Establishing a Primary Healthcare Center for Students in Gothenburg

An investigation of the needs, possibilities and designs of a primary healthcare center for university students

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Abstract

Attending university is for most students a challenging period in life, often in combination with being a young adult and experiencing new mental and physical situations. Having access to support within healthcare and student health service is important to maintain a healthy life as a student. This report aims to investigate the healthcare needs and current healthcare services for university students in Gothenburg. Furthermore, this report aims to investigate the possibilities and propose solutions and design ideas for opening a primary healthcare center owned by Gothenburg's Students Company Group and targeted at university students of Gothenburg. The suggestions are also based on investigating the healthcare needs and current services of university students in Gothenburg. This study is a literature review as well as an interview study with key persons and companies. The results show that there seems to be an increased prevalence of mental illness among young adults, where university students may be particularly susceptible to mental health issues, which indicates a need for more preventative care and adjusted healthcare. The suggested solutions for a primary healthcare center for students include adjustments in the organizational design and a location close to the students. The conclusion is that there is a need for more preventive care and adjusted healthcare for students, and by utilising all possibilities when opening a primary healthcare center for students, it has the potential to not only help students in need of healthcare but also make the students of Gothenburg healthier.

Acknowledgements

Contents

Abbreviations

Chalmers Chalmers University of Technology. 1, 4, 5, 8, 10, 14, 15, 18, 21, 28, 37

GFS Gothenburg's Joint Student Unions (Göteborgs förenade studentkårer). 1

GSF Gothenburg's Students Company Group (Göteborgs studenters företagsgrupp). 1, 2, 19, 28

GU University of Gothenburg. 1, 5, 8–10, 14, 15, 19–21, 25, 28

HHGS Handelshögskolans Student Union. 1, 37, 38

PCBH Primary Care Behavioral Health. 17, 21, 22

PHC Primary Healthcare Center. 1–4, 6, 8–28, 37, 40

SAKS Sahlgrenska Academy Student Union. 1, 38

SHC Student Healthcare Center. 1, 14–17, 21, 23

UKÄ Universitetskanslersämbetet. 15, 39

1   Introduction

University studies are, for many students, the last stepping stone before discovering a new chapter of life, which means entering the labor market and proceeding with a career. The years at university are, for many young people, a period of time where you are very adaptable and you develop on several levels. Balancing studies with well-being and health can be a difficult task, but if university students could manage to find a good balance and get healthy living habits already during their years at university, this could in turn generate good conditions for a continued balanced working life. The health among the younger population and students, in particular the mental health, has received increasing attention the last couple of years, especially during the COVID-19 pandemic. Understanding how university students feel today and how they are consuming healthcare is therefore of importance to understand how their needs could be fulfilled and to give them the possibilities of finding these balanced and healthy living habits during their time at university.

Today, more than 40 000 full-time students are registered at one of the two universities located in Gothenburg: Chalmers University of Technology (Chalmers) or University of Gothenburg (GU) [1, 2]. Of these students, around 1000 of them are fee-paying full-year international students. All university students in Gothenburg have access to Student Healthcare Center (SHC)s through their university. *Feelgood* has been the provider of student healthcare services since march 2020 and students can seek help from Feelgood when experiencing study-related illness or problems. Students are allowed three to five visits per year free of charge, depending on if the student attends GU or Chalmers [3, 4, 5, 6]. When the university students in Gothenburg experience health-related problems that are not caused directly by their studies, they are instead advised to seek help from their Primary Healthcare Center (PHC).

The student unions also play an important role in the well-being of students during their time at university. There are five student unions for university students in Gothenburg, one at Chalmers and four unions at GU: Chalmers Students' Union; Göta Students' Union; Handelshögskolans Student Union (HHGS); the Sahlgrenska Academy Student Union (SAKS) and Konstkåren. The student unions cooperate through the Gothenburg's Joint Student Unions (Göteborgs förenade studentkårer) (GFS) which is the cooperation body for all five student unions in Gothenburg. GFS is part-owner of Gothenburg's Students Company Group (Göteborgs studenters företagsgrupp) (GSF), and through GSF AB they run the gym Fysiken and Akademihälsan, the previous provider of student health services for the university students of Gothenburg [7]. One of the goals that GFS are working towards, is that the students of Gothenburg should be able to study without having to worry about their health or their financial situation [7].

1.1   Business Objective

In the spring of 2021, the board of GSF AB decided on investigating the possibilities of starting a PHC for the university students of Gothenburg. Hence, the business objective is to establish a PHC in which the patient group will primarily be the students in Gothenburg. Since this specific patient group of interest in general suffer from other health issues than e.g. the older population, the business objective in terms of this project, is to gather information on, and understand the student perspectives. The results from this project could then be used as a basis for understanding both the importance and the challenges of starting a new PHC with students as the target patient group.

1.2   Project Objective

This project therefore aims to investigate the needs of university students in Gothenburg concerning healthcare, and how the current healthcare service situation is for the students. Furthermore, it aims to investigate the possibilities of starting a PHC targeted at the university students of Gothenburg, and to then explore and suggest solutions and design ideas, based on the needs and possibilities found. The findings of this research are intended to be of support to GSF AB in their process of planning a PHC for university students in Gothenburg.

1.3   Scope

There are many crucial aspects to consider when establishing a PHC, but this research project only aims to investigate the student needs, the possibilities as well as ethical concerns. Therefore, financial aspects or regulatory issues will not be further investigated in this research. One example that was set for this research project concerns the tender document *Krav- och kvalitetsbok Vårdval Vårdcentral*, that concerns the system of choice and describes e.g what demands the healthcare providers have to fulfill [8]. Due to the time limit and the extent of the course, this material has not been studied in detail and will therefore not be taken into any deep consideration when discussing needs, possibilities or potential solutions.

Any potential needs and challenges that arise during the research process concerning architectural aspects may be mentioned in brief, but solutions for these will not be further discussed in this project due to the main competence of the group being in the field of engineering.

2 Methods

In the following chapter the research design, the research process as well as the research methods that were used during the project are presented. The chapter also presents some ethical considerations concerning the research conducted during the project.

2.1 Research Design and Process

The research design was mainly focused on a qualitative approach, where the aim was to discover and understand how university students feel today and how the younger population consume health care. This was done by gathering information on the health status of students and their consumption through a literature review. Concurrently with literature review, interviews with key people and companies were conducted to explore the possibilities of a PHC for students. This could then be used to generate innovative solutions and designs for a PHC specially designed for students' needs.

The research process started with an initial meeting with the supervisors and the project leader, where the project and the business objective were presented. This first meeting was then followed by a workshop organized by the project leader, where different needs and aspects were discussed among the participants. The research process then continued with literature reviews and interview studies, which are explained in more detail in section 2.2.

The research was divided into different phases or parts, some of which were overlapping or carried through in parallel. The research process can be divided into the following phases or parts: investigating the needs; investigating the current healthcare situation; investigating the possibilities; generating or finding possible solutions and design ideas; and describing the ethical considerations. The research process partly followed the "Double Diamond" design model to organize the research process. The Double Diamond design model can be divided into different stages: discover, define, develop and deliver. A simplified flowchart of the research process is presented in Figure 1.
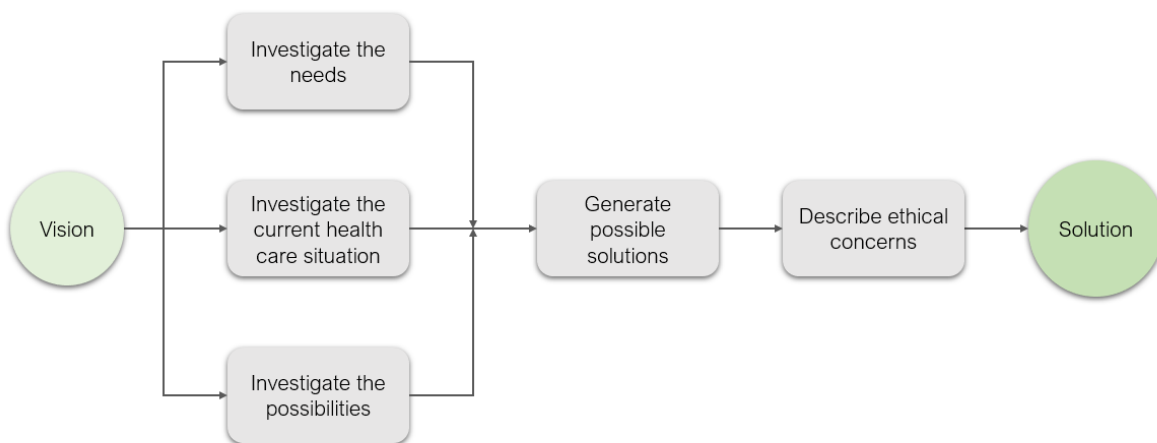

Figure 1: Flowchart visualizing the different parts and phases of the research process.

The vision that served as guidance throughout the research process was to help young adults or students to achieve healthy living habits during their time at university. The problem was first discovered by

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investigating the needs of students as well as investigating the possibilities of starting a PHC for students. The discovery research phase aimed to understand and increase the knowledge on the following questions: "How do students feel today both mentally and physically on an international, national, and local level?"; "How do students and the younger population consume healthcare today?"; "What have other universities in Sweden or outside of Sweden done?"; and "What are the possibilities in terms of campus development, competences or resources?". This phase of the process involved both literature and interview studies.

In the next phase, the insights from the initial discovery research phase could be defined in terms of the most important student needs and the different possibilities. In parallel with investigating the needs and possibilities, the current situation in healthcare was also involved in the research process.

The last phases of the research process was to develop and deliver solutions and design ideas. By considering how to fulfill the needs found in the discovery phase, as well as the possibilities, and how to make a PHC for students attractive, different solutions and design ideas were generated and developed. The development process also involved both literature reviews and interviews.

2.2 Research Methods

The following section explains the different research methods that have been used for gathering information and data as well as increasing the understanding of the topic during the whole research process.

2.2.1 Literature Review

A literature review was conducted throughout the entire process to gather information and increase the knowledge on the topic. The literature search mainly focused on student health as well as student and/or primary healthcare in Sweden and Gothenburg, although literature concerning these topics in other countries was not completely excluded. Primarily, Google, Google Scholar, and Chalmers Library were used to search for literature, but also websites of different organizations, authorities, and universities were used to search for information. The keywords that were used for the literature review include "mental", "health", "student", "healthcare", "service", "university", "primary care", "consumption", "utilisation", "Sweden", "Gothenburg", "Västra Götaland", "Chalmers University of Technology", "University of Gothenburg" and/or the Swedish translations of these keywords as well as combinations of the keywords mentioned.

2.2.2 Collecting Data

Besides conducting a literature review, both primary and secondary data were collected and used in the research. The primary data was mainly collected through several conducted interviews but also through a workshop and meetings. Secondary data was also used and this was collected from external survey or questionnaire reports from e.g. student unions or authorities.

2.2.3 Interview Study

To gather different perspectives on both the needs and possibilities regarding a primary care center for students, several interviews were conducted. In total, five interviews were conducted, and the interview subjects included two people working in the healthcare sector; one respondent working at Chalmers; two respondents working at Chalmersfastigheter; and one respondent working at Fysiken. A summary of all interviews and their purposes can be found in Table 1. At least two people from the research group were

present at each interview, and one person was responsible for taking notes during the interview.

Table 1: Interview subjects of the interviews conducted in the project.

Respondent	Role/Organization	Purpose	Location	Duration
Respondent 1	Psychologist	Increase knowledge and understanding	Zoom	50 min
Respondent 2	Employees at Chalmersfastigheter	Investigate the possibilities regarding campus development	In person	60 min
Respondent 3	Employee at Chalmers University of Technology	Investigate the possibilities regarding campus development	In person	30 min
Respondent 4	Employee at Fysiken	Investigate the possibilities regarding collaborations	In person	40 min
Respondent 5	Psychologist	Investigate the possibilities and learn about Campushälsan	Telephone	60 min

All of the interviews started with a brief background and presentation about the research group and the aim of the research. The interviewees could then present themselves and their work. Both general and more specific questions were prepared and written down prior to each interview. During the interviews, the more general or open questions were asked first to open up the possibility for a discussion. Depending on the answers from the respondents, supplementary questions or more specific questions could then be asked. Questions asked during the interviews can be found in Appendix A.

In the latter stage of the research process, written interviews were also conducted with both Chalmers and GU students. The written interviews were conducted by sending out a questionnaire with open-ended questions and can be found in Appendix B. The questions in the questionnaire were formulated based on findings and knowledge gathered throughout the research process and the aim of the written interviews was mainly to get the students' perspectives on possible needs that had already been found during earlier interviews and literature studies. In total, 14 students responded, where eight of the respondents were studying at Chalmers University of Technology and six students were studying at GU. Five of the respondents were international students, all from different countries.

2.3   Ethics

Some ethical aspects have been considered in this study [9]. The respondents were selected based on their relevance to the different research areas and were informed about the research goals and purpose of the study and their particular interview. One of the interviews was recorded and consented by the respondent. All respondents that have been referred to in the report, have been provided with and read through the paragraphs concerned and have given their full consent.

The written interview with students was sent out to selected groups of students where the respondents within the targeted groups were anonymous. They were also informed about the research goals and purpose of the study. The main purpose of the written interviews with students was to regard a broader area of students, such as students from GU and international students.

3 Investigating the Needs

The following chapter investigates the different needs among students in terms of how students feel today on a global, national as well as local level, but also how the younger population consumes and utilizes healthcare today. Furthermore, the needs of young adults regarding important and desirable factors, functions and/or information of a PHC are investigated.

3.1 Health Status of Students

Attending university represents, for most young adults, a great developmental challenge and opportunity. The transition into university life comes not only with immense academic pressure but also, for many students, the coping with stressful tasks of separation and individuation from their family of origin [10]. The stressful life events are often accompanied by the emergence of health problems.

By reviewing the overall literature, the health problems of students include physical and mental illness, health risks such as illegal drug and alcohol use and unsafe sexual behavior [11, 12]. For example, in the United States, students commonly go to student health centers for dermatological conditions, musculoskeletal problems and minor trauma including sprains, fractures and lacerations [13].

The health problems that have gotten a lot of attention during the 21st century are mental health issues among younger people. There are several studies indicating an increase in mental health issues in the younger population both internationally [14] and nationally [15]. Figure 2 shows the proportion of the population that received psychiatric care between 1997 and 2015 in Stockholm's county [16]. What can be noticed is the significant surge of proportion in the population between 18-24 years in both genders from the start of the 21st century until 2015. These surveys have not factored in variables such as education level, which would make it difficult to draw a conclusion about students' mental health as a whole.
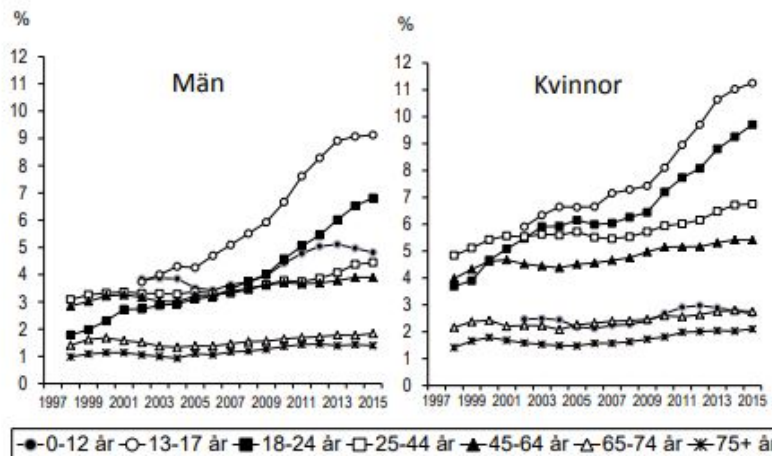
Figure 2: From *Fortsatt ökning av psykiatrisk vårdkonsumtion bland unga i Stockholms län år 2015* by S. Wicks, C. Dalman , 2021, Stockholm, Sweden: Copyright (2022) by Centrum för epidemiologi och samhällsmedicin. The figure shows the proportion of the population receiving care within outpatient psychiatric care in Stockholm county.

However, there are studies that have looked at the prevalence of mental illness among Swedish medical students [17] and Swedish nursing students [18]. In both these studies, the prevalence of mental illness

among students was significantly higher than in the general population. Furthermore, a public health survey conducted between 2004-2009 (23,394 women; 18,274 men; aged 16-29 years) looked at mental illness related to occupation. That is, whether they studied, did an internship or worked. The results showed that the prevalence of mental illness is greater among students compared to the working population in the same age group [19]. Even though there has not been any large scale study on students and their mental health issues, the results from the above-mentioned studies can be seen as an indication that there is a greater need for interventions to be put towards promoting mental health and preventing mental illness among students in higher education.

The need for such preventative care interventions to prevent mental illness and promote mental health can also be seen on a more local level at the universities in Gothenburg. A study from 2017 showed that there was a widespread prevalence of mental illness among the undergraduate programs at the Sahlgrenska Academy [20]. Both Chalmers Students' Union and the HHGS Education Committee have followed up on their students' perceptions of their life and health situations through different surveys over the past years (see Appendix C for more information on the surveys). What can be concluded from the results of the different surveys is that the university students in Gothenburg also suffer from stress, anxiety, mental illness and other health-related issues and that there is potential for improvement [21, 22]. The studies have also shown that the general health status or well-being of both national and international students has worsened during the pandemic, with perceived negative effects on the students' mental as well as physical health [21, 23]. Hence, there is a pronounced need for improvement concerning preventative mental and physical healthcare for students at the local level as well.

3.2   Healthcare Consumption and Utilization Among Young Adults

The need for preventative care among the younger population and students can also be seen when looking at healthcare consumption among young adults. Between 2011 and 2020, the number of visits to primary care per inhabitant per year in the region of Gothenburg has been around 2 for the age group of 18-29 [24]. This could be compared to the older age group of 65-79, which on average has 5-6 visits per year. Important to consider is that these visits include visits to all of the medical competences in primary care: nurse, doctor, physiotherapist, psychologist, counselor and occupational therapists. When looking at the number of visits to the psychologist or the counselor per year per inhabitant, there is an important switch between the age groups. Here, the younger age group dominates in the number of visits to the psychologist in comparison to the older population, and among the young adults, there has also been a steady increase in the number of visits: from 0.1 to about 0.25 per inhabitant in the time period from 2011 to 2020. This domination of visits from the younger population can not be seen for any of the other medical competences. Hence this is also an indicator that the younger population and therefore also students are in greater need of mental healthcare than other age groups.

In contradiction to this need for preventative care among the younger population, at the same time, studies also show that young adults are responsible for a substantial proportion of avoidable and unnecessary healthcare visits when investigating healthcare utilization among young adults [25, 26]. Multiple studies have shown that the younger age group, 20-29 years old, often prefer to seek healthcare for minor illnesses or symptoms instead of performing self-care [25]. This behavior could be explained by a lack of knowledge and experience of symptoms or healthcare within the younger population, indicating that insufficient health literacy could be an important factor for the utilization of healthcare services among young adults[25, 26]. Healthcare professionals think that young adults are often well informed through

the impact of media, but the problem is that they have difficulties in separating relevant information from irrelevant information [25].

Important to note, however, is that young adults are a vulnerable age group in transition to adulthood, and therefore face new obstacles in life such as utilizing healthcare services independently [25]. It has been shown that insufficient health literacy among young adults can be associated with less trust in healthcare as well as more worries and anxiety about their health and symptoms in general [25, 26]. Furthermore, the problematic health literacy among young adults can also be associated with a greater prevalence of seeking care for psychiatric problems and symptoms [26]. Unfortunately, these studies have not taken educational level into consideration when studying the younger population and their utilization of healthcare, and therefore it is not sure that these findings of insufficient health literacy and less trust in healthcare are directly applicable to university students within that age group. However, there is possibly a need among students to improve their health literacy to utilize healthcare in a better way, but also to improve self-care to a greater extent and in that way improving their mental and physical health.

3.3 Important Factors Regarding Primary Healthcare Centers

In the following chapter, the needs of students and young adults are investigated regarding what information on the PHC is important, as well as what factors and functions in primary healthcare are desirable or important.

3.3.1 Geographical Location of a Primary Healthcare Center

A study performed by the Swedish Agency for Health and Care Services Analysis (see Appendix E for more information) has shown that young adults, in the age group of 18-34 years, have a greater need for information on where the PHC is located geographically and it has also been shown that the geographical location is the most important and determining factor for the younger population in their choice of PHC [27]. This interest in the geographical location is even higher in bigger cities, such as in Gothenburg, where the number of alternatives is higher [27]. The importance of information on physical location could be an indication that younger adults, including university students, need the PHC to be well and closely located.

The need for a PHC that is located geographically close to home, could be verified by several university students in written interviews with students at both Chalmers and GU. Those students that found the location of their PHC to be important, state reasons for this to be: that the PHC should be close to a public transport station; that it should be easy and quick to get there; and that it should be close to home if something happens. However, some students that participated in the interviews did not find the location of the PHC to be more important than other factors.

3.3.2 High Availability and Short Waiting Times

Another factor that seems to be of importance for the younger population is the availability and waiting times at their PHC. In a report from 2018 by Socialstyrelsen, the availability of healthcare as well as patients' perceptions and opinions on availability was investigated [28]. The younger population, in the age group of 18-29 years, are less content with the availability in primary care concerning the waiting times in comparison to the older age groups [28]. Young adults also tend to be unsatisfied to a greater extent with the availability in terms of ways to get in contact with their PHC [28]. The findings of this

report are, however, based on studies from 2015, and could therefore be misrepresenting what young adults feel or need today.

The need for high availability at the PHC was also found to be important among some of the students at Chalmers and GU. When asked what would make their current PHC better, some students answered: the possibility to get care quicker; if there were more time slots for appointments; if there were more available in terms of time; if it had more booking opportunities and if the booking system was easier. The answers followed the same theme when the students were asked what would make them apply to another PHC. Hence, availability in terms of waiting times, more or better ways to get in contact with the PHC, and better booking opportunities seem to be another important condition or need to consider.

When interviewing students, some students also raised the importance of digital contact ways, online services and digital visits, which all could be associated with the availability of the PHC. The demand for digital healthcare services among young adults is also reflected in the utilization of such digital services by the younger population. A study from 2021 indicated that the people born in the 1980s and 1990s are the age groups who consume these digital services to the highest extent in Sweden [29]. This indicates that young adults and university students have other needs in terms of availability and digital services than the older population, and it also suggests that the students' healthcare needs possibly could be fulfilled by digital services to a higher extent.

4 Investigating the Current State of Healthcare Services

To determine if there is a need for a PHC for students, it is important to factor in the current state of the services provided. In Sweden, the healthcare system is decentralized, which means that it is either run by the regions, local authorities or municipalities. Healthcare is then divided into public and private sectors. A few of these healthcare providers will be brought up to get an overview of what healthcare options Chalmers and GU students have.

4.1 Primary Care

In Västra Götaland there are over 200 health centers. The largest provider of primary care in Västra Götaland is *Närhälsan* with just over 100 centers, whereas the remaining PHCs such as Capio and Carlanderska are run privately [30]. As a resident of Västra Götaland, you are free to list yourself on whichever PHC you want. The PHCs are usually the first place to turn to when you get sick, injured or feel mentally ill. There are a lot of demands that are put on the healthcare providers to run a PHC. One of the demands is that PHCs needs to always be staffed with a doctor and a nurse [8]. Furthermore, it needs to be able to provide the services of a licensed psychologist. This means that every PHC should essentially provide the same services by having an equivalent group of working staff and when it comes to health conditions that are not acute, every PHC should be able to help. Through the PHCs, the staff can then determine if it is necessary to write a referral to specialist care or if it can be treated at the center.

When it comes to the Swedish healthcare system, one often mentions the term *God och nära vård* which basically aims to improve care such that it is organized and conducted after the patient's needs and conditions to a greater extent [31]. One important dimension is then to consider availability which includes for example waiting times. Long waiting times have been a long-term issue in the Swedish healthcare system. To guarantee care, Sweden has introduced a statutory right called *Vårdgaranti* that is supposed to make sure that each person receives care within a certain time [32]. Vårdgaranti gives out the time limits when different care interventions should be offered. For example you should be able to get in contact with primary care the same day that you are seeking care and get a medical examination by certified personnel within three days. As almost all PHCs have standard opening hours 8:00-17:00 from Monday-Friday, one could question whether Vårdgaranti meets the needs of students with regards to availability.

4.1.1 Närhälsan

There is a PHC which is located on Chalmers' campus at Johanneberg called *Närhälsan Gibraltargatan.* The PHC has a facility which is open Monday to Friday between 7:45 - 16:45, where the listed patients can meet with a doctor, nurse or psychologist in person. They also offer a digital service through their app called *Närhälsan Online* [33]. That way, patients do not have to go to the clinic and the meetings are held through video by phone or tablet.

There were no statistics readily available of how many students that are listed on Närhälsan Gibraltargatan. However, as the PHC is located on Chalmers' campus one can assume that it is the one which students who live near campus list themselves on. In a survey from *Nationell patientenkät* that looked at patients' experiences and impressions in primary care, dimension scores such as "respect and treatment"; "continuity and coordination"; and "availability", were compared for different PHCs in Sweden [34]. Al-

though the results are not a representation of the student's experiences and impressions, they can still give an indication of whether the services provided around Johanneberg are meeting the patient's needs.

One of the questions in the dimension "Availability" in 2021 was: "Was it easy to get to the PHC?" where a comparison of the results for Sweden, Gothenburg and Närhälsan Gibraltargatan can be found in Figure 3.

Figure 3: Results from the national survey Nationell Patientenkät in 2021 regarding the question: "Was it easy to get to the PHC?" [34]. The results are presented as percentage of positive answers for patients in Sweden, patients in Gothenburg as well as patients at the PHC at Gibraltargatan.

What can be seen from the results in Figure 3, is that the majority of the respondents thought that it was easy to get to the PHC. When investigating the needs among students and young adults, the geographical and physical location of the PHC was very important for some (see 3.3.1). Currently, the PHC Närhälsan Gibraltargatan seems to fulfill the need of being close or easy to get to.

Another question in the same dimension concerned the waiting times. A comparison between Sweden, Gothenburg and Närhälsan Gibraltargatan in terms of the results for the question "Did you get to visit the PHC within a reasonable time?" can be found in Figure 4.
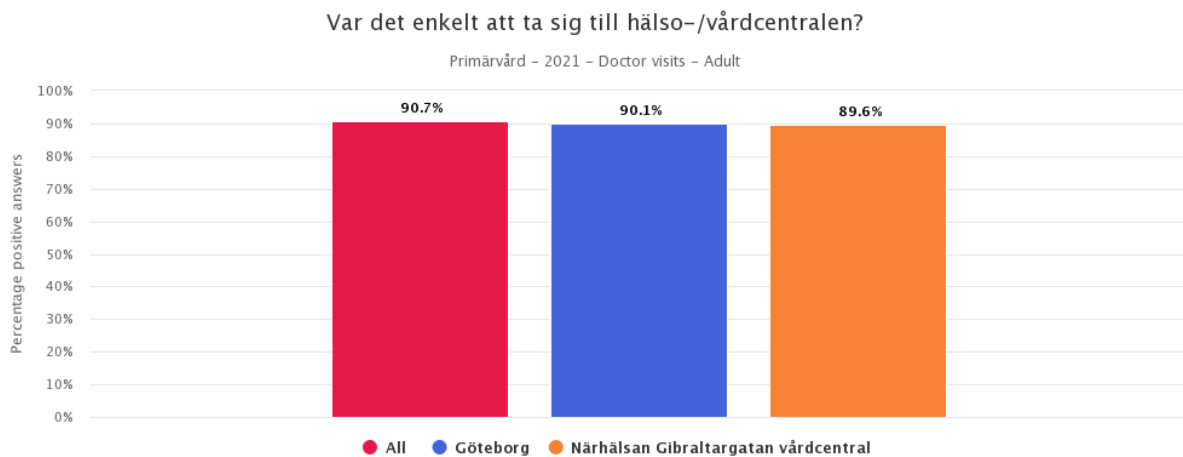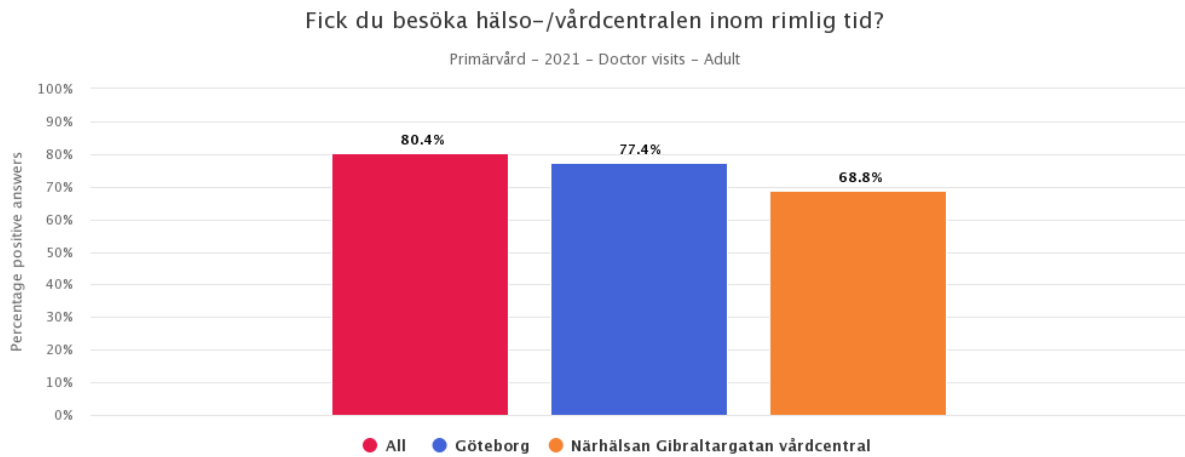
Figure 4: Results from the national survey Nationell Patientenkät in 2021 regarding the question: "Did you get to visit the PHC within a reasonable time?" [34]. The results are presented as a percentage of positive answers for patients in Sweden, patients in Gothenburg as well as patients at the PHC at Gibraltargatan.

By observing the results presented in Figure 4, it can be seen that the percentage of positive answers at Närhälsan Gibraltargatan is lower than the average in Sweden and that the patients at Närhälsan Gibraltargatan are dissatisfied with the waiting times in comparison to the average primary care patient in Gothenburg. Since high availability in terms of short waiting times appears to be important for students when investigating the needs in Chapter 3, this need does not seem to be fully fulfilled according to the current situation.

In Figure 5, the results from a third question in the "Availability" dimension can be seen. Here, the question was: "Are you satisfied with the ways that you can get in contact with the PHC (e.g. 1177 Healthcare guide, telephone, e-services, website or other)?".

Figure 5: Results from the national survey Nationell Patientenkät in 2021 regarding the question: "Are you satisfied with the ways that you can get in contact with the PHC (e.g. 1177 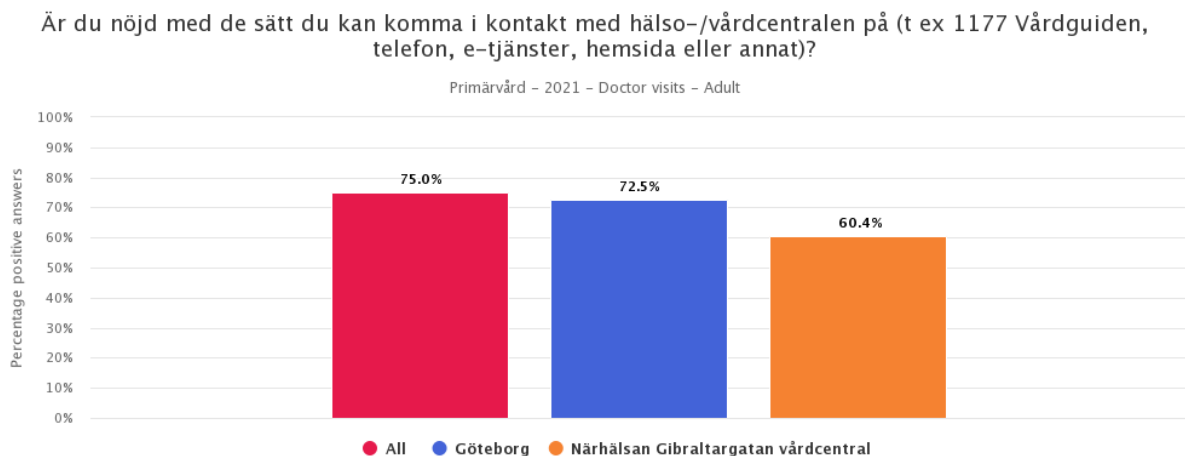Healthcare guide, telephone, e-services, website or other)?" [34]. The results are presented as a percentage of positive answers for patients in Sweden, patients in Gothenburg as well as patients at the PHC at Gibraltargatan.

From Figure 5, it can be seen that only 60 % of the patients were satisfied with the contact ways for the PHC Närhälsan Gibraltargatan, whereas that number was 75 % for the average patient in Sweden. Hence, according to the current patient experiences in primary healthcare, improvements can be made regarding availability and ways to contact the PHC to meet the needs and conditions of patients.

4.1.2 Online Medical Companies

The advancements in technology have made it possible for companies to solely provide healthcare services digitally. There are online medical companies out there such as *Kry*, *Min doktor*, *doktor.se* and *doktor24*. Through these services, patients can meet with a doctor, nurse or psychologist within 10-15 minutes. They all provide a healthcare service that is open 24/7. For *Kry*, patients can go via their website or app where they get to fill in a symptom form [35]. Depending on the health issue of the patient, they get an appointment with either a doctor, psychologist or nurse. Alternatively, if the health issues are not suited for a digital visit, then the patients get referred to the appropriate level of care [36]. The high availability in terms of waiting times is what attracts most patients. This can be quite convenient for people when compared to Närhälsan PHCs where you could wait for weeks, even if it is only a video meeting.

4.1.3 Patient's Attitude Towards Waiting Time in Primary Care

In the report "Hälso- och sjukvårds-barometern 2021" they have gathered results of the patients' attitude towards waiting time to visit PHCs all over Sweden [37]. Figure 6 shows, by age, the proportion that agrees in full or in part that waiting times to visit PHCs are reasonable. Generally speaking, people of older ages have a more positive attitude towards the waiting times to visit PHCs. Notice that the age group 18-29 has the lowest proportion (60%) which agrees that the waiting times are reasonable. Whether this reflects the current healthcare services provided is concluded in the report. However, it could be speculated that mental illness is more common among the younger population and the handling of mental illness patients for primary care is under greater workload. Nonetheless, the results in Figure 6 could indicate that the younger population has different needs in terms of getting care at PHCs.
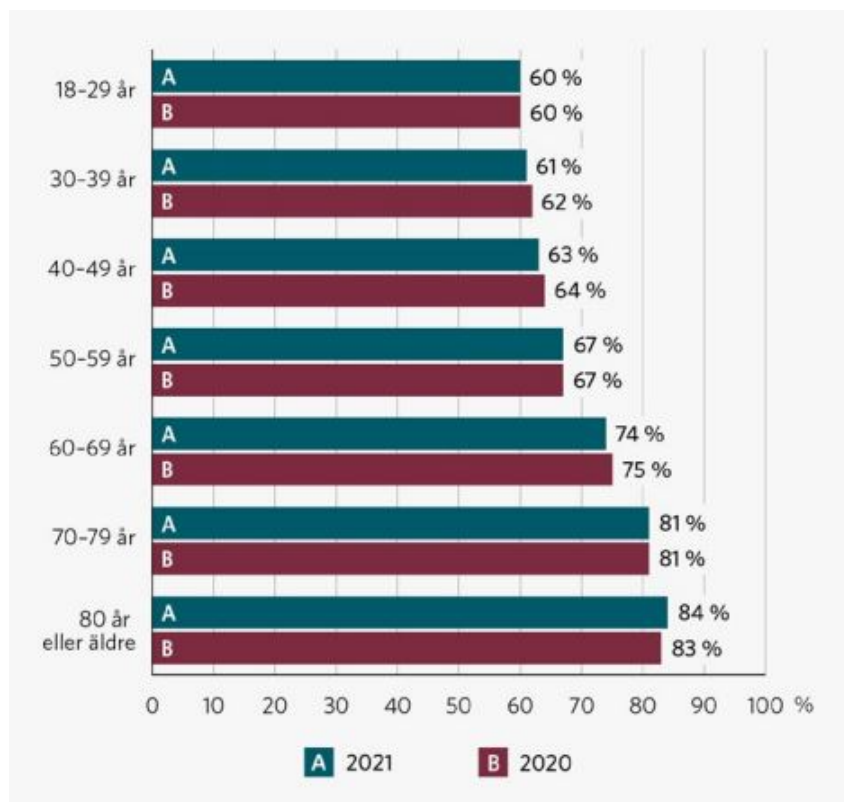
Figure 6: From *Hälso- och sjukvårdsbarometern 2021* SKR, 2022, Stockholm, Sweden: Copyright (2022). The proportion that agrees in full or in part that waiting times to visit PHCs are reasonable, where the y-axis represents different age groups.

4.2 Student Healthcare

Being part of the younger population and also being a student, one has the option to not only turn to PHCs but also SHC which are collaborating with universities. Students can contact them if they are experiencing health issues related to their studies and if they are not study-related then they should turn to primary care.

4.2.1 Feelgood

Feelgood is the main provider of student healthcare for GU and Chalmers students [38]. Feelgood offers help with the following: stress management, ergonomics and workload such as pain in muscles, medical checks and anxiety that is related to your studies. This could be through both individual meetings and group activities. The group activities could be in the form of workshops or lectures that are given about student health. The content of the workshops or lectures are not mentioned. There are, however, examples on what has given in form of lectures by other SHCs at other universities which is described in section 5.1. For the individual meetings, they provide both a physical and digital option. The virtual meeting can be done by phone or tablet through their Feelgood app.

4.2.2 Students' Perception vs Universities' Perception of Student Healthcare

Between the GU and Chalmers there were in total 45920 registered students in the year 2019/2020 [39]. The same year, at Feelgood, the number of annual staff in total was 12, which means that the number of

staff per 1000 students was about 0.3 [39]. This raises questions of whether the SHC is able to cover the needs of students when it comes to study-related illnesses. A survey done by Universitetskanslersämbetet (UKÄ) (see appendix D for their responsibilities) looked at the student unions' perception versus the universities' perception of accessibility to SHC [39]. Essentially, the student unions represented the students' perspective, whereas the universities who had an agreement with the SHCs represented their view. They were asked to what extent the students who contacted the SHC for an appointment also got one and if they did not get an appointment what the reason was. Most SHC always offered an appointment to students who reached out. For some SHC, all students were offered an appointment with a nurse, counselor or similar. The most common reason why a student does not get an appointment is that the issues that they are seeking help for fall outside of the SHC's area of responsibility. It could be a health problem that is assessed to be better handled by PHC or an issue that needs more educational support than support from the SHC.

When comparing the SHC perceptions to the student unions' perceptions, most of the unions are positive towards the SHC that is offered at the universities. However, many believe that the SHC is not enough to cover the student's needs. One of the main problems that they bring up are long waiting times and difficulties with getting an appointment. That said and Gothenburg being such a big city with the second most registered students, there might be a need for a PHC adjusted to students.

4.3 International students

Chalmers and GU not only have Swedish students but also international students. Every year Chalmers welcomes around 600 exchange students from all over the world [40]. These students' culture differs from the Swedish culture, which requires them to adjust. One of them is getting accustomed to the Swedish healthcare system. According to the survey done by UKÄ, international students have access to SHC just as much as Swedish students [39]. There are, however, a few challenges that come with offering student healthcare to international students. One of those challenges is that the SHC needs to guide the international students through the Swedish healthcare system. The system is unknown to many of the international students and there is often no information in English on the healthcare websites. Another challenge is that international students in some cases have expectations of what the student healthcare should help with, which falls outside of their responsibility. That is, there is a need not only from students, but also from international students, who can have different needs compared to a Swedish student.

5 Investigating the Possibilities

The following chapter presents the possibilities regarding a PHC for students. The investigation covers other health centers primarily in Sweden but also internationally, as well as the possible integration on campus and collaboration with other companies.

5.1 Other Universities in Sweden

All universities have the responsibility to ensure that their students are provided with access to healthcare according to Chapter 1, Section 11 of the Higher Education Ordinance. However, evaluations have shown that the design of as well as the services provided by the student healthcare differs between different universities [39]. Therefore, it is of interest to investigate the different possibilities of a PHC for students in terms of what other universities are doing differently.

One main difference between the SHCs in the country, is whether they offer guidance and care if the problems are study-related or not study-related. Some universities, e.g. Uppsala University, Umeå University, and Malmö University all offer their SHCs to students that have both study-related problems but also other health-related problems [41, 42, 43]. As of today, the SHC in Gothenburg only offers help with problems caused by studies, which could limit many students seeking care from their SHC provider. By providing healthcare for all students irrespective of the underlying cause of their problems, this could potentially create attractiveness and value for the students.

The SHCs also have different competences. The SHC at Umeå University is a great example of a student health service that has several competences in their employment, such as nurses, counselors, psychologists and physiotherapists [42]. Various competences in one place means that students can get help with a wider range of problems at the same place. To exemplify, those SHCs that have nurses working, often have in common that they offer students the possibility to test for genital diseases.

One interesting possibility for the PHC would be to focus on preventative care, especially targeted at students. For example, the SHCs at both Uppsala University and Umeå University offer recurring lectures, workshops and groups both in person and online throughout the year [41, 42]. These are, for instance, focused on stress management, sleep, anxiety, depression, mindfulness, or finding life balance. Hence, to offer preventative mental healthcare, providing services like lectures or focus groups could be a possibility for a PHC for students.

5.2 Campushälsan in Växjö

In contrast to the previously mentioned SHCs, *Campushälsan* in Växjö was an unique PHC for students [44]. Campushälsan was a part of the PHC Teleborg, and was open only for students. Besides Campushälsan, the university in Växjö had their regular SHC.

An interview with a psychologist that previously worked at Campushälsan in Växjö, was conducted to learn more about Campushälsan and the respondent's reflections on the operation. The background to why Campushälsan opened around 14 years ago is similar to the current discussion in Gothenburg, described in section 3.2. It had been seen that the student group were relatively healthy but also resourceful when seeking healthcare. If the students did not get help at the PHC, they would go further to the emergency or other places, which was often unnecessary. The idea was to have a place where the

students could seek healthcare even for smaller issues, get help quickly and avoid further problems for the patient and put pressure on the healthcare system.

Campushälsan was, as mentioned, a part of the PHC Teleborg, and was only next door to the rest of the main facility. The main staff was made up of a district doctor, a district nurse, a psychologist and a physiotherapist, where the employment rate varied over the years. There were also easy access to other personnel like midwives. There were lots of ways to contact Campushälsan and book a time. Examples were by telephone, drop-in, writing online on 1177 Vårdguiden, or email. The idea was "quick in - quick out", if many patients get short visits, the few that need longer visits have the possibility to get it. There should not be any hassle and no referral requirements. This organization was built on the Primary Care Behavioral Health (PCBH) model [45] (IBH - Integrerad beteendehälsa in Swedish [46]). The model is mainly for behavioral health, but since mental health issues are common among students, the model was a key to Campushälsan's success.

The model is built on three parts; accessibility, integration and triage [46]. It is seen as important to have high accessibility to avoid waiting times where the patients' complaints increase. Integration is built on the idea that the personnel work together and have a common ground on how mental health should be approached. The third part, triage, is the ability to sort and guide the patients to the right personnel. It should also be easy for other personnel to book appointments.

One challenge when it comes to having students as the patient group is that the demand for healthcare varies during the year. The highest demand was at the beginning of each semester and the lowest was during the summer. Campushälsan was more generous with appointments during times of low demand, in contrast to the more hectic times where they sometimes had to refer to the SHCs instead. During the summer when the demand was at its lowest, the personnel worked at the main PHC instead.

The students were satisfied with the service at Campushälsan, according to the psychologist that previously worked at Campushälsan. Campushälsan was close to campus and the students could walk over there and usually get help on the same day. If there was a personal crisis, the student could get an appointment with a psychologist within a couple of days, in contrast to the normal PHC where the waiting times could be several weeks.

Campushälsan was closed due to COVID-19 and has not opened again. Some of the reasons for the closing were that due to COVID-19, drop-in appointments did not work, it was unsafe in the waiting rooms and many students moved away from Växjö and studied from a distance instead. However, the closing should according to the respondent not be seen as an indication that Campushälsan did not work, but rather that new ways of working evolved instead. At this moment, the possibility of a re-opening of Campushälsan is unknown.

5.3 Student Healthcare Outside of Sweden

When investigating the student health services outside of Sweden, several differences can be identified. One essential difference is the fees and health insurance requirements. The range of services differs between universities, but it is common that the health services are more like a PHC in Sweden, and offer a wide range of services including vaccinations, nutrition, sports medicine, laboratory, X-rays etc. [47, 48].

Transparency is another thing that differs from the Swedish system. The University of Utah healthcare

system was the first in the US to post all the patient's comments received after visits [49]. The idea was to get all the patient's reviews and not a small fraction that often had complaints. This resulted in a change in how the care was delivered, where some of the physicians reported that transparency has made them better and more compassionate caregivers.

Most of the universities in the US have health clinics that provide care services for university students, faculty and staff [50]. Its services include e.g general health examinations, vaccinations, emergency care, pharmaceuticals, and gynecological, dermatological, orthopedic and psychiatric consultations. With a low budget from state funding and limited student service fees, health clinics have to deal with the limited resources and still try to provide acceptable levels of quality. A study made by Elizabeth A. Anderson, measured the service quality at The University of Houston Health Center [51]. This was done through a method called SERVQUAL which is applied to measure performance in the service industries, such as medical services in primary care. The respondents rated the service quality on five dimensions: tangibles, reliability, responsiveness, assurance and empathy. The customer's evaluation of service quality is based on perceptions of the service received relative to their prior expectations. This service gap, defined as the difference between expectations and perceptions, can then be used to determine what the clinic needs to improve upon. The results of the study was that the students cared about responsiveness, reliability and assurance. Waiting time is an indicator of responsiveness. That is the clinic could e.g look at redesigning its operations to reduce student waiting time.

5.4 Campus Development

The location of the PHC for students is an important factor, since distance to home or university and accessibility affects the students' interest in the facility, which was described in section 3.3. A natural place would therefore be on or close to Chalmers campus in Johanneberg. An ethical discussion considering the different universities in Gothenburg is discussed in section 7.2.

An interview with an employee at Chalmers University of Technology was conducted to hear more about the plan for Chalmers campus and the respondent's view on a PHC on campus. The respondent referred to a plan for Chalmers campus development that was conducted in 2019 [52]. One thing that the campus development plan states is the need to open up the campus to the rest of the city and society. This can be done in several ways, but a PHC at campus can be one way to attract others than students.

To explore the possibilities regarding the campus development, facilities and location of a PHC for students, an interview with two employees at Chalmersfastigheter was conducted. Chalmersfastigheter manages properties and their biggest stakeholder is Chalmers, however their customers are also external companies and organizations [53]. The interview with the respondents from Chalmersfastigheter addressed some possibilities but also raised some important questions. Chalmersfastigheter is in general open to collaboration with Chalmers and to develop projects or buildings that add value to their customers (which often are students). One concern that they raised was that there is already a PHC (Närhälsan Gibraltargatan) and a youth clinic (Göteborgs ungdomsmottagning Centrum) located on campus. One aspect is whether it is possible to collaborate with the already existing operations, or what the new facility would contribute with that does not already exist. A more ethical discussion concerning this can be found in section 7.5.

Another possible location of the PHC is at Mossens Randzon, close to Fysiken and many of Chalmers Studentbostäders buildings. An advantage of this location is that there is already a mix of students

and the area has plans for further exploitation [54]. A disadvantage, however, is that it is further away from trams and the centre of the city, and an alternative is another place around Holtermanska, close to Chalmershållplatsen [54].

5.5   Collaboration with Fysiken

Fysiken is a gym and fitness center located at three different places in Gothenburg, where two of them are located on or close to Chalmers campus in Johanneberg and the third in the centre of Gothenburg [55]. The owner is five student unions in Gothenburg, through GSF, but is open to everyone [55]. The organisation is non-profit, where any profit goes back into the business.

An interview with the co-managing director at Fysiken , was conducted to investigate their approach to collaboration with a PHC. At the time of the interview Fysiken had around 10 000 members where 45-50% were students. They offer student discounts on their services. The current collaborations with students are mainly at reception events for new students, both at Chalmers and GU. Those events could be lectures or try out training. Fysiken's approach to collaboration with a PHC is positive, since both companies would be owned by the same corporate group there would not be a risk for competition between the companies. Fysiken's investigations show that many of their members' goals are to train for better health and to relieve stress, and not only to maximize their training. The respondent from Fysiken means that if this can be further evolved to help students during stressful times, such as during exam weeks, this could be a benefit for the student's health and study results. The challenge is to reach and attract the students that do not like to do sports, the ones that do already exercise with them or in other places. An increased collaboration could decrease the breach between these groups of students. No concrete ideas for this were further discussed, but the goal is to find ways to introduce sports and health more naturally to the students, where increased collaboration during reception times could be one way.

When it comes to collaborations in terms of internships and research practice, the respondent from Fysiken means that it depends on resources and that it cannot compete with the practice they already have. For example, some of their personal trainers offer dietary services, so it would be illogical to introduce services that compete with that. The continuity in Fysiken's products is also important. A product needs to be available all year round, and not only during internship periods. Fysiken's interest in collaboration would be more substantial if it could be run more continuously. Another solution could also be that Fysiken provides the customers and advertisements. Fysiken's premises also hosts Elitrehab with legitimate physiotherapists, therefore collaborations in that area is more likely to be with them.

Another advantage that the respondent from Fysiken sees with a PHC within the corporate group is for Fysiken's employees. In cases when a customer needs medical assistance, such as overtraining, eating disorders or injuries, it would be easier for the employees to have policies that directly guide the customers to the right person at the PHC. This could make the employees more comfortable in difficult situations, but it would also benefit the customers in terms of better and faster service. Other things that can add surplus value for the customers and also help the employees are easier access to education for the employees. Examples can be courses in cardiopulmonary resuscitation (CPR), compression bandage and first aid.

6   Possible Solutions and Designs

This chapter presents possible solutions and designs for a PHC based on the previous chapters' investigation. Since there are many aspects to consider, the solutions will vary in amount and depth.

6.1   Physical Location and Architectural Design

From section 3.3.1 it can be concluded that the geographic location of the PHC is important. Preferably it should be close to home, otherwise, it should be close to campus or a public transport station. This was one of the advantages of Campushälsan, because it was located right beside campus where most of the students also lived. However, in Gothenburg one challenge is that the students and their accommodation is spread out over and close to the city. Chalmers campus in Johanneberg is relatively centered. This is, however, not the case for GU which holds most of the students in Gothenburg. Different possible locations were mentioned in section 5.4 where Mossens Randzon and Holtermanska were two examples, which both are close to Chalmers campus in Johanneberg. One disadvantage of both of these locations is that it favors Chalmers students and might discourage GU's students. However, Mossens Randzon is close to Fysiken and has a lot of student accommodation, which also attracts and accommodates GU's students. Holtermanska is close to Chalmershållplatsen and the center of the city, which can ease the transport to get there. To reach more students, another idea could also be to use mobile health clinics as a supplement [56]. Then the placement can vary between convenient locations for more students. Although a downside of this can be poorer continuity and that the mobile health clinic might not be at the closest location when a student needs it. Therefore, it may be better for recurring appointments or blood samples for example.

Another solution could be to have two locations, possibly where one favors Chalmers students and the other GU students. This could attract a broader range of students and therefore hopefully help more. A downside is the extra organisational demand for two clinics instead of one would require, as well as the challenge of finding two premises. As further described in section 6.2, the importance of the good ability of close collaboration between different caregivers is also dependent on the location. One facility might be more beneficial for that type of organisation. The most realistic solution might be to start with one location and, if successful, open another in a complementary location that widens the targeted students.

Besides the physical location, the opening hours are also important for accessibility. When considering the life of a student, the time during working hours may be scheduled with lectures or other teaching activities. Therefore, the lunch break can be a convenient time for the PHC to be open (except ordinary hours), which is not given for all PHCs open today. Having it open during some evenings can also increase the accessibility for students or other employees at the universities. From the good experiences at Campushälsan, a drop-in system is also recommended to diversify the ways to get healthcare.

When it comes to healthcare, integrity is also important. If the target patient group is students, there is a likely chance that the patients at the PHC will know each other. This might be disturbing for some patients and adjustments in the waiting room architecture could be a solution. More use of digital applications is also a possibility and will be further discussed in the following section.

6.1.1 Focus on Digi-physical Healthcare

The development of digital healthcare services has been rapid in recent years. The digitalization of healthcare could be a way to make care more effective and meet the increasing needs of students. As already described in section 3.3.2, students being a target group where they are quite experienced with digital services, a greater focus on digital healthcare would be something that they are more likely positive towards.

As mentioned in section 4.1 care providers such as Närhälsan provide the option for virtual meetings through mobile or tablet. By offering this service, one is not forced to have physical meetings, but rather having the flexibility to choose could be important to students for several reasons. One could be that a student is seeking help for mental health issues and does not want to be physically present at the PHC because of the stigma around mental illness [57]. It could also be a question of convenience for some students that do not live close to campus but are listed on the PHC. The online medical companies Kry, as we know, also provide the same service of virtual meetings with the possibility to get an appointment within 10-15 minutes, which is only possible because of the system where a patient gets an appointment with the first best available doctor, nurse or psychologist. High availability is certainly desired by students considering their busy schedule. However, this could be at the expense of the continuity of care which is a crucial factor in increasing the patients' trust in healthcare. By integrating more of the digital into the physical healthcare could be an option to provide the availability to meet the needs of students and not compromise the continuity between the patient and doctor. For example, a lot of GU and Chalmers students come from other cities and there are occasions where they visit their hometown during e.g holiday breaks and having the service of virtual meetings allows them to meet their primary doctor.

Other digital services that facilitate better care for students in terms of availability, effectivity and equality are websites and apps. By having a well informed website for students, it could relieve some of the workload that would be put on the PHC for students. This is especially important to international students who have difficulties navigating themselves through the Swedish healthcare system. As Chalmers and GU have quite a few international students, it is necessary to have a website where the information can get translated to English.

There are many possibilities with the PHC having an own app. An app, e.g. makes it easier for students to access information and it also provides the flexibility to book appointments online instead of having to call the PHC. The app could in addition be integrated with other apps such as the Fysiken app and the upcoming Chalmers student union app. By connecting these apps to a network, you provide an even better experience for the students. This contributes to building up the ecosystem by giving the students the best study time experience and hopefully making the students also adopt a healthier lifestyle.

6.2 Organizational Design

The organizational design is a crucial part for making the PHC efficient and attractive to students. After the interview with a psychologist that previously worked at Campushälsan, it was clear that one of the keys to Campushälsan's success was their organizational adjustments for the patient group by using the PCBH model [45]. As described in section 3.3.2, the availability and waiting times are important factors for students when choosing caregivers. The PCBH model offers appointments easily and quickly and is therefore a good choice. One aspect of the model is close collaboration between different fields, both within the PHC and also between other services such as SHCs and youth clinics. The model is described

briefly in section 5.2. Even though high availability is important in healthcare, all demand for it is not always necessary, which has to be considered [58].

A main suggestion is to have a PHC that handles all the patients in the same way, but the marketing and adjustments are towards students. However, if the rate of students as patients is low, it might be inefficient to use the PCBH model. Another possible solution could therefore be to have an organization similar to Campushälsan where the student patient group is handled separately from the rest of the patients.

The varying demand for healthcare during the year among students also affects the organizational structure of the PHC. During times with low demand, such as during summer, other tasks are needed for the personnel. The rate of this is affected by how high the rate of students as patients is. If the structure is similar to Campushälsan, one solution is to let the personnel work more in the main clinic. It could also be helpful to collaborate with the PCBH and other facilities to ease the pressure during the most hectic periods.

An aspect that has been mentioned on several occasions in this investigation, is the possibility to increase the collaboration with already existing caregivers instead of opening a new PHC. Campushälsan is a good example of this. However, in Gothenburg and especially at Chalmers student union, there is now a unique opportunity to do this with students as the owners. We believe it would be unfortunate to not use this opportunity and do as it has always been done before. With students as the owners there can be more student influence and adaptations, which is what is needed to attract the students.

Another key factor is the caregiver's reception and treatment of the patients. The personnel need to enjoy working in the special environment that the patient group brings. One example can be not being irritated when patients seek healthcare for minor disturbances. The personnel should be prepared for the sort of problems that the students experience, both mentally during the academic year but also physically as an often young adult. This is also an important factor given that the students demands for availability and short waiting times is not always possible or actually needed. A good communication can then be a way to handle all the students' demands without making them displeased.

6.2.1 Collaboration with External Actors

From the mapping of the current state of services provided to students, there is a need to look at ways to relieve the long waiting times. As waiting time is an extremely difficult-to-capture and multifaceted phenomenon, there is no direct and simple solution [59]. This could be partly because a PHC is limited in resources, but also that there is not an unified healthcare system that is provided [60]. That is why we believe that an interconnected network consisting of multiple different external actors can have a crucial role in providing the care that fulfills the students' needs.

Although we are targeting students as a group, it is important to consider that each student can still have different needs based on their individual circumstances. It differs in each student's individual capabilities and resources in oneself and in one's close surroundings where it takes more than a PHC to fulfill the students' needs [61]. Sometimes the support needs to come from primary care and other times there is a need for other efforts in society. That is why a collaboration between a PHC and other external actors in society is important. For example, by working together with Fysiken there are lots of possibilities to encourage students to be more physically active. By doing this, one not only makes sure to improve

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the physical well-being of students but also strengthens their mental well-being, as there are studies that show the connection between a reduction in sedentary lifestyle and the improvement of mental health [62]. Other collaborations that the PHC can do are with Feelgood and the restaurant at Chalmers' campus, *Kårrestaurangen*. Through these types of collaborations, we not only make sure that we treat mild to moderate health issues but also make sure that students take care of themselves and their health in terms of eating, sleeping and being physically active to promote good health.

The advantage of having a PHC at Chalmers campus, Johanneberg, as a starting point is the fact that you are able to develop a close relationship with students based on their specific needs. This continuity in regular nurse/doctor/psychologist contact consequently facilitates lots of possibilities to cooperate with external actors and provide the best support for students.

6.3 Adaptation for Students

Apart from the previous proposed solutions, there are other adjustments that can be made to improve the healthcare service for students. One is to have multilingual personnel to improve the quality of service for international students. When meeting with a psychologist or other healthcare personnel, the experience for both caregiver and patient improves with good communication [63]. Besides English, other languages that are common among international students could be extra usable.

The need for easy and fast service has been pointed out several times throughout this investigation. One way to take this a step further could be by implementing a solution that Campushälsan used. It was a special choice of buttons for students since they knew that this patient group did not want to wait and listened to all the slow information. This easy feature could be a small but still important adjustment that is beneficial for the students.

As mentioned in section 6.2 and 7.1, the PHC can not refuse any non students as patients but instead adapt the marketing to reach a greater portion of students. Therefore it is important to be visible physically during reception events, in the student union building and on campus. Except physical marketing, social media can also be a great way to reach the students.

6.4 Preventative Care

The findings in Chapter 3 indicate that there is a higher prevalence of mental illness among university students and that there is a need for preventative care to promote both physical and mental health among students. Therefore, it would be of interest to consider implementation of such care at a possible PHC with students as the main patient group.

Possible ways of implementing preventative care at the PHC could be to offer courses, lectures, workshops or groups, focusing on how to prevent mental illness and promote well-being. Services like these are already offered by several SHCs throughout the country, as explained in 5.1. These courses or groups could, for instance, focus on mindfulness, stress management, or anxiety and they could be based on cognitive behavioural therapy. To increase the availability, these courses and groups could be offered either online or both in person and online. To lower the threshold for students to come in contact with these preventative offers, some information could also be published on social media. Examples can be to have specific weeks when highlighting subjects as anxiety or daily physical activity.

Through informative lectures, courses and focus groups, the health literacy among university students

and young adults could hopefully improve. In the longer run, this could help students to take better care of themselves with regards to both their mental and physical health. Fysiken, medical professionals or other collaborating partners could be possible resources for this.

Other ways of preventative care is to promote physical activity in the outdoor environment. This is also in line with the plan for Chalmers campus development, and more collaboration within this area could be successful.

6.5 A Place for Research and Clinical Practice

Both Chalmers and GU are institutions with extensive research capabilities. By allowing students, whether it would be undergraduates, masters or PhD students, using PHC as a platform to try out new things benefit both the research advancements but also the PHC. Students can e.g. look at methods described in section 5.3 to measure the service quality in the PHC. This can then be used to better understand the students' needs in terms of a PHC for students, which could then be used to improve how care should be delivered in the PHC.

Another possible design of the PHC would be to integrate clinical practice and student projects e.g. in terms of bachelor's or master's thesis. Akademiska vårdcentraler or academic PHCs is already something that is implemented in certain parts of Sweden. At an academic PHC, there is a collaboration between education, research, development and primary care [64, 65]. One important aspect of these academic primary care centers is that they provide a place for teaching or clinical practice for students in the field of health or healthcare. The deficit availability of teaching practice is a struggle for many universities that offers e.g. medical education. Hence, one possible design idea would be to open an academic PHC, and in that way integrate teaching practices for the students at Sahlgrenska Academy into the daily work and care for patients.

7 Ethical Considerations

There are many societal and ethical aspects for a PHC and its technology. With students as the primary patient group other aspects within and in connection to the students also occur. This chapter will shed a light on some of these aspects that might be of concern for the future of the PHC for students.

7.1 Students as the Primary Patient Group

In Sweden, the prioritisation in healthcare is built on three ethical principles: human dignity, need and solidarity, and cost-effectiveness [66]. One of the aspects that is especially relevant for a PHC for students, is that the clinic cannot be open only to students. There are several ways to handle this, where targeting marketing towards students is one example. With adjusted marketing, there is a chance to get a higher rate of students as patients than in other PHCs. Another way is to do as Campushälsan, where the whole PHC was open to everyone and Campushälsan was a special unit for students [44]. An important point is that the non-student patients at the PHC should not get lower quality of care than elsewhere.

There are several aspects why it is ethically responsible to open a PHC for students. One is from the cost-effectiveness perspective regarding the reasons why Campushälsan opened, described in section 5.2. The students as a patient group were resourceful and would seek help in the wrong places if they did not get help quickly at the right place. That puts pressure on the healthcare system and it might be more cost-effective to help this patient group in a fast way, before their concerns increase or they seek care elsewhere. Another aspect is the decreasing mental health among students, described in section 3.1. Because of this, it is clear that the system as it is now, is not working for this patient group. A PHC that targets the student's needs might be a way to help improve the student's health instead.

7.2 Different Universities and Different Needs

As could be seen when investigating the needs (see chapter 3), students have different needs in terms of what they want in a PHC. Some students find the geographical or physical location of their primary care center to be most important, and having it close to home or in close connection to the university could be a crucial factor. This raises some ethical concerns when considering where the PHC should be located, since the university students in Gothenburg are scattered around the city. The students of Chalmers are studying at either one of two campuses: Johanneberg or Lindholmen. However, in a few years, all of Chalmers' students will be located in Johanneberg, and since many students live in close proximity to the university, a strategic location for the PHC would be somewhere close to Chalmers' campus, Johanneberg. The majority of the university students in Gothenburg are studying at the GU however, and since the university premises of GU are scattered over several places in Gothenburg, Johanneberg is probably not an ideal location for a PHC for many of the GU students. If the PHC is to be placed on premises on Chalmers' campus Johanneberg such that it would require students to enter and cross the campus, this could potentially make some students at GU feel uncomfortable. Hence, finding an ideal location for the PHC that fulfills the needs of all university students in Gothenburg, especially regarding geographical and physical location, might be difficult and should be taken into consideration.

It is important to note that university students of Gothenburg are not a completely homogeneous group. There could most likely be differences with regards to the health status and needs of the students depending on, e.g. gender, age, study year, study program and nationality. The need for preventative care to promote mental as well as physical health seems to be important for the group of university students

as a whole, but exactly what the students need to prevent mental illness could vary between sub-groups.

7.3 Targeting International Students

Since the possible PHC will be targeted at all university students in Gothenburg including the international students, it is of importance to consider the differences between national and international students when it comes to knowledge of the Swedish healthcare system. Although it has not been further investigated in this research project, there might possibly be lack of knowledge regarding the right to choose a PHC among the international students, and especially newly arrived students. Therefore, the presentation and marketing of the PHC is necessary to consider when attracting students as customers. From an ethical perspective, it is important that international students that lack this knowledge of the Swedish healthcare system, do not feel pressured or forced to choose the possible PHC as their main clinic. It is also important that the information is not only in Swedish, but also in English and maybe other languages. This applies to all information regarding the PHC and not only marketing. Examples can be to not only write the drug instructions in Swedish when prescribing medications.

7.4 Conducting Research and Clinical Practice

As mentioned in section 5.3 there are a lot of advantages to conducting research at the PHC or using it for clinical practice. Nevertheless, there are ethical dilemmas to consider, such as the safety and integrity of the patients. When it comes to conducting research, it is important to make sure that the patients are aware of the collaboration between the universities and the PHC so that they understand how it might affect them as patients. That is, the people that list themselves on the PHC should not feel pressured in any way to participate in a research project and how they are treated should not be affected by their choice to participate. Furthermore, the PHC needs to ensure that the research does not interfere with any of the main tasks of a PHC. The PHC is there to treat patients and therefore it is crucial that the quality of service does not get affected by the research work. This could be, for example, that the research projects need to use the data that is collected at the PHC. Then it is important that the integrity of the patients is handled correctly.

The clinical practice at the PHC would offer a lot of opportunities for students to apply their theoretical knowledge in practice. However, as the students are not licensed practitioners yet, it is important that the patients are informed about the clinical practice taking place on the PHC and that they have the option to refuse the students to participate in their meeting. They should also feel safe, and that if they do not participate that it has no consequences for their continued care at the PHC.

7.5 Competition Issues

Since there already exists a PHC (Närhälsan Gibraltargatan) on campus (as described in section 4.1.1 and 5.4), it may be reasonable to discuss whether it is ethical to open another one. A report by the Swedish Competition Authority [67] states that a PHC has its own market if the closest PHC is located over 300 meters away. When looking at the PHCs located closest to the two proposed locations in section 5.4, neither Holtermanska nor Mossens Randzon was at risk for this. The report also states that if the new PHC is located within 2-300 meters to the closest PHC, it can be an advantage for the other PHC. Even though the competing issues may be justified by the report by the Swedish Competition Authority, there is still a risk that this is unwelcomed by other businesses. However, it is important to have good communication with them and hopefully open up to some form of collaboration. In Chapter 3 when

investigating the needs, it could be seen that there clearly is a need for better healthcare for students, which can be an argument for opening the PHC.

8   Conclusions

As the time at university is a challenging period that comes with academic pressure, a lot of stress and for some separation from family, it was requested by GSF to investigate the health status of students and find out if the healthcare system is fulfilling their medical needs. This was to determine whether there is a need for another PHC specially designed for students and if so, what the possibilities and solutions are for such a PHC. That is, a PHC that would not only be there to fulfill the students' medical needs but also, on top of that, influence the students to adopt a healthier lifestyle and make their time at the university a better experience. By reviewing the literature on the health status of students, there seems to be an increased prevalence of mental illness among young adults, where university students may be particularly susceptible to mental health issues. This, in tandem with the healthcare services of primary and student healthcare not covering the students' needs, in terms e.g difficulties getting appointments or long waiting times, suggest that there is a need for a PHC. From also conducting interviews with key people and companies such as Campushälsan Växjö, Fysiken and Chalmers University of Technology, the possibilities of a PHC for students were explored. Finally, using the basis found in investigating the needs of students and possibilities of a PHC, possible solutions and designs were formulated. Possible solutions for a PHC are e.g adjustments in the organizational design and a location close to the students. As with any PHC, there are constraints, hindrances and limited resources which make it difficult to implement all of the proposed solutions. Nonetheless, we believe that the start up of a new PHC for students, that will continually improve with time by getting feedback from student-patients, restructuring the organization and collaborating with other external actors, will be a great step towards improving the mental and physical well-being of the Chalmers and GU students.

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A Interview Questions

This appendix presents the questions asked during the interviews presented in table 1. All interviews were conducted in Swedish, and an English translation of the questions is presented in *italic*.

Psychologist

Hur såg det ut när du jobbade på Akademihälsan? *What did it look like when you worked at Akademihälsan?*

Vilka sökte sig till Akademihälsan? *Who sought healthcare at Akademihälsan?*

Var det några specifika studentgrupper? *Were there any specific student groups?*

Upplevde du att det var några studenter som ni missade? *Did you experience that there were some students that you missed?*

Studenters hälsoproblem, vilka är de? *Students' health problems, what are they?*

Vad tror du om att ha uppsökande verksamhet? *What do you think about having outreach actions?*

Skicka ut kallelser till besök? *Send out invitations to appointments?*

Vad tror du om att få in fler digitala möjligheter i vården? *What do you think about bringing more digital opportunities into healthcare?*

Employees at Chalmersfastigheter

Vad ser ni för möjligheter/svårigheter med att starta upp en vårdcentral på campus? *What do you see as opportunities/difficulties with starting up a primary healthcare center on campus?*

Vad är era tankar kring blandningen av GU/Chalmers studenter? *What are your thoughts on the mix of GU/Chalmers students?*

Lokal för vårdcentral på campus? Möjligheter? Finns det lediga lokaler? *Premises for a primary healthcare center on campus? Possibilities? Are there any vacant premises?*

Vad har ni för tankar kring förbättrade miljöer/utemiljöer för studenternas välmående? *What are your thoughts on improved environments/outdoor environments for students' well-being?*

Employee at Chalmers University of Technology

Vilka möjligheter ser du kring att starta upp en vårdcentral för studenter? *What opportunities do you see with starting a primary healthcare center for students?*

Vad ser du för svårigheter? (lokalmässigt, platsmässigt, utvecklingsmässigt etc) *What difficulties do you see? (premises wise, location wise, development wise, etc.)*

Vilka svårigheter/möjligheter på kort sikt respektive lång sikt? *What difficulties/opportunities do you see in the short term and long term, respectively?*

På vilket sätt tror du det hade varit positivt för campusutvecklingen med en vårdcentral? Finns det några negativa aspekter? *How do you think it would be positive for the campus development with a primary healthcare center? Are there any negative aspects?*

Är det enligt dig aktuellt att placera lokaler för en vårdcentral inne på campus Johanneberg eller anser du att det är mer lämpligt med en placering utanför campusområdet? *Do you think it is relevant to place premises for a primary healthcare center at Johanneberg campus, or do you think it is more appropriate to have a location outside the campus area?*

Hur ser du på möjligheten att det kanske blir en stor del icke-studenter som är patienter på vårdcentralen? *How do you see the possibility that there may be many non-students who are patients at the primary healthcare center?*

Hur tänker du kring möjligheterna vad gäller utformningen av vårdcentralen? *How do you think about the possibilities regarding the design and layout of the primary healthcare center?*

Sara Högberg, co-managing director at Fysiken

Hur ser samarbetet mellan Fysiken och kårerna ut idag? Föreläsningar, erbjudanden etc? *What does the collaboration between Fysiken and the unions look like today? Lectures, offers etc?*

Hur många av medlemmarna är studenter? *How many of the members are students?*

Hur kan Fysiken bidra med förebyggande vård? *How can Fysiken contribute to preventive care?*

Hur är Fysikens syn på samarbete med vårdcentral/studenthälsa? Potentiella möjligheter med ett sådant samarbete? Positiva/negativa aspekter? *What is Fysikens' view of collaboration with primary healthcare centers/student health? Potential opportunities with such a collaboration? Positive/negative aspects?*

Har ni haft inspirationsföreläsningar eller workshops på något sätt? *Have you had inspirational lectures or workshops in any way?*

Hur ser samarbetet ut med Elitrehab? *What does your collaboration with Elitrehab look like?*

Hur ser ni på möjligheten att studenter från olika utbildningar (dietist, fysioterapeut osv) kan göra sin praktik i samarbete med er? *What is your view on the possibility that students from different educations (dietitians, physiotherapists, etc.) can do their internship in collaboration with you?*

Hur ser ni på möjligheterna för testbädd för forskning? *How do you see the possibilities for pilot projects for research?*

Vad finns det för möjligheter för icke-medlemmar? *What are the opportunities for non-members?*

Emma Laurtizson, former psychologist at Campushälsan

Hur fungerade Campushälsan? Var låg den (i förhållande till universitetet)? *How did Campushälsan work? Where was it (in relation to the university)?*

Var det något speciellt med Campushälsan? Krävdes det någon speciell utbildning? *Was there anything special about Campushälsan? Was any special education required?*

Vet du något om anledningen till att campushälsan inte är öppen just nu? *Do you know anything about the reason why Campushälsan is not open right now?*

Hur många patienter var studenter? *How many patients were students?*

Arbetade ni med förebyggande vård? *Did Campushälsan work with preventive care?*

Vad skulle du vilja ha på en vårdcentral för att förbättra vården för studenter? *What would you like to have at a primary healthcare center to improve healthcare for students?*

Vad gjorde det möjligt att kunna ha vårdcentral och Campushälsan? *What made it possible to have a primary healthcare center and Campushälsan?*

Vet du något om studenters erfarenhet av Campushälsan? *Do you know anything about students' experience with Campushälsan?*

Tror du att Campushälsan fungerade bättre för att Växjö är litet? Bor studenterna nära campus i Växjö? *Do you think that Campushälsan worked better because Växjö is a small city? Do the students live near the campus in Växjö?*

B Questions to Students

Introductory information

Vad studerar du och på vilket universitet? // What are you studying and where are you studying?

Vilken termin/årskurs? // Which year?

General questions about healthcare experiences

Har du besökt din vårdcentral? // Have you visited your local/primary healthcare center?

Vilken är den viktigaste faktorn för dig när du väljer vilken vårdcentral du ska lista dig på? Detta kan till exempel vara närhet till hemmet, bemötande på vårdcentralen eller väntetider. // What is the most important factor when choosing your primary healthcare center? Examples of this can be distance to your home, the staff's treatment or waiting times.

Vad hade gjort din nuvarande vårdcentral bättre? Varför? // What would have made your current primary healthcare center better? Why?

Är det större chans att du söker hjälp via en vårdcentral/studenthälsa om det erbjuds digitala besök? // Is it more likely that you will seek help via a primary healthcare center / student health if digital visits are offered?

Vad hade fått dig att söka till en annan vårdcentral än den du är listad på idag? // What would make you apply to a primary healthcare center other than the one you are listed on today?

Questions about the location of the primary healthcare center

Är det viktigt för dig var vårdcentralen ligger? Varför är det viktigt/inte viktigt? // Is it important to you where the primary healthcare center is located? Why is it important / not important?

Hur viktig är integriteten för dig på en vårdcentral? På vilket sätt? // How important is integrity to you at a primary healthcare center? How?

Hade du velat gå till en vårdcentral dit många du känner också går? Varför/varför inte? // Would you like to go to a primary healthcare center where many you know also go? Why / why not?

Questions to international students

Vilket land kommer du ifrån? // Which country are you from?

Hur skiljer sig det svenska hälso- och sjukvårdssystemet för studenter mot det i ditt hemland? // How does the Swedish healthcare system for students differ from your home country?

C   Health of University Students in Gothenburg

C.1   Student Health at Chalmers University of Technology

Every year, Chalmers University of Technology together with the Chalmers Student Union follow up on the students' perceptions and opinions on their education, study environment and life situation and this is investigated through the survey *Studentbarometern*. Some of the questions in the survey concern the students' perception of their health. In February 2020, the survey got 3242 respondents (response rate of 33 %) and at that time, the general health status among the students were estimated to be 66 % which indicated that there were potential for improvement [68]. One year later, in February 2021, the general health status had decreased to 61 % but that year the survey had 4531 respondents [69].

The results from the survey in 2022 indicated that the general health status had increased from the previous year to 64 % but there is still potential for improvement [21]. In 2022, the survey also contained a new question concerning how the students seek care or help regarding their well-being [21]. There were several options and there were 1580 respondents. The survey found that 70 % of the students seek help from family or friends; 27 % seek help from their PHC or other healthcare; 21 % didn't get help; 11 % sought help from a study counselor; and only 6 % had sought help from the student health service [21].

In a proposed action from 2021 by the Chalmers Student Union management team, the health of Chalmers' students during the corona pandemic were addressed and several pathways for meeting the students needs were presented [23]. The proposed action was partly based on the results from the survey Studentbarometern, that was sent out in January 2020 and had 3242 respondents, as well as results from the survey *StudentVoice* that was sent out in October 2020 and had 1619 respondents. Thus, the surveys were conducted before and after the outbreak of the Covid-19 pandemic respectively.

What could be observed when comparing the results from the two surveys was that the general health status or well-being of both national and international students worsened during the first year of the pandemic [23]. One question in the survey StudentVoice concerned the negative effects of the pandemic on the students' mental health, and the results showed that 79 % of the national students felt that the pandemic affected their mental health in a negative way, while 57 % of the international students had perceived a negative effect on their mental health [23]. Regarding the negative effects on the physical health, 53 % of the national students reported that they had experienced such effects, while that number was 35 % for the international students [23].

C.2   Student Health at the School of Business, Economics and Law

The HHGS Education Committee have arranged a so called *Speak Up Week* every year since 2018, with the aim of collecting the students' thoughts and opinions about their education. One part of the Speak Up Week is a survey that has been divided into five or six parts, covering approximately 30-40 different questions in total. Every year, one part of the survey have contained questions regarding the topic health. The number of respondents in the surveys from 2019, 2020 and 2021 were 365, 1177, and 659 respondents respectively [70, 71, 22].

One of the questions in the health related part of the survey from both 2020 and 2021 was: *"Are you aware of our student health service "Feelgood" where you can get help and support if you have health issues due to you studies?"*. The results from 2020 showed that only 30 % of the responding students

were aware of the student health service Feelgood [71]. The HHGS Education Committee commented that this could possibly be explained by the fact that Feelgood had replaced Akademihälsan as the student health service only earlier that year. In 2021, the survey showed better results in terms of students awareness of Feelgood and their student health service. However, more than 50 % of the respondents still did not know about the student health service Feelgood [22].

C.3   Student Health at the Sahlgrenska Academy

SAKS have not done any surveys of the same character as the Chalmers Student Union or HHGS have done. There is however a report from 2017 on the health of students at the Sahlgrenska Academy, written by Söderberg et.al [20]. The unit of occupational and environmental medicine at University of Gothenburg and the Sahlgrenska Academy performed the study during the autumn 2016, and there were 2398 respondents (61 % response rate) in total from all undergraduate programs at the Sahlgrenska Academy [20]. The results showed that there was a widespread prevalence of mental illness among the students; and that 15% of the students had sought medical care for their study-related illnesses, where the highest share was found among the female medical students where 27 % had sought care [20]. In this study, the medical healthcare included both Akademihälsan, which was the student health service at that time, and other care agencies such as a local medical center.

D   UKÄ

UKÄ is a state agency that examines and evaluates the quality in higher education in Sweden. Their work is divided into three main areas: to make sure that higher education in Sweden is of high quality, to follow and analyze the development and trends within Swedish universities and lastly to make continuous inspections ensure that the universities are following laws and rules.

In November 2019 UKÄ were assigned, by the government, to do a comprehensive mapping of the student health care at Swedish universities. It involved looking into student's availability to health care and how it is organized at different universities, identifying potential shortcomings with the current student health care and coming up with proposals of measures to be taken for a more suitable and practical student health care. The goal with the mapping was to give the government a basis which would contribute to the continued work towards promoting students' physical and mental health but also further improve the student health care in dialogue with students.

E   Swedish Agency for Health and Care Services Analysis

In 2014, the Swedish Agency for Health and Care Services Analysis published the report "Vem vill veta vad för att välja?", that investigated what kind of information different groups of people want to know in order for them to choose their provider of primary healthcare [27]. This study was based on another study from 2013, also conducted by the Swedish Agency for Health and Care Services Analysis: "Vad vill patienten veta för att välja?" [27]. The analysis consisted of three stages where the last stage was a survey with 3354 respondents. Among the age group of 18-34 years, 38 % had changed their choice of primary PHC at least once during the last three years, and 17 % were considering a change of primary PHC [72].

The results from that survey showed that the possibility to choose your PHC is more important amongst women and elderly, while it was less important for men and young [27]. It could also be shown that the younger population had less knowledge about the free choice of primary healthcare. However, the results from the study indicated that the younger population more often change or consider changing their PHC, and therefore may have a bigger need for information on the choice of PHC than others [27]. The writers explain in the report that one reason for why the younger population more often change or consider changing PHC, could be that young adults more often move places than other age groups [27]. Another finding from the survey was that the most important and determining factor among the general population when choosing a clinic was the geographical location of the clinic, and this was also the determining factor for the younger population [27]. However, information about continuity in primary care is less important for the younger population, and this is likely due to their lower consumption of primary healthcare.

According to the survey results, the general population think that the geographical location of the PHC or clinic is important to know when choosing a clinic [27]. When the number of alternatives are higher, such as in bigger cities, this could affect the interest of information. The results showed that residents in bigger cities generally are more interested in the geographical location of the clinic or how to get there and they also find these factors as deciding factors. The geographical location of the clinic is also of importance for those people that are moving. The respondents that stated moving places as their reason for changing primary care center, were generally more interested in trying to find a clinic that is well located.

The results in the report also indicates that there are some differences between what kind of information women wants to know in comparison to what men wants to know. In general, the results showed that women consider all kinds of information about the PHC as important, while men generally consider them as less important. Women seem to think that the physical location and the availability of the PHC, the possibility of meeting the same doctor and the behavior towards patients are some crucial factors when choosing a clinic [27].