



Master thesis

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A study on tea drinking, behavior, and
attitudes in the Nordic countries

Health and Lifestyle (60 credits)

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Abstract

Tea is known worldwide for its unique taste and health benefits to the human body. Recent studies on tea have proven that many of its components have significant beneficial effects on the human body. The Nordic region has the highest well-being index globally but is also threatened by non-communicable diseases, mental health, and an aging population. This master's thesis aims to investigate the tea drinking behavior and habits of the Nordic population and the Nordic population's perceptions and attitudes towards the relationship between tea drinking and health. Based on sociological theory, data were collected using standardized anonymous online questionnaires, and the data were analyzed by the social science software SPSS. This study showed that more than 80% of the participants enjoy and have a habit of drinking tea; the majority of the participants have a positive attitude towards the relationship between tea drinking and health, as well as more than half of the study participants agree that drinking tea is a healthy lifestyle. This study offers new ideas for optimizing the health of the Nordic population.

Keywords: attitude, behavior, health, lifestyle, Nordic countries, tea drinking

Preface

Time flies and it feels like it's only been a short time since I started studying with you all and I'm already nearing graduation. It is with a sense of sadness that I would like to thank you all. I want to thank my supervisor Linus Andersson for his guidance on my thesis and my examiner Martin Danielsson for his comments. I would also like to thank the other professors who have taught me knowledge in different courses. I would like to thank all my classmates for being so lovely, patient, hardworking and helpful.

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Chapter 1: Introduction

People are more eager to live a healthy lifestyle due to the advancement of globalization, the accelerated pace of people's lives, the deterioration of the natural and ecological environment, and the harmful effects of contemporary industrial civilization on the environment and people's lives (Qinghong, 2012).

Tea is a non-alcoholic beverage consumed by millions of people around the world (Senthil Kumar et al., 2013). Tea distinguishes out as a natural health and wellness beverage with its unique style of consumption as people increasingly appreciate and pursue the popular notion of healthy and green living (Qinghong, 2012). Free radical scavengers are popular in healthy meals (Priy et al., 2015).

Several research studies, epidemiological studies, and analyses have shown that tea and its active polyphenol components have many beneficial effects on health, including preventing diseases such as cancer, diabetes, arthritis, cardiovascular disease, obesity et al (Hayat et al., 2015). With new research in scientific journals or periodicals, the evidence supporting the health benefits of tea consumption is growing. For example, Potential therapeutic properties of green tea polyphenols in Parkinson's disease (Pan et al., 2003); Tea consumption and risk of dementia: a prospective cohort study of 377,592 UK Biobank participants (Hu et al., 2022); Chamomile tea may prevent hyperglycemia and diabetic complications et al (Kato et al., 2008).

The Nordic countries have always been the envy of the rest of the world regarding their well-being. Although the Nordic countries have an active welfare policy, the health disparities in the Nordic countries are growing despite this (Groholt et al., 2018). Public health encompasses several aspects of health: physical and mental, and social. In 2019, approximately 16% of adults in Denmark will be defined as obese, increasing from 13% in 2010. According to The EU Statistics on Income and Living Conditions, nearly half (49%) of adults in Finland reported having at least one chronic disease in 2019, much higher than in the EU. Other Nordic countries have the same obesity and chronic disease problems (European Union Statistics on Income and Living Conditions - Eurostat, 2011). In a report by the Swedish Public Health Agency, self-reported stress or anxiety among the Swedish population (16-84 years) has increased in the last decade, from 31% to 42%

in 2011. According to data from the State of the Nordic Region 2020, cardiovascular disease remains the leading cause of years of healthy life lost in Finland and Sweden. In Denmark, Finland, and Iceland, cancer was the main factor in the burden of disease in 2016 (State of the Nordic Region, 2020). According to several recent studies, mental health problems are increasing across the Nordic countries, especially among young people and women (Andreasson, 2018; Eriksson et al., 2019; Gustafsson & Lohmann, 2018).

Beverages are essential for disease prevention and health promotion. An unbalanced diet can have serious long-term effects on health, such as circulatory diseases and cancer, which are significant causes of premature death (Afshin et al., 2019). Tea, as a globally popular beverage, also affects the health of the Nordic population.

There are still debates concerning the benefits and risks of tea, and more attention has to be devoted to the negative effects of tea on human health (Hayat et al., 2015). In the present day, because of the different perceptions and drinking habits of tea around the world, and the different understanding of tea culture, the attitude between tea and health can be different.

The research aimed to study the tea-drinking behavior and habits of the inhabitants of the Nordic countries, as well as the perceptions and attitudes of the Nordic population on the relationship between tea drinking and health, lifestyle, and well-being.

Chapter 2: Background

People worldwide have seen tea's relaxing and refreshing effects, and numerous scientific studies have proven that drinking tea helps with health and positively affects the body and mind. According to the World Happiness Report 2022, all the Nordic countries are among the top ten happiest countries in the world (Helliwell et al., 2022). Although the Nordic countries have consistently ranked high in subjective well-being and life satisfaction, many people in Denmark, Finland, Iceland, Norway, and Sweden still feel that they are struggling or suffering (i.e., the opposite of happiness). The most closely associated with struggle and distress is poor general health, followed by poor mental health (Andreasson & Birkjær, 2018). In 2018, Finland (18.8%), Norway (18.5%), and Sweden (18.3%) had higher levels of mental ill-health than the average of the 17.3%. The Nordic countries have been working to promote health in their countries, generating innovative knowledge in all areas of life to promote health and quality and improve the lives of each country's citizens (*State of the Nordic Region*, 2020).

Classification of tea

Tea is the tea tree's young shoots and tender leaves that are processed to make a beverage. Depending on the type of processing, and in particular, the degree of fermentation, tea is usually divided into three basic types: green tea (unfermented), oolong tea (semi-fermented), and black tea (fully fermented). In addition, depending on the combination of the processing method and the characteristic qualities of the tea made, tea is further divided into six types, namely White tea, Green tea, Yellow tea, Black colored tea, Black tea, and Oolong tea (Pan et al., 2022). Green tea is a non-fermented tea, usually with a light aroma, and there is more research into its composition. Black tea is a near fully fermented, floral, and honey-flavored, deep red liquid and is one of the most popular types of tea. Oolong tea is a semi-fermented tea that has been fermented to produce a tea with a strong aroma. Other types, such as white tea, black colored tea, and yellow tea, are all classified according to their different levels of fermentation and color (Pan et al., 2022).

In addition, as the tea process continues to change, many new categories have emerged in modern times, such as floral, fruit, herbal, and other blends and derivative teas. Blended tea refers to the fusion of tea with another tea or other substance, combining different varieties of tea/herbs to produce a

unique flavor and different health effects. Herbal tea is the consumption of plants with medicinal properties as tea. Derivative teas are non-tea-derived beverages related to tea or beverages called tea, which can be made from tea leaves or extracts from tea leaves that have lost their tea form (Pan et al., 2022). Black tea has become the most popular globally due to its rich and smooth taste. It accounted for 66% of the world's tea production in 2010. The world's top black teas are mainly Keemun Black Tea from China, Darjeeling Black Tea from India, Assam Black Tea, and Ceylon Black Tea from Sri Lanka (Jianping et al., 2011).

History of tea drinking in the EU countries and the Nordic region

In the eighteenth century, tea was one of the essential commodities in the Eurasian trade, arriving onboard ships from Guangzhou in China to places such as Gothenburg and Copenhagen before spreading to Europe. That one-third of the tea imported from China to Europe in the eighteenth century on board ships of the Danish Asiatic Company (DAC) and the Swedish East India Company (SEIG) (Zhang Beichen, 2019). In Northern Europe, where tea drinking was primarily confined to the social elite and coffee consumption was more common than tea, tea consumption has always been relatively low in Northern Europe. Here, a figure that must be mentioned is the Swedish naturalist Linnaeus; Linnaeus is the founder of modern biological taxonomy or systematics. In order to promote the economic development of Sweden, Linnaeus imported tea plants from China to Sweden for cultivation and successfully planted a tea plant (Zhang Hanliang, 2011).

Coffee is the main daily drink in Scandinavia, but in recent years the love of tea has also become more popular. Tea drinking became widespread in Sweden from the 1850s and it was not until the advent of bagged tea that tea became popular in Sweden. Most Nordic inhabitants prefer black tea and like it with honey, sugar and milk (Jianping et al., 2011).

There are various types of tea available in Sweden, but black tea is the most popular. In recent years, green tea has also become accepted and loved. In Sweden, many people like to drink tea with breakfast, as well as in the evening. In the afternoon, it is generally "coffee time" and the Swedes drink tea with an emphasis on taste (Jianping et al., 2011). The main sales channel

in the Finnish tea market is the supermarket, where black tea is the main product, with only about 10% of green tea and a variety of fruit-flavoured teas. As in other European tea-consuming countries, bagged tea accounts for about 70% of tea sales in Finland. The rest comprises various loose teas, such as Darjeeling and Assam from India, Dian Hong from China, "Malinin" from Kenya, and some blended teas from importers (Zhou Guofu,2019). In recent years, the tea culture in Denmark has gradually evolved, and the number of tea shops has increased, with tea becoming a common beverage among the Danish populace((Jianping et al., 2011). The majority of Danish tea imports come from India, Sri Lanka, China, and Japan to a lesser extent, including black, green, white, and oolong teas and some flavored teas with distinctive flavors. In addition to traditional teas, Denmark also has a popular flower and fruit tea made from dried fruit and flower petals, which has been enjoyed for centuries by the elderly and children and by women as a beauty product (Jianping et al., 2011).

It is said that Cardinal Mazarin, the grandfather of King Louis XIV of France, relied on tea to relieve the symptoms of draughts. As a result of the royal initiative, tea became popular among the aristocracy. The Marquise de la Sabliere began experimenting with the addition of milk to tea during the time of Louis XIV, innovating the method of drinking tea(Jianping et al., 2011). Most French prefer to drink tea outside in tea rooms and restaurants, with a preference for black teas and more scented or flavored teas. Nearly half of the teas sold in France are 'spiced teas' with mint, chocolate, or floral notes(Zhou Guofu,2019).

Poland is a latecomer to the tea consumer market, having grown over the decades since the 1970s, and is now one of the world's leading tea importers and consumers and one of the four largest tea consumers in Europe. The famous tea market in Poland is black tea, while some people also love green tea. Bagged teas are becoming increasingly popular, accounting for around 7% of the tea market, and more and more 'fruit teas' are becoming increasingly popular with Poles (Jianping et al., 2011).

Germans see tea as a healthy and tasty drink, with black tea making up 80% of the German market, followed by green tea, fruit teas, and flower teas. The preferred types of tea are loose teas, bagged teas, canned tea drinks, instant teas, and flavored teas. Tea imports come mainly from India, Sri Lanka, Argentina, Indonesia, and China. The rise and development of tea in Germany are in part due to the findings of the German medical profession.

They believe that green tea is an excellent product to prevent and cure cancer as an aid to medical treatment. Doctors often advise people to drink green tea and herbal teas. Medicinal tea uses plants with medicinal properties as tea, such as chamomile tea for stomach pains and linden flowers for fevers (Jianping et al., 2011).

Table 1: Per capita tea consumption in selected EU, Nordic countries 2007-2011. Resources from: *Tea Consumption per Capita*, 2013

Tea Consumption Per Capita						
Yearly Data	Units	2007	2008	2009	2010	2011
Belgium	kg	0.3	0.34	0.28	0.19	0.2
Bulgaria	kg	0.05	0.08	0.45	0.09	0.11
Croatia	kg	0.03	0.03	0.03	0.04	0.04
Denmark	kg	0.32	0.33	0.3	0.32	0.3
Estonia	kg	0.5	0.5	0.46	0.5	0.42
Finland	kg	0.32	0.27	0.28	0.26	0.31
France	kg	0.48	0.39	0.31	0.27	0.27
Germany	kg	1.03	1.06	0.68	0.4	0.54
Greece	kg	0.13	0.12	0.16	0.28	0.4
Iceland	kg	0.57	0.5	0.51	0.48	0.47
Ireland	kg	2.1	2.19	3.34	2.23	1.88
Italy	kg	0.11	0.12	0.13	0.13	0.11
Latvia	kg	0.48	0.43	0.41	0.39	1.01
Luxembourg	kg	0.26	0.28	0.29	0.63	0.48
Malta	kg	1.28	1.08	1.62	2.04	2.24
Netherlands	kg	1.01	1.31	0.89	0.66	0.98
Norway	kg	0.31	0.32	0.31	0.3	0.29
Poland	kg	0.59	0.63	0.99	0.96	0.92
Romania	kg	0.07	0.05	0.1	0.08	0.15
Spain	kg	0.34	0.12	0.09	0.09	0.11
Sweden	kg	0.45	0.47	0.46	0.45	0.41
World	kg	0.71	0.73	0.71	0.73	0.78

Health and lifestyle

Tea contains

Tea contains more than 700 components, including tea polyphenols, amino acids, proteins, flavonols, flavonoids, organic acids, caffeine, sugars, vitamins, alkaloids, aromatic substances, pigments, and enzymes. The chemical composition in tea includes inorganic (3.5%-7.0%) and organic (93%-96.5%) substances. The mineral elements in tea are Potassium , Magnesium, Manganese, Fluorine, Calcium, Sodium, Sulfur, Iron, Copper, Silicon, Zinc, Selenium, Etc (Pan et al., 2022).

Table 2: Ingredients in tea and benefits to the body.

According to (Pan et al., 2002 ; Serafini et al., 2011; Yashin et al., 2015; Al-Mahdi et al., 2020; Dongdong & Laitian,2007).

Ingredients in tea and benefits to the body	
Contents	Potential health effects
Potassium	Keeping body fluids balanced
Magnesium	Maintain normal glucose metabolism
Manganese	Maintaining bones
Fluorine	Protects teeth
Calcium	Helps bone development
Sodium	Balancing body fluids
Sulfur	Has an antidiarrheal effect
Iron	involved in the synthesis of haemoglobin
Copper	Prevention of anaemia
Silicon	Improve bone development
Zinc	Improve growth and development
Selenium	Boosting immunity
Nickel	Maintain normal metabolism
Polyphenols	Lowering blood lipids, antioxidants and preventing cancer.
Flavonoid	Anti-inflammatory, antibacterial and antiviral

Ingredients in tea and benefits to the body	
Contents	Potential health effects
Caffeine	Reduces tiredness and refreshes
Polysaccharid	Strengthening the body's immune system
Cellulose	Regulating the micro-ecology of the intestinal tract
Vitamin B	Maintains a healthy digestive system and skin
Vitamin C	Detoxification, Beauty
Vitamin E	Anti-oxidant/anti-ageing

The first group of essential components of tea and their functions are catechins, which are unique to tea and have a bitter and astringent taste. It can also be combined with caffeine to moderate its physiological effects on the body. Catechins have antioxidant, antitumor, blood cholesterol-lowering and blood pressure suppressing effects, and antibacterial effects (Musial et al., 2020). The second category is caffeine, which has a refreshing effect, and its bitterness is the main component of the taste of tea broth. The third category is minerals. Minerals help maintain the alkalinity of body fluids and keep healthy. The fourth category is vitamins required by the body, for example, vitamins B, C, and D (Dongdong & Laitian, 2007; ITOEN, 2020).

Laboratories worldwide have provided a wealth of information on the positive effects of tea on human health, focusing on human resistance to aging and degenerative diseases, like cardiovascular disease and diabetes, related to the oxidant / antioxidant effects. Studies have shown that tea consumption is associated with cardiovascular and metabolic enhancement. Studies on overall cholesterol status and mechanisms regulating cholesterol have shown that various tea components such as EGCG, polyphenols, and catechins can prevent or reduce the cholesterol-related time that may lead to CVD (Dufresne & Farnworth, 2001).

The polyphenols in tea, have a high antioxidant capacity, and polyphenols have significant beneficial effects on human health. The various antioxidant components in tea extracts scavenge free radicals, deplete reactive oxygen species, increase the number of antioxidants and enhance antioxidant enzyme activity(Dufresne & Farnworth, 2001). In several clinical trials, tea has shown protective effects against obesity and related metabolic disorders. Extracts from tea and its components, such as polyphenols, caffeine, and polysaccharides, have potent anti-obesity effects, including regulating

glycolipids' digestion, absorption, and metabolism. It may improve energy expenditure, prevent fat accumulation and deposition, and ultimately reduce body weight (Tang et al., 2019).

Lifestyle-related tea-drinking habits

Lifestyle refers to the characteristics of the inhabitants of an area at a particular time and place, and it includes the daily behavior and functioning of individuals in terms of work, activity, recreation, and diet (Farhud D. D. 2015). Alternatively, it can mean that lifestyle is the sum of health-related factors (e.g., tobacco, alcohol, drugs, fat, sugar, exercise) (Cockerham, 2000; Bolt, 2002).

A person can express himself or herself in different forms of practice and through multiple lifestyles (Jensen, 2007). Personal lifestyles are deeply intertwined with self-identity. Lifestyle can be understood as the material expression of personal identity (Wilska, 2002). According to the WHO, 60% of the factors associated with an individual's health and quality of life are related to lifestyle (Ziglio E et al., 2004). Diet is the most significant aspect of lifestyle and has a direct and beneficial relationship with health. Lifestyle is becoming more and more recognized as an important factor in health (Farhud D. D. 2015).

A team of 18 researchers spent seven years surveying 100,902 Chinese adults who took part in the study by administering questionnaires to determine how much tea they drank and how healthy they were. The results, published in the *European Journal of Preventive Cardiology*, concluded that habitual tea drinking might be associated with a lower risk of heart disease and longer life expectancy (Wang et al., 2020). The findings of Wang and colleagues suggest that habitual tea drinking could be considered a health-promoting overall lifestyle behavior in this study (Bianconi et al., 2020).

Several prospective studies in Asian populations have shown that regular tea drinking is negatively associated with cardiovascular disease risk and all-cause mortality. However, the same association has not been observed in studies conducted in Western countries and multi-ethnic populations (Wang et al., 2020). Given this controversial situation, it remains uncertain whether

regular tea drinking can be considered a health-promoting lifestyle (Feder, 2020).

Tea consumption was positively associated with higher levels of education and healthy lifestyles in the Netherlands, Japan, Austria, and the USA, but the results were different in Wales and Scotland. When using observational studies to examine the effects of tea on health, it is important to consider the possible confounding effects of other lifestyle and dietary factors (Yang et al., 2004).

The chemical nature of tea's numerous nutrients is gradually being revealed. After all, everything has two sides. Only a thorough understanding and scientific application of these active ingredients can truly realize tea's health-promoting properties. Despite the health benefits of tea, it is still necessary to drink tea scientifically (Zhou Guofu, 2019).

Obtaining confirmed information on the effects of tea on health-related endpoints through clinical trials is required before consistent and unquestionable recommendations on the type and amount of tea to be consumed, as well as the patterns of tea-drinking behavior that should be encouraged, can be issued (Bianconi et al., 2020).

Tea and Complementary and alternative medicine

Complementary and alternative medicine is used for medical products and practices that are not part of standard healthcare. Alternative medical systems are a broad category that encompasses entire systems of philosophy and practice that have evolved independently of traditional medicine (Willacy, 2022). The National Institutes of Health's National Center for Complementary and Alternative Medicine defines as "a diverse group of medical and health care systems, practices, and products that are currently not considered part of conventional medicine", and divides CAM models into five categories. Alternative medical systems are listed first, followed by mind-body interventions, physiologically based treatments, manipulative and body-based techniques, and energy therapies. Bio-based treatments are the third of these groups, and they include specific diets, herbal items, and other natural goods like minerals, keratin, and biologics (Nstitute Of Medicine (U.S.). Committee On The Use Of Complementary And Alternative Medicine The American Public, 2005).

As societies develop and mental illness afflicts people in many countries, many factors drive the increased use of complementary CAM. CAM therapies are increasingly used to address mental health issues (de Jonge et al., 2017). Traditional and alternative techniques are used in integrated mental health care, which provides significant financial and clinical benefits over traditional mental health care models (Lake, 2022). The current global population is aging increasingly, while many people, even many young people, are suffering from non-communicable diseases, poor health, or even mental illness. Several significant studies have shown that mental health problems such as depression and anxiety are the main reasons people use CAM (Zuess, 2003).

Many of the exact causes are driving the rise in CAM, which is increasingly being utilized to treat mental health issues. Over traditional mental health care models, integrated mental health care, which integrates traditional and alternative therapies, offers significant financial and clinical benefits (Lake, 2022). In many nations across the world, CAM provides a variety of alternative therapy techniques for health promotion. Tea was the first Chinese herbal medication used by the ancient Chinese. Tea was initially utilized as a medication in France, as well. Tea has become one of the most basic, affordable, and sophisticated herbal-based complementary and alternative medicine therapies (Pan et al., 2022).

There is no doubt that the benefits of tea consumption are numerous, but more research is needed to understand their adverse effects on human health. Excessive tea intake has been associated with three significant health risks: caffeine levels, the presence of aluminum, and the effect of tea polyphenols on iron bioavailability. Tea contains several compounds that might cause damage at pharmacological levels, vulnerable groups, and illness or polypharmacy settings (Hayat et al., 2015).

There is uncertainty and controversy in scientific research about tea as a treatment modality for CAM. The Canadian Breast Cancer Research Program's Alternative Therapies Working Group article "Unconventional Therapies for Cancer: Green Tea" argues that green tea is safe to consume in moderation. There is evidence that green tea may prevent the development of some forms of cancer. However, its action mechanisms and specific components are unknown (Kaegi, 1998). Studies of the preventive effects of green tea on oesophageal cancer have produced inconsistent results. However, the inverse relationship between tea consumption and gastric and colon cancers has been widely reported (Koo & Cho, 2004).

Although many consumers consider CAM therapies and dietary supplements safe as most are described as natural, they can cause harm directly and indirectly (Ventola, 2010)). The safety and efficacy of CAM therapies must be evaluated through rigorous scientific research to ensure that patients receive care with the most favorable risk/benefit ratio (Kantor, 2009).

Nordic Nutrition Advice and the European Food Safety Authority

The Nordic countries have been working together to develop dietary structure and nutrient intake guidelines in recent decades. According to Nordic nutrition recommendations(NNR), the available scientific evidence has to establish dietary reference values to ensure optimal nutrition and help prevent lifestyle-related diseases such as cardiovascular disease, osteoporosis, certain types of cancer, type 2 diabetes, and obesity, as well as the risk factors associated with these diseases. Experts have evaluated the association between dietary patterns, foods, nutrients, and specific health outcomes (NNR, 2012).

Current scientific evidence suggests that a diet pattern that is micronutrient and fiber intensive should be in order to promote the future health and well-being of the Nordic population. Although very little about tea in the Nordic Nutrition Recommendations Report, water, tea, coffee, and other non-energy drinks are often excluded from calculated intakes, they may be significant sources of certain minerals and micronutrients (NNR, 2012).

Green tea is recommended in the NNR 2012 report among the food sources with antioxidant properties. Moreover, tea may be for subpopulations at increased risk of IDA. As well as tea may also contribute significantly to the intake of manganese and fluoride ions (NNR, 2012).

According to the European Food Safety Authority (EFSA), Manganese may occur in various oxidation states, with Mn(II) being the most common in biological systems. Manganese exposure in the general population comes mostly from food. The content in food varies, although it is usually less than 5 mg/kg (Scientific Committee on Food, 2006). Tea has also been discovered to have high manganese levels. Manganese levels in tea can range from 0.4 to 1.3 milligrams per cup (World Health Organization, 2004). Adult dietary intakes have been estimated to be 2 to 9 mg Mn/day (World Health Organization, 2004). Tea drinking may play a significant role.

Chapter 3: Problem definition and aim

Problem definition

Tea drinking is a popular lifestyle in many countries, and tea is also a promising dietary ingredient whose components show many health functions (Tang et al., 2019). In Scandinavia, health trends are an ongoing trend. As health and wellness trends increase during the pandemic, consumers are increasingly concerned about the ingredients of the products they choose (*Tea in Denmark, 2022*). However, there is a knowledge gap and relatively little research on lifestyle factors and tea drinking among people in Nordic countries. Exploring new findings in this area and understanding the tea-drinking behavior and habits of the Nordic residents, and the perception of the relationship between tea and health provides new ideas for optimizing the health of the Nordic residents.

Aim

The aim of this Master's thesis is to investigate the Nordic population's tea drinking behavior and habits, as well as the perceptions and attitudes of the Nordic population on the relationship between tea drinking and health, lifestyle, and well-being.

In order to be able to answer this aim, the following three research questions are proposed.

1. What are the tea drinking habits and behaviors of the inhabitants of the Nordic region?
2. How do the Nordic inhabitants perceive the relationship between tea drinking and health, and what are their attitudes?
3. How do the Nordic inhabitants perceive the link between tea drinking and lifestyle and well-being?

Chapter 4: Theoretical Framework

Health behavior

People in many different places drink tea because they are aware of the positive effects on the body. Tea drinking was first used for therapeutic purposes in China and France, and many people now consider it a healthy habit. Individual, collective, and organizational activities and their drivers, connections, and repercussions, such as social change, policy formation, implementation, enhanced coping abilities, and improved quality of life, are all examples of health behavior (Parkerson et al., 1993). This is comparable to Gochman's working definition of health behavior, which encompasses observable, overt acts and mental events and feeling states that can be recorded and assessed (but his definition stresses the person). He defines "health behaviors" as "those personal attributes such as beliefs, expectations, motivations, values, perceptions and other cognitive elements; personality traits, including affective and emotional states and characteristics; and overt behavioral patterns, actions, and habits associated with health maintenance, health recovery, and health improvement." (Gochman, 1988).

Health behaviors comprise distinctive lifestyles based on socioeconomic status, age, gender, race, and other social variables. These patterns are levied in a top-down process of socialization and experience that makes people aware of the range of choices available to individuals and the protocols of socially determined choices (Glanz et al., 2008). Health behavior change is our best hope for reducing the worldwide burden of preventable disease and death. People choose their lifestyles, but usually, their choices are aligned with the SES and other structural variables that apply to them (Cockerham et al., 2019). Health behaviors are defined as activities that individuals engage in to maintain or enhance their health, prevent health problems or achieve a positive body image. This definition of health behavior is not limited to the involvement of healthy people are trying to maintain their health. For most people, their health behaviors are primarily aimed at maintaining their health and prolonging their lives (Cockerham, 2013a). Health-promoting behaviors and lifestyles are common in advanced societies.

Kasl and Cobb define three categories of health behaviors. 1. Preventive health behaviors include any action that a person who does not yet exhibit

any symptoms of illness engages in intending to ward off or protect themselves from disease. 2. Illness-acting behavior: any action undertaken by a person who feels he or she is unwell in order to assess their health and find appropriate treatments (Kasl & Cobb, 1966). 3. disease-acting conduct refers to any action that a person who feels unwell and wants to get better engages in to improve their health. Receiving treatment in a medical facility, engaging in various dependent behaviors, and enjoying a degree of relief from the demands of day-to-day life are all components of this type of care (Kasl & Cobb, 1966). The study explores the tea-drinking habits and behavior of people in the Nordic region and seeks to understand the perceptions of this health behavior.

Attitudes

As mentioned earlier, many people's tea-drinking behavior is based on the perception that drinking tea affects their health and creates an attitude towards tea drinking. A person's attitude can be defined as an individual's positive or negative evaluative response to a person or thing, which is usually rooted in the individual's beliefs and expressed in the individual's feelings or behavioral tendencies (Eagly & Chaiken, 2005). The most common characteristics and definitions of an attitude are a conscious or unconscious state of mind, a principle, opinion, emotion, and a preference for an action or activity. The agency of attitudes involves three dimensions: affect, behavioral intention, and cognition. That is the ABC agency of attitudes. Attitudes are formed by accumulated experience after specific experiences in social life, are social, and are influenced by social circumstances and relationships. The specificity of attitudes is expressed in the stable psychological disposition of individuals towards specific people, ideas, or things. By specific, the researcher means specific attitudinal objects. (Altmann, 2008).

Attitudes change due to perceptions, and persuasive news leads to positive reactions. Changes in source credibility directly impact people's confidence, as people are more likely to believe their cognitive response to a message if it comes from a highly credible source. This high level of confidence leads to more positive attitudes if the recipient's cognitive response is favorable (e.g., strong arguments) but leads to more negative attitudes if the recipient's cognitive response is unfavorable (e.g., weak arguments) (Bohner & Dickel, 2011). Attitudes influence information processing, and the combination of a person's winter to select high-quality information and a persistent bias in attitudes towards perceived information quality may lead to selective

exposure to information. Attitudes influence behavior. Research on attitudes as precursors to behavior suggests that implicit attitudes predict spontaneous, less controllable behavior, whereas explicit measures of attitudes predict deliberate, more controllable behavior. Together, implicit and explicit measures of attitudes can improve the overall prediction of behavior (Bohner & Dickel, 2011).

Lifestyle

Lifestyle is related to the activities of an individual, where a person's actions, preferences, and behaviors are reflected in their behavioral patterns or reacted to in the person's lifestyle (Farhud, 2015). A lifestyle is a pattern expressed through activities, interests, and beliefs (Berzano & Genova, 2015). Views on health, politics, and religion are examples of lifestyles.

Lifestyles are also used to refer to the differences in levels of behavior that exist within a culture. Historically, the lifestyles that individuals chose to live depended on their position in the social hierarchy. However, as social history developed, people's living standards increased, many people were emancipated, and lifestyles began to separate from the social order. They became more dependent on other factors such as personal tastes and preferences, location of residence, and economic status (Sharlamanov & Petreska, 2019).

Personal lifestyles and self-identity are intricately intertwined. Lifestyle is the material manifestation of an individual's identity (Wilska, 2002). Lifestyle is intertwined with personal habits, goals, and beliefs at the individual level. Positionally, lifestyles and subcultures are intertwined (Jensen, 2007). Even though there are numerous modern beverages on the market today, as an integral part of the Chinese culture and way of life, tea drinking is an essential part of everyday life. (Pan et al., 2022). In addition, tea has been an essential beverage in Britain for centuries, with the majority of households drinking tea every day. Tea has had a significant impact on the country's culture and way of life, and tea permeates British culture (Wang, 2011). After tea arrived in Russia from China, it gradually became a significant social beverage and then one of the most vital necessities of life.

Tea drinking has become an integral part of Russian culture and way of life (Zhou Guofu, 2019).

Cultural identity

As a theoretical construct in cross-cultural psychology, cultural identity affirms the value of a person's spiritual existence, mainly through the nation's identity, customs, and even ways. People's material and spiritual lives are realized within a specific cultural context and environment, with values being the most fundamental part of the culture (Smith, P.B.,2011). The psychological community regards a group's history as a critical component of its members' cultural identities (Gjerde, 2004; Okazaki et al., 2008). Cultural identity construction can be an ongoing process influenced by a variety of social, cultural, and historical forces. Cultural elements such as norms, values, behaviors, beliefs, and symbols can be constructed and transformed over time (Usborne & de la Sablonnière, 2014). Cultural identity is the sense of cultural belonging and community that individuals have within themselves. Social values, religious beliefs, customs, language and art, and even food all contribute to one's cultural identity. (Yang et al., 2021).

Tea is an important cultural carrier that can exhibit both Eastern and Western characteristics, Eastern and Western tea cultures are both distinct and similar (Yang et al., 2021). In the course of the introduction of tea from China to Europe, in a specific historical context, influenced by multiple elements such as politics, economics, and culture, the differences between Eastern and Western tea cultures have grown, which again correspond to the issue of different cultures, thinking, and values (Ma, 2008).

Cross-cultural communication studies point out that material cultural differences are the most objective and realistic feedback of cultural differences, also reflected in the differences between Chinese and Western cultures. Identification with culture allows people to adapt to cultural differences and to be able to understand, identify with and respect cultural values that are different from their own (Ge, 2019). The differences in tea culture correspond mainly to the preference for tea leaves, tea utensils, and tea-drinking habits (Ge, 2019). For example, Chinese people drink a wide variety of tea types, and the use of tea utensils tends to be ceramic, with the most rustic and natural shapes and the natural taste of tea. In contrast, in the

material aspect of the European tea culture presentation, Western tea was mainly introduced from the East, corresponding to a small number of tea types. The full-bodied black tea was more popular, and they liked to experiment with mixed drinking methods. In the use of tea utensils for a long time corresponding to the symbol of aristocratic culture, in the choice of utensils prefer to pursue metal texture, teapots are more luxurious, complex shape(Ge, 2019). Tea was initially used as a medicine and poison in many European countries, then rose to become an aristocratic luxury, then suffered social suspicion before finally becoming a beverage. It was a long process that incorporated many aspects of Western history, culture, and society(Yang, 2019).

From an intercultural perspective, one must first acknowledge and accept the diversity of human beings and the diversity of cultures, give equal status to all different nationalities, races, and cultures, and deepen one's understanding of the micro-knowledge of different cultures' language habits, social culture, and customs in order to achieve better(Yang, 2019). Accepting the changes in tea culture in different cultural contexts and exploring the development of tea culture in different cultural contexts will enable us to better contribute to current research.

Chapter 5: Methodology

Design

Quantitative research is a type of study that stresses quantification in data gathering and analysis and reflects a view of social reality as an objective reality outside of the researcher's control (Bryman, 2016). This research approach implies collecting and analyzing data in a numerical and quantifiable form. The research methodology for this thesis is based on a quantitative approach, using a cross-sectional research design in which data are collected at a single point in time to gather quantitative or quantifiable data relating to two or more variables, which are then examined discover patterns of association (Bryman,2016). A questionnaire was used for this study (Appendix), a self-designed questionnaire that was iteratively modified to take into account the characteristics of the respondents in this study. The questionnaire, completed by the respondents, was one of the

main tools used to collect data using the survey design. The use of the questionnaire ensured that the questions were asked in the same order and manner, thus increasing the reliability of the study (Bryman, 2016).

The questionnaire was developed based on the research topic, research questions, and data collection methods and was designed in English and consisted of 23 questions in both nominal and multiple-choice formats. The questionnaire for this study was designed for behavior, habits and attitudes, and perceptions. The multiple-choice questions are divided into single and multiple-choice questions. One of the closed-ended questions completes standardized data that can be statistically analyzed. Respondents must complete nominal questions to obtain specific information about the respondent's gender, age, and geography to investigate differences. The questionnaire included basic information about the respondents, their tea drinking preferences and habits, behaviors, and attitudes. No names were collected for this study, and anonymity was maintained throughout the process. The questionnaire was pilot-tested on a random sample of 10 respondents to ensure that the questions were easy to read and understand and avoid misunderstandings leading to research errors.

The deductive theory represents the most common view of the nature of the relationship between theory and social research. According to this theory, the theory and the hypotheses that are formed from it come first, and they drive the process of data gathering (Bryman, 2016).

Sample

Simple random sampling is the most basic form of probability sampling. When taking a sample from a population, using a random method ensures that every unit in the population has an equal chance of being included in the sample (Bryman, 2016). The criteria for the study population were that the participants were residents of the Nordic countries, between the ages of 15 and 70, the ratio of males to females was similar to the number of questionnaires distributed. The researcher sent a link to the questionnaire to friends, classmates, or residents living in Nordic countries. The sample was distributed to more than 200 people, with more than 100 males and females distributing the questionnaire. 155 people responded, and after excluding non-response and sampling error (non-Nordic residents, no nominal questions filled in), the actual number of valid questionnaires was 127.

The researcher sent a link to the designed questionnaire to people she knew in the Nordic countries and then sought out people from the Nordic countries on Facebook and Reddit and sent them invitations, hoping to get as many answers as possible to reduce sampling error. Those willing to do so completed the questionnaire themselves and submitted it directly to the Google Forms for further analysis by the researchers. Respondents were given the right to send a link to the questionnaire to people living in the surrounding Nordic countries.

Instrument

The standardized questionnaire was the instrument used to collect the data. The questionnaire was designed in different points in accordance with the objectives of the study. The first of these was to inquire about tea-drinking routines and behaviors, such as whether or not residents like to drink tea, how frequently they drink tea, the type, time, and state of tea they like to drink, their preferred brand of tea and the way they buy it, and how they feel about drinking tea. The response options to the questions were given to single and multiple choice answers in accordance with their respective objectives. The next aspect is the relationship between tea drinking and health, whether tea drinking is perceived to affect health, whether tea drinking affects health in and out, and whether the tea is understood in terms of its benefits and adverse effects on the body, and attitudes towards tea as a complementary alternative therapy, with answers of yes or no or maybe. The last aspect is how people in the Nordic area feel about drinking tea in relation to their way of life and their overall health, with questions being answered either yes or no.

Procedure

The internet enables the collection of non-random data for surveys (Bryman, 2016). A web-based online survey was the method to be used for the data collection strategy. The questionnaire design was going to be implemented on Google Forms, software for survey management. It was going to be accompanied by a brief note at the beginning of the questionnaire that provided an introduction and information that participants

needed to know to participate in the study and the deadline for the questionnaire. It is possible to reach a large and geographically dispersed population by using an internet-based questionnaire (Bowling,2014); it has more means of embellishment in terms of the appearance of the questionnaire(Bryman, 2016); respondents can quickly complete the questionnaire from both their computer and mobile phone, and some respondents may feel more comfortable completing the questionnaire online. These are the advantages of using an internet-based questionnaire. There is also a considerable reduction in the amount of money that the researcher needs to spend on labor and time(Bryman,2016).

The researcher sent the link to the designed questionnaire to people she knew in the Nordic countries. Secondly, the researcher joined groups on Facebook in each Nordic country, inviting residents of Sweden, Denmark, Finland, Norway, and the Icelandic region to participate in the questionnaire. This process involved sending an invitation letter to each person individually and the link to the questionnaire. However, the feedback received was not very effective. Then the search for groups in the Nordic countries continued on Reddit, where there was more feedback on the questionnaire's effectiveness. The questionnaires were distributed from 20 April to 6 May, and the researcher wanted to get as many answers as possible to reduce sampling error. Those willing to do so completed the questionnaire themselves and submitted it directly to Goole Forms for further analysis by the researcher.

Analysis

The study used descriptive statistics for data computation and aimed to summarize the sample to answer the research questions. Data were analyzed using statistical software for social sciences: IBM-SPSS-Statistics-VERSION 27. Questions were analyzed using frequency analysis and a chi-square test. Two types of chi-square tests were conducted using the goodness-of-fit chi-square test and the chi-square test (cross-tabulation analysis).

Frequency analysis provides the number and percentage of people in each category for the variable in question. It can be used for all different types of variables (Bryman, 2016)

Pearson's chi-square (χ^2) tests, often referred to simply as chi-square tests, are among the most common nonparametric tests (Kent State University, 2018). The chi-square test is a commonly used hypothesis test based on the χ^2 distribution, where the null hypothesis H_0 is that the observed frequencies are not different from the expected frequencies. The basic idea of this test is first to assume that H_0 holds. A χ^2 value is calculated on this premise, indicating the deviation between the observed and the theoretical values (Chi-Square (χ^2) Tests, 2022). The data collected in the survey at $P < 0.05$ was set to be statistically significant.

Ethical Consideration

Ethical considerations are one of the essential aspects of social research, whether there was harm to participants in the survey, whether there was a lack of informed consent, whether there is an invasion of privacy. Whether there is deception involved, the researcher should also not be harmed based on the research. Ensure that the questionnaire does not address income, religious beliefs, or other privacy issues and respects the dignity of the respondents and the researcher. The introductory section at the front of the questionnaire begins with a clear statement of the purpose of the study and the associated benefits and guarantees of confidentiality and explains the nature of the study. Participants were made aware of their rights and were completely free to decide whether or not to participate in the questionnaire (Bryman ,2016)

An essential part of research ethics concerns treating people who participate in research as research subjects or informants. It is self-evident that these individuals should be afforded the most excellent possible protection from harm or misunderstanding during their participation in research (Good Research Practice, 2011). While individuals involved in research should be protected from harm or wrongdoing (the standard for protecting individuals), it is unreasonable to allow trivial harm to get in the way of necessary research. Research is essential to society and citizens alike because it can improve health, the environment, and quality of life. In addition to the benefits, the research results are often valuable in their own right. Arguably, there is one ethical imperative for conducting research: research standards. Many issues in research ethics can therefore be said to be a balance between these two criteria. We need to conduct quality research with an essential purpose in mind while protecting those individuals involved in the research. This is balanced and achieved depending on the type of research conducted(Good Research Practice, 2011).

Chapter 6: Research results

The results of the analysis were interpreted by the background variables as well as the primary data for the three sections of the research questions, namely tea drinking behaviors and habits, perceptions and attitudes towards tea drinking and health, tea drinking and healthy lifestyles and descriptive statistics and chi-square tests were used to interpret the results of the survey questions.

Background variables

The background variables consisted of 3 questions. Gender, age, nationality were asked respectively (see table 3).

Question1: *What is your gender?* The distribution of participants responding shows a valid sample size of 127, with 56.69% of the sample being male and 43.31% being female.

Question 2: *What is your age?* The distribution in age groups shows that the percentage of the age sample who were "21-40 years old" was 63.78%.

Question 3: *Where are you from?* The data came from the Nordic region, Sweden, Denmark, Finland, and Norway. Over 80% of the sample was "Swedish".

Table 3. Study populations by descriptive data/

Study populations by descriptive data			
Items	Categories	N	Percent (%)
What is your gender?	Female	55	43.31
	Male	72	56.69
What is your age?	20 years old and below	36	28.35
	21-40 years old	81	63.78
	41-60 years old	8	6.30
	60+ years old	2	1.57
Where are you from ?	Sweden	109	85.83
	Norway	9	7.09
	Finland	7	5.51
	Denmark	2	1.57
Total		127	100.0

Tea drinking habits and behaviors

In terms of tea-drinking habits and behaviors, The proportion of people who like to drink tea was over 80% of all respondents. More than half of the respondents prefer to drink tea in the evening, followed by those who prefer to drink tea in the morning. Moreover, the proportion of those who drank tea more than five times in the past two weeks was also the highest, with the proportion of men and women tending to be similar, drinking tea on an average of 2-3 days. Of the preferred types of tea to drink, the most popular continues to be black tea. With more than half of people preferring black tea, followed by fruit, green, herbal, and blended teas. Many tea drinkers will choose to drink more than one type of tea and try various types of tea. The feedback from the respondents indicates that more people focus on the taste of the tea when drinking it. More than half of the respondents prefer to add honey to their tea, followed by adding milk and no addition. More than 60 % of respondents buy Lipton brand tea. The same data shows that they drink tea for the straightforward enjoyment of drinking tea, followed by the fact that it makes them feel relaxed.

Question 4: *Do you like tea?*

According to the table below (Table 4). of the participants who answered this question, 86.51% answered "Yes" and 13.49% answered "No" .

Table 4. Study of the proportion of tea drinking through descriptive data/

The proportion of tea drinking people			
Items	Categories	N	Percent (%)
Do you like tea? (n=126)	No	17	13.49
	Yes	109	86.51
Total		127	100.0

Question 5: *At what time of the day do you like to drink tea?*

Based on the table 5, of the participants who answered this question 47.83% answered "In the evening", 28.70% answered "In the morning" and 17.39% answered "In the afternoon".

Table 5. Study of preferred tea time through descriptive data/

Preferred tea time			
Items	Categories	N	Percent (%)
At what time of the day do you like to drink tea? (n=115)	All time	3	2.61
	In the afternoon	20	17.39
	In the evening	55	47.83
	In the morning	33	28.70
	In the morning, In the afternoon	1	0.87
	In the morning, In the afternoon, In the evening	2	1.74
	In the morning, In the evening	1	0.87
Total		127	100.0

Question 6: *How many times have you had tea in the past two weeks?*

Table 6 shows the number of times tea was drunk in the past two weeks, with 127 valid responses, of which 43.31% were "More than 5 times". The percentage of the "Less than 5 times" sample was 33.86%.

Table 6. Study of tea drinking frequency through descriptive data/

Frequency of tea drinking in a two-week period			
Items	Categories	N	Percent (%)
How many times have you had tea in the past two weeks?	Less than 5 times	43	33.86
	More than 5 times	55	43.31
	Not any	29	22.83
Total		127	100.0

Question7: *What type of tea do you like to drink?*

As can be seen from the table 7, the goodness of fit test showed significance ($\chi^2=75.427$, $p=0.000<0.05$), specifically, the response rate and prevalence rate for a total of 1 item for “Black tea” was significantly higher.

Table 7. Study of preferred tea types by chi-square goodness-of-fit test/

Preferred tea types				
Items	Categories	Response		Popularity rate (n=127)
		n	Response rate	
What type of tea do you like to drink?	Black tea	67	46.85%	52.76%
	Green tea	24	16.78%	18.90%
	Fruit tea	31	21.68%	24.41%
	Herbal tea	11	7.69%	8.66%
	Blended tea	10	6.99%	7.87%
	Total	143	100%	112.60%
Goodness of fit: $\chi^2=75.427$ p=0.000				

Question8: *Who do you like to drink tea with?*

As can be seen from the table 8, the test of goodness of fit showed significance ($\chi^2=72.901$, $p=0.000<0.05$), specifically, the response rate and prevalence of "Along"1 item was significantly higher, and the second highest response rate for “family member”.

Table 8. Study of tea drinking partners by chi-square goodness-of-fit test/

People who drink tea together				
Items	Categories	Response		Popularity rate (n=94)
		n	Response rate	
Who do you like to drink tea with?	Alone	93	51.38%	98.94%
	Family member	42	23.20%	44.68%
	Colleagues	20	11.05%	21.28%
	Friends	26	14.36%	27.66%
	Total	181	100%	192.55%
Goodness of fit: $\chi^2=72.901$ p=0.000				

Question 9: *What do you look for when you drink tea?*

Among the participants who answered this question, the main sample of answers chose "Taste" with 72.88%, "Atmosphere" with 15.25%, "Aroma" with 8.47% and "Other" with 3.39%(see table 9).

Table 9. A study of what tea drinking focuses on through descriptive data/

Tea drinking focuses on			
Items	Categories	N	Percent (%)
What do you look for when you drink tea? (n=118)	Aroma	10	8.47
	Atmosphere	18	15.25
	Other	4	3.39
	Taste	86	72.88
Total		127	100.0

Question 10: *What do you like to add when you drink tea?*

As can be seen from the table10,the goodness-of-fit test showed significance (chi=81.800, p=0.000<0.05), implying that there was a significant difference in the proportion of choices for each item. This indicates that people in the Nordic region prefer to drink tea with milk, honey and with no addition(see table 10).

Table 10. Study of tea drinking additions through goodness-of-fit test/

Addition preferences				
Items	Categories	Response		Popularity rate (n=127)
		n	Response rate	
What do you like to add when you drink tea?	Sugar	23	13.94%	18.11%
	Milk	46	27.88%	36.22%
	Honey	53	32.12%	41.73%
	Fruit	1	0.61%	0.79%
	Other	6	3.64%	4.72%
	No addition	36	21.82%	28.35%
	Total	165	100%	129.92%
Goodness of fit: $\chi^2=81.800$ p=0.000				

Question 11: *Where would you choose to buy tea?*

In the Nordic region, More than half of the Nordic people in the questionnaire chose to buy tea from supermarkets. The proportion of the sample choosing "Supermarkets" was 61.67%. In addition, 36.67% of the sample chose "Tea shops" (see table 11).

Table 11. Study of places to buy tea through descriptive data/

Places to buy tea			
Items	Categories	N	Percent (%)
Where would you choose to buy tea? (n=120)	Other	2	1.67
	Supermarkets	74	61.67
	Tea shops	44	36.67
Total		127	100.0

Question 12: *What are your favourite tea brands?*

Multiple choice questions were analysed using a chi-square goodness of fit test. The table 12 shows that the goodness of fit test is significant ($\chi^2=100.049$, $p=0.000<0.05$), specifically, "Twinings", "Lipton" had a significantly higher response rate and penetration rate for a total of 2 items.

Table 12. Study of tea brands through chi-square goodness of fit test/

Favourite tea brands				
Items	Categories	Response		Popularity rate (n=127)
		n	Response rate	
What are your favourite tea brands?	Twinings	37	30.33%	29.13%
	Söderblandning	21	17.21%	16.54%
	Lipton	60	49.18%	47.24%
	Forsman	2	1.64%	1.57%
	Teapigs	2	1.64%	1.57%
	Total	122	100%	96.06%
Goodness of fit: $\chi^2=100.049$ $p=0.000$				

Question 13: *For what of the following reasons do you drink tea?*

The proportion of Nordic people who answered "To enjoy drinking tea" was chosen by 54.24% of the sample. "To feel relaxed" was chosen by 33.05% of the sample.

Table 13. Study of purpose of drinking tea through descriptive data/

Purpose of drinking tea			
Items	Categories	N	Percent (%)
For what of the following reasons do you drink tea? (n=118)	To be healthy	3	2.54
	To enjoy drinking tea	64	54.24
	To feel energised	6	5.08
	To feel relaxed	39	33.05
	To socialise	6	5.08
Total		127	100.0

Perceptions and attitudes towards tea drinking and health

More than half think that tea drinking affects their health regarding how the Nordic population perceives the link between tea drinking and health and whether they care about it. When analyzed by gender, 45% of women and 55% of men agree, with no significant difference as well as more than two-thirds of people care about the relationship between tea drinking and health. The main component of tea, L-Thea polyphenols, elevates one's mood, with 74.6% agreeing with the question. Of course, not all tea drinking is good for human health, and more than half of the participants knew about the harmful effects of too much tea on teeth, insomnia, and other symptoms. However, 84.3% of the participants answered that the benefits of drinking tea outweigh the harms. The majority of people agreed that the benefits of drinking tea outweighed the disadvantages. However, attitudes towards tea as an alternative and complementary therapy were less straightforward, with similar proportions of people agreeing and disagreeing.

Question 14: *Do you think drinking tea affects people's health?*

Of the total sample that answered this question, 60.00% answered "Yes" and 40.00% answered "No"(see table 14).

Table 14. Study of perceptions of the health effects of tea drinking through descriptive data/

Perceptions of the health effects of tea drinking			
Items	Categories	N	Percent (%)
Do you think drinking tea affects people's health? (n=125)	No	50	40.00
	Yes	75	60.00
Total		127	100.0

Question 15: *Do you care that drinking tea affects your body?*

Over 70% of the sample answered "No" to the question of whether they were concerned about the health effects of drinking tea(see table 15).

Table 15. Study of people's concerns about the health effects of tea drinking through descriptive data/

People's concerns about the health effects of tea drinking			
Items	Categories	N	Percent (%)
Do you care that drinking tea affects your body? (n=124)	No	88	70.97
	Yes	36	29.03
Total		127	100.0

Question 16: *Did you know that L-theanine, the main ingredient in tea, has been shown to elevate people's mood?*

The distribution of the sample answering this question shows that 94 of the sample chose "No", accounting for 74.60%(see table 16).

Table 16. Study of people's perception that L-theanine affect mood through descriptive data/

People's perception that L-theanine affect mood			
Items	Categories	N	Percent (%)
Did you know that L-theanine, the main ingredient in tea, has been shown to elevate people's mood? (n=126)	Maybe	13	10.32
	No	94	74.60
	Yes	19	15.08
Total		127	100.0

Question 17: *Do you think it is possible to use tea as a botanical medicine in complementary and alternative medicine ?*

From the distribution of the sample answering this question, the majority of the sample was "Maybe", with 57 people (45.24%) and the proportion of "No" sample was 34.92%(see table 17).

Table 17. A study of people's attitudes towards tea as a CAM through descriptive data/

People's attitudes towards tea as a CAM			
Items	Categories	N	Percent (%)
Do you think it is possible to use tea as a botanical medicine in complementary and alternative medicine (CAM)? (n=126)	Maybe	57	45.24
	No	44	34.92
	Yes	25	19.84
Total		127	100.0

Question 18: *Did you know that drinking too much tea can lead to insomnia, discoloration of teeth and gastrointestinal problems?*

The distribution of the samples answering this question shows that more than 60% of the samples chose "Yes". The proportion of the No sample was 39.20%(see table 18).

Table 18. A study of whether people understand the harmful effects of tea drinking through descriptive data/

Whether people understand the harmful effects of tea drinking			
Items	Categories	N	Percent (%)
Did you know that drinking too much tea can lead to insomnia, discoloration of teeth and gastrointestinal problems? (n=125)	No	49	39.20
	Yes	76	60.80
Total		127	100.0

Question 19:*Do you think the benefits of drinking tea outweigh the harms?*

The distribution of the sample answering this question shows that more than 80% of the sample answered "Yes", with 102(see table 19).

Table 19. A study of attitudes towards the benefits of tea drinking outweighing the harms through descriptive data/

Attitudes that tea drinking has more benefits than harms			
Items	Categories	N	Percent (%)
Do you think the benefits of drinking tea outweigh the harms? (n=121)	No	19	15.70
	Yes	102	84.30
Total		127	100.0

Tea drinking and healthy lifestyles and well-being

In this section of the research , the highest percentage of people who thought that Sweden had a large tea drinking population. The majority of participants agreed that drinking tea is a healthy lifestyle, at 79.3%. In the question of whether promoting tea drinking affects the well-being of people in the Nordic countries, 57.6% said 'No', indicating that more than half of the participants do not believe that tea drinking affects the well-being of people in the Nordic countries.

Question 20: *Do you think the number of tea drinkers has increased in recent years in the Nordic region ?*

When asked whether the number of tea drinkers in the Nordic region has increased in recent years, a relatively high proportion of the sample answered "Yes", with 54.40%. The proportion of the No sample was 45.60%(see table 20).

Table 20. A study on whether the number of tea drinkers in the Nordic region has increased through descriptive data/

Tea drinkers increased			
Items	Categories	N	Percent (%)
Do you think the number of tea drinkers has increased in recent years in the Nordic region ? (n=125)	No	57	45.60
	Yes	68	54.40
Total		127	100.0

Question 21: *Which Nordic countries do you think have more tea drinkers in comparison?*

In terms of the distribution of responses, the highest proportion of respondents chose "Sweden" at 45.60 %t, followed by "Denmark" at 19.20 % (see table 21).

Table 21. A study of which Nordic countries have the largest tea drinking populations through descriptive data/

The Nordic countries with the higher number of tea drinkers			
Items	Categories	N	Percent (%)
Which Nordic countries do you think have more tea drinkers in comparison? (n=125)	Denmark	24	19.20
	Finland	13	10.40
	Iceland	15	12.00
	Norway	16	12.80
	Sweden	57	45.60
Total		127	100.0

Question 22: *Do you think drinking tea is a healthy way of life?*

The sample distribution of responses to this question shows that the highest percentage of "Yes" was 79.34%, with 96.0% of the respondents answering "No"(see table 22).

Table 22. Descriptive data to study whether people consider drinking tea to be a healthy lifestyle.

Tea and healthy lifestyle			
Items	Categories	N	Percent (%)
Do you think drinking tea is a healthy way of life? (n=121)	No	25	20.66
	Yes	96	79.34
Total		127	100.0

Question 23: *Do you think that promoting tea drinking will have an impact on the well-being of Nordic people?*

From the sample of responses to this question, more than 50% of the sample answered "No". The proportion of the Yes sample was 42.40%(see table 23)

Table 23. Descriptive data to study people's perceptions of how promoting tea drinking affects well-being.

Tea drinking impact on the well-being			
Items	Categories	N	Percent (%)
Do you think that promoting tea drinking will have an impact on the well-being of Nordic people? (n=125)	No	72	57.60
	Yes	53	42.40
Total		127	100.0

Analysis of the variability of responses by gender

In this section, cross-tabulations between genders were analysed for each question. After screening (except for multiple choice questions), the overall results were significantly different from gender for only 2 questions, and gender was not significantly different for all other questions.

Question: Do you think it is possible to use tea as a botanical medicine in complementary and alternative medicine (CAM)?

Question: Do you think the benefits of drinking tea outweigh the harms?

Cross-tabulation (chi-square) analysis results					
Items	Name	gender(%)	Total	χ^2	p

		Female	Male			
Do you think it is possible to use tea as a botanical medicine in complementary and alternative medicine (CAM)?	Maybe	25(45.45)	32(45.07)	57(45.24)	6.714	0.035*
	No	14(25.45)	30(42.25)	44(34.92)		
	Yes	16(29.09)	9(12.68)	25(19.84)		
Total		55	71	126		
Do you think the benefits of drinking tea outweigh the harms?	No	13(25.00)	6(8.70)	19(15.70)	5.955	0.015*
	Yes	39(75.00)	63(91.30)	102(84.30)		
Total		52	69	121		
* $p < 0.05$ ** $p < 0.01$						

H0: If do you think it is possible to use tea as a botanical medicine in complementary and alternative medicine? no significant difference from gender.

H1: If do you think it is possible to use tea as a botanical medicine in complementary and alternative medicine ? there is a significant difference with gender.

Significance level = 0.05, accept H1 if $P < 0.05$ and reject H1 if $P > 0.05$. After cross-tab chi-square test, where the p value is 0.035 is less than 0.05, so it is reasonable to accept H1 and reject H0, so gender and Do you think it is possible to use tea as a botanical medicine in complementary and alternative medicine? There are significant differences between.

As can be seen from the above table, Do you think the benefits of drinking tea outweigh the harms? The p-value of the chi-square test done by gender is less than 0.05, so there is a significant difference with gender.

Chapter 7: Discussion and Conclusion

Result discussion

The aim of this Master's thesis is to investigate the Nordic population's tea drinking behavior and habits, as well as the perceptions and attitudes of the Nordic population on the relationship between tea drinking and health, lifestyle. The background of the study discusses basic knowledge about tea and the effects on human health in current research; perspectives on healthy lifestyles in the Nordic countries. The research methodology was conducted based on the research objectives. The whole research process allows the researcher to review what has been learned at the Master's stage.

What are the tea drinking habits and behaviors of the inhabitants of the Nordic region?

In the theoretical section, health behavior is defined as "patterns of behavior, actions, and habits associated with health maintenance, health recovery, and health improvement." (Gochman, 1988). According to tea, tea is a beverage or food that combines nutritional, recreational, and health-related functions. Firstly, the chemical composition of the tea itself has a preventative and therapeutic effect on heart diseases. Secondly, the calming atmosphere created by drinking tea has a soothing impact on heart diseases (Zhou Guofu, 2019).

Personal behavior regarding food is directly related to health (Marijn Stok et al., 2018). The data from the study in this thesis show that most of the Nordic residents who participated in the study enjoyed tea and that the frequency of tea drinking determined the tea drinking behavior of the study participants. Psychological determinants of healthy behavior include intention, self-efficacy, and outcome expectations (Conner & Norman, 2015a). Knowledge, habit, automaticity, and emotional influence are all factors that promote healthy behavior (Conner & Norman, 2017). More than half of the residents studied prefer to drink tea alone. Most of them invest more attention in the taste of tea, with a higher proportion drinking tea in the morning or evening, and the purpose behind this is mainly to enjoy drinking tea or to relax. Various factors influence human behavior, including place, time, and space (Warde, 2005). Through the study of everyday life, we can observe the social environment in which a person or group of people live (Bourdieu, 1992). In the case of tea drinking habits, it is also possible to understand that the studied people prefer black tea, with honey, milk, and sugar added to the tea. In most people's perception, the act of drinking tea is beneficial to health, and it can be assumed that tea drinking is the health

behavior chosen by most people. This fact supports the research on health behavior theory.

How do the Nordic inhabitants perceive the relationship between tea drinking and health, and what are their attitudes?

Knowledge and self-efficacy play a role in attitudinal change and eating behavior, and diet and health-related issues may shape attitudes. (Biddle et al., 1994; Buttriss, 1997). As people's health beliefs and lifestyles change, tea drinking habits are becoming more fashionable. More people are learning to drink tea more scientifically and to choose a tea that suits them better (Zhou guofu, 2019). Recently in the Danish market, tea has played an important role in the hot beverage market, not only in terms of sales growth, but also considering the impact of health and wellness trends on the consumption behaviour of Danes (Tea in Denmark, 2022).

In this study population, they are also very concerned about the health benefits of drinking tea. They understood the effects on the body, and had positive attitudes towards the relationship between tea and health. Among the participants were interested in learning the basics about the benefits and harms of tea ingredients in the human body and even left messages informing the researchers of the most popular brands of tea sold in Sweden in their feedback. Many of their's tea-drinking behavior is based on the idea that drinking tea brings health. The data showed that the population in this research believed that drinking tea affected their health and agreed that the benefits outweighed the disadvantages. In this study of tea as a complementary alternative therapy, the results were insignificant, with the proportions in favor and against tending to be similar.

The reference to 'cultural identity' in the theory section relates to the perceived homogeneity of social groups, particularly concerning distinct regional cultures (Atkins & Bowler, 2007). Different cultures can also influence attitudes towards the relationship between tea drinking and health.

In the tea-drinking countries of East Asia, tea's popularity is based on how well it works. In one study, 93.3% of Koreans rated green tea's health

benefits as "good for the body." Japanese consumers are more concerned about the health benefits of tea when they buy tea. Since Chinese people drink tea daily, they are more worried about the connection between tea and health (Zhou Guofu,2019). Tea is not only a beverage but also an essential cultural vehicle that has been influenced by the culture and customs of different countries, resulting in different habits and attitudes towards tea drinking(Wang, 2011). In the different countries where the custom of drinking tea varies, it is possible to learn about different values and cultural orientations. In some areas, it is recognized as an art; in some cases, it is considered part of the culture, and tea has different meanings in different cultures (Jingxia & zhaodan, 2012).Tea drinking habits reflect various values and cultural orientations. As a result, understanding and learning about tea culture is critical in today's world of cross-cultural communication. It also helps to promote international cultural exchange (Jingxia & zhaodan, 2012).

Even though most of the people in this study thought that the benefits of drinking tea outweighed the risks, more than half of them chose "NO" when asked if they were worried about how drinking tea would affect their health. Interestingly, people in the Nordic countries see drinking tea as a way of life and more of an emotion. It shows that people with different cultural identities care about and understand the relationship between tea and health in different ways, which leads to different health behaviors (Rudan, 2019).

How do the Nordic inhabitants perceive the link between tea drinking and lifestyle and well-being?

According to this thesis research, the majority of people in the question about how the Nordic population perceives whether tea drinking is a healthy lifestyle agree with this view. Lifestyle habits are an essential factor in the health status of individuals. For example, obesity, alcohol consumption, and smoking are all risk factors for health (State of the Nordic Region, 2020). According to the available research, tea is effective at lowering blood lipids, blood pressure, and blood glucose, as well as boosting the immune system. Researchers agree that lifestyle is a concept that answers the question of "how people live." It refers to how people use the material and spiritual, cultural resources provided by the social environment to meet their needs by specific cultural patterns (Wang Yalin, 1995). According to the World

Health Organization, a healthy lifestyle is a way of life that allows people to enjoy more aspects of their lives and is concerned with physical, mental, and social well-being; it is a way of life that reduces the risk of severe illness or premature death. A healthy lifestyle entails various activities such as eating, sleeping, and exercising (World Health Organization, 1999). The Nordic countries are in the international spotlight for their high levels of well-being. Despite continued economic growth, people's well-being has slowed or even declined (Helliwell, J. et al., 2020). To improve the health and well-being of the population, the Nordic governments have set several goals hoping to increase life expectancy, reduce premature mortality and improve people's well-being to achieve the highest level of health, among others.

There are many studies on tea and health in this area. Still, the recommendations and information on tea consumption in the Nordic region are almost exclusively from commercial surveys, with very little official data and information available. For future research on tea consumption among the Nordic population, the European ready-to-drink tea market is proposed to grow at a CAGR of 5.37% from 2022-2027, according to the report "Growth, Trends, and Forecasts in the European Ready-to-drink Tea Market." Changing demographics, disposable income, increasing consumer health awareness, and ongoing health trends are the driving factors that will influence tea consumption in the coming years. It is hoped that more data and research will be disseminated to the Nordic population. Governments and public platforms will provide the necessary knowledge and information to ensure that more people are aware of tea and its effects on the human body to promote the health and well-being of the Nordic people.

Methods discussion

The process of using the same tools to obtain the same answers multiple times gained the reliability of this study, and the process of following the requirements of scientific research methods in studying the results gained the validity of this study (Bryman, 2016).

Online questionnaires are simple and easy to use. Moreover, they save time and costs and are highly efficient (Bryman, 2016). Questionnaires are very widely used, they are not limited in number or scope, and as most questionnaires are administered in a closed-ended format, answers can be coded. Data entered for quantitative analysis and processing. The questionnaire respondents answer the same questionnaire, which is helpful for the researcher to conduct comparative analysis in the same situation and survey respondents with different consciousness for individual analysis (Bryman, 2016). The anonymity of the respondents was observed, and the questionnaire did not contain any personally identifiable information.

In addition to this, the research process also allowed the researcher to reflect on more information about the health and lifestyles of the Nordic population, and to search for information on the contribution of tea consumption to sustainable development and climate change in the Nordic region and to look forward to expanding on this in future studies.

Limitations

The limitation of the questionnaire is that it is inflexible, and most of the questionnaires are again designed by the researcher with a range of responses, making the respondents' answers more restricted and, therefore, more detailed and deeper information may be missed out. Secondly, the questionnaires were given to the respondents to answer freely, making it easy to miss out and make mistakes in their answers (Bryman, 2016). The last limitation is that the return rate and efficiency are limited. Only a certain percentage of the return rate can make the survey information representative and valuable. The online questionnaire is entirely voluntary, so that it will affect the return rate to a certain extent (Bryman, 2016).

The questionnaire was administered in English, and instructions for answering the questions were provided. The aim of the study was more to

understand the Nordic region and tea drinking and behavior, so the questionnaire was not designed with scale questions, which is a shortcoming in this questionnaire. Secondly, of the 127 returned questionnaires, there were missing data on the responses to individual questions, and there were instances where respondents did not answer all questions. The researcher could not determine whether the participants participated honestly and were attentive. Most of the respondents were from Sweden, where the researcher knows relatively more people, which may also affect the data frame. The number of participants in the questionnaire varies across the Nordic countries, and the proportion of men and women. So the researcher does not think the data results can be generalized to the general population.

Recommendations

Recommendations for research methods: using mixed methods research, the advantage of mixed methods research is that i.e. quantitative and qualitative research can be combined and the findings triangulated so that they can corroborate each other. Both quantitative and qualitative research-related research methods have their own strengths and weaknesses, so combining them allows the researcher to offset their weaknesses in order to draw on the strengths of both. By including both quantitative and qualitative methods, a more complete answer to a research question or set of research questions can be obtained. Combining the perspectives of the researcher and participants through quantitative and qualitative research respectively, reveals the relationships between variables through quantitative research and also reveals the meaning between research participants through qualitative research. (Bryman, 2016).

About augmented research data: The sample size requirement is larger when the phenomenon under study is more complex and more varied, and larger when the required precision and extrapolability is higher (Bryman,2016). For a more comprehensive study of tea drinking in the Nordic region, a larger sample is needed for a valid analysis, and the sample size should be balanced across countries so as to give a true picture of the accuracy of the data.

Conclusion

Knowledge about tea and the relationship between tea and human health influences people's tea-drinking habits, behavior, and attitudes to related issues. This master's thesis research issues such as the tea-drinking behavior and habits of the Nordic region population and the Nordic population's perceptions and attitudes towards the link between tea and health. The study results show that more than 80% of the Nordic residents participating in the study enjoy tea and have good tea drinking behavior and habits on issues related to their tea drinking preferences. They also have positive attitudes towards the effects of tea on health. Most of the participants considered tea drinking as a healthy lifestyle. The issue of tea as a complementary alternative therapy is still controversial. This area of research offers new ideas for optimizing the health of the Nordic population, while more in-depth studies are yet to be carried out.

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Appendices

Questionnaire guide and questionnaire

A study on tea drinking, behavior, and attitudes in the Nordic countries

How is the research conducted?

The study was conducted with questionnaires and data analysis. The following survey consists of 20 multiple-choice questions. The survey is not time-limited, so participants may take as long as possible to reflect on their experience and choose the option that best describes them. The findings will be published as a master's thesis.

Participate

Participation is voluntary and will not receive any compensation. You do not need to explain if you do not want to participate, or if you wish to stop the survey before it is completed. There will be no negative consequences. We kindly ask that you let the research investigator know if the investigation is not complete so he/she knows to find another participant.

What will happen to my information?

No name or personal information was collected for this study, and responses remained anonymous throughout the process.

How do I get information about research results?

The results will be published as a master thesis and uploaded to the DiVA Portal for public access.

Ethics

This study complies with ethical standards in the research field. If you have any further questions or concerns, please notify the Research Investigator.

Deadline.

This questionnaire deadline is 6 May

1. What is your gender?

2. What is your age?

3. Where are you from ?

4. Do you like tea?

Yes

No

5. At what time of the day do you like to drink tea?

In the morning

In the afternoon

In the evening

All time

6. How many times have you had tea in the past two weeks?

Not any

Less than 5 times

More than 5 times

7. What type of tea do you like to drink?(Multiple choice)

Black tea

Green tea

Fruit tea

Herbal tea

Blended tea

8. Who do you like to drink tea with?(Multiple choice)

- Alone
- Family member
- Colleagues
- Friends

9. What do you look for when you drink tea?

- Taste
- Aroma
- Atmosphere
- Other

10. What do you like to add when you drink tea? (Multiple choice)

- Sugar
- Milk
- Honey
- Fruit
- Other
- No addition

11. Where would you choose to buy tea?

- Supermarkets
- Tea shops
- Other

12. What are your favorite tea brand? (Multiple choice)

- Kobbs
- Twinings
- Söderblandning
- Trinin
- Lipton
- Forsman
- Others

13. For what of the following reasons do you drink tea?

- To feel relaxed
- To feel energised
- To socialise
- To enjoy drinking tea
- To be healthy

14. Do you think drinking tea affects people's health?

- Yes
- No

15. Do you care that drinking tea affects your body?

- Yes
- No

16. Did you know that L-theanine, the main ingredient in tea, has been shown to elevate people's mood?

- Yes
- No
- Maybe

17. Do you think it is possible to use tea as a botanical medicine in complementary and alternative medicine (CAM)?

- Yes
- No
- Maybe

18. Did you know that drinking too much tea can lead to insomnia, discoloration of teeth and gastrointestinal problems?

- Yes
- No

19. Do you think the benefits of drinking tea outweigh the harms?

- Yes
- No

20. Do you think the number of tea drinkers has increased in recent years in the Nordic region ?

Yes

No

21. Which Nordic countries do you think have more tea drinkers in comparison?

Norway

Finland

Sweden

Denmark

Iceland

22. Do you think drinking tea is a healthy way of life?

Yes

No

23. Do you think that promoting tea drinking will have an impact on the well-being of Nordic people?

Yes

No

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