung>

TMB Tourismus-Marketing Brandenburg GmbH (2018). *Gesundheitstourismus in Brandenburg. Leitfaden.* Retrieved from [https://www.healthcapital.de/files/documents/Publikationen/Leitfaden\\_Gesundheitstourismus.pdf](https://www.healthcapital.de/files/documents/Publikationen/Leitfaden_Gesundheitstourismus.pdf)

Trendbüro & Kantar TNS (2017). *Werte-Index 2018: Natur und Familie sind den Deutschen jetzt wichtiger.* Retrieved June 12, 2019 from <https://www.kantartns.de/presse/pdf/presse/2017-11-21-presseinformation-werte-index-2018.pdf>

United Nations (2019). *World Urbanization Prospects: The 2018 Revision. Key Facts.* Retrieved from <https://population.un.org/wup/Publications/Files/WUP2018-KeyFacts.pdf>  
Engadin Samnaun Val Müstair. (2019, 06 30). *Mineralwasserweg Scuol.* Retrieved June 24, 2019 from

Healing Alps:

Tourism based on natural health resources  
as strategic innovation for the development  
of Alpine regions

ASP815



<https://maps.engadin.com/de/tour/themenweg/mineralwasserweg-scuol/23903397/#>