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Digital Games in Young Adults´ Mental Health Rehabilitation

Perceptions of professionals & experts

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Description

Author(s) Korhola, Kimmo Mautz, Peter	Type of publication Master's thesis	Date January 2019
	201	Language of publication: English
		Permission for web publication: x

Title of publication **Digital Games in Young Adults´ Mental Health Rehabilitation** Perceptions of Professionals & Experts
Degree programme Double degree programme, Master's Degree Programme in Social Services and Health Care, Health Care and Social Services Development and Management
Supervisor(s) Raitio, Katja (JAMK) & Reiche, Ralf (CUAS)
Assigned by Coronaria Sähäkkä

Abstract

Millions of people are suffering from mental health issues worldwide, while service providers are looking for effective, low threshold solutions suitable for a new generation of digital natives. Game-based solutions show promising results yet utilising them in everyday mental healthcare still requires more research, especially considering mental health professionals, one of the primary user groups.

The primary goal of the authors was to learn more about the perceptions of mental health professionals and gamification experts and the potential and risks of digital games in young adults' mental health rehabilitation, their requirements for a successful implementation and their attitude towards digital games in general.

The process included three stages: A literature review clarifying the background and state of earlier research on the topic. Focus groups with mental health professionals, held at Coronaria Sähäkkä, to learn more about their attitude, knowledge and ideas and a series of interviews with mixed experts on gamification and serious games to gather their opinions and valuable information. Mental health professionals had various perceptions of digital games. They prefer digital games to be tailored to the needs of mental health rehabilitation and a better overview of the existing solutions. Information concerning digital games should be focused on the needs of mental health rehabilitation. When it comes to training, a practical setting offering the possibility to try out digital games for themselves is in favour.

Keywords
digital games**,** mental health, mental health rehabilitation, serious games, gamification, professional development

Tiivistelmä

Ympäri maailmaa miljoonat ihmiset kärsivät mielenterveyden haasteista. Mielenterveyspalveluiden tuottajat pyrkivät löytämään uusia matalan kynnyksen palveluratkaisuja, jotka soveltuisivat uusille digisukupolvea edustaville kuntoutujille. Peleihin perustuvat ratkaisut ovat antaneet lupaavia tuloksia mutta niiden käyttöönotto vaatii vielä lisätutkimusta varsinkin koskien mielenterveystyötä tekeviä ammattilaisia, jotka ovat keskeinen pelejä työssään käyttävä ryhmä.

Tekijöiden tavoite oli saada lisää tietoa mielenterveystyötä tekevien ammattilaisten ja pelillistämisen asiantuntijoiden käsityksistä digipelien käytöstä nuorten aikuisten mielenterveyskuntouksessa sekä käyttöön liittyvistä mahdollisuuksista ja uhkista. Tämän lisäksi selvitettiin digipelien implementointiin liittyviä vaatimuksia sekä digipelien käyttöön ja digipeleihin kohdistuvia asenteita.

Opinnäytetyöprosessi sisälsi kolme vaihetta: Aiempaa aihepiiristä tehtyä tutkimusta ja kirjallisuutta koskevan selvityksen; ideoita, tietämystä ja asenteita selvittäneet fokusryhmä haastattelut Coronaria Sähäkässä mielenterveystyötä tekevien ammattilaisten kanssa; yksilöhaastattelut valikoitujen pelitutkimuksen ja mielenterveyskuntoutuksen asiantuntijoiden kanssa. Mielenterveyskuntouksen ammattilaisilla oli monenlaisia ja monipuolisia käsityksiä digipelien käytöstä nuorten aikuisten mielenterveyskuntoutuksessa. Ammattilaiset haluaisivat lisää tietoa mielenterveyskuntoukseen suunnatuista digipeleistä ja toivoivat erityisesti tätä tarkoitusta varten suunniteltuja pelejä. Digipelejä koskevan uuden tiedon tulisi koskea niiden käyttöä mielenterveyskuntoutuksessa. He toivoivat koulutusta, jossa voisivat tutustua digipeliratkaisuihin mahdollisimman käytännönläheisesti ja kokeilla itse pelejä.

V

Table of Contents

List of Abbreviations

L 14.12.1990/1116. Mielenterveyslaki. Säädös säädöstietopankki Finlexin sivuilla.

- ESA   Entertainment Software Association
- EU   European Union
- ISFE   Interactive Software Federation Europe
- KELA   Kansaneläkelaitos (Fin. Social Security Institution)
- MPAA   Motion Picture Association of America
- MSAH   Ministry of Social Affairs and Health Care

- UN   United Nations
- USA   United States of America
- VVG   Violent Video Game
- WHO   World Health Organization

List of Figures

List of Tables

Preface

Since CUAS and JAMK launched the Double Degree Program, not a single thesis had been written in co-operation by two international students from two different countries.

For us, it felt like a unique chance and an opportunity to gain as much as possible from the Double Degree Program. Not only regarding international science communication and research co-operation but also to practice language skills and exchange cultural knowledge. We decided to write the thesis together in spring of 2018 in the course of a colloquium, which was part of the Double Degree Program. After the collaboration was authorised, we started to set up meetings and plan the research in a more detailed fashion. The first task was narrowing down the topic to a sufficiently specific focus. This was achieved by discussing the matter between us and checking back with the supervisors and the representative from Coronaria Sähäkkä. After the weeks that followed, we created an exposé in close co-operation. The approval of it was the first significant milestone for this thesis.

During the execution part of the study, we met between one and seven times a week, for online discussions and planning sessions. The collaboration got more intense during the final phase of the project, and for the last month, we kept in touch daily, using either chat messages or online voice communication.

When sharing experiences, we would describe our co-operation as flawless, easy going and educative. We both feel that we have improved magnificently in terms of written and spoken English and have acquired a variety of skills and knowledge, useful for the organisation and coordination of future projects. This would not have been possible without the shared thesis project. Scheduling for mutual online meetings was occasionally challenging, but we both were extremely flexible, and so meetings were often rescheduled in shared understanding.

We unreservedly recommend such a collaboration for every future participant willing to get the most out of the Double Degree Program. We are hoping that our bold example will encourage other international students to work in international teams as well. It has been a unique chance to get true real-life experience from international scientific collaboration.

1. Introduction (Peter Mautz)

"Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less."

This quote is attributed to Marie Curie. A woman who lived in the late 19th century in a world where research was dominated by men. Despite that, she managed to leave an incredible mark on the pages of history. She became the first woman ever to be awarded a Nobel Prize, the first person ever to win a second Nobel Prize and the first and only person since then to win two Nobel Prizes in two different sciences. (Wikipedia 2019.)

The reminder of such an incredible person, not to fear the unknown, but to be curious and improve our understanding about it, shall not go unheard. Also, understanding more is, or at least should be, the purpose of any research ever conducted, and this master's thesis, as limited as it might be in its scale, is no exception.

The research journey that will be undertaken during this thesis starts with the global rise of a phenomenon that was only recognised as a side note back in the 1980s: digital games. Fuelled by technological advances and development of communicational infrastructure, they grew to a global multi-billion-dollar industry. It was only in the last decade that their up-rise reached new heights when the inflation-corrected revenue of the global gaming industry jumped from 44.25 billion dollars in 2005 to 108.9 billion dollars in 2017 (Fandom 2019). For perspective: This is more than 2.5 times the movie industry's 40.6-billion-dollar global box office revenue of 2017 (MPAA 2017). These numbers are not surprising considering the 2.6 billion players worldwide, claimed by the Entertainment Software Association (2018).

However, despite having a phenomenon that is impacting roughly a third of the worlds' population: "The vast majority of research by psychologists on the effects of gaming has been on its negative impact: the potential harm related to violence, addiction, and depression" (Granic, Lobel & Engels 2014, 66).

One can easily imagine that focusing the research on the negative aspects has consequences. Media coverage and education of professionals for example. Both rely on research, and both produce more negative than positive findings, since that was what had been studied for decades (Granic et al. 2014). The gathered knowledge is valuable and will not be questioned. However, researching only one dimension of a phenomenon as complex as digital games is very much like looking at a cube from the front. One will never notice that it is, in fact, a cube and not only a square, if one does not look at it from another angle: "If the popular press simplifies the effects of video games, it is no less true for most psychological research" (Granic et al. 2014, 74).

At this point, it is time to get back to Marie Curie and her reminder that it is necessary to understand more in order to fear less.

In the past decade, a new vein in research emerged, trying to make the step to the side and examine the phenomenon "digital games" from a different perspective (Granic et al. 2014, 66). In the wake of this trend, also serious games emerged — a type of game designed to serve a serious purpose rather than mere entertainment. For example, in the treatment of depression or post-traumatic stress disorder. These games will be previewed in detail later in this thesis. However, a meta-analysis conducted on them shows overall promising results, while often criticising methodology and calling for more research to be conducted (c.f. Fleming et al. 2014; Fleming et al. 2017; Li et al. 2014; Eichenberg & Schott 2014).

Nevertheless, it is indisputable, that more research is required regarding the effectiveness of specific game-based solutions: "People with mental health problems are entitled to receive treatments that are consistent with the best available evidence" (WHO 2015, 8).

One shall not forget the people directly impacted by those tools. Mental health clients and mental health professionals, whose experiences, perceptions and attitudes have not been researched to a great extent, despite being seen as important factors for a successful implementation of game-based solutions in every-day mental healthcare (Hopia, Siitonen & Raitio 2018, 10).

1.1 Relevance of the Topic

The statistics about digital games as presented in the introduction already outline a phenomenon that has permeated almost all layers of society and age. The Entertainment Software Association's annual report for 2018 on demographics and usage data takes the same attitude and gives another hint on the sheer significance of digital games in our western society. Of all Americans, 60% play digital games on a daily basis. Furthermore, it might be surprising that 70% of the game playing population are 18 years of age or older, making children and juveniles a minority in numbers. This is underlined by data showing that the group of adult women (33%) is almost twice as large as the group of boys under 18 (17%). (Entertainment Software Association 2018, 4-9.) However, research conducted by Lenhart et al. (2008, 2) found that out of a sample of n=1102 juveniles between 11-17 in the United States, 94% of the girls and 99% of boys played digital games. In Germany, data provided by the Interactive Software Federation of Europe (ISFE) shows that 55% of the population aged 6-64 was playing games averaging 7.9 hours per capita and week in the first quarter of 2016 (ISFE 2016, 1).

Data collected by the Interactive Software Federation Europe and the Entertainment Software Federation shows that more and more people are playing (online) games and according to Hopia and Raitio (2016, 894) users of mental healthcare services are no exception.

While digital games are undoubtedly a topic of great significance, there is another topic with equal importance that has already been approached: mental health.

Research by the WHO (2016) featuring a systematic review of data and statistics from community studies in the EU, Iceland, Norway and Switzerland shows that 27% of the population aged 18–65 had experienced at least one of a series of mental disorders in the past year, including situations caused by substance abuse, psychosis, depression, anxiety, and eating disorders. The estimated 83 million affected people in those countries are, according to the WHO most likely a massive underestimation, since the research excluded both, the youth and the seniors. (WHO 2016.)

Across the 53 states with nearly 900 million citizens, mental disorders are responsible for 19% of the disability-adjusted life years (DALYs) and 40% of the years lived with disabilities (YLDs) according to the WHO (2015, 13). Numbers as high as these have a noticeable impact on the countries' economies, with an estimated cost of about 500 billion Euros per year (Joint Action 2019). Unfortunately, a large number of people avoid mental health services. Discrimination, stigma or negative experiences can cause this. To improve the situation, the WHO aims to promote deinstitutionalised, community-based, out-patient approaches and solutions. A reduction of entry barriers to the system as well as participation in the development of services and therapies are also part of the agenda. (WHO 2015, 7-9.)

With the situation outlined, it might be reasonable to recapitulate and bringing all three elements together:

- **Digital Games**
  Most people in the developed world play digital games, across gender and age. Entire generations grow up playing digital games almost without exception. People are familiar with them.

- **Mental Disorders**
  Mental disorders affect millions of people, and since new generations are almost entirely familiar with digital games, the percentage of gamers among them is likely to increase. To improve the situation, the WHO (2015, 7-9) is calling for low-threshold, participative and wherever possible, outpatient solutions.

- **Serious Games & Gamification**
  Serious games and gamification try to harness powerful game mechanics for therapy purposes. In addition to that, game-based solutions are designed to have a low threshold, with many of them playable at home. While researchers like Hopia and Raitio (2016, 894) advocate for a service user's capability to contribute to the improvement of such services.

As Lee (2016) emphasises, games have an enormous potential to transform the future of mental health care. He names "SPARX" as an example. A game designed as a self-help intervention for adolescents which has beaten usual care in remission from depression rates 44% versus 26%. However, the game was not a success and the author concluded that healthcare professionals have difficulties talking describing their vision to a developer and don't know the principles of game-design. (134-136.)

According to Koivisto (2018), gamification is still at its very initial stage. In order to use gamification successfully in different contexts, one must acknowledge cultural and social factors, as well as demographic differences and the nature of the activity. The attraction of novelty can easily make one forget the client perspective. It is essential to understand that in gamification and usage of serious games one size does not fit all. (Koivisto 2018.)

Hopia and Raitio (2016) furthermore underlined a lack of implementation or updates of digital health tools in the desired manner, even though positive results have been achieved due to the implementation of such tools in mental health work. The authors predict those digital tools to be in daily use in the future, and that they require quick and flexible changes in job descriptions and work content in mental health care. (894.)

A study later conducted by Hopia, Siitonen and Raitio (2018) concluded that gamification of mental healthcare is not a "one fits all" solution. It is difficult to understand it and multitudinous. Trying to implement it in existing approaches might only work for a few people and trying to implement and establish new game-based solutions is a time-consuming process, requiring a solid evidence base. (10.)

> *One of the preconditions for the implementation of new methods is the availability of sufficient research focusing on different perspectives. However, the attitudes of service users and professionals towards games and gaming have not been extensively researched in the context of mental health services.* (Hopia et al. 2018, 10.)

Due to the complex nature of this matter and the difficulty of predicting the outcomes of a game and the objectives of the game designers, it is especially important for the mental health professionals to know their service users' needs: "This is another reason why there is a definite need for more research on attitudes towards games and gaming." (Hopia et al. 2018, 10.)

1.2 Purpose of the Study

The purpose of this master's thesis is to answer the call for more research on mental health professionals' attitudes towards games and gaming. It aims to improve the understanding of what mental health professionals think about digital games in young adults' mental health rehabilitation, and which potentials and risks they see. Another purpose is to get ideas on what is needed to make digital games work as a common tool in every day mental healthcare practice by speaking to professionals and experts. Finally, the thesis aims at collecting more information on what mental health professionals think they would require regarding professional development, to be ready for the challenges caused by new game-based solutions. All this shall be and compare how this resonates with the opinion of experts in gamification and serious games. Because:

> *Good mental health service delivery requires sufficient competent staff. Changes in service structure and ways of working require changes in workforce numbers and skill mix in all parts of the mental health services.* (WHO 2015, 7.)

Ultimately, this will improve the knowledge base on the topic and support decision makers when it comes to the implementation of game-based solutions in the future. Since the knowledge about existing potentials and weak spots, as well as attitudes towards games and gaming, could be utilised and directly targeted.

1.3 Research Questions

To achieve the purpose of this master's thesis, the following research questions must be answered:

Main question:

- What perceptions do mental health care professionals, mental health care experts and gamification experts have about the potential and risks of using digital games in young adults´ mental health rehabilitation?

Sub-questions:

- What perceptions do mental health care professionals, mental health experts and gamification experts have about the type of professional development needed for mental health professionals in order to be able to use digital games as a common tool in young adults' mental health rehabilitation?

- What is the attitude and knowledge of mental health professionals, working with young adults, towards digital games and gaming in general?

1.4 Structure of the Thesis

Before diving into the theoretical background, the elements of this thesis will be presented, outlining the research concept and giving detailed information on the process of literature research.

Having done that, a step by step introduction to the topic will be provided for the reader, beginning with early adulthood as a phase of development. After that, the focus moves on to mental health in the context of young adulthood, describing challenges and disorders and showing data from the EU-region and Finland. The following part will focus on mental health work and mental health rehabilitation, giving information on available services, methods and tools as well as well as Coronaria Sähäkkä. A Finnish rehabilitation service provider for young adults. Coronaria Sähäkkä was in partnership with the authors of this thesis, allowing them to conduct their research and giving valuable feedback from a working life perspective. This co-operation lasted throughout the whole thesis process.

The second segment in the theoretical background is all about digital games. It answers the question of what a game is, gives examples of how games can influence us and shows what this has to do with the concept of "flow". After having a better understanding of game mechanics and their power, the reader will be introduced to the concepts of gamification and serious games. He or she will then learn about the differences between the concepts and about the variety of game-based solutions in mental health research today.

By understanding the meaning of young adults´ mental health rehabilitation on the one hand, and digital games on the other, the core issue of the thesis will be finally introduced. The complicated relationship between mental health professionals and game-based solutions, as it was discovered in earlier research by Hopia and Raitio (2016, 894-902) and Hopia et al. (2018, 1-12). Both studies functioned as an inspiration, foundation and starting point for this master's thesis. Therefore, a summary about them and their findings will round off the theoretical background and state of the research.

After giving the reader an overview of the theoretical background, the methodology chapter will explain in detail how the data collection was planned and executed. This includes the description of the qualitative methods chosen for data acquisition and processing, as well as information regarding the process of questionnaire development, interview planning and execution.

The presentation of the results follows the methodology chapter. A chapter is dedicated to the presentation of the collected data. The structure of this part is strictly following the category system developed in the research process, showcasing the answers from the focus groups and expert interviews.

One of the final chapters in this thesis is the discussion, in which the gathered results are critically reflected using available literature on the topic. This is also where the authors of this thesis present their thoughts produced in brainstorming sessions on the topic. In addition to this, the discussion chapter is also where the chosen methodology is critically analysed, and where the research questions are answered.

2. Young Adulthood and Mental Health (Kimmo Korhola)

This chapter marks the beginning of the theoretical background. It covers and defines emerging adulthood in various contexts, previews challenges and disorders in this important phase of human development and showcases statistics on mental health to provide the reader with a better overview. Following young adulthood, the focus is moving on mental health work itself, explaining different forms of rehabilitation and services. Rounding down this chapter is an introduction of Coronaria Sähäkkä, showing their role, methods and system in detail.

2.1 Adulthood and Emerging Adulthood

Adulthood can be defined from at least three different perspectives. It can be seen as a legal matter but also as something defined from a personal or social point of view. The legal definition assumes adults as persons who are capable of making informed decisions for themselves. They are seen as autonomous. There are several activities restricted from juveniles that are considered to be harmful, risky or demand a capability of foreseeing long-term outcomes. Such activities are for example sex, smoking, marriage, gambling, voting or having a dangerous job. Adults are the ones capable of responsibility. That is what differentiates adults from children. Despite gaining a certain legal age of adulthood one may deem oneself as an adult or not. Young adults living in modern western countries consider themselves adults in some respects and in others not. Age 18-25 has been described as emerging adulthood. It is an age in which a lack of commitment and responsibilities may occur, but one is no longer as dependable on one´s parents. Personal views on the meaning of adulthood vary among individuals. When young adults were asked, for example, the answers may contain the following elements: marriage, parenthood, moving out of the parental home, sense of personal responsibility, financial independence from parents, achieving stable employment and leaving education. These markers are typically reached after 25 years of age and only very rarely by the legal age of adulthood. Social norms effect and modify personal impressions about adulthood and adulthood as a concept differs a lot depending on cultural factors. (Robinsson 2013, 2-5.)

As the word, "adult" origins to the Latin word "adultus" meaning grown up or mature the label of adulthood is often described as a stable face of life. Many researchers in contrast to this classical definition think, that adulthood should be divided at least in three different developmental phases that each consists of their own tasks and goals. These phases are productive adult life, retired adult life and dependent old age. (Robinsson 2013, 7.)

In a theory by Havighurst late youth and early adulthood share simultaneously the same kind of developmental purposes. The theory combines biological growth and social expectations. Social expectations vary depending on life stage and guide one´s individual growth. Therefore, one must be capable of adapting in relation to these expectations set by norms and cultural factors. There is a possibility for individual decision-making for each individual, but the settings are created by societal possibilities, alternatives, rules and standardised life models. (Kuusinen 1997, 312-313.)

According to Kuusinen (1997), the critical developmental tasks of late youth (16-23) are the creation of a personal belief system and ethics, separation from parents, preparation for relationship and marriage, preparation for parenthood and preparation for career and studying related choices. At this stage, one´s normative references are switched from parental home and childhood settings to social and profession-related peer groups. (Kuusinen 1997, 314.)

Young adulthood is seen in Havighurts´s theory as a period between 23-35 years of age. The developmental tasks for this period are choosing a life partner, starting a family, managing a shared economy in a relationship, participating in working life, proceeding in career issues and taking part in duties as a citizen. Starting a family and having children have an impact of participation also in day-care and schooling co-operation. Recently the value of work and career have decreased in western societies, and people can find meaningful activities also from other domains of life. Finding a partner and starting a family is a task that continues through both late youth and early adulthood. (Kuusinen 1997, 314-316.)

According to Levinsson´s theory, one´s life span is labelled by movement between stable stages and transitions between them. In his description, adults

aged between 18-40 years are in a stage of early adulthood, people aged between 17 and 22 are in a transition phase of adulthood and adults aged between 22 and 28 are in a stage of becoming an adult. In this theory, the key term in perceiving adult age is structure of life. Structure of life describes one´s personal development and contains meaningful relationships. It also contains one´s different roles related to family, work and other communities as well as different sides of an individual´s personal characters. In each structural stage, the amount of factors, such as important roles, tasks and relationships is limited. In a stable phase of life, individuals do not question their roles or ambitions but instead settle in the current situation. Structure of life is also about key choices that set the course for one´s life and that form the building blocks for life. Each stable stage of life lasts approximately 6-8 years. (Perho & Korhonen 1997, 323-325.)

Between every stable stage of adulthood, there is a transition phase that can also be called developmental stage. These stages last approximately 4-5 years. During these stages, life is re-evaluated and analysed. Developmental stages form due to the contradiction that one experiences between one´s expectations and the existing reality. In a developmental stage, it is typical for an individual to weigh the importance of significant and essential roles. Radical changes at these stages can result in a crisis, but they may also exist as a change of perspective. All developmental stages are labelled by strong and intensive exploring of self. (Perho & Korhonen 1997, 324-325.)

Specific gender-related differences have been found in studies about entering adulthood. Women relate to the task of beginning to study as well as to tasks of taking care of other people more often when entering adulthood, whereas men tend to focus on the tasks of individualisation and independence. Even though the theory divides adulthood into different phases and time periods, it is important to remember that each person has strong individual content and rhythm of his/her own. (Perho & Korhonen 1997, 326-328.)

In the definition of youth by the World Health Organization, the term "adolescent" means persons 10-19 years old; the term "youth" means persons 15-24 years old and the term "young people" means persons 10-24 years old.

Placing exact age-related barriers between childhood, youth and young adulthood is very difficult as the process of development from being a child to becoming an adult is more about going through different developmental stages. (Adolescent Health and Development 2011; Kinnunen 2011, 23.)

2.2 Special Features of Emerging Adulthood in Late Modern Age Western Countries

The most characteristic feature labelling young adulthood is the challenge of facing a developmental crisis (Erikson 1982, 42). Special features manifest as multiple developmental tasks that should occur in young adulthood.

Entering adulthood is typically described in research with five external markers: completion of schooling, entering the labour force in a full-time job, the onset of childbearing and parenting, the onset of cohabitation or marriage with a chosen romantic partner, leaving the parental household and completing schooling. (Arnett 2004, 7-9; Kokko, Mesiäinen & Pulkkinen 2006, 34.)

In our opinion, it can be said that the modern societal surroundings in western countries set new challenges for a person's individual developmental tasks relating to young adulthood.

Even though the development of identity begins during youth, the development continues in young adulthood. In modern western countries, young adulthood is a phase for multiple choices, and the surrounding setting offers many possibilities regarding career, work, studies, friends and romantic partners. The freedom of choice in lifestyles has increased dramatically in the past years and produces new challenges in the context of identity development and transition to adulthood. Late modern age societies are characterised by a restructuring of social systems and relativity of values. (Fadjukoff 2007,15-17.)

The timing of transitions from youth to adulthood vary a lot depending on individual characters and environmental settings. The average timing of transitions to adult roles is increasingly later in industrialised countries such as Finland. Most young people experience the lengthened transition period positively, but on the other hand, for some, it might create challenges regarding

identity creation. In a jungle of endless possibilities, some individuals cannot make use of this unstructured period but instead get lost in it. In such a case, young people would benefit from external help when transitioning into adult roles and responsibilities. One can claim that emerging adulthood raises new challenges concerning identity formation, exploration and development. (Fadjukoff 2007, 18.)

The term emerging adulthood introduced earlier in this paper can instead of 18-25 also refer to the age from 18 to the late-twenties. This definition is used by Arnett, and it describes the lengthened time between adolescence and full adulthood. It can be said that the transition time has delayed recently, and the youth are offered a lengthened period to various experiences considering work and love without taking full responsibilities in social and family life. This lengthened period offers a chance for self-exploration and psychological moratorium. (Arnett 2004, 31-32; Fadjukoff 2007, 17.)

In this thesis young adulthood means the age between 18-29 years. The age definition is based on the definition of emerging adulthood introduced by Arnett, as well as the age category of mental rehabilitation clients that Coronaria Sähäkkä provides services for.

2.3 Mental Health

There is no single or simple definition for the term "mental health". Scholars representing different fields of science emphasise different factors in their definitions. According to the world health organisation (2018), mental health is a state of wellbeing in which one understands one´s own competences, is capable of functioning in normal stressful life situations, is capable of participating in productive work, and is capable of participating in community activities. One classic definition of mental health is composed by Sigmund Freud, who claimed that mental health is the "ability to work and love". In his well-known theory about human development, Erik H. Erikson claims that when a person has a realistic sense about him/herself and when one´s self-image is lasting one´s "mind is healthy". Mental health is also described as a resource that a person uses in order to control his/her life. (Lehtonen & Lönqvist 2017.)

Quite recently an entirely new term has parsed and clarified the complexity between the terms "mental health" and "mental illness". That term is "positive mental health". The phenomenon of positive mental health is complex, dynamic and holistic and developing in continuing interaction with the environment. Mental health does not disappear even though a person is facing problems or challenges – there is always some amount of it left. Mental health and its consequences manifest through feelings, thinking and behaviour. (Sohlman 2004, 35; Canadian Institute for Health Information 2009.)

According to the Finnish Mental Health Association (2018), skills related to mental health are something that can be strengthened. Competencies related to mental health are skills in handling thoughts and feelings, coping skills in different life situations, social skills and skills in problem-solving. Developing mental health skills is useful and rewarding. Many factors protect one´s mental health. These factors can be divided into internal and external factors.

The internal factors are for example:

- Possibilities to implement one´s self
- Capability to engage in sustainable relationships
- Social skills
- Skills in handling conflicts
- Skills in problem-solving
- The feeling of being accepted
- Sufficient self-esteem
- Favourable early (childhood) relationships
- Good physical health and genetics
- Social support and friends

The external factors are, for example:

- Educational possibilities
- Work or other income
- Support of work community and/or superior
- The chance of being heard and possibilities to influence

- Safe living environment
- Easily reachable societal support systems within a short range

Developing competence in these factors is beneficial for all individuals. Mental health is constructed in identity and personality. (Mielenterveysseura 2018; Kinnunen 2011, 35.)

2.4 Mental Health in Emerging Adulthood

Young adulthood can be seen as a stage of enormous changes in one´s life settings. It is also a stage in life in which individual habits and settings become more stable. These life-changing events happening at a rapid pace affect the health, behaviour related to health and quality of life of young adults. (Suvisaari 2009, 297.) The basics for positive mental health are formed in earlier developmental stages before entering emerging adulthood. According to Erikson, the most important task in youth is to find an identity. It is an individual process that follows certain stages: a stage of unclear identity, search for identity, accomplishing an identity. The accomplishment of identity creates a sense of wholeness and a solid base for value-based decision making later in life. (Erikson 1982 according to Sneed et al. 2006, 148-157.)

Multiple factors influence this developmental process simultaneously. The basis for the development of identity and mental health are genetics, individual predisposition, environment and life events. The perception about the relationship and about how much each factor influences on the development of mental health has varied due to time, culture and the angle of approach selected by the scholars, culture, societal structures and values also influence the development of mental health. (Kinnunen 2011, 26.)

Research has shown that depression symptoms, challenges in emotional life and different un-favourable experiences taking place in one´s child youth and youth are related to mental health later in life. How the symptoms appear can vary a lot as time goes on: for example, depression and anxiety are sometimes cross-predictable and behavioural challenges in youth may predict anxiety or depression symptoms in emerging adulthood or anxiety symptoms in youth may

predict burn out symptoms in emerging adulthood. It has been clearly shown that the poverty of a parental home causes a risk of anxiety and depression symptoms in emerging adulthood. (Kinnunen 2011, 34.)

Individual developmental factors and environmental factors often offer an explanation for the time of becoming ill, show how the symptoms are manifesting and what is the prognosis. In the case of severe mental disorders genetics play, a significant role as these conditions are due to changes in the structure of the brain. Becoming ill with a mental disorder is, always a time-related chain of events that is due to multiple factors having a simultaneous effect. The individual chain of events explaining the reasons for becoming mentally ill is called pathogenesis. The development of a mental disorder or becoming mentally ill can be understood as a result of exposing factors, protecting factors, developmental factors and triggering factors having simultaneous influence. The exact timing of becoming ill with a mental disorder is extremely difficult due to the nature of mental disorders that often are a result of long-term developmental processes. (Lönnqvist & Lehtonen, 2017a.)

One´s adulthood is constructed from a set of developmental crises. These crises are partly shared amongst all people and partly individual and often related to personal life events such as experiencing a loss or going through a separation process. Developmental crises can be described as intersections in life and require the ability to adapt and future orientation from the person experiencing them. Success in adaptation creates conditions for a new era in life that will most likely lead to a new crisis, developmental challenges and adaptation. Research shows that in addition to individual features deep relationships and a wide social network can support one´s adaptation process. (Lönnqvist & Lehtonen 2017a.)

2.6 Mental Health Challenges and Disorders in Emerging Adulthood

Incapability to fulfil developmental challenges fast or in time predicts lower life-satisfaction in middle-life in comparison to individuals who have fulfilled the

developmental challenges in time. The transition phase from youth to adulthood increases the risk of experiencing mental health challenges and mental health disorders. From the perspective of one´s life span, the incidence of mental health challenges is at its highest peak in youth and early adulthood. Mental health challenges often decrease significantly young adults´ capacity of participation in studies or work life and increase the risk of mental health challenges later in adulthood. Young adults´ mental health challenges and disorders also form a significant challenge for the public economy. Finish research shows that in Finland 25% of young adults face at least one mental health challenge or disorder. (Kestilä, Koskinen, Suvisaari, Aalto-Setälä & Aro 2007, 3979–3986.)

Mental disorders can manifest as different kinds of symptoms, and also the form and intensity of the symptoms vary individually. The symptoms are, for example, depression, anxiety, neurotic obsession, various kinds of fears, psycho-somatic symptoms or psychotic symptoms. Symptoms of mental health disorders increase in youth and early adulthood between 12-24 years of age. Mental health disorders are diagnosed twice as much for young people as for children. (Kinnunen 2011, 31.)

2.7 Mental Health Statistics in Europe

Research by the WHO featuring a systematic review of data and statistics from community studies in the EU, Iceland, Norway and Switzerland shows that 27% of the population aged 18–65 had experienced at least one of a series of mental disorders in the past year, including situations caused by substance abuse, psychoses, depression, anxiety, and eating disorders. The estimated 83 million affected people in those countries are, according to the WHO, most likely a massive underestimation, since the research excluded both youth and seniors. (WHO 2018.)

The comparison between genders shows that the prevalence of mental health disorders for women is higher in most cases. The rate in substance abuse and psychotic disorders make an exception as substance abuse in almost four times

more common for men, and psychotic disorders have practically the same prevalence rate. (WHO 2015.)

EU-wide, the high prevalence of mental health disorders causes a massive loss of human capital and a decrease in labour. Mental health disorders have an impact not only individually but also on the societal and economical dimension. On the individual level, a mental health disorder can have a high impact on one's capability to earn money from productive work. At present, mental health diseases are the most common reason for people to receive a work disability benefit. The estimated cost caused by mental health disorders in the EU region is almost 500 billion euros. This number shows the costs caused by the use of health care services and the costs of loss of productivity. (European Commission 2016.)

The policies in European countries should be able to respond to changes in the demographical change in the population. The EU region has also faced challenges regarding economic growth and employment rates. Many governments are appraising the wellbeing and the mental wellbeing of the citizens as the most important agenda in their policies. The goal is to maximise and preserve wellbeing across the European Union counties. In order to have a high impact rate on citizens´ mental health wellbeing, the European countries should implement policies including the following aspect and strategies:

- Providing high standard service and treatment by giving more resources in terms of quantity and quality of human capital.
- In order to reduce stigmatisation and discrimination of people with mental health challenges, the services should be arranged at close range within one´s municipality instead of centralising the treatment in central hospitals and institutions.
- More emphasis and resources should be focused on proactive work in order to prevent mental health disorders and to promote citizens´ mental health wellbeing.
- The funding for mental health services should be secured.

- Mental health care services should be easy to access by anyone at any time.

- When designing policies and structures of mental health care services, the participation of service users, professionals and experts is essential. This would increase the empowering of the clients.

(WHO 2015.)

The cornerstone of mental health promotion is to give the subject positive attention as a value and potential within individuals, families, municipalities and citizen nations. In the European Union mental health work should be a solid part of health promotion work targeted towards the citizens. Psychiatric treatment should be seen as a natural part of effective specialised health care services. Mental disorder is always a significant burden not only to the subject him/herself but to people around them and the whole society. Stigmatisation should not exist as it increases the burden unnecessarily. Positive attitudes relating to mental health disorders are most likely being created by sharing up-to-date, relevant and reliable information about the subject to the public. (Lehtonen & Lönnqvist 2017b.)

2.8 Mental Health Statistics in Finland

According to Heikkinen-Peltonen, Innamaa and Virta (2008), mental health disorders are the second most common reason in Finland causing long-term illnesses. Every other citizen has had challenges with his/her mental health in terms of mild or non-permanent mental health disorders, and one-fourth of the population faces a mental health disorder that requires medical intervention and treatment. (136.) Mental health disorders are common in all age groups. Research shows that the prevalence of mental health disorders among higher education students under the age of 35 have been increasing since the year 2000. The most common symptoms experienced by the students were depression, stress and over-exhaustion. In the year 2000, 21% of the students were experiencing mental health challenges whereas the percentage in 2012 was 28%. (Laukkanen & Aalberg 2006, 15; Kunttu & Pesonen 2012, 45, 91-92.)

Amongst the most severe threats to public health in Finland are mental health disorders and problems with substance abuse. Approximately one-quarter of finish adults suffer from psychological symptoms with adverse effects at some point during their life span. About 7% of the adult population face challenges related to anxiety, alcohol abuse and depression. In childhood and youth, bullying causes a significant threat. In the year 2000 about one-fourth of children aged 13 reported that they had experienced bullying during the previous months. 12% of the students in the 8th and the 9th grade were suffering from moderate or serious depression in the year 2005. In 2007 mental health disorders were the most common reason for disability pensions. Amongst older people, 6.5% of men and 13.2% of women over 65-year-old were currently diagnosed with depression. The suicide mortality rate in Finland is among the five highest within the EU region and due to this clearly above the average. (European Commission 2019.)

Depression is the most common mental health disorder worldwide and also in Finland. In a study "Terveys 2000" young adults aged 18-29 were asked about depression and exhaustion symptoms. The study showed that 18.3% of women and 5.7% of men were experiencing depression symptoms and that 31.9% of women and 29.9% were experiencing symptoms caused by exhaustion. In a study by Suvisaari in 2009 (n=1863) 40% of the people reported that they had had challenges with mental health issues or substance abuse at some stage of their life and 15% reported facing the issues at the time of the study. The most common mental health disorders among young adults were depression 17.7%, substance abuse 14.2% anxiety disorder 12.6% and bipolar disorder 1.9%. (Kinnunen 2011, 32.)

Lönnqvist & Lehtonen (2017d) claim that according to epidemiologic measurements the overall state of mental health of the whole population has not changed significantly during the recent years. Despite this, it seems that especially the working ability and the overall functional capability of young adults have been affected. The most common reason for a decrease in life satisfaction and functioning is depression. The transformation to a more competitive and information-centred society seems to challenge an individual´s

competencies relating to emotional life. The reason for this is unknow for now. (Lönnqvist & Lehtonen 2017d.)

Even though that the average age of the population in Finland has increased in recent years and physical health has increased by all standards the same positive effects cannot be seen in the mental health of the population. This epidemiologic fact supports the assumption that the same methods and strategies used in order to support better physical health do not apply when dealing with mental health issues. Developing, preserving and supporting functions of mental health require different kinds of activities and strengths. (Lönnqvist & Lehtonen 2017b.)

2.9 Mental Health Work

Mental health work can be divided into mental health promotion and treatment of mental health disorders. Mental health care is one part of mental health work. The goal of mental health work is to identify individuals at risk of mental health challenges, to provide psychic first aid and help in crisis situations and to help the individual to maintain or gain back his/her mental health. (Kuhanen 2013, 16.)

Recognition and early intervention are the essential elements in youth mental health care. It is crucial to find and arrange effective individual treatment in order to prevent negative consequences in later life such as exclusion. In youth mental health care, the supportive actions should be targeted to positive personal competences and individual guidance. (Marttunen 2009, 45-46; Kiviniemi 2008, 72.)

The rehabilitants should play an active role when future mental health services and proper treatments are being planned. Their opinions provide an insight point of view. The participation of the service users should also include an active role in organising and involving in individual care plan and treatment. (Laitila 2010, 45.)

In mental health work, the interaction between the mental health work professionals and service users plays an important part. The goal of the co-operation is to empower the service users. The treatment should be centred not only on the problem caused by the symptoms of mental health disorder but to value and highlight the service users´ individual competencies and needs. Interaction skills play a meaningful part in everyday work. In mental health work also the ethical aspect of everyday work is always present, and it can be seen in ordinary work tasks and communication situations. Societal values and the current state of economy influence the ethics of everyday mental health work. In the discussion about ethics related to mental health work, it is crucial to identify and separate the purely economic factors influencing everyday decision making such as economic profit, narrowing down the funding, cost-effect relationship and efficiency. A tendency to prefer economical values can be seen in short in-ward hospital stages and the popularity of out-patient care services. (Kuhanen et al. 2010, 59-60.)

A person´s subjective right to live as good a life as possible ought to be the essential goal of mental health work. The importance of mental health rehabilitation can also be observed from a societal perspective. This perspective highlights the relationship of rehabilitation to economical and labour related aspects. From a narrow perspective, rehabilitation can be considered as a diagnosis-based psychiatric intervention. The modern idea of rehabilitation is broader and takes into account all the negative and positive factors influencing mental health caused by the individual´s disorder or disability. (Koskisuu 2004, 10.)

2.10 Rehabilitation and Mental Health Rehabilitation

Rehabilitation can be described as an individual change process. Rehabilitation contains all the actions that the individual is participating in order to increase his/her life satisfaction. A change in a person´s attitudes, thoughts and emotions are an essential part of rehabilitation. Rehabilitation also means a change in the behavioural patterns of the individual involved. One´s willingness and readiness to participate in rehabilitation play an essential role in rehabilitative processes.

The service user/client participating in the rehabilitation process should be able to set personal goals related to his/her life. Small everyday tasks that everyone is capable of doing play a significant role in rehabilitation processes. (Valkonen 2011, 17.)

These same principles can be said to consider also "mental health rehabilitation" as shown in the next chapter.

As a concept "mental health rehabilitation" can be considered as covering the whole field of rehabilitation of clients who have any type of mental health disorders. Despite this one broad concept it is important to remember that the actual mental health rehabilitation processes differ a lot due to the nature and severity of the disorder. Often quite ordinary and simple things related to the service user´s every-day life are sources of finding the meaningful and important factors that support and increase one´s mental health. That is why the service user should be seen as an expert in his/her rehabilitation process. In real-life rehabilitation, the needs and wishes of the service users are unfortunately likely to go unnoticed. Service users should be treated in practice as users´ of the services, and the professionals´ task is to support and help in this process. As professionals are not capable of producing rehabilitation or well-being on the service users´ behalf the service users themselves should play an active part in their rehabilitation process. The core of the rehabilitation should be formed from service users´ hopes, needs and possibilities. (Pylkkänen 2008, 67; Riikonen 2008, 160.)

Mental health rehabilitation can also be described as the entire set of activities from the proactive mental health work, done in order to influence the environment and circumstances of a person in order to prevent mental health problems to activities supporting personal functioning. Mental health rehabilitation in the context of mental health work means the connecting element between wellbeing, health, social participating and rehabilitation. (Aspvik 2003, 77.)

The main-focus in mental health rehabilitation is on the matters supporting and strengthening the person's mental health and not only on taking care of disorders or problems. As personal, social and societal factors influence an

individual´s experience on his/her mental health, it is crucial to take into account also the environmental and external factors when planning the rehabilitation process. (Kuntoutusportti 2013.)

Because of the common goals, mental health rehabilitation can be related to the thought-model of psychotherapy and psychiatric counselling. The common goal in all these three different concepts is to support personal development by helping a person to face the challenges preventing the developmental step. This is done bearing in mind individual competencies and psychic resources. The difference that separates psychiatric rehabilitation from mental health rehabilitation is due to the broader concept of mental rehabilitation that also contains elements of early intervention. When executing an early intervention or early stage rehabilitation the basis is not necessarily treatment of a diagnosed psychiatric disorder but for example work-related stress or exhaustion symptoms. (Mattila 2002, 14; Lönnqvist 2007, 56.)

According to PRA:

> *Mental health rehabilitation promotes recovery, community integration, and improved quality of life for persons who have been diagnosed with any mental health condition… focusing on helping individuals to develop skills and access resources needed to increase their capacity to be successful and satisfied in the living, working, learning, and social environments of their choice.* (PRA 2018.)

2.11 Different Forms of Rehabilitation in Finland

According to the Ministry of Social Affairs and Health (MSAH) rehabilitation is part of mental health care. Mental health services include rehabilitation for mental health disorders. The primary goals of rehabilitation are to improve one´s functional capability, further independent coping, support wellbeing, create possibilities for participating and to improve changes in work life. Only few client fees are charged in rehabilitation services, and they are mostly free of charge for the service user. Usually, insurances compensate rehabilitation costs related to occupational diseases, workplace accidents or traffic accidents. People participating in rehabilitation are compensated for the loss of earnings

in full. Occupational pension institutions and KELA, an independent social security institution supervised by the Finnish parliament pays the rehabilitation allowances in the form of income support. (MSAH 2018; KELA 2018.)

There are several forms of rehabilitation available for different kinds of needs. The forms of rehabilitation available are:

- Medical rehabilitation
- Rehabilitative work experience
- Vocational rehabilitation
- Rehabilitative psychotherapy
- Social rehabilitation
- Rehabilitation in the event of a workplace or traffic accident
- Rehabilitation under the military injuries act
- Disability services
- Medical rehabilitation for people with severe disabilities
- Others forms of social and health care rehabilitation (provided according to municipal resource capacity)
- Special education in comprehensive schools
- Vocational special needs education
- The labour administrations vocational rehabilitation
- Discretionary rehabilitation

(MSAH 2018.)

2.11.1 Rehabilitation Services aimed at Mental Health Service Users

When facing mental health challenges, one´s functional capacity may decrease. If the situation gets more permanent rehabilitation is often needed in order to stabilise everyday life functions. Unique situations require different forms, environments and executive methods of rehabilitation. Specific mental health rehabilitation can be provided in institutions or a more open setting by visiting units of the local service providers. Rehabilitation can also occur at home, via the internet or phone. Sometimes carefully designed rehabilitation programs, such as rehabilitation courses or short-term psychotherapies are the most

efficient way to arrange rehabilitation. In some cases, the most efficient way is to work in an individually designed personal and flexible interactive relationship with the service user. (Mielenterveystalo 2018.)

Rehabilitation services are provided by different kinds of rehabilitative institutions, psychiatric hospitals, private service providers and organisations. Different rehabilitative procedures are aimed at different target groups. Individual features, current life circumstances and nature of the symptoms are all factors influencing when choosing the right form of rehabilitation. Most often the primary rehabilitation is sharing information. It is essential that the service user him/herself knows the background of his/her symptoms, the usual prognosis of the disorder and the common treatment and rehabilitation possibilities. It is the doctor´s or other representatives of the professional teams' responsibility to give this information forward. Close co-operation with the service user´s next of kin or other peer members close to him is an important part of psychoeducation. Psychoeducation is an educative working method. The goal of psychoeducation is to provide knowledge, information and understanding about long-term illness and how to cope with it in every-day life. When facing mental health challenges that require rehabilitation one can negotiate the most suitable rehabilitation options with the doctor in charge of the treatment or the municipal rehabilitation counsellor. (Mielenterveystalo 2018.)

Before the rehabilitation process, a medical doctor evaluates the need for rehabilitation and suitable rehabilitation forms in a broad examination. In addition to the medical examinations made by the doctor, opinions of other experts working in the field of mental health are taken into account. When constructing a rehabilitation plan, statements from a psychologist, occupational therapist, physiotherapist or neuro-psychologist about a person´s functional capacity may be heard. A holistic evaluation considering an individual´s overall status makes it easier to find the most suitable rehabilitation form from the broad selection of possibilities and ensures that the service user potentially gets benefit from it. (Mielenterveystalo 2018.)

2.12 Mental Healthcare Services in Finland

Act (L 14.12.1990/1116) called the *mental health law* defines mental health work preventing, curing and relieving mental disorders and other kinds of mental health challenges as well as promoting functional capacity and psychic welfare and personality. According to the law, mental health services are part of social and health services provided for clients suffering from a mental health disorder or mental health challenge. The arranging of the whole infrastructure and living environment in relationship to easily accessible mental health services and mental health promotion as preventive work are also parts of mental health work. Municipalities must provide mental health work in accordance to the need of citizens. When providing mental health care services outpatient care is always the first option. The goal is that the service users would find the service spontaneously without assistance from professionals. These services are provided in order to support individual coping. (L 14.12.1990/1116.)

Understanding the Finnish mental health care system as a whole, is difficult due to the differences how services are provided in different municipalities, joint municipal authorities and health care districts. Studies concerning the whole population show that on only a part of the people in need of mental health services are receiving them. Geological and demographical factors partly explain the availability of mental health services. (Järvikoski & Härkäpää 2011, 234.)

According to the Finnish mental health care association (2018), municipalities are responsible for arranging mental health services in Finland. They claim that in addition to health care districts, private service providers, third-party actors and different kinds of organisations and associations provide mental health services. There is a broad selection of mental health services provided by health care centres, occupational health care, specialised psychic health care, private health care centres, private psychotherapists, churches and organisations. Execution of mental health services differs a lot between municipalities. In bigger municipalities, the service structure is often more versatile. Besides, the amount of service providers is usually larger (Mielenterveysseura 2018). Quality standards set by the government concern all municipalities and all of them

should be capable of providing all the services needed. Due to the quality standards, out-patient care is always the first option when providing mental health care services. Whenever the service users´ functional capacity relating to day-to-day functions has decreased, valid treatment and rehabilitation must be planned individually. (Vuori-Kemilä, Stengård, Saarelainen & Annala 2007, 26.)

High quality social and health services can-be-seen as one of the standards defining welfare societies. One central part of high quality social and health care services are mental health services arranged by public, private or third-party service providers. Mental health services including examining mental health disorders, rehabilitation and treatment at health care centres or in specialised psychiatric care are part of mental health care. One essential part of mental health services in Finland is psychosocial support in different crisis situations. Psychosocial services are provided by the Finnish mental health association, church and psychiatric nurses in health care centres. (Vuorilehto Larri, Kurki & Hätönen 2014, 225.)

Outpatient care aimed at mental health service users has usually supported living service or daytime activities. The daytime activities are aimed at clients who have a long history of coping with a mental health disorder. Usually, the clients who participate in out-patient care daytime activities can live on their own on a daily basis, but they have challenges in coping with all parts and factors in life simultaneously. The daytime activities provide a change for the participants to talk about their problems with their peer group or with the professionals. It can also help the service user to find new inner strength, competencies and it will improve the service user´s social skills. Different kind of tasks and visits are all part of the day time activities and participating in a group plays a significant role. The service users are encouraged to activity and participation in different kinds of everyday settings. If the wanted outcome related to rehabilitation and treatment is not accomplished by the means of out-patient care, hospitalisation must be taken into consideration. Receiving a place in a psychic ward or psychiatric hospital can be quite challenging. (Suomen mielenterveysseura 2018.)

Rehabilitation can be seen as an essential part of the Finnish mental health care strategy. According to the Ministry of Social Affairs and Health Care, guidance, advice, psychosocial support, examination, treatment and rehabilitation are all parts of mental health care. The primary care is outpatient and organised by municipal social and health care providers. Municipal social services provide housing services, home services and work activity for clients going through mental rehabilitation. (MSAH 2018.)

2.12.1 Role of Coronaria Sähäkkä in the Finnish Mental Health Service System

Coronaria Sähäkkä (Originally called Sähäkkä Oy) was founded in 2006 by the owners based on a notice that there were no services of psychiatric rehabilitation for young adults. The first rehabilitation centre was established at Kantokylä, Ylivieska. From the very beginning, the core idea was to create a rehabilitative service concept that would support young adults facing mental health challenges into more individual coping in everyday life. In 2017 Coronaria Sähäkkä Oy started providing rehabilitative services also for juveniles aged 14-17 years old. The underaged clients are found through child welfare services, and the service is called rehabilitative child welfare. The psychiatric rehabilitation service for young adults is arranged as housing services of social care. In the Finish mental health care system Coronaria Sähäkkä young adults´ housing services are operating as a solution in between hospitalisation and out-patient care. The focus group of rehabilitative housing services are young adults who are not capable of coping with the support of out-patient care but do not require hospital scale services. Service of Coronaria Sähäkkä is financed by the service user´s municipality of residence. (Sähäkkä 2018a.)

Coronaria Sähäkkä provides psychiatric rehabilitation for rehabilitation orientated young people with special needs having the readiness to go through the rehabilitation program in order to live an independent life. There are separate units for young adults 18-29 years old and juveniles 14-17 years old. Coronaria Sähäkkä holds two trademarked service products: ALKAVA© evaluation system and JOTOS© rehabilitation program. Coronaria Sähäkkä helps young people rehabilitate from mental health disorders and challenges in

coping with day-to-day life. Prevention of long-term effects of challenges in functional capability is also an essential part of the rehabilitation service. Coronaria Sähäkkä is specialised, for example, in the rehabilitation of psychoses and supporting psychosocial functional capacity. The cornerstones of rehabilitation are functionality and supporting the service users' independent coping as well as supporting full filling developmental tasks of emerging adulthood. The staff works in co-operation with the service user´s nearby network. (Sähäkkä 2018a.)

2.13 Practical Methods and Tools in Mental Health and Psychiatric Rehabilitation

There are a lot of different methods and tools that can be used mental health and psychiatric rehabilitation. The rehabilitation can contain, for example, conversations, practical tasks, physical exercises and training of different kinds of every-day life skills in a familiar environment. The rehabilitation process occurs at the same time with other treatment of the disorder. The content of the rehabilitation and the counselling path in health care depend on the municipal practices and regulations. The same principles though concern all rehabilitation. (Mielenterveysseura 2018.)

Engaging in physical activity may support the overall rehabilitation process. Psychological coaching and neuropsychological coaching are interactive ways to support the client´s functional capacity and have become more popular in recent years. Depending on age and the situation supportive actions towards working life or studies are essential parts of the rehabilitation process. The following methods and tools are used in mental health rehabilitation in practice:

- Individual psychosocial support
- Visiting the client´s home (outpatient care)
- Keeping company
- Taking care of day-to-day tasks together with the client
- Group activities
- Participating in voluntary work

(Laukkala, Tuisku, Fransman & Vorma 2015, 1511.)

2.14 Coronaria Sähäkkä Rehabilitation Service for Young Adults

The basis of the rehabilitation program lies on ALKAVA© assessment period and JOTOS© rehabilitation program. ALKAVA© evaluation period lasts for three months. In this three-month period evaluation in done in a multidisciplinary team. (Sähäkkä 2018c.)

ALKAVA© assessment period is needed when special psychiatric know-how and knowledge about the developmental tasks of young adulthood is crucial in-order to plan and execute treatment and rehabilitation. During the period, the service user´s individual needs, functional capability, psychic welfare and personal motivation regarding rehabilitation are being evaluated. At the end of this evaluation, period professionals might recommend the JOTOS© rehabilitation program to the service user.

JOTOS© Rehabilitation program includes four phases. Each step includes a varying amount of support in different kinds of housing arrangements from more supported to totally independent. All supportive services and activities related to the rehabilitation program are available for the service users at every phase of the program. Still, during the final phases, the service users are actively counselled to find solutions from alternative sources of support outside the rehabilitation program. (Sähäkkä 2018b.)

The phases included in JOTOS© Rehabilitation program are as follows:

1. **Myself**

   The goal of the first phase "Me" is to build a solid foundation for the phase-based rehabilitation program that the service user will be going through. The support and counselling are available 24/7. The central aspects of the rehabilitation at the first phase are the challenges in functional capability (psychoeducation) and to strengthen one´s psychic welfare (control of the symptoms).

2. Life skills

In the second phase of the JOTOS© Rehabilitation program, the service user takes more responsibility. The service user gains more experiences of independent coping as the possibility for immediate and intensive support remains.

3. Environment

In this phase, the meaning of external support systems is emphasised. The resident is withdrawing from the immediate support and counselling provided by the counsellors in the group housing setting. The interaction with the nearby environment is highlighted as the service user is mentoring towards studies, work life and other activities outside the JOTOS© Rehabilitation program.

4. Becoming Independent

In the final phase, the service user practices taking complete responsibility in a private apartment. The fourth phase includes a stage for getting totally independent, and during this three-month period, all responsibility related to day-to-day life is transferred from the counsellors to the service user. During the last month of the rehabilitation program support is only provided when suggested by the service user.

(Coronaria Sähäkkä 2018c.)
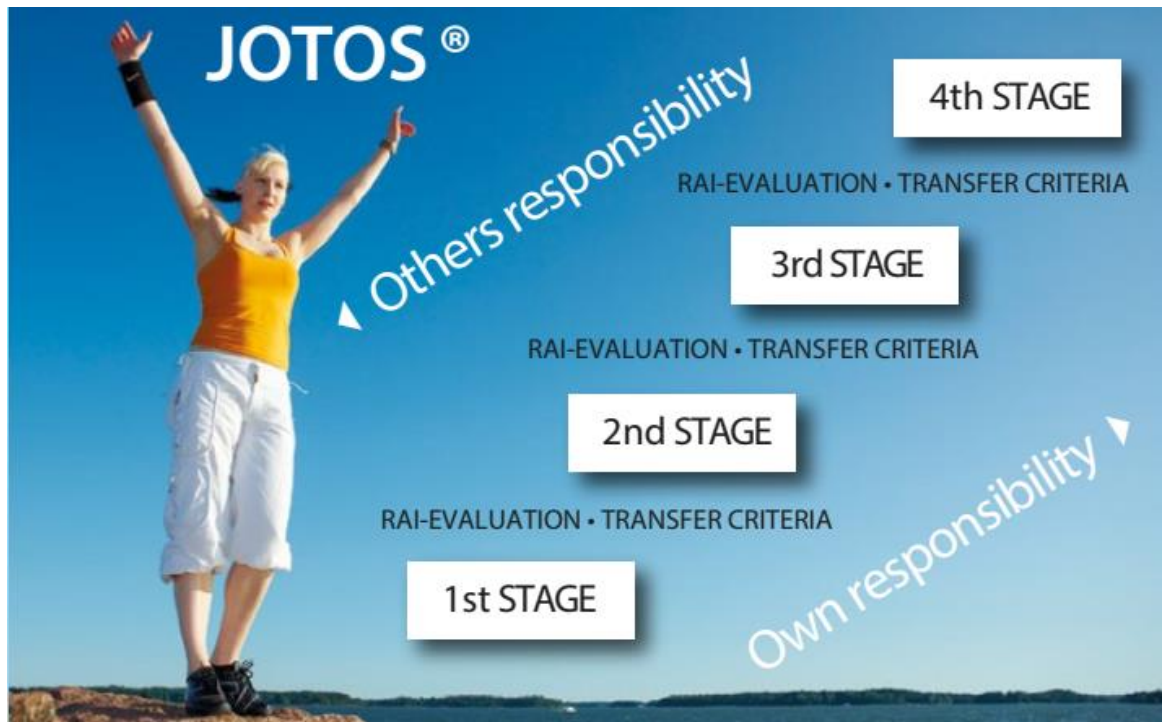
Figure 1 - Stages of the JOTOS Program (Coronaria Sähäkkä 2018a.)

Figure one not only features the JOTOS© rehabilitation program visually but also two new terms highly relevant when executing it. These terms are RAI-evaluation and transfer criteria. The guidelines and goals of rehabilitation work in Coronaria-Sähäkkä are set by using a highly valued internationally developed tool called RAI-evaluation (Residence Assessment Instrument). More specifically the instrument in use is ChYMH, RAI for Child and Youth Mental Health. Child and youth tools have been developed in clinical expertise with an assessment of the specific target group. The assessment gives a broad perspective of the service user´s overall performance and indicates the presence of imminent risk. Interventions can then be planned according to this data provided by the assessment (interRAI 2018).

RAI-evaluation is a tool for measuring the effects of the rehabilitation and assessing if the rehabilitation plan is appropriate. The assessment is done during ALKAVA©-Assessment period and JOTOS©-Rehabilitation program with this specific tool standardised for psychiatric out-patient care. Daily functional capacity is assessed with AMPS-assessment tool by an occupational therapist.

Transfer criteria is also a method created for following the progress of the rehabilitation process. It is a tool created in Coronaria Sähäkkä, and the purpose is to assess the service user´s functional capability between the stages of the rehabilitation program. The aspects assessed by the means of transfer criteria are: personal hygiene, coping with day-to-day functions (cooking, shopping etc.), studying and work life, spare time activities, coping in a familiar environment and taking care of rest (Coronaria Sähäkkä 2018c).

The main priority in Coronaria Sähäkkä rehabilitation service is to support young adults coping in order to achieve independence in life and to prevent the need of psychosocial support later in adulthood. Work life skills, spare time activities, day-to-day functioning and taking care of oneself are all aspects of functional capability taken-into-account when setting goals for the rehabilitation. Co-operation with the service user´s nearby network (next to kin, relatives etc.) and representatives of the municipality of residence is part of the rehabilitation program. Rehabilitation is based on a rehabilitation plan constructed due to the information gathered during the ALKAVA©-Assessment period. Rehabilitation plans are always individual and based on the possibilities of the JOTOS©-Rehabilitation program (Coronaria Sähäkkä 2018a).

JOTOS©-Rehabilitation program contains the following elements among others:
- Supported living in a suitable environment in relationship with the current status of functional capability
- Personal planned weekly program on daily activities, work life and spare time activities
- Personal counselling on a regular basis
- Rehabilitative group counselling
- Work life and career counselling
- Participation in events in order to increase social competence
- Peer support

(Coronaria Sähäkkä 2018c.)

Supportive services include: medical treatment (medication), cognitive rehabilitation methods (CRT/SCIT), assessment by psychologist, neuro-psychiatric coaching and outpatient care services offered by KELA (Coronaria Sähäkkä 2018c).

Throughout the rehabilitation program, a multidisciplinary team coordinates the process and offers support to the service user. The multidisciplinary team consists of: head of the unit, personal counsellors, occupational therapist, psychiatric doctor, psychologist, counsellors of work activities, counsellors working in the night shift only, counsellors of daily living skills and counsellor of nutrition (Coronaria Sähäkkä 2018a).

3. Digital Games (Peter Mautz)

The question about what a game is sounds very trivial at first glance. Almost everyone has played a game at least at some point of his or her life. They come in countless varieties. However, why can people say that they want to play a game of football in the same way that they say they want to play a game of Monopoly? Why do so diverse activities both qualify as being games? This chapter is aimed at answering that. To distinguish gaming from playing, to define the characteristics of games and to show their impact on the people playing them. It is crucial first to understand how games work, in order to have a better understanding of why people around the world try to make use of powerful game-mechanics in gamification and serious games.

3.1 Gaming vs. Playing

Imagine two boys kicking a ball around in the garden. – Does this qualify as a game of football? Or imagine a girl sitting next to a monopoly board throwing around money and tokens. – Does this qualify as a game of monopoly? Neither does. To understand why exactly this is the case, it is necessary to distinguish the terms "game" and "play". While the word "play" is commonly used for both, for games as well as for toys, there is a considerable difference between them.

Following Caillois' concept (cf. Caillois & Barash 2001), Groh (2012, 39) points out "paidia" and "ludus" as the "two poles of play activities":

- **Paidia** (play) is free in form and features expressive, improvisational behaviours and meanings

- **Ludus** (game), on the other hand, is characterizing playing with determined goals and a set of rules

Gaming therefore features a higher level of complexity in comparison with playing. This may become clearer when taking a closer look at the following illustration by Bo Kampmann Walther of Southern Denmark University:
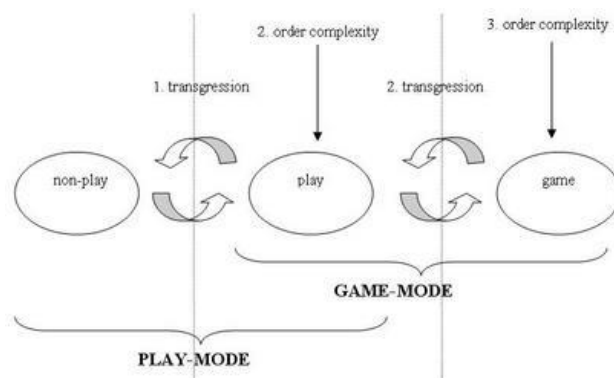
Figure 2 – Gaming vs. Playing – (Walther 2003)

Figure two shows the transgressional phases between non-play and play (1st transgression) and play and game (2nd transgression).

According to Walther (2003), and as shown by the graphic above, the simple distinctions that guide the form of play are not enough to describe a game:

> *In addition, one observes – and responds to – the very criteria of a specific game. At least, one has to be aware of these criteria in order to advance and, preferably, win the game. Thus, the organisation of gaming lies in a third order complexity.* (Walther 2003.)

According to the conclusions of those authors, it can be said, that "play" and therefore "playing" is something free of norms with no certain goal other than playing itself. A "game" is something that had been thought through and designed with a set of rules, which the player is required to understand and make use of, in order to succeed. Alternatively, as Bernard Suits puts it in his book *The Grasshopper*: "Playing a game is the voluntary attempt to overcome unnecessary obstacles" (Suits 2005, 55).

3.2 Defining "a Game"

Sticking with the quote from Bernhard Suits and the example of the boys playing around with a ball. What could be those unnecessary obstacles? Not being allowed to touch the ball with the hands could be one and playing within the limits of a playing field could be a second obstacle. However, those obstacles alone are not sufficient to qualify this as a game of football. There are still essential elements missing.

Games today come in a greater variety than ever before in the human history. People play them on fields, courts, boards, with cards or digital devices. They come with breath-taking graphics and deep stories or boxy pixels and no story at all. People play some for ten minutes, while other games never end. Some games at home and some on mobile devices, some while having a break and some for filling an entire evening. The choice available is almost endless. (McGonigal 2011, 22.)

Yet:

> *When you strip away the genre differences and the technological complexities, all games share four defining traits: a goal, rules, a feedback system, and voluntary participation* (McGonigal 2011, 22).

The **goal** is the specific outcome that players will work to achieve. It focuses their attention and continually orients their participation throughout the game. The goal provides players with a *sense of purpose*. (ibid., 22-23.)

The **rules** place limitations on how players can achieve the goal. By removing or limiting the obvious ways of getting to the goal, the rules push players to explore previously uncharted possibility spaces. They *unleash creativity* and *foster strategic thinking*. (ibid, 22-23.)

The feedback system tells players how close they are to achieving the goal. It can take the form of points, levels, a score, or a progress bar. Or, in its most basic form, the feedback system can be as simple as the players' knowledge of an objective outcome: "The game is over when…" Real-time feedback serves as a promise to the players that the goal is definitely achievable, and it provides motivation to keep playing. (ibid., 22-23.)

Finally, **voluntary participation** requires that everyone who is playing the game knowingly and willingly accepts the goal, the rules, and the feedback. Awareness establishes a common ground for multiple people to play together. Moreover, the freedom to enter or leave a game at will ensures that intentionally stressful and challenging work is experienced as a safe and pleasurable activity. (ibid., 22-23.)

In their vast variety, games can make use of many different elements to reinforce the core elements described above. For example, interesting storylines, which make the goals more attractive, or achievements and levels, which provide more occasions for players to experience success. The feedback system can also be more motivating by implementing complex scoring metrics, while multiplayer experiences can make prolonged gameplay more pleasurable and unpredictable. Yet, those additional features are not defining "a game". What defines it, are the goal, the rules, the feedback system and voluntary participation. (ibid., 23.)

Going back to the example of the two boys playing football, which accompanied us through this chapter so far. They need a **goal**, literally. Move the ball more often between two sticks at the border of the playing field than the other boy does, could be it. Do not use the hands, do not exit the playing field, and the game ends in ten minutes, could be the **rules**. Successfully moving the ball

between the two sticks makes the player score one point, is the **feedback system**. Accepting the rules and **participating voluntarily** would be the last missing element to qualify what those two boys do as a game of football.

So far, this chapter showed the reader the difference between playing and gaming, as well as the defining elements of a game. The next chapter will move from the football field to digital worlds, showing effects game can have on their players, talking about related theories, the state of flow, the ideal game design and the controversies still haunting gaming research.

3.3 The Impact of Gaming

After having heard the difference between playing and gaming and knowing more about gamification, serious games and their variety, it is time to dive deeper into the topic. The following chapter will show the reader how digital games can impact their players' cognitive skills, motivation, emotions and social life. It is important to note that, even though many promising results were mentioned in the last chapter, there are also negative aspects of playing digital games, which will also be talked about later in this chapter.

3.3.1 Spatial Ability

For the sake of completeness and a better understanding of the following chapter, it is necessary to briefly outline the concept of spatial ability using a definition by the Johns Hopkins University (2011) defining it as the capacity of understanding and remembering the spatial relations between objects.

Spatial ability is not static and consists of various sub-skills, which are interrelated and evolve throughout a person´s life. It is vital in everyday situations such as orientating in a building, on a map or in traffic. Certain fields of study also require or benefit from advanced spatial ability. For example: mathematics, engineering or natural sciences. (Johns Hopkins University 2011.)

3.3.2 Digital Games and Cognitive Skills

According to Granic et al., there is a conventional belief, that playing video games is sedating and intellectually lazy. Also, in contrast to that, research suggests that playing video games, especially first-person shooter games, which are often referred to action games by researchers, are promoting a wide variety of cognitive skills. Supporting this claim are so-called "training studies", where participants are being recruited, who hardly or never played such action games. These players are then prohibited from playing any other type of game for the time they are being researched. (2014, 68.)

> *Compared to control participants, those in the shooter video game condition show faster and more accurate attention allocation, higher spatial resolution in visual processing, and enhanced mental rotation abilities.* (Granic et al. 2014, 68.)

Uttal et al. (2013), conducting a meta-analysis on the malleability of spatial skills, go in a similar direction with their statement: "Video game players performed substantially better in several tasks that tap spatial working memory" (368).

According to the authors, gamers can hold more elements in their working memory, allowing them to absorb and use more information. This is appearing to be true for the whole range of spatial attention. (Uttal et al. 2013, 368.)

Granic et al. (2014), analysing the same meta-analysis, conclude:

> *[…] this recent meta-analysis showed that spatial skills can be trained with video games in a relatively brief period that these training benefits last over an ex- tended period of time, and crucially, that these skills transfer to other spatial tasks outside the video game context.* (Granic et al. 2014, 68.)

The meta-analysis mentioned above is focusing on spatial training. It also mentions Tetris. A game we talk about earlier in the sub-chapter on

entertainment games used for serious purposes, where it is used in the treatment of PTSD. Uttal et al. (2013) however, link this very game to spatial training, by arguing that the players learn specific rules and strategies which also apply to real-world problems. For instance, in chemistry, when it comes to spatial properties of molecules. An example of research discovering new areas of application for already existing digital games, which were never developed with those areas in mind. (368.)

When it comes to cognitive skill improvement by playing digital games, there is one particular genre delivering the most extensive benefits to perceptual and attentional abilities. Superior to, for example, strategy, roleplay or puzzle games: The genre of action games. - Meaning first- and third person shooter games. These games are usually fast-paced and demand very high motoric, cognitive and perceptual skills. In order to be successful, the player is almost forced continuously to monitor multiple targets at once, to evaluate the danger they represent, to predict where (spatially) they will be and when (temporally) they will be there, making predictions in milliseconds while simultaneously developing a greater strategy for achieving the goal of the particular game level. The player is rewarded for making better predictions, training his skills and learning to focus and filter distracting information. (Green & Bavelier 2012, 197-206.)

3.3.3 Digital Games and Problem Solving

In contrast to the spatial skills mentioned in the prior segment, problem-solving skills are required by all genres across the spectrum of digital games. The difficulty of the problems is varying from rather simple route-finding tasks to complex riddles, requiring analytical and memorisation skills. Since most games do not provide instructions of how to solve their riddles, it is up to the player to use intuition and experiences from the past, while trying different approaches and strategies for solving the in-game problems. (Granic et al. 2014, 68-69.)

As Prensky (2012) according to Granic et al. (2014, 69) argues, an entire generation of so-called "digital natives" grew up playing these games and got

used to their open nature of solving problems. He furthermore claims, that because of this exposure, the way many of those children and adolescents approach a problem has changed, and that they use trial and error tactics instead of reading instructions thoroughly.

A game designed by a team of the University of Auckland with the above in mind and specifically aimed at young people aged 12-19 years is SPARX. It is meant for preventing depression and anxiety, which also includes teaching problem-solving skills via a series of quests (Merry et al. 2012, 2). One can find additional information on it in the chapter about serious games and Cognitive Behavioural Therapy in this thesis.

> *In summary, specific types of video games seem to enhance a suite of cognitive functions, some of which appear to generalize to real-world contexts* (Granic et al. 2014, 70).

This quote relates to entertainment games. One can imagine how game designers are capable of tailoring serious games or game-based solutions, which are specifically targeting those cognitive functions, using research and cooperating with mental health experts.

3.3.4 Digital Games, Intelligence and Motivation

Before opening the topic of how games can motivate us, it is reasonable to introduce two theories of intelligence first. This will provide the reader with a better understanding of coherencies and the overall topic.

3.3.4.1 The Theory of fixed Intelligence

This theory is also called "the entity theory of intelligence" because intelligence is seen by some people to be an unchangeable entity within them. A fixed amount that cannot increase or decrease. This leads to, for example, students worrying about their intelligence, setting them under pressure to look smart and seek opportunities to show that. (Dweck 2013, 3.)

According to the author: "The entity theory, then, is a system that requires a diet of easy successes. Challenges are a threat to self-esteem" (Dweck 2013, 3).

A threat can cause those students to avoid valuable learning opportunities if they bare the danger of revealing their weak spots. This can go as far as abandoning tasks they had been pursuing successfully up to the first challenging obstacle. Praising them for their intelligence instead of praising them for the effort, makes them avoid challenges and has a negative impact on their ability to deal with setbacks. (Dweck 2013, 3.)

3.3.4.2 The Theory of Malleable Intelligence

"The ability to enjoy challenges and then master them is a fundamental metaskill that is essential to individual development and to cultural evolution" (Csíkszentmihályi 2014, 235).

In sharp contrast to the entity theory stands the theory of malleable intelligence, or as it is also known: "the incremental theory of intelligence". For people believing in this theory, intelligence is not a given thing they cannot change. Instead, it is viewed as something that can be improved, by effort and guidance. When taking students as an example again, according to this theory, they would gladly exchange opportunities to look smart for a chance to learn something new. (Dweck 2013, 3.)

> *Even students with an incremental theory and low confidence in their intelligence thrive on challenge, throwing themselves wholeheartedly into difficult tasks-and sticking with them* (Dweck 2013, 3).

Self-esteem in the incremental intelligence theory is very different to the entity theory. It is not feeding on easy victories and being demolished by mistakes. Instead, it is about enjoying the need of using one's skills to the uttermost in pursuit of a precious goal. (Dweck 2013, 4.)

> *It is not something we give to people by telling them about their high intelligence. It is something we equip them to get for themselves-by*

*teaching them to value learning over the appearance of smartness, to relish challenge and effort, and to use errors as routes to mastery. (*Dweck 2013, 4.)

3.3.5 Motivation

Scholars who follow an incremental theory, show according to Dweck and Molden (2008, 4), more resilience when being confronted with real-world problems, while Granic et al. (2014, 71) conclude that: "[…] video games are an ideal training ground for acquiring an incremental theory of intelligence […]".

To have a better understanding of why this is the case, it is necessary to take a look back at a crucial aspect that lies within the very core of this theory: Thriving on challenges and stick with difficult tasks because of that (Dweck 2013, 3).

If individuals are matching the entity theory, deliberately avoiding challenges, a game can be an effective method to change their mindset over time by giving them instant feedback on their actions and accustoming them to being rewarded for their specific efforts with, for example, points or coins. Some modern games are even capable of constantly analysing a player's abilities and adapting correspondingly, increasing the difficulty level while the player is improving. (Granic et al. 2014, 71.)

Even though not all games possess this adaptive technology:

Challenge is consistently identified as the most important aspect of good game design. […] Therefor games should be designed to have a level of challenge that is appropriate and not discouragingly hard or boringly easy. (Swetser & Wyeth 2005, 8.)

Following the line of argumentation by Granic et al. (2014, 71), the game itself can be seen as the scaffolding supporting the players as they are led through their zone of proximal development. A concept introduced initially by the Soviet psychologist Lev Vygotsky (c.f. Vygotsky 1978) in the field of child development.

It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers. (Vygotsky 1978, 86.)

Wood, Bruner & Ross later linked the term "scaffolding" to proximal development, defining "scaffolding" as a process "[…] that enables a child or novice to solve a task or achieve a goal that would be beyond his unassisted efforts" (1976, 90).

A motivational tool used by digital games is failure in combination with infrequent or intermittent chances for success. Behaviourists suggest for a long time, that this is the most effective way in the process of learning new behaviour. (Granic et al. 2014, 71.)

A study conducted at the M.I.N.D. Lab in Helsinki, Finland, found scientific evidence supporting these claims and linking them to digital games (c.f. Ravaja et al. 2005) back in 2005. As mentioned earlier in this thesis, the feedback system is one of the four crucial elements of a game. It also plays a vital role in this regard, because the right kind of failure feedback is perceived by the player as a reward, resulting in joy, interest and excitement. This can reinforce the feeling of control, which then creates "a powerful drive to succeed" motivating the player. (McGonigal 2011, 66-67.)

"Which is why, on the whole, gamers just don't give up" (McGonigal 2011, 67).

3.3.6 Digital Games, Emotions and Flow

The ancient Greek historian Herodotus, who lived around 500 B.C., wrote about the ancient tribe of Lydians, claiming that they had invented dice games as a distraction for surviving a famine and raising their quality of life. While the accuracy of this story is debatable, there are still remarkable parallels regarding the motives for playing games then and now. For the Lydians, as for us now, the three primary functions of playing games are the same. To provide real

positive emotions, real positive experiences and real social connections during a difficult time. (McGonigal 2011, 349.)

No one is immune to boredom or anxiety, loneliness or depression. Games solve these problems, quickly, cheaply, and dramatically. (McGonigal 2011, 349.)

While this claim by McGonigal is arguably optimistic, there is scientific evidence for a causal relation between playing digital games, the increase of positive emotions and having a better mood (c.f., Russoniello, O'Brien, & Parks 2009b; Ryan, Rigby, & Przybylski 2006).

"Gaming may be among the most efficient and effective means by which children and youth generate positive feelings" (Granic et al. 2014, 71).

This is no coincidence, since digital games are specifically engineered to achieve it, and according to Sweetster & Wyeth (2005, 2), enjoyment is their most important goal.

In this context, a very important mechanism game designers are trying to utilise in their games, is the concept of "flow", which has been introduced by Mihály Csíkszentmihályi, a Professor of Chicago University, back in the 1970s. He describes the state of flow as a subjective experience, reported by people after they were so engaged with an activity, that they forgot everything around themselves including exhaustion and time. This exceptional involvement is the defining feature of flow. People dedicate all of their attention and capacity on the task at hand. Csíkszentmihályi names four crucial aspects of flow they feel during the experience:

- The merging of action and awareness
- The sense of control
- An altered sense of time
- A loss of self-consciousness

(Csíkszentmihályi 2014, 229-235.)

The sense of control, in this case, can be seen as the absence of anxiety. Anxiety about losing control as we often experience in typical everyday situations. Not having to worry about things like succeeding in a relationship, on the job or other any other everyday situation, is reducing psychic entropy at that moment. This makes the flow experience so rewarding and enjoyable. (Csíkszentmihályi 2014, 229-235.)

Three conditions are suggested by past research as being of crucial importance:

- The activity needs to contain a clear **set of goals.**
- The perceived **challenges** and the perceived skills need to be in balance.
- The **feedback** needs to be clear and immediate.

(Csíkszentmihályi 2014, 229-235.)

These three conditions listed above are already familiar. Echoing around this chapter since the very definition of what a game is. Two of them as defining features of a game, as stated by McGonigal (2011, 22-23), and the third one, balanced challenges, being "the most important aspect of good game design" according to Swetser & Wyeth (2005, 2). Which means, that if you have the key ingredients for a good game, you also have the key ingredients for a flow experience.

3.3.7 The Game-Flow Model

After researching user experiences and usability in games to know more about how the flow is manifested in digital games, a "model of enjoyment in games" was created. – The Game-Flow model. It links game elements directly to the theory of Mihály Csíkszentmihályi.

Table 1 - Elements from Games Literature vs. Elements of Flow – (Sweetser & Wyeth 2005, 5)

Elements of Games	Elements of Flow
The Game	A task that can be completed
Concentration	Ability to concentrate on the task
Challenge Player Skills	Perceived skills should match challenges, and both must exceed a certain threshold
Control	Allowed to exercise a sense of control over actions
Clear Goals	The task has clear goals
Feedback	The task provides immediate feedback
Immersion	Deep but effortless involvement, reduced concern for self and sense of time
Social Interaction	n/a

Table one gives an overview of elements of games and their corresponding elements in Csíkszentmihályi's concept of flow.

The game itself is the first element. It functions as the task that can be completed. The following elements are interdependent and interrelated. A high workload to keep the player's concentration up and skill-challenging tasks to make the game enjoyable. Besides, those tasks that need clear goals and clear feedback on the progress the player is making on the way. With all these requirements being fulfilled, the player will feel in control over the game, enabling him to be "absorbed" by it and feel total immersion. Concerns are gone and the sense of time altered. While social interaction is not listed as an element of flow, it is widely featured in the literature regarding user experience. It is suggesting that people play games just for interaction with other people. No matter if they like games or the game that is being played. (Swetser & Wyeth 2005, 5)

Based on this, a model with detailed criteria for evaluating enjoyment in games was created. Criteria that can not only be used for evaluating a game but also for displaying how a game needs to be designed to be enjoyed by the players.

Table 2 - Evaluation Criteria of Game Enjoyment – (Sweetser & Wyeth 2005, 7)

Element	Criteria
Concentration Games should not require concentration and the player should be able to concentrate on the game	• Games should provide many of stimuli from different sources • Games must provide stimuli that are worth attending to • Games should quickly grab the players' attention and maintain their focus throughout the game • Players should not be burdened with tasks that don't feel important • Games should have a high workload, while still being appropriate for the players' perceptual, cognitive, and memory limits • Players should not be distracted from tasks that they want or need to concentrate on
Challenge Games should be sufficiently challenging and match the player's skill level	• Challenges in games must match the players' skill levels • Games should provide different levels of challenge for different players • The level of challenge should increase as the player progresses through the game and increases their skill level • Games should provide new challenges at an appropriate pace
Player Skills Games must support player skill development and mastery	• Players should be able to start playing the game without reading the manual • Learning the game should not be boring, but be part of the fun

	• Games should include online help, so players don't need to exit the game • Players should be taught to play the game through tutorials or initial levels that feel like playing the game • Games should increase the players' skills at an appropriate pace as they progress through the game • Players should be rewarded appropriately for their effort and skill development • Game interfaces and mechanics should be easy to learn and use
Clear Goals Games should provide the player with clear goals at appropriate times	• Overriding goals should be clear and presented early • Intermediate goals should be clear and presented at appropriate times
Feedback Players must receive appropriate feedback at appropriate times	• Players should receive feedback on progress toward their goals • Players should receive immediate feedback on their actions • Players should always know their status or score
Immersion Players should experience deep but effortless involvement in the game	• Players should become less aware of their surroundings • Players should become less self-aware and less worried about everyday life or self • Players should experience an altered sense of time • Players should feel emotionally involved in the game

	• Players should feel viscerally involved in the game
Social Interaction Games should support and create opportunities for social interaction	• Games should support competition and cooperation between players • Games should support social interaction between players • Games should support social communities inside and outside the game

The Table above shows the criteria for evaluating game enjoyment as developed in the Game-Flow model by Sweetser & Wyeth (2005, 7).

3.3.8 Digital Games and Emotion Regulation

The broaden-and-build theory of positive emotions by Fredrickson's (2001, 4) claims that positive emotions like love, joy or curiosity, are capable of helping to undo the results of malicious negative emotions, but also broadening the repertoire of thoughts and actions a human can rely on and therefore expanding their intellectual, psychological, social and physical resources. Furthermore, she claims, that the resources acquired in a state of positive emotion are outlasting the duration of this emotional state, making them the foundation of wellbeing and a source of inspiration and social interaction. (Fredrickson 2001, 4.)

"By consequence, then, the often incidental effect of experiencing a positive emotion is an increase in one's personal resources" (Fredrickson 2001, 4).

According to Granic et al. (2014, 72), games are capable of both, generating positive emotions and also triggering negative ones. Frustration, anger, sadness and anxiety, to name some. Research suggests that digital games might be in a spot, where they feel real enough to make goals worth pursuing and still secure enough for practising the adaption or control of negative emotions along the way. This capability of adapting strategies to new situations has been linked to lower levels of depression, less negative impact and more

social support. (Aldao, Nolen-Hoeksema, & Schweizer 2010, as cited in Granic et al. 2014, 72.)

Acceptance, problem-solving, and reappraisal, are strategies, which are actively regulating emotions and have repeatedly been connected to a decrease in negative feelings, increased social support and lower levels of depressive symptoms (Aldao, Nolen-Hoeksema, & Schweizer 2010, as cited in Granic et al. 2014, 72).

Many digital games too require a constant reappraisal of situations in order to be successful, linking this directly to the achievement of goals within the game (Granic et al. 2014, 72).

> *Thus, game playing may promote the ability to flexibly and efficiently reappraise emotional experiences, teaching players the benefits of dealing with frustration and anxiety in adaptive ways.* (Granic et al. 2014, 72.)

3.3.9 Digital Games and Social Life

Digital games have evolved considerably over the past decade, especially regarding their social features and possibilities for player interaction. It is no wonder then that according to the Entertainment Software Association (2018, 7) 55% of the most frequent gamers claim that digital games help them to connect with their friends, while 46% of them said that gaming helps their family to spend time together.

A study conducted by Lenhart et al. (2008) provided findings that go in a similar direction. Their research revealed that 76% of players ageing 12-17 years, play games either together with friends in the same room or online. (26.)

One genre, in particular, stands out with its possibilities for social interaction: Massively Multiplayer Online Games, like Eve Online. In this particular game players band together to form so-called "corporations". Some are having thousands of members and requiring multiple layers of organisation with different players having different responsibilities like management, diplomacy, logistics or fighting. (Uniwiki 2019.)

Given possibilities like these, Gentile et al. (2009) suggest that it is possible for gamers to quickly learn social skills and prosocial behaviour, some generalizable to relations in the real world. Furthermore, the authors claim that evidence provided by longitudinal studies suggests that pro-social digital games predicted pro-social behaviour. (2-4.) Also, Ewoldsen et al. (2012, 3) conclude that players practice essential prosocial skills while playing games that are rewarding cooperation and supportive behaviours, whether they are violent or not.

3.3.10 Downsides of Gaming

The impact of playing digital games on social lives and behaviour of their players has been controversially discussed for years in the media and research. One of the major topics was violence. One line of argumentation is that if a game requires the player to decide between helping and harming, the consequence of this decision feeds back into the situation, creating a repeating cycle of learning and reinforcing. A game where prosocial behaviour is rewarded might show an increase in prosocial behaviour after playing it, with the same being claimed to be true for violence. If this happens to be repeated often, researchers claim that this might result in long-term changes in beliefs and perceptions, stereotypes, attitudes, empathy, hostility and other emotional responses. (Gentile et al. 2009, 3.)

Other researchers are questioning the validity and generalizability of studies like the one featured above. They claim that false positives may occur because violent and non-violent games are not equated on other aggression related dimensions and that each condition in the experimental setup is represented by a separate commercial game. (Adachi & Willoughby 2011, 272-273.)

> *The first limitation with experimental research is the failure of many studies to adequately equate video game conditions on confounding variables such as competitiveness, difficulty, and pace of action (*Valadez & Ferguson 2012, 610).

Studies using such different variables (c.f. Kneer et al. 2016; Przybylski et al. 2014; Zendle, Kudelko & Cairns 2018a) come to different findings:

> *In recent years, null results have repeatedly been found by researchers*
> *seeking to test the theory that playing VVGs (violent video games) leads*
> *to aggressive behaviour using more controlled experimental settings […]*
> (Zendle, Kudelko & Cairns 2018a, 6).

Gentile et al. on the other hand, defending the quality of their study, which linked violent games to violent behaviour of children:

> *The strongest case possible for establishing that the effects of video*
> *games (or any scientific variable) are causal is when well-designed*
> *experimental, correlational, and longitudinal studies yield converging*
> *evidence. […] The present studies satisfy all of these criteria.* (Gentile et
> al. 2009, 9.)

Granic et al. see a different problem: Researchers examining children or adolescents in the gaming context tend to completely ignore the fact that, as figures released by the Entertainment Software Association (2012) according to Granic et al. (2014, 73) show, over 70% of people play games together with others, online or in person. In contrast to that, most studies use single-player games for their purposes, which can lead to results being distorted. One reason for this, is the variety of social encounters in a multiplayer game, changing the experience every single time, depending on whom the player meets. (Granic et al. 2014, 73.)

As Zendel, Kudelko and Cairns (2018a, 6) before, also Granic et al. request better designed, longitudinal studies to tackle the growing complexity of modern games:

> *[…] it seems important to start by acknowledging the growing complexity*
> *and interactivity and, from there, to develop equally complex models to*
> *explain how gaming influences players in relevant cognitive, social, and*
> *emotional domains* (Granic et al. 2014, 74).

All this shows how controversial this topic still is, and that more research is required.

3.4 Gamification

The term "Gamification" has its' origins in the digital media industry, where it had been used since 2008. It was two years later, in the second half of 2010, when industry players picked it up and made it popular. Despite this popularity, there were different views on how it shall be interpreted. (Deterding, Khaled, & Nacke 2011, 1.)

According to Deterding et al. (2011, 1-2), there were two major takes on the interpretation of gamification:

- The first is seeing gamification as a societal adoption & institutionalisation of video games, using the influence that the games and their elements have on the shaping of our interactions and everyday life.

- The second approach is seeing gamification as utilising the capabilities of video games in producing states of desirable experience, harnessing their power to keep users motivated and engaged for an unmatched duration and with unmatched intensity.

Today, one can define gamification as as: "[...] the use of game design elements in non-gaming contexts" (Deterding et al. 2011, 1).

As mentioned in the chapter before, a game is thought through and has its ruleset and goals. One goal can be motivation, and it will consist of elements supporting that motivating factor. The idea is to take those factors, which make a game motivating, and use them outside the game. For example, by using badges, a client can earn to improve his compliance.

It is important to underline, that gamification, as defined by Deterding et al. (2011, 2) is using elements of games and therefore not being a complete game itself, as the graphic below shows.

Figure 3 - Gamification on the Spectrum – (Deterding et al. 2011, 2)

Figure three is aimed at improving the understanding of how gamification can be categorised. The x-axis reaches from the whole game on the left to elements of a game on the right and the y-axis from play at the bottom to the complexity of a game at the top. One can see gamification in the top right corner, using elements of games.

Those game elements are classified by Deterding et al. (2011, 3-4) as five levels of game design, ordered from concrete to abstract:

1. Interface design patterns such as badges, levels, or leader boards.
2. Game design patterns or game mechanics.
3. Design principles or heuristics: guidelines for approaching a design problem or evaluating a design solution.
4. Conceptual models of game design units, such as the MDA framework, Malone's challenge, fantasy, and curiosity, or the game design atoms described in Braithwaite and Schreiber.
5. Game design methods, including game design specific practices such as playtesting and design processes like play-centric design or value conscious game design.

Jonna Koivisto from Tampere University describes gamification as a trend in multiple areas of daily life. Identifying: points, leaderboards, awards and rewards as typical game elements used in gamification. There are usually goals

to achieve, rules to follow, a feedback system to show the progress. According to her, gamification can also be described as intentional planning and modification of services, systems, organisations and functions to offer the same kind of experiences as games do. This is usually done by using mechanics, interactions and technologies familiar from games. (Koivisto 2018.)

Following the suggestion of Deterding et al. (2018, 3), the definition of the "non-game context" shall not be limited any further for:

> […] *usage, intentions, contexts, or media, because (a) there is no clear advantage of such a restriction and (b) serious games have also developed themselves into all kind of contexts, although there was a specific purpose (e.g. learning) at the beginning* (Deterding et al. 2011 as cited in Groh 2012, 40).

This suggestion basically removes any limits for the context gamification can be used in, with the exception of a game itself. Gamifying a game would just be an extension for the game itself, not gamification, so the authors.

3.4.1 Important Factors for successful Gamification

Gamification makes use of the self-determination theory (cf. Deci & Ryan 1985), describing three needs for intrinsic motivation:

- **Relatedness:** The universal need to interact and be connected with others.
- **Competence:** The universal need to be effective and master a problem in a given environment.
- **Autonomy:** The universal need to control one's own life.

(Groh 2012, 41.)

According to Groh (2012), the needs for **relatedness** can be addressed by establishing a connection to the users' personal goals, interests or passions, which a user might have in real life. By connecting him or her to a meaningful

community with shared interests. By creating a meaningful story and beware of social context meanings, meaning that things, that are perfectly clear for a particular group of users, might be very confusing for another group. (42.)

The need for **competence,** on the other hand, can be addressed by exciting challenges. Clear, visual goals, with a variety and a good structure. Good feedback and preventing unintended behaviours. While the need for **autonomy** can be addressed by keeping in mind that playing the game has to be voluntary. The user shall not use his autonomy, and neither shall the activity be devaluated by extrinsic rewards. (Groh 2012, 42-43.)

Groh extends the definition of Deterding et al. to the following points, trying to draw a clear line between what gamification is and what it is not:

Gamification is:
- **the use of** (in contrast to extension)
- **game** (in contrast to play or playfulness)
- **design** (in contrast to game-based technology)
- **elements** (in contrast to full-fledged games)
- **In a non-game context** (regardless of specific usage intentions, contexts, or media of implementation)

(Groh 2012, 40-41.)

3.5 Serious Games

In contrast to gamification or gamified applications, which only make use of game elements, serious games are full-fledged games, designed for the non-entertainment purpose. They are more than just game design elements used in another context.

"Those are games that have something other than entertainment, enjoyment or fun as their primary purpose" (Michael & Chen 2005, 21).

"Serious games are computer or video games that contain elements that are specifically designed for the purpose of education or training" (Eichenberg & Grabmayer 2016, 1).

Such games can be aimed at a specific task, for a specific target group. For example, to improve the learning motivation of adolescents. They usually have goals to achieve, rules to follow and often contain the visualisation of the player's progress. (Lee 2016, 134-136.)
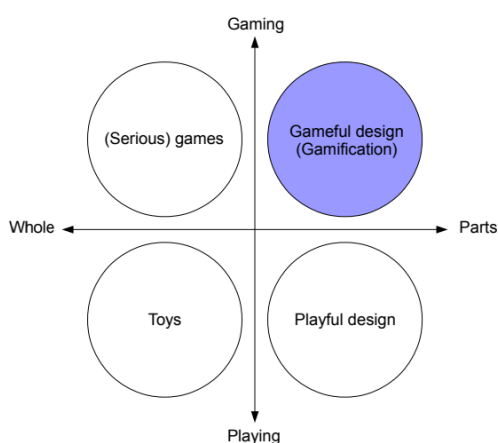
Figure 4 - Gamification vs. Serious Games (Groh 2012, 41)

Figure 4 illustrates the difference between serious games and gamification. While the x-axis shows how much of a game it consists of, from whole on the left to parts on the right, the y-axis shows if it belongs to gaming or playing, with gaming being on the top and playing being the bottom of the axis. As one can see, serious games are located at the upper left corner, being games as a whole.

3.6 Serious Games in (Mental) Healthcare

In recent years, serious games have been increasingly applied in various healthcare settings, such as patient education, rehabilitation or the promotion of healthier lifestyles. The games fulfil various tasks within those settings, for example:

- prevention
- disease awareness

- cognitive training

- emotion regulation

- impulse control

- promotion of social behaviour

- rehearsal of relaxation techniques through biofeedback

- physical therapy

(Eichenberg & Grabmayer 2016, 1.)

Also, mental healthcare has seen the use of serious games. Since the use of serious games as an intervention in mental healthcare is a somewhat new approach, the available research data, especially the data from large scale randomised controlled trials is very limited. However, the existing data suggests the effectiveness of serious games when used as an intervention in mental healthcare.

For example, a review conducted by Eichenberg and Schott included 17 studies using serious games for

- treatment of phobias

- treatment of anxiety disorders

- Asperger syndrome

- treatment of depression

- treatment of post-traumatic stress syndrome

- attention deficit disorders

- impulse disorder

- cancer rehabilitation

- general psychotherapy

With the researchers concluding that the outcome is "effective in treatment". (Eichenberg & Schott 2014, 23-25.)

Another review conducted by Li et al. (2014, 526) included 19 studies, where serious game-based interventions were used in the treatment of depression concluded, that, while research findings supported the effectiveness, further research is still required.

Also a review by Theresa Fleming from the Auckland University in New Zealand including nine studies of interventions that were utilising games as " a major or primary component to treat or prevent depression" concluded:

> *Most studies reported promising results, although one universal program had mixed results. Interventions show promise, but the evidence is currently very limited.* (Fleming et al. 2014, 227.)

3.6.1 Types of Applied Games in Mental Health

The following pages shall give an overview of the most common types of digital games used in mental health care today.

3.6.1.1 Cognitive Behaviour Therapy Based Games

Initially developed by Aaron Beck in the 1960s, cognitive behaviour therapy was a structured, short-term, present-oriented psychotherapy for depression, directed toward solving current problems and modifying dysfunctional (inaccurate and/or unhelpful) thinking and behaviour. Since then, this therapy approach has been adapted to match a variety of different disorders and problems as well as different types of clients. The treatment is based on a cognitive formulation, the beliefs and behavioural strategies that characterise a specific disorder. Furthermore, it is based on an understanding of the individual patients especially their beliefs and patterns of behaviour. In order to achieve enduring emotional, behavioural change, the therapist aims for cognitive change as well as changes in the patients' thinking and belief system. (Beck 2011, 2-6.)

One of the most prominent games, designed with CBT in mind is SPARX, which is an acronym for smart, positive, active, realistic, x-factor thoughts. It had been programmed as a treatment for depression and aimed to appeal to young people in particular. It combines first-person instruction with a three-dimensional fantasy world, where the client is choosing an avatar and overcomes a series of challenges. During the seven-level long journey, the player receives psychoeducation about depression and CBT, trains activity scheduling and behavioural activation and learns problem-solving techniques. (Merry et al. 2012, 2.)

3.6.1.2 Exergames

According to Bogost (2007, 294), exergames are "a combination of exercise and video games". The games used for testing in mental healthcare had often been originally developed for entertainment or commercial use. Nevertheless, a review conducted by Li et al. (2016, 36-42) including nine exergames, of which eight were initially developed for Nintendo's Wii or Wii Fit, suggests mitigating effects on depression.

3.6.1.3 VR and AR Games

According to Fleming et al. (2017), Virtual Reality (VR) and Augmented Reality (AR) games have the advantage of being capable of providing an immersive experience by creating a virtual or augmented world for the user. This immersion is achieved by wearing a headset equipped with headphones and displays for both eyes, while sensors and/or special controllers capture the movement and actions of the user. (3-4.)

The available research on interventions using virtual reality or augmented reality is very thin. Li et al. (2014, 522-523) identify only two studies with more than ten participants and speaks of lacking information considering the games used in most studies conducted.

Rizzo et al. (2013, 50) state that VR games have shown promising results in the treatment of combat-related post-traumatic stress disorder (PTSD), where those games are used as an exposure therapy using the immersive nature of virtual reality.

3.6.1.4 Bio Feedback Games

Biofeedback games often use small skin electrodes to monitor changes in the variability of the heart rate and the skin conductance, visualising stress levels, excitement and anxiety. Data obtained this way can then be used to control the progress in the game. (Knox et al. 2011, 198.)

For example, a task in the biofeedback game "The Journey to the Wild Divine". By lowering the breathing rate and tension, the user can slowly build a bridge in the game and proceed to the next task. If the game is recording frustration or

anxiety, the bridge is gone again. Only a consistent level of relaxation brings success. The difficulty level of the tasks is increasing and meant to train tension reduction skills during stressful events, which is useful for practising remaining calm in 'real-world' situations. (Knox et al. 2011, 198.)

Similar to virtual reality games, biofeedback games in mental healthcare still require to be researched in depth. There are only a few studies available, yet, those delivered promising results:

> *"In a small trial, youth receiving the intervention had significantly lower post-intervention levels of depression and anxiety compared to those in a waitlist control group"* (Fleming et al. 2017, 5).

3.6.1.5 Entertainment Games

"Initially developed for entertainment, a game is generally considered to be an activity with the key features of challenge, motivation, and reward" (Li et al. 2014, 519).

With those mechanics in mind, games initially developed for commercial use, are being researched as mental healthcare interventions as well. Fleming et al. (2017, 5) preview two ways of utilising entertainment games in mental health. The first is using those games for stress release, regulation of emotions or as social support pathways, having an impact on the clients' mood.

Studies on this topic involving violent video games show different outcomes:

While a study by Ferguson and Rueda (2010, 105) concluded that results are not supporting a link between video games containing violent content and aggressive behaviour, furthermore, the findings suggest that these violent video games have a positive impact on feelings like depression and help with mood management.

Another study conducted by Valadez and Ferguson came to a different result:

> *Results indicated that neither randomized video game play nor time spent playing a video game had any effect on depression, hostility, or,*

visuospatial cognition. […] These results suggest that both positive and
negative influences of violence in video games may be limited in scope.
(Valadez & Ferguson 2011, 608.)

Available studies on non-violent casual games appear to have more comparable results.

A study by Russoniello, O'brien, and Parks (2009, 53-66), researched the effects of "Bookworm Adventures", "Peggle" and "Bejewelled 2" on the players' mood, by conducting EEG measurements and following the mood assessment protocol by Davidson (c.f. Davidson 1988). The results showed that all three games had "different yet complementary" mood-lifting effects, with Bejewelled 2 having the most significant impact on physical stress and anger, resulting in an improved overall mood (Russoniello et al 2009, 63).

Peng, Henry, Mietus, Hausdorff, Khalsa, Benson and Goldberger (2004), as cited in Russoniello et al. (2009, 63), came to similar results considering the effects of Bejewelled 2 on heart rate variability when researching heart rate dynamics.

Nevertheless, more research on entertainments games effects on mood is still required.

Apart from mood modification, there is a second major way of utilising entertainment games in mental health care for therapeutic purposes: Visuospatial cognitive activities.

The game used in the underlying study is Tetris. A computer game developed in the former USSR in 1984, where the player has to move, rotate, and drop blocks, which come in various shapes, in order to complete horizontal lines. While engaged in this cognitive activity, memories are being activated that are supposed to help to overcome traumatic flashbacks when suffering from PTSD by interfering with the consolidation of memory.

The results of their study bring the authors to this conclusion:

Playing Tetris after viewing traumatic material reduces unwanted,
involuntary memory flashbacks to that traumatic film, leaving deliberate

> *memory recall of the event intact* (Holmes, James, Coode-Bate, & Deeprose 2009, 1).

Furthermore, the effects of game-based interventions on access and engagement, especially for younger clients have been identified by researchers. Results from neuropsychology suggest the therapeutic value of such interventions in the treatment of depression by finding that positive game-playing events trigger the discharge of hormones responsible for well-being and feelings of pleasure. (Li et al. 2014, 519.)

> *Preliminary results from some early attempts to use this approach in the field have supported this claim by showing the effectiveness of individual games in reducing depression levels and enhancing social support* (Li et al. 2014, 519).

4. Professional Development (Kimmo Korhola)

In the Finnish language a term often used as a synonym to "professional development" is (as directly translated) "professional growth". Subject related literature written in English does not, however, recognise "professional growth" on such a big scale. In this thesis, the translation from the Finnish term "Ammatillinen kasvu" will be "professional development".

In our opinion one´s professional development in a central element that guides one´s attitude, willingness and orientation considering development or any changes in one´s professional field. It is the crucial factor that determines how the work is done now and in the future in working life. As it is traditionally seen as an individual factor that is the chosen perspective in this thesis as well. In real life settings, it is the individuals that form teams or work communities, and for that reason, individual professional development is a significant factor when we discuss implementations.

4.1 Definition of Professional Development

According to Ruohotie (1995), the objective of professional development or professional renewal is the improvement of competencies and professional performance. It covers all actions taken in order to maintain or improve professional skills. It can involve keeping competencies up-to-date or learning new skills or techniques. The renewal can be seen as a continuous life-long process. The most important factors that influence a person´s possibilities for professional development restrictively or improve it are the organisational atmosphere, management culture, management practices and relationships between employers and employees. (122.)

A competency-based framework canMED, initially created in the early 1990s for evaluation of physicians' professional abilities needed for health care work, is now widely used among several health care professions. CanMED consists of seven roles which a health care professional should be able to uphold in her/his work. These roles are a Professional, Scholar, Health advocate, Manager, Communicator, Collaborator and medical expert (Royal College 2017; Kalén, Lachmann, Varttinen, Möller, Pexelius & Ponzer 2017, 2) These roles can be used as a basis for evaluating a student´s professional development and professional development and can be defined as development in these roles. Competence-based thinking, however, has been criticised. It has been argued that professional development should be evaluated through the development of professional identity instead of professional competences. (Kalén et al. 2017, 2.)

Professional development is a continuing learning process. It includes different kinds of aspects and types of learning. A person may learn from random experiences, education or work practices. Professional development means training and developing new skills and competencies in order to perform better in present work or to learn a new one. As it can be seen as a lifelong continuous process, it requires commitment and a genuine need and will to learn and develop. It requires effort, time, motivation and independent activity. In the ideal situation, a person experiences the possibilities to develop her/his competences continuously. (Ruohotie 2000, 9, 50.)

4.2 Examples of Professional Development in Different Professions

A counsellor working in Coronaria-Sähäkkä has several professional roles that vary due the time and the task on hand. In our opinion, the role of mental health professionals working in reactive rehabilitation housing services can be seen as a blend of tutoring, mentoring, nursing, coaching, teaching and caretaking. That is why the chosen examples for professional development in a specific profession are professions of a nurse and a teacher.

Price and Reichert (2017) describe professional development from a nurse´s point of view. According to them, the expectancy of continuing education has become a norm across all professions also especially early-career nurses expect support from employers for professional development. It is seen as keeping skill sets up-to-date in order to augment them throughout the whole career. (2.)

Järvinen (1999) has studied professional development processes of teachers in several research projects. According to her, the most important objective in all professional development is to learn to work with reflective practice. Reflective thinking and performances. It also means the ability to reflect on the performance of the whole work community in order to develop or change one´s practices or the practical social context. Reflection is needed in expert level work tasks in order to solve complex and unclear problems through shaping and analysing it over and over again. (259.)

Teacher´s professional development can be seen as a process of formation. The process is life-long learning covering professional education, self-education and professional activities. Professional development is needed to manage professionally important qualities such as intellectual, communicational, reflexive, educational and motivational qualities. (Kovalchuck & Vorotnykova 2017, 214.)

4.3 The dimensional Model of Professional Development

Ruohotie (2010, 114) presents a model of Professional development, introduced initially by Mentkowski (2000) which is based on the integration of learning, development and performance. This model is based on different dimensions that consider the professional development. The first dimension is about cognitive structures and performance context in which the development process takes place. The second dimension concerns the orientation and focus prioritising of the learner. It describes how the learner is balancing on the orientation between the inner and outer world. The focus can be either more on developing competencies or on developing the personality and self-reflection skills. (Ruohotie 2010, 114.)

The dimensional view emphasises that it is possible to separate four crucial areas of professional development. The areas are the following: Thinking processes, performance, self-reflection and development of identity. Specific thinking processes develop as professional development occurs. These skills can be learned through assignments planned to stimulate a specific type of problem-solving. These are productive thinking processes which can be identified as hypothetical, future orientated, profound and abstract. With performance-based learning, it is possible to learn from participating in a social context. Skills like communication, teaching other learners and analysing mistakes are learnable in these settings. Self-reflective skills are at the very heart of professional development. A person who can do self-reflection can assimilate new things, thoughts and themes to her/his earlier life span. It is also a crucial skill in order to be able to discover and change a person´s predictions and correct them. Development of identity is related to changes in personality. These changes are profound and effect on the level of autonomy and independence of the learner. Development of personality can also be described as a growing process to ethical responsibility and solid identity. (Ruohotie 2010, 114-116.)

4.4 Role of Reflection Skills in Professional Development

The importance and the mediating role of reflection as a component of professional development is high-lighted by Shaina (2017) in a description of a Reflection circle model. Reflection circle is a tool planned for youth workers to support their professional growth. Reflection circle, which is a kind of a meeting would take place at certain times, and it would be done collaboratively. The goal is to provide space and time to creative problem solving to new ideas. (54-55.)

Reflection is not only a personal cognitive process. There is also a strong social, collaborative and shared dimension which takes place in workplace learning. It is best understood as interpersonal behaviour taking place in a social context through social exchange and negotiation processes. This is why the presented schematic and cycling models often fail to capture the complexity of reflection. Reflection as an activity to foster professional development should be interpreted through activity-orientation and social perspective. (Gartmeier, Kipfmueller, Heid & Gruber 2008, 133-134.)

Professional development is a process of professional and personal empowerment. It is an answer to the changes in work settings and the demands of the work. It is the constant development in a person´s work-related skills and professional knowledge. Professional development is also the improved skill to understand the core of the work process which is for example in a teacher´s case understanding the processes of teaching and learning. (Avidov-Ungar 2016, 654-655.)

4.5 Meaning of Professional Identity

Professional development can also be studied through the concept of professional identity. Professional identity is something which begins to form from the very beginning of one's studies, and it is shaped during the whole work career. It is a long process, and the basis is created during the studying time. (Virtanen, Tynjälä & Stenström 2010, 98.) Professional identity is the profession related perception of a person about her/himself. It covers the present and the future. What is the personal relationship towards work at the current moment and what expectations and what are the goals for the future? Professional

identity as identity itself is dynamic and transforming core element. It is re-constructed in relationship to every day experiences through social interaction, people and circumstances that a person is dealing with. (Eteläpelto & Vähäsantanen 2010, 26.)

Professional development has been defined differently by different scholars, and these interpretations can be seen competing or even conflicting with one another. The differences in interpretation can also be seen as differences in emphasis. Definition of Professional development can emphasise the process of personal growth in which the number of professional skills and tools are seen to advance a person´s degree of expertise. Other definitions may emphasise the wider extent of one´s professional development as a way to influence the environment and other subjects in a social environment. Personal subjectivities can be even seen as constitutionalising through their engagement in learning and working in a social environment. (Avidov-Ungar 2016, 655; Billett & Smith 2006, 144.)

5. Perceptions of Serious Games and Gamification in Mental Healthcare (Peter Mautz)

This chapter is designed to close the link between prior research and this thesis. It will focus on mental health professionals and service users, their perceptions about gamification and serious games in mental healthcare and their attitudes towards games and gaming in general. In the course of this chapter, two studies will be showcased in detail. Both conducted by researchers from JAMK University Finland and published in the years 2016 and 2018. These studies provided the foundation and inspiration for this master's thesis.

5.1 Study 1 - Perceptions on Gamification in Healthcare

The first study showcased in this chapter was conducted by Hanna Hopia and Katja Raitio (2016, 894-902) from JAMK University of Applied Sciences,

Finland. It has the title *"Gamification in Healthcare: Perspectives of Mental Health Service Users and Health Professionals"* and is about the exploration of perceptions and experiences by mental health professionals and service users regarding the use of gamification in mental health.

It aims to answer following research questions:

1. How can game-playing elements, serious games, and web-based applications be used as part of the mental health care process?
2. What possibilities do these offer when being used in mental health care?
3. What potential obstacles might be involved when these are used in mental health care?"

(Hopia & Raitio 2016, 895.)

5.1.1. The Participants

The study had 42 participants in total, ten mental health service users with an average age of 39, and a group consisting of 8 eHealth experts and 24 health professionals with an average age of 38 (Hopia & Raitio, 896).

Table 3 - Sample Structure - (Hopia & Raitio 2016, 896.)

Group	Female	Male	Total	Average Age
Health Professionals **eHealth Experts**	25	7	32	38
Service Users	3	7	10	39

Table 3 shows the group structure, gender balance and average age in the showcased study.

The group of mental health service users consisted of persons diagnosed with depression, schizophrenia or bipolar disorder, and has been several years in the mental healthcare system while the group of professionals consisted of mental health workers, nurses and eHealth experts working as technology advisors in the healthcare sector.

5.1.2 The Methodology

Three different types of interviews were used in the research process. Eleven one on one interviews, four pair interviews and five group interviews, where the following topics where discussed:

Table 4 - Covered Topics - (Hopia & Raitio 2016, 896.)

Mental Health Service Users	Health Professionals
Gamification and online games in mental healthcare: • How can these be used? • What should be considered in their use?	The impact that using online games and new technologies has on work.
The use of digital tools in mental health care: • How can these be used? • What should be considered in their use?	The use of elements of gamification in the routines of mental health service users.
	The digitalisation of mental health care services: What kind of expertise does this require?

Table 4 shows the topics discussed during the research process of study 1.

6.1.3 Results for Service Users

What follows are the results gathered from the service users' perspective. In order to provide them as complete as possible, while trying to keep the segment quick and easy to read, the results were compressed and arranged in bullet point form. This shall grant the reader a quick overview.

Beneficial Factors of Playing Games

- Support for daily routines by providing a meaningful activity.
- Opportunities for networking and social interaction.
- Alleviation of loneliness and improvement of interpersonal skills.
- A sense of community, team spirit and inclusion in a group
- Easier entry for shy or sensible people to join activities.
- Reduced need to travel for appointments with professionals.
- Offering an escape "from the stress of illness".
- Reduced stigma of suffering from a mental disorder.

Hindering Factors of Playing Games

- Limitations in the extent to which recovery processes could be gamified
- Missing face to face or human contact
- Doubts on the ability to play during acute phases of the disorder
- Lower threshold of lying to professionals
- Identifying players as mental health service users due to the games they play
- Concerns about privacy and data security
- Fewer reasons to leave the home
- Addiction, which could also lead to lower income
- Game and hardware prices might exceed what service users can pay

Professionals' Role / Attitude

- Professionals are expected to play along with the service users and guide them until an independent play is possible

- Professionals are expected to support and encourage service users when they are starting with game applications
- It is important for a professional to have a positive attitude toward gamification's possibilities
- Service users think that professionals could see game-based solutions as a threat or more work

(Hopia & Raitio 2016, 896-898.)

According to Hopia and Raitio (2016), the most critical factors for mental health service users was the identification of gaming's advantages and the provision of meaningful content. Furthermore, they underlined the need for game-based solutions to be tailored to their individual needs. (899.)

6.1.4 Results for Health Professionals

After having shown the results and a summary for the group of mental health service users, this subchapter will now showcase the results gathered from the health professionals' perspective. As before and in order to enable the reader a quick and complete overview, the results were compressed and arranged in bullet point form.

Perceptions of Professionals

- The internet is part of social lives and for some the only way for maintaining social relationships.
- Especially adolescent service users could establish social contacts worldwide.
- Games offer an escape from the real world - in positive and negative ways.
- Not all service users are interested or can afford it
- Services should be tailor-made to suit a service user's individual needs.
- Game-based solutions could reach people who refuse to use mental health services, despite needing help.
- Games could train the service users cognitive-, and problem-solving.

- Other elements considered vital were: working in groups, peer support and sense of belonging.

Game Requirements of Professionals

- Evidence-based and strong theoretical background
- The reasons for a game being useful must be clear
- A game's target group should be selected very thoughtfully
- A game should be user-friendly and its objective clear
- A game should emphasise the individual strengths of the player
- The extent to which a game can be personalized should be sufficient.
- A game should provide feedback and motivate the player to progress
- Choosing a character wielding an entirely different personality than one's own was considered therapeutic for depressed service users.

Concerns of Professionals considering the Working Environment

- Concerns about having enough expertise to use new digital tools.
- Concerns about having problems to understand digital environments.
- Fear of losing jobs.
- Fear of clients doubting that there is serious work done while playing.
- Refusal of giving it a try.

(Hopia & Raitio 2016, 898-899.)

According to Hopia and Raitio (2016), the most important factors for health professionals were "*an understanding of the service users' routines*" and carefully designed game content, tailored to the client's individual needs. Furthermore, mental health professionals were concerned about their digital expertise not being sufficient for those challenges. (899.)

5.2 Study 2 – Relationship with Games and Gaming

The second study to be showcased in this chapter was conducted by Hanna Hopia, Marko Siitonen and Katja Raitio (2018, 1-12) from JAMK University of

Applied Sciences, Finland. It has the title *"Mental health service users' and professionals' relationship with games and gaming"* and describing the perceptions and experiences of mental health service users and mental health professionals when it comes to digital games and gaming.

The study tries to answer the following research question: "What kind of relationship do mental health service users and mental health professionals have towards games and gaming in their life?" (Hopia et al. 2018, 3).

5.2.1. The Participants

The study had 23 participants in total and consisted of two groups. One group consisted of 14 mental health service users, while the other group consisted of 9 mental health professionals. The average combined age was 36. (Hopia et al. 2018, 3.)

Table 5 - Sample Structure – (Hopia et al. 2018, 3.)

Group	Group Size	Total	Male	Female	Average Age
Mental Health Professionals	9				
		23	10	13	36
Service Users	**14**				

Table 5 shows the group sizes, gender balance and the average age in the study showcased in this subchapter.

5.2.2. The Methodology

In total, 39 interviews were conducted, with 16 out of 23 total participants being interviewed a second time. The participation in the second round of interviews was voluntary and meant a broader focused, more profound discussion about the same issues. (Hopia et al. 2018, 3.)

Table 6 - Covered Topics - (Hopia et al. 2018, 3.)

The role of gaming in the subject's everyday life	Gaming and social life
Physiological factors related to gaming	The impact of gaming on the subject's finances
What kind of gamer am I?	Gaming in different situations
Personal skills as a gamer	Development as a gamer
Motivation for gaming	Interest in gaming
Regulation of gaming	Gaming and success

Table 6 is showing the themes covered during the interview sessions in the showcased study.

5.2.3 The Results

The researchers identified four main orientations towards gaming. Since the study did not aim to compare the group of mental health service users with the group of mental health professionals, the results are mixed, and both groups are represented in each of the following orientations.

Compulsive Gamers

Compulsive gamers have lost control over their time spent playing, feeling a strong compulsive need to play, sometimes dominating their lives to the point where every-day tasks are being skipped in favour of gaming. For some interviewees a way to escape their everyday lives. They were very aware of their situation, with some of them stating that gaming would not be as compulsive if they had other meaningful tasks in their lives. The types of games played a minor role. While some compulsive players enjoy the social aspect of games, others prefer playing all alone. (Hopia et al. 2018, 4-5.)

Closet Gamers

While closet gamers are familiar with digital games and have played them to quite an extent, it is not an integral part of their life, nor is it goal-oriented for them. They feel in control of their gaming behaviour and reflect on it. However, they are also partly ashamed of playing digital games as a grown-up person and wonder if the spent time is worth it. Some ask themselves if they want to compensate for something else, they are missing in their lives. While some of this group saw gaming as an opportunity to spend time with their family, others felt the opposite and blamed gaming for reducing time spent with the family. (Hopia et al. 2018, 5-6.)

Hobby Gamers

Hobby gamers strongly feel that they are in control of their gaming habits and that they can stop when they want to or need to. For them, it is a goal-oriented activity and an integral part of their lives, which inspired at least some of them to learn to code and take on game design as a possible career path in the future. The social aspect of gaming is strong in this group, and members of it have a feeling of belonging to a greater gamer community. By them, games are being utilised as a hub for social interaction. For example, spending time and communicating with existing friends or meeting new ones. (Hopia et al. 2018, 6-7.)

Besides, gamers in this group claim to improve a wide variety of other skills like:

Table 7 - Promoted Skills - (Hopia et al. 2018, 6-7.)

• **Leadership**	• **Ability to engage in long term activities**
• **Organisation**	
• **Argumentation**	• **Ability to seek information and apply it in practice**
• **Reaction speed**	
• **Analytical thinking**	• **Ability to view the world through different eyes**
• **Language skills**	
• **Anticipation skills**	
• **Hand-Eye-Coordination**	

Table 7 features a list of skills which members of the hobby gamer group claim, can be improved by playing digital games.

Members of this group also described the sensation of flow experiences, which have also been described earlier in this master's thesis. Besides game flow, other aspects of game design are of great importance for enjoyment by the players. Opulent graphics, atmospheric acoustics, outstanding level design and exciting storytelling are just some essential features mentioned by the interviewees. The phenomenon of transference, where a sense of satisfaction would be transferred from an in-game experience to an every-day situation, was also reported by the interviewees, helping them to find motivation for everyday tasks like cleaning, shopping or doing the laundry. (Hopia et al. 2018, 6-7.)

Late Bloomers

While the members of this group had proficient digital competences and made use of social media and online services on a daily basis, gaming never really became a part of their lives, and their gaming experience is limited. In addition to that, some group members questioned why people would spend their leisure time playing, while typically having no gamers in their social environment. Despite gaming being a foreign territory to them, they showed interest and curiosity. Positive opinions were also noted on a game's capabilities for learning, or social interactions and "many" of the interviewees could envision a part for games and gaming in treatment and rehabilitation. (Hopia et al. 2018, 7.)

5.2.4 Conclusion

The authors of this study concluded that since no negative nor healthier attitude was found, one should, therefore, refrain from the goal of moving from one attitude level to another. Furthermore, they remind the reader not to jump to conclusions, since also compulsive gaming can be a protective factor for the mental health of a player. (Hopia et al. 2018, 10.)

Both groups, mental health professionals and mental health service users were represented in all four groups. Therefore, the authors see no point in separating them. (ibid., 10.)

6. Research Design & Methods (Kimmo Korhola & Peter Mautz)

In order to make the decisions leading to the final research design more comprehensive, this part presents the objective the authors set themselves for the research. Not to be confused, yet closely linked, to the research questions presented in chapter 1.3.

These Objectives are:

- Learn more about the knowledge, habits and thoughts of mental health professionals working in young adults' rehabilitation on gaming in general.
- Learn more about what mental health professionals know and think about digital games in young adults' mental health rehabilitation.
- Get to know what mental health professionals, working in the field of young adults' mental health rehabilitation, think is necessary for successful implementation of digital games regarding their professional development.
- Learn more about the possibilities and limitations of mixed experts in gamification, serious games or mental health, see in the utilisation of digital games in mental health rehabilitation.
- Get to know what various experts in gamification, serious games and mental health think is needed for a successful implementation of digital games, concerning professional development of mental health care professionals working in young adults' mental health rehabilitation.

According to Flick (2004, 14), quantitative approaches try to eliminate both, the subjectivity of the researcher, as well as the subjective experiences and feelings of the interviewee. However, the very essence of this thesis is about capturing the perceptions, feelings and ideas of professionals and experts. This, of course, meant the selection of qualitative methods and instruments to fulfil the objectives of this thesis and to answer the research questions.

Consequently, the methodology of this master's thesis rests on the following three pillars:

- A literature review to clarify the background and state of the research on the topic.
- Group discussions with mental health professionals, held at Coronaria Sähäkkä in order to learn more about their attitude, knowledge and ideas.
- A series of interviews with mixed experts on gamification and serious games, to gather their opinions and valuable knowledge.
- The following chapters will give insight into the process of literature research, followed by a short introduction to qualitative research and the description of the instruments used.

6.1 Literature Research

At the beginning of this master's thesis, extensive literature research was conducted, including literature of English, Finnish and German language. Various database searches were conducted, including CUAS & JAMK inventories, Janet-Finna, Jykdok-Finna, EbscoHost, Elsevier, Springer and Google Scholar. Additional literature recommendations were made by the professors supervising this thesis and by experts who were interviewed during the research process. In addition to that, literature suggested for further reading by the authors was assessed and included as well, if considered valuable. While large parts of the literature research were done in the early stages of this thesis, it was necessary to keep searching and including appropriate literature if the need arose. For example, by new aspects brought up during the interview sessions.

The following table shows the conducted database searches. The first column is listing the searched databases, the second column the used keywords, the third column the limitations and the fourth column the number of results.

Table 8 - Database Search

Where	Keywords	Limitations	Results
CUAS Library	Gamification	-	5
	Serious Games	-	3
	Professional Development	-	2
EbscoHost	Serious Games	-	76
	Serious Games + Mental Health	-	3
	Gamification	Full Text	18
	Gamification + Mental Health	-	3
	Entertainment Games	-	28
	Professional Development	Full Text	236
	Digital games		593
Elsevier	Serious Games + Mental Health		1423
	Gamification + Mental Health		183
	Entertainment Games + Mental Health		1685
	Digital games	journals	75
Springer	Gamification + Mental Health	>2014	528
	Serious Games + Mental Health	>2014	7235
Google Scholar	Gamification + Mental Health	>2014	6360

	Serious Games + Mental Health	>2014, Systematic Review	4470
Janet-Finna	Professional development	International e-material, 2017-2017, Full text, Peer reviewed	525
Janet-Finna	Management + Professional development	International e-material, 2017-2017, Full text, Peer reviewed	29
Jykdok-Finna	Ammatillinen kasvu	"Search from headlines" Library collections, available online	22
Jykdok-Finna	Ammatillinen kehitys	"Search from headlines" Library collections, available online	5
Jykdok-Finna	Professional development	International e-material, 2016-2016, Full text, Peer reviewed, language=english	1048
Jykdok-Finna	Mental health	Library collections, 2014-	720
Jykdok-Finna	Mental health	Library collections, 2016-	248
Jykdok-Finna	Mental health	Library collections, 2017-	100
Jykdok-Finna	Mental health	Library collections, 2017- Available online	88
Jykdok-Finna	Mental health	International e-material, Peer reviewed, Full text, 2018-2018	37293
Jykdok-Finna	Young adults´Mental health	International e-material, Peer reviewed, Full text, 2013-2018	150
Jykdok-Finna	Mental health rehabilitation	Available online	270

Table 8 gives an overview of the databases, search words and limitations used during the process of literature research, as well as their result-count.

6.2 Qualitative Research

In our daily lives, we are interested in different types of information. We need both, quantitative and qualitative information to fulfil our needs. When we want to describe, find or reveal existing facts instead of proving already existing hypotheses we are dealing with qualitative research. The idea of qualitative research is to describe the diverse reality from the perspective of real life. It is value based, and it cannot be "objective" in a way that objectivity is traditionally understood as the researcher is bonded to her/his existing knowledge. (Hirsjärvi, Remes & Sajavaara 2009, 160-161.)

Qualitative inquiry is situational, personal, experiential and interpretive. When studying professional or clinical knowledge, researchers often rely on qualitative research. The interpretations are strongly related to the personal and situational nature of qualitative research. It is affected by the researcher, the subject and those to whom the information will need to be conveyed. Professional knowledge is based on personal experience often occurring in an organisational setting. (Stake 2010, 14.)

Certain main features make research qualitative in nature. The first key feature to be highlighted is that qualitative research emphasises validity. Validity and reliability are proven by research transparency. All the steps and a systemic path to conclusions should be available for the reader. Secondly, qualitative research is naturalistic. This means that the researcher does not manipulate the setting and the environment of the research. The unique real-life context is what makes the data meaningful and rich in information. The third key point is the reflexive nature of qualitative research. Reflexivity is an essential aspect of objectivity in qualitative research, and it applies to both the participants and the researcher´s role. The participants should be seen as experts on the research question. The fourth feature is that qualitative research is interpretative. Interpretation plays a mediating role throughout the whole research process. From the same data, different interpretations can be made, and they all differ from each other relating to the researcher´s background. Most importantly the research questions are set to explore different kinds of meanings. The final key point is the inductive nature of qualitative research. This feature is seen in both

the data collection process and in the data analysis. They are both done in a data-driven way. For example, the questions are set to be open so that the interviewee decides in which aspects of the phenomenon she/he focuses. In the analysis, the idea is to let the categories and themes to "emerge" from the data. (Schreier 2012, 21-27.)

According to Alasuutari (2011), a key feature in qualitative data is that it is complex, multi-levelled and rich in expressions. The collected data plays a significant role in qualitative research because the data and the method define each other or at least set boundaries to one another. They have to be in line with each other. Qualitative research data´s purpose is to give the researcher possibilities for different kinds of approaches. (82-84.)

There are many terms related to qualitative research that contain similarities, similar meanings and cross over each other. This broad variety of different styles, approaches and methods can be confusing. Even though a connection between different kinds of research orientations can be found. In the field of qualitative research, the similarity between different orientations is that they emphasise the meaningful nature of social phenomena and the need to take it in order when describing, explaining or interpreting communication, culture or social activity. (Hirsjärvi et al. 2009, 163.)

Certain features could be described as typical for qualitative research which is explained in the next chapter. The data is often gathered using human beings as the instruments of data collection. This means conversations or observation technique. The methods of inquiry are qualitative. The focus is on getting the subject´s voice to be heard through theme or interviews or participative observation. It is not up to the researcher to decide what is essential in the research. Using inductive analysis unexpected things can arise from the gathered data. In qualitative research, the interviewees are not randomly selected. They are selected for a specific purpose based on their current position. The research plan is forming itself during the research, and the process is flexible. Plans can be changed during the research process. All the different cases being studied are seen unique, and that is what guides the interpretation of the collected data. (Hirsjärvi et al. 2009, 164.)

6.3 Focus Groups

A small number of individuals, brought together as a discussion or resource group, is more valuable many times over than any representative sample. Such a group, discussing collectively their sphere of life and probing into it as they meet one another's disagreements, will do more to lift the veils covering the sphere of life than any other device I know of. (Blumer 1969, according to Flick 2014, 243.)

The key character of the focus group discussion method is that it focuses on a specific issue. It is a discussion with a predetermined group of people. The method is interactive, and the discussion is led by a moderator. It is essential to create a safe environment for the participants in order to make them feel free to express their views on the preselected topic. The goal is to gather a wide scale of views in a discussion typically lasting from 60 to 90 minutes. The group nature of data gathering, composition and purpose makes focus group discussions different from other qualitative methods. (Hennink 2014, 1.)

There are certain features included in focus-group discussion method. These characters are listed below:

- A permissive environment is vital to create a comfortable atmosphere so that participants are encouraged to express their thought without fear of being judged

- The moderator should be able to recognise a broad set of views and the questions asked should be carefully designed.

- It is essential that the participants discuss the topic.

- In order to gain breadth and depth, the moderator facilitates the discussion

- A consensus is not the aim of focus group discussion.

- The goal is to uncover a range of perspectives and experiences.

- To allow the participants to discuss each issue in detail, the discussion is focused on a specific topic.

- Preselection of the participants is done in order to gather a group having shared experiences or similar backgrounds related to the research topic.

- The number of participants can be anywhere between five and ten depending on the purpose of the study.

(Hennink 2014, 1-2.)

6.3.1 Setting up Focus Groups

The participants for the focus groups were gathered from Coronaria Sähäkkä´s two Young adults´ rehabilitation units. One located in Jyväskylä and one in Ylivieska. Mr Korhola first contacted Mrs Anu Vuolukka, the head of service of Coronaria Sähäkkä and asked about her interest to co-operate with the authors to be the working life representative. She was immediately interested in the topic and promised to introduce our thesis project to managers of Jyväskylä and Ylivieska unit in a board meeting. Mr Korhola co-operated with Mrs Vuolukka during the exposé writing process, and Mrs Vuolukka gave her insight on the topic, which was truly valuable for the authors.

After the exposé was approved by supervisors from JAMK and CUAS, Mr Korhola contacted the unit managers and presented the interview request. Mr Korhola set up a date with the manager of Jyväskylä unit and attended one of the staff meetings for a short presentation on the thesis project and the focus groups. All staff members were interested in the topic and willing to take part in the focus groups. Some of them signed the consent forms in the very same event. After that Mr Korhola went through the duty schedule with the manager of the unit in order to find times for the focus groups. It was a mutual decision to split the workgroup in half, so that, both of the focus-groups would consist of 4 professionals each.

Mr Korhola contacted the manager of Ylivieska unit as well and described the thesis process and asked for permission to perform interviews with professionals from Ylivieska unit. Material on the topic written in Finnish and English was provided for the manager per email as well. As the manager of Ylivieska unit and the staff members were willing to give their permission to be interviewed, the times were then set for the interviews in co-operation with the unit manager.

Jyväskylä unit focus groups took place in Jyväskylä unit during December 2018. The focus groups of Ylivieska gathered together at Ylivieska, and the moderator was operating the discussion via phone. Ylivieska focus groups were planned to be executed in an online meeting, but that had to be cancelled due to technical problems. Both Jyväskylä and Ylivieska focus group discussions were held in December 2018 and January 2019.

6.3.2 The Participants

The participants were preselected from Coronaria Sähäkkä staff members in co-operation with the unit managers. All the participants share the same position as a mental health care professional and work in the company providing the same rehabilitation service. Their educational background is quite similar, and all of them have earlier experience from working in social and healthcare. Naturally, they differ in age and amount of work experience. There was a variation in the work history considering working in Coronaria Sähäkkä as well. This is explained mostly due to the Jyväskylä unit being in operation only since 10/2018. Their knowledge about digital games was told to be irrelevant from the beginning, and the scholars highlighted that the thesis is about perceptions and not knowledge. Their pre-understanding was not affected by the scholars at any stage of the thesis process.

The shared title for most of the professionals is a Counsellor. Described in a more detailed fashion most of the professionals participating the focus groups are working as a Personal Counsellor. That means that they are in charge of rehabilitation-related issues of one to two young adults participating in the

rehabilitation program. A few of the professionals participating focus groups are working in a specific area of rehabilitative activities. These activities are for example activity crafts or handcrafts. One the professionals was focusing on a specific stage of the rehabilitation program and work primarily in the stage called "environment" in a supported housing arrangement.

Table 9 – The Participants

Age (avg.)	**42**
Years working in social and health care (avg.)	14
Years working at Coronaria-Sähäkkä (avg.)	4
Educational background: • **Secondary nurse or similar** (3) • **Bachelor´s degree** (11) • **Master´s degree** (1)	

Table 9 is showing an overview of all mental health professionals participating in the research, including age, working experience and educational background. All numbers approximate.

6.3.3 The Interview Guide

This part of the master's thesis is dedicated to the process of developing the interview guide used later in the focus-groups and expert interviews.

The developed interview guide was aimed to cover three major areas. The first one being the general attitude and knowledge toward digital games and gaming in general. This was important since prior research concluded that:

> *If we wish to utilise game-based interventions as part of care in mental health services, we must first understand service users' and professionals' perceptions and experiences regarding games and gaming* (Hopia et al. 2018, 10).

These general questions about gaming were designed not only to get an impression about the attitude and knowledge mental health professionals and mental health experts have regarding the topic but also as a "warm-up" for the interviewee for the following, narrowed down questions.

The second section of the interview guide was designed to learn more about mental health professionals' perceptions of digital games as a tool in mental health rehabilitation. Lastly, the third segment was intended to collect information about the needs of mental health professionals when it comes to professional development required to handle these new potential tools. Those last two segments were inspired by prior research done by Hopia and Raitio (2016) concluding:

> *[…] the results of this study also raise concerns regarding how health professionals feel about the use of serious games as part of mental health care and how their expertise can be developed* (Hopia & Raitio 2016, 900).

To recap the main idea in short: First, finding out what mental health professionals think about gaming in general — then narrowing it down to digital games as a tool in mental health rehabilitation, talking about their perceptions when it comes to digital games and their positive and negative aspects. Finally, the professionals were asked in a participative approach about what they think would be required for them to handle digital games as professional tools if they would be implemented. This is a question closely related to the topic of professional development and training. This is especially significant since they are considered experts for their position and work-related requirements.

Professional development is a process of professional and personal empowerment. It is an answer to the changes in the work settings and the demands of the work. It is the constant development in person´s work-related skills and professional knowledge. Professional development is also the improved skill to understand the core of the work process which is for example in a teacher´s case understanding the processes of teaching and learning. (Avidov-Ungar 2016, 654-655.)

To set the focus groups in contrast, the authors interviewed various experts from different fields, using slightly adapted questions. The aim was, to set the mental health professionals' answers in contrast to the ones provided by the experts. Doing this enabled the possibility to compare differences and similarities for possible gaps in the perception of, for example, a gamification researcher and the mental health professionals. This was intended to identify areas where the perceptions, opinions and attitudes of those two groups lied apart and where they were similar, identifying areas where additional research is required and making a possible implementation process easier for decision makers.

The theoretical background for questions concerning the client's rehabilitation is strongly linked to the rehabilitative aspect of mental health care.

Rehabilitation can be seen as an essential part of the Finnish mental health care strategy. According to MSAH guidance, advice, psychosocial support, examination, treatment and rehabilitation are all parts of mental health care. The primary care is outpatient and organised by municipal social and health care providers. Municipal social services provide housing services, home services and work activity for clients going through mental rehabilitation (MSAH 2018).

Questions that concern digital gaming´s possible effects on clients´ rehabilitation are also relevant as the mental health professionals that we will interview work in a rehabilitation orientated setting. Rehabilitation is the origin for all activities and services arranged in Coronaria Sähäkkä.

The owners originally founded Coronaria Sähäkkä (Started as Sähäkkä Oy) for the need to fill a gap between psychiatric hospital care and home services. The founders saw a need for a systematically planned rehabilitative process that could prevent a circle of hospitalisation and provide the clients enough skills to cope with their challenges as independently as possible. The rehabilitation process follows a trademarked path and a series of actions starting from evaluation and ending to enhanced coping. The service provided by Coronaria Sähäkkä is rehabilitative housing service. The goal is to full fill a rehabilitation process in an individually scheduled period.

6.4 Expert Interviews

The third pillar of this thesis, besides literature research and group discussions, were expert interviews. In contrast to the mental health professionals who participated in the group discussions, the experts interviewed for this thesis were not directly subject to the research. The interviews with them and the expertise provided by them were meant to broaden the insight on the topic, aimed to enable the authors not only to set the results of the group discussions in contrast to existing literature but also in contrast to the knowledge of the chosen experts.

6.4.1 Who is an Expert?

There are varying views on how an expert shall be defined. While Deeke (1995) according to Flick (2014, 227) states that: "We can label those persons as experts who are particularly competent as authorities on a certain matter of facts."

This would also include people to be experts on their own illnesses or biography (Flick 2014, 227).

Menz (2009) as cited in Flick (2014, 227) on the other hand, defines an expert as someone with oriented and interpretive knowledge:

> *The experts' knowledge and orientations for practices, relevancies etc. have also – and this is decisive – a chance to become hegemonic in a specific organizational or functional context.*

This can be interpreted as someone whose views are influencing others in their professional field.

6.4.2 The Experts

Kadri Hallas

With orientation from psychological research and clinical psychology, Kadri Hallas is currently working on her PhD at the University of Helsinki faculty of medicine. She has worked a couple of years in the hospital at the clinic of psychology. What started as a start-up side project has now become her primary interest: Triumf Health. Triumf Health provides gaming solutions to provide psychological support for children with chronic decease. Kadri Hallas currently works as the CEO of Triumf Health.

Jarkko Järvelin

Co-ordinator of a Finnish project that aims to recognise, prevent and treat gaming related problems. He is working for a third-party organisation specialised in rehabilitation processes for clients with challenges with addictions. Järvelin has been speaking in various gamification related events and is well known in the field.

Jonna Koivisto

Jonna Koivisto is a researcher at the Gamification Group at the Tampere University of Technology. She holds a PhD from information studies and interactive media at the University of Tampere, Finland, where she has worked at the UTA Game Research Lab. She holds an MA degree in anthropology from the University of Jyväskylä. Koivisto's research focuses on online consumer behaviour. She has studied the phenomenon of gamification and the use of gameful elements in digital products and services. She has done research on acceptance and use of such systems as well as studied motivations behind their use. In addition to this, she has been consulting Tampere University Hospital Juvenile psychiatric ward about the use of gamification in mental health rehabilitation.

Kristiina Moilanen

Licentiate of medicine degree, a specialist in psychiatry at, a specialist in youth psychiatry and PhD (Doctor of medical science), Kristiina Moilanen is the head of medicine in Coronaria Säkäkkä. Her role in Coronaria-Sähäkkä is

consultative relating to medication and aspects of treatment of mental disorders. Besides, she works as an educator in the company´s network. She has also taught psychiatry for medical students at the University of Oulu during 2012-2017.

Beate Schrank

Beate Schrank is a psychiatric specialist doctor and head of the psychiatric department of Tulln University Clinic. She is also leading an Austrian research project called "Die offene Tür" or "The Open Door", aiming to improve the development of children and adolescents using digital tools, including serious games.

6.4.3 The "Problem Centred Interview"

According to Flick (2014), expert interviews are less interested in a person as a whole, and more in the person's expertise. With this taken in consideration and the need for an instrument, that grants the expert flexibility in his or her answers, while simultaneously allowing the interviewer to guide the conversation, the problem centred interview was selected. (227.)

> *The problem centred interview is an open, semi-structured questioning technique, which aims to give the interviewee a lot of freedom in his or her answers. It is focused on a topic to which the interviewer is always guiding the interviewee back.* (Hölzl 1994, according to Kurz et al. 2009, 465.)

The problem centred interview is, very much like the narrative interview, setting the narrative principle in the foreground. The interviewer guides the conversation and always tries to keep the focus on the main topic of the interview, while simultaneously including the reasoning, opinions, judgements and explanations of the questioned person. (Kepper 1994, according to Kurz et al. 2009, 465.)

According to Hölzl (1994), as cited in Kurz et al. (2009, 465), the structure provided by the interview guide makes it easier to compare the different interviews and improves the generalizability.

Following Witzel (2000) as cited in Kurz et al. (2009, 466), this interview technique is based on three principles: Problem centration, topic orientation and process orientation.

- **Problem centration** means objectivity regarding existing problem areas which are assumed to be relevant for the interviewee.

- **Topic orientation** means that the procedure needs to be adapted to fit the topic which is being researched and that it cannot just use a set of pre-created instruments.

- **Process orientation** means that the focus lies on the process itself. It demands a flexible analysis of the problem area with data collection and evaluation happening step by step, where coherence and character of the singe elements are coming together and taking shape slowly in the reflective relationship with the chosen method.

<div align="right">(Witzel 2000, according to Kurz et al. 2009, 466.)</div>

Hölzel is concluding:

The researcher enters the interview situation with a certain theoretical concept, which he does not reveal to the interviewee in order to prevent influencing the outcome. Due to the open character of the interview situation, the interviewee is free to set the importance of different topics himself. The researchers keep their theoretical concept and their methodology open for modifications suggested by collected empirical evidence, which also raises the need for the data collection and analysis happening step by step. (Hölzl 1994, according to Kurz et al. 2009, 467.)

The selected questions must be as open as possible and should engage the interviewee to tell his story. If the answers raise assumptions or questions, the researchers are allowed to ask more about it for clarification. (Fischer-Rosenthal 1997, according to Kurz et al. 2009, 472.)

Surprises have priority in the interview situation. The researchers are encouraged to chase new aspects and surprising restatements by the interviewee, are making the interpretation easier. (Kurz et al. 2009, 472.)

This is causing new evidence to be included in the process continuously, which makes a simultaneous data collection and evaluation necessary, allowing evermore precise questioning, better orientation towards the researched topic and, in the ideal case, the constant deepening of the insights. (Wooten 2000, as according to Kurz et al. 2009, 473.)

The post-processing of problem centred interviews is very similar to the approach in regular qualitative interviews. The semi-structured nature already provides first clues for a system of categories. New categories based on new aspects found in the interviews can be added. (Kurz et al. 2009, 473.)

6.4.4 The Expert-Interview Guide

Since it is a vital element of this thesis to talk with experts and mental health professionals about specific topics, and due to the semi-structured nature of both the focus group moderation and the problem centred interview, it would have been inefficient to develop a new questionnaire. Instead, the focus group questionnaire was modified by changing the wording for some of the questions, while the topics remained untouched. An example for such a change was rephrasing "How do you influence the clients' use of digital games?" to "What do you think about professionals influencing the clients´ use of digital games?"

6.4.5 Informed Consent for Experts

In addition to a slightly modified questionnaire, the experts also received a modified version of the informed consent form. It replaced the guarantee of anonymisation, as used for the focus group participants, with an agreement of revealing the expert's identity for the sake of this thesis. There were multiple reasons for this decision. Firstly, we firmly believed that there were no negative consequences for the experts by publishing their statements. Secondly, we believed that knowing who the experts are, and therefore having information on

their background and field of expertise, would not only strengthen their point but also give the reader the opportunity to compare expert opinions from different fields of expertise on the same topic.

6.4.6 Conduction of the Expert Interviews

The experts were contacted via email, telephone or in person and invited to take part in this research. The concept and purpose of this thesis were explained to them, and so were details on the interview procedure. This included the estimated time derived from the test-interviews and information on the recording and handling of the audio files. With that done, the experts selected dates and interview modes convenient for them.

At the beginning of each interview, the participants were reminded of the voluntary nature of their participation and that they can quit at any time without giving a reason. The purpose and process were explained once again and the informed consent forms signed. Before starting the interviews, the interviewees were asked for their permission to have them recorded. All interviews were closing with asking for something to add, or if something has not been mentioned. If the experts had nothing additional to add, they were thanked, and the recording stopped. These records were then transcribed, the audio files deleted, and copies of the transcripts sent to the interviewees for confirmation.

6.5 Content Analysis

After being held, the interviews were transcribed. The texts created in that way were equipped with line numeration, allowing a more precise system for quotation in the presentation of results. The full transcripts were added to the thesis on a separate CD. The chosen system for content analysis was the pragmatic content analysis method after Mühlfeld, as described in the book "Interview und schriftliche Befragung" by Horst Otto Mayer from the Vorarlberg University of Applied Sciences. This process is flexible and allows the creation of new categories in between interviews to explore new facets of the topic. It is designed for expert interviews and blends together very well with the problem centred interview guidelines.

6.6 Qualitative Analysis

Whether the analysis is qualitative or quantitative the recommendation is that it should be started soon enough after the data collection. The researcher should, however, be mature and have enough distance concerning the collected material in order to solve and understand the complexity and problematics of the collected data. Because of the extent and often massive amount of data, the researcher may spend weeks or months organising, interpreting and finding solutions when performing a qualitative analysis. All the data is not relevant for analysis, and there is a certain amount of data that will not be useful. It is also possible that the data collection and the data analysis are done at least partly simultaneously. (Hirsjärvi et al. 2009, 223-225.)

The objective of a content analysis is to get a general and abstracted description of the studied phenomenon. It is a method which can be used to analyse different kinds of documents systematically and objectively. A document has to be in written form, but it can initially be a report, dialogue, interview, book and so on. Content analysis is a way to organise the collected data in order to draw conclusions from it. With conducting a content analysis, the researcher tries to find meanings from texts. The ideological point of view is that a human being can only see things through a personally understood experience. (Sarajärvi & Tuomi 2009, 103-104.)

According to Schreier (2012), a qualitative content analysis is a method which is to be used if the researcher wants to explore not so obvious or only partly standardised meanings. The data which is often referred to be "text" or "textual material" can be written, visual or verbal. (3.)

Using content analysis, the existing data is analysed in every step during the research. The data is first divided into units, then conceptualised and then reconstructed into a new form using logical deduction and interpretation. The collected data is a representation of the studied phenomenon, and the purpose of the analysis is to create a clear written description of the phenomenon using the data. The idea is to organise the data in a compact form without losing the information it contains. (Sarajärvi & Tuomi 2009, 107-108.)

In order to use qualitative content analysis, the researcher must specify the respects from which he wants to describe the material. Qualitative content analysis will not allow the researcher to make a broad or full description of the material. Even when adding important upcoming aspects during the analysis they must be specific and fit to the chosen point of view determined by the research questions. Qualitative content analysis in that sense does not give a holistic overview of the material. (Schreier 2012, 4.)

6.7 Data Handling

The idea of the so-called reducing process is to cut down the information which is non-relevant to the on-going research. The research questions and objectives guide the reducing process. In the reducing process, it is possible to search the data for expressions which describe the research questions. This process can be called coding the data. A unit of analysis should always be defined before starting the process of content analysis. It can differ from a word to a whole phrase or even a specific thought. The definition process is guided by the collected data and the research questions. (Sarajärvi & Tuomi 2009, 109-110.)

In order to find the relevant data and cut out the irrelevant, it is recommendable for a researcher new to qualitative content analysis to start the analysis using only two simple coding frames: relevant and irrelevant. In this stage, it is essential to keep the category of relevant broad enough to avoid important data from getting lost. If hesitating it is better to include data in the relevant category. Conversely, the irrelevant category in this procedure is to be kept narrow enough. (Schreier 2012, 83.)

According to Hirsjärvi et al., in an analysis, the researcher starts to form her/his empirical notices from littered interviews or other written documents and interprets this data with carefully reading through it several times. The relevant theme arises from the data using analysis and comparative notes and is then transformed and coded into more general main categories. The critical point is to gain a profound knowledge of the data. Based on this limited and specified data the researcher is then able to continue the reducing in order to create key categories. The last part of the process is data based theoretical discourse and explanation of model creation. (Hirsjärvi, Remes & Sajavaara 2009, 266.)

6.7.1 The Pragmatic Content Analysis

The focus of the pragmatic content analysis is on the evident, unconcealed contents of a communication, making it more time efficient and economical than hermeneutic methods (Lamneck 1995, according to Mayer 2013, 48).

> *The point is not to interpret a single interview as exactly and thorough as possible, but to identify problem areas, which can be matched with questions of the interview guide. Not every single sentence has to be used for the content analysis.* (Lamneck 1995, according to Mayer 2013, 48.)

6.7.2 The Six Steps of Pragmatic Content Analysis

Step 1: Spontaneously visible answers to questions asked in the interview guide are marked.

Step 2: The text is fitted to an existing system of categories.

Table 10 – Pragmatic Analysis Step 2 – (Mayer 2013, 48-50.)

Reasoning for the Implementation of School Autonomy	
Competition by other Schools	**New Opportunities**
L2: Yes, the reason is, that because of us being a city secondary modern school, a large number of children decided to go to academic high schools instead, since there are some in the area. **L7:** Because of us being a city school, we lost scholars to other schools, especially academic high schools. You have to have flexibility and stand out in order to be able to compete nowadays.	**L12**: It was a chance for us to make use of new systems of learning and teaching. **L4**: Since we share the building with an elementary school also offering modern and open teaching forms, school autonomy provides us with the possibility to offer classes which are tailored to match the children's requirements, since most of them would want to stay in the building familiar to them.

Table 10 shows a category pattern as used in the pragmatic content analysis after Mühlfeld.

Step 3: Creating logical connections between information provided by the interviews.

Step 4: The created inner logic is written down.

Step 5: The evaluation with text and interview-excerpts is created.

Table 11 - Pragmatic Analysis Step 5 – (Mayer 2013, 48-50.)

According to different interviewed teachers, there was an improvement in cooperation, motivation and identification with the school, since measures of school autonomy had been implemented. The possibility of participation seems to encourage the devotedness and collaboration and by doing that, a major aspect of school quality (Cf. Bachmann et al. 1995, p. 96).

> **L3:** "I would say that the school autonomy has pretty much matched my ideas of teaching since it gives me the freedom to focus on the areas which I considered the most important all along."

> **L8:** "(…) before we got this freedom, we basically did the same. This (school autonomy) is a chance for every teacher.

> **L12:** "It is a strong sign of life for this school, teachers and students are strongly motivated."

Table 11 shows an example for the written down inner logic, supported by excerpts of the interviews.

Step 6: Development of a presentation of the created evaluation texts, without adding new interpretations.

(Mayer 2013, 48-50.)

6.8 Research Ethics

In order to get the most up-to-date information from a highly appreciated publisher on research ethics, we choose to use SAGE-publications scientific literature as our primary reference when considering ethical aspects of the research. In our research, we assume that the most critical ethical issue is the question-setting in the interview form. The interview itself is also a situation in

which the moderator must be aware not to guide the answers in any particular way.

In this thesis, we use the words ethics, ethical and unethical in the meaning which they are described by Hammersley and Traianou (2017). According to them the words ethical and unethical are often used when referring to actual parts of the research or research proposals as well when questioning publishing particular findings, using particular methods, studying particular topics and adopting particular theoretical perspectives. The word ethics can refer to what is good or right and how to determine that. How things should be done in order to maintain ethical. Ethics and ethic can refer also to an already existing ethical code system which can be religious or scientific. "Muslim ethics" or "Nursing ethics" for example. (Hammersley & Traianou 2015, 2-3.)

The most relevant description for what ethics means in this thesis can be summarised as research ethics that study the particular field of ethics related to conducting research. Research ethics study the difference between ethical and non-ethical and how a judgment between those could be done. Research ethics highlight some core elements which should be considered when evaluating good/bad, right/wrong in the research context. (Hammersley & Traianou 2015, 4.)

From a more practical point of view, the anonymity and voluntary participation are the cornerstones when conducting qualitative research. These highly important matters must be taken into account especially when describing the results of the research. (Remler & Van Ryzin 2011, 85.)

In this thesis, the following issues due to ethical matters are being considered:

- Awareness of researchers´ position
- Awareness of the pre-study attitudes and knowledge about the subject
- Ethical use of the gathered information (information is used only for this thesis)
- Voluntary participation
- Anonymity

To ensure transparency, all participants have been introduced to a consent form providing information on researchers, the involved institutions, the purpose of the study, the handling of the collected data, anonymity. All the participants have been reminded of the voluntary nature of their participation.

7. Results (Kimmo Korhola & Peter Mautz)

This chapter is dedicated to present the results of this research. It is split into five subchapters following the structure of the category system created following the pragmatic content analysis system after Mühlfeld. Each subchapter represents one main category which may or may not include a subcategory.

The structure is as follows:

Table 12 - Category Structure

Main Categories	Sub-Categories
1. **Perceptions of Young Adults Playing Digital Games**	• Age-Group in General • Mental Health Client • Sähäkka Clients
2. **Perceptions of the Role of Digital Games**	• Rehabilitative • Aspects
3. **Mental Health Professionals Influence on Gaming Habits**	• Counselling Role • Participative Role
4. **Future Outlook on Implementation**	
5. **Requirements of Professional Development**	

Table 12 is showing the structure of the category system.

7.1 Perceptions of Mental Health Professionals and Mixed Experts Considering Young Adults' Playing Digital Games

This category gives an insight of how the interviewed mental health professionals view the phenomenon of digital games, especially considering the

age group of young adults, and how this resonates with the view of the experts on gamification and serious games interviewed as well.

7.1.1 Age-Group in General

Both professionals and experts shared the same view that digital games have a significant role in young adults´ lives these days. There was a concern about the amount of gaming and using digital devices brought up by some of the professionals:

> **P7:** *"Digital playing is so comfortable these days with mobile phones that it seems that no one is willing to spend even a little boring moment without something to do. [...]"*
>
> *(FCG2, p.3, line 73-76)*

> **P7:** *"It is very common that people are on their phones. Just go to the store, and you'll see it happening. Not relating to mental health service users but at a general level."*
>
> *(FCG2, p.3, line 80-81)*

> **P8:** *"The first thing that comes to my mind is that there is too much of it going on."*
>
> *(FCG2, p.1, line 17)*

> **P2:** *"In my opinion a lot of it is going on. Young people play a lot these days. Maybe there a more options available such as game consoles and other devices one can play with."*
>
> *(FCG1, p.1, line 14-15)*

> **E5:** *"One cannot go into a single classroom, going as far back as the 4th class of elementary school, where no kid is knowing Fortnite or playing it as an example. Yet, the importance for them is varying, and it is serving different purposes."*
>
> *(Beate Schrank, p.1, line 10-12)*

An Expert, working in a project considering gaming related problems, was less worried about the negative effects of gaming despite their popularity and stated that:

> **E4:** *"[…] considering how common playing digital games is amongst young adults...in reality the negative effects, long lasting negative effects, are extremely minimal […]"*
>
> *(Jarkko Järvelin, p.1, line 27-29)*

Thoughts considering the cultural change in playing digital games and using digital devices were presented by one the professionals:

> **P13:** *"I think that our reality has changed, and we have kind of levelled realities in which we live relating to these games and other use of media…I don't think that the amount of screen time is manageable anymore. […] I want to add that what I meant by affecting the amount of time was considering the time using digital devices in general."*
>
> *(FCG4, pp.1-2, line 24-42)*

One of the experts saw a need for discussing the adverse effects of digital games related to young adults´ lives, primarily since the public discussion is focused on children and juveniles. On the other hand, he expressed his opinion about the whole topic often being exaggerated:

> **E4:** *"I think that this whole subject is a way too demonized. On the other hand, I believe that the negative sides should be more in the discussion because I think our discussion and debate about the negative sides of gaming is focused on juveniles or even children or youth in their teen years. Still, the case is that quite often the negative sides of gaming truly manifest when one is reaching his/her adulthood and should start taking more responsibility, that could be a hard stage for intervention. However, when discussing young adults playing digital games, in general, I think it is something related to normal every-day life of young adults these days."*
>
> *(Jarkko Järvelin, p.1, line 17-22)*

He also brought up the generational perspective impacting peoples´ attitudes towards digital gaming:

> **E4:** *"The typical attitude about young adults or youth playing digital games is very….it is not genuinely neutral….and very rarely people are genuinely interested in their gaming like that they would be curious and asking the players: what is so fascinating about these games? In many cases, the people close to the player have a very strong first opinion about this matter to a way or another, and it often defines their attitudes that are very hard to change, and I think that this is in a way a generation related issue."*
>
> *(Jarkko Järvelin, pp.1-2, line 34-39)*

Many of the professionals reflected their perceptions about young adults playing digital games to their individual experiences about digital games considering personal life:

> **P10:** *"I think I personally see it more from the perspective of a parent. When you have an own child that is playing digital games...I'm not too fond of it if one gets stuck to it for hours and hours, and someone can play through the whole night for example. On the other hand, there is a social factor in this, if they are playing using headphones and communicating with each other all the time. However, I don't know if it is good or bad."*
>
> *(FCG3, p.1, line 26-30)*

> **P9:** *"On a general level, I would say…I play digital games myself...and I don't see any problem in playing games as long as one doesn't get too deep to the gaming world and can take care of his/her daily tasks."*
>
> *(FCG3, p.1, line 20-22)*

> **P1:** *"[…] I kind of a see myself belonging to an age category...my first reactions to digital gaming according to my own children as well as professionally were kind of rejecting, and I thought that gaming takes time away from traditional things such as sports and it makes people more passive but now, I have changed my mind a little bit…I see a lot of socializing factors in gaming…I recommend gaming with moderation."*
>
> *(FCG1, p.1, line 16-20)*

The thought presented at the end of the previous statement, considering the amount of gaming, was confirmed by various professionals. Kristiina Moilanen highlighted the importance of maintaining a moderate level of digital gaming when assessing the possible adverse effects. She judged the topic being multi-sided:

> **E3:** *"Well I think that if the gaming stays on a moderate level then from a psychiatric point of view it won´t cause any significant harm…but then if gaming takes a big part of one´s time, there is a chance that an addiction might occur […] and if you develop an addiction to gaming as a juvenile, the problem will continue to young adulthood…I think it is a two-sided …there are good….for some kids it's not a problem…and in those cases I think that it's just one way to spend one´s spare time and it can be even a hobby. But then there are those kids for whom it becomes problematic and what considers me the most is that if a juvenile's life everything is related to the gaming world, internet or digital world…cause, unfortunately, the thing is that it makes creating social contacts in the real world harder and as well it makes so-called normal life harder in general […]"*
>
> *(Kristiina Moilanen, p.1, line 16-27)*

The topic was identified as multi-dimensional in other expert interviews as well:

> **E5:** *"There are many different and opposite ways in which digital games can be utilized. One can use digital games to reduce frustration, which is an important function. But, one can also use a digital game to generate frustration. One can use them to isolate oneself, one can also use them to make social connections."*
>
> *(Beate Schrank, p.1, line 15-18)*

> **E2:** *"There are many sides to this phenomenon, both positive and negative, which is from a researcher's perspective probably always the case. I see that there is a lot of good things and potential in the current games and gaming culture. I do see that game cultures, in general, provide a reference point and kind of a social environment for a lot of young people, for example as kind of a hobby or reference point where they find like-minded people and have their*

friends and peers. From that point it has potential and the possibility of being a very good thing in a young adult's life."

<div align="right">

(Jonna Koivisto, p.1, line 18-24)

</div>

Professionals and experts both saw digital gaming impacting the way of social interaction happening in young adults´ lives. Social interaction is perceived to occur more and more online:

P3: *"[…] see this matter as that the social interaction has started to happen more online and that there is not as much real interaction going on because of games…people are not really present in real life settings, but interaction is happening online or via games […]"*

<div align="right">

(FCG1, p.1, line 21-25)

</div>

E1: *"From general perspective a significant role because this is a part of social interaction for young people these days because they communicate a lot through digital channels and games as well and also this is what they discuss with their peers. They talk at school about their progress in different games, and so it is a huge part of their lives, and I think that is a valuable resource to have the kids so eager to play and use the game environment."*

<div align="right">

(Kadri Hallas, p.2, line 34-38)

</div>

E2: *"[…] for some people I'd say that they play a very significant part. Of some, the whole social environment and their peers can be found in those in-game circles or the gamer culture. So, it can be really significant or then there are of course those who just play very casual for example, for them, it's not as important. However, I would say that probably for almost every young adult, games play some part in their life."*

<div align="right">

(Jonna Koivisto, p.2, line 40-44)

</div>

Jonna Koivisto and Beate Schrank stated that not all social interaction related to online games is positive:

> **E2:** *"There can be social benefits from games, but there can also be social troubles caused. So, it's a two-sided phenomenon. […] there is toxic behaviour in a lot of games […]"*
>
> *(Jonna Koivisto, p.1, line 36-38)*

> **E5:** *"Effectively many of these games offer the possibility to communicate with other players. This is leading us to a different topic, raising questions about the type of communication one is having and the true nature of the relationship to this person. Do I know or don't know the person? There is the risk to delude oneself."*
>
> *(Beate Schrank, p.1, line 18-21)*

The previous quote, from the perspective of privacy, confidentiality, anonymity and personal security, thematised unsupervised online gaming as a potential risk for abuse. However, the following statements tried do imagine the positive aspects of digital games:

> **E1:** *"I think that in general there are many ethical issues that entertainment game companies have and that they use the…like in early adulthood the decision-making process is, of course, different as in adults in general. So some ethical issues arise, but I don't think that…I believe that the research has shown that if you are a gamer, either a professional or just doing it as a hobby, then your cognitive abilities, your IQ levels seems to be higher, your reasoning and reaction times are better, and so on and of course it does offer multiple processing skills that you wouldn't get elsewhere. "*
>
> *(Kadri Hallas, p.1, line 22-27)*

> **E2:** *"[…] speaking on a very general level, I do consider games to have the potential to teach various skills […]"*
>
> *(Jonna Koivisto, p.1, line 26-27)*

> **E2:** *"[…] considering for example strategy games or big cooperative games, where you actually need to cooperate or work in a team, or you need to kind of*

invest in this learning about how to solve specific problems or, or – depending on the game and depending on the environment, there can be a lot of potential skills to be learned and so on."

<div align="right">

(Jonna Koivisto, p.1, line 27-31)

</div>

8.1.2 Mental Healthcare Clients

On a general level, neither the professionals nor the experts felt a need to separate mental health care clients from other young adults. Despite valuing integration and equality, specific issues considering mental health care clients were also identified. Statements often considered the aspect of social interaction and overall functional capacity:

> **E2:** *"[…] I do consider that, well, mental health issues and being in mental health care is rather common, or kind of an issue that comes upon all kind of individuals, so see that people play in general so I don't see why should mental healthcare clients be considered differently with regards to this question, so I don't see anything that they don't should be playing. […] when we are talking about very severe mental health problems, then it might be worse and more problematic than for others, but on a very general level, I do consider that they play as others."*

<div align="right">

(Jonna Koivisto, p.2, line 49-58)

</div>

> **E4:** *"Well, it is always a very unique situation. It depends a lot on the whole situation and about what is the problem considering the situation, so there is a lot of variation. In most cases, first of all, it is as natural for them to play as it is for anyone else in the same age category. Gaming can be a hobby, and for many, it is a hobby that it is easier to stick to for longer than other hobbies if problems like fear of social interaction are occurring…or issues like isolation…in a way it brings some content to life even in that situation."*

<div align="right">

(Jarkko Järvelin, p.2, line 58-63)

</div>

In the next quote, Järvelin discussed gaming´s isolation aspect from another perspective. He then suggested that digital games were not the primary reason causing social challenges:

E4: *"The problem is that in a way these games maybe make it easier just to stay at home…and a kind of uphold the isolation process…or makes it easier to continue being isolated…but I see that it is very rare when the games are the primary issue causing these challenges, but they offer a chance to fill one´s life with gaming to the point that it is not beneficial anymore."*

(Jarkko Järvelin, p.2, line 63-66)

According to Moilanen digital games were not a central problem, but there were cases in which gaming had been the primary reason for participating in a rehabilitation program:

E3: *"So it is yet not a central problem for most of the service users, but for some of them, it is the main reason why they are in the rehabilitation process in the first place…the goal for them is to gain control of everyday life and to control gaming."*

(Kristiina Moilanen, p.2, line 38-41)

Moilanen saw that there was a risk that gaming related challenges would increase in the future due to the number of people playing them:

E3: *"I think that it will be more of a problem and a challenge in the future that it is right here and now... these youngsters born in the 80s whom are now about 30 or becoming 40…in that age category of mental health rehabilitants there is some kind of a gaming addiction existing but when we look at younger generations I think…I don't have any data about this relating to studies…but I doubt that gaming and gaming addictions play a more significant role…the youngster might have a specific psychiatric diagnosis such as depression or anxiety, but in many cases, problems related to gaming are included...many times these kids who have challenges with gaming and mental health challenges also have difficulties in schooling…So in the big picture, I think that it will be a growing challenge with mental health rehabilitants that the goal is to decrease the amount of digital gaming or to quit digital gaming completely."*

(Kristiina Moilanen, p.2, line 43-56)

Järvelin stated that judging from his experiences, gaming related problems were more often related to gambling than digital games. An example of addictive behaviour was given as well:

E4: *"Well, first of all, we (Sovatek) have a lot of different kinds of clients. […] A very small group of them have gaming related problems. Mostly these problems relate to playing games that money is involved in. […] Where this digital gaming is shown in our foundations work, is in the clients under the - searching work - or in younger clients´ lives...or some clients searching help for addiction. The target of the addiction might change from a thing to another. So, the option might be a substance abuse addiction from which occasionally the addiction is changed to uncontrolled gaming. Most of the times it is rather gambling that digital games, so in our foundations' work, the negative effects of digital gaming are not more present than they are in general in public. However, I think that maybe there would be room for gaming-based solutions to help people to get back on their feet."*

(Jarkko Järvelin, p.2, line 42-53)

Hallas assumed that entertainment games may cause adverse effects but on the other hand, also stated that there are two sides to this phenomenon:

E1*: "So, of course, this is also that entertainment games produce these problems with mental health in young adults, because they are drawn away from their social environment and they play sometimes without…like the games that don't offer any benefits for them, they are just hooked, they only play and play and play and this is of course causes social issues and also can cause mental health problems. It's a two-sided thing. It can create something that is very fun and engaging, and if you can offer additional support with it, then that's wonderful but at the same time it is something that is addictive, and it can cause problems as well."*

(Kadri Hallas, p.2, line 48-55)

The controversy of the phenomenon was shown in the next statement by Moilanen, underlining the existence of positive factors as well:

> **E3:** *"[…] there is nothing wrong in gaming itself…I think it is a way to relax…and to reduce stress and it isn't necessarily just a bad thing...or only a bad thing…there are two sides to this thing…there are online games available for example some strategy games that can develop thinking processes […]"*
>
> *(Kristiina Moilanen, p.3, line 87-90)*

The professionals assessed the suitability of different types of games for mental health care clients. The concern was related to gaming´s impact on the symptoms:

> **P3:** *"Are all the games necessarily suitable if you have a certain type of mental health disorder? May it increase symptoms or something else?"*
>
> *(FCG1, p.2, line 69-70)*

> **P4:** *"And who is playing?! I'm thinking about psychosis disorders. How it takes you to that world that if gaming can launch a psychosis."*
>
> *(FCG1, p.3, line 80-81)*

> **P3:** *"So it is like: What is the game been played, and how much you play?"*
>
> *(FCG1, p.3, line 79)*

The next statement brought up the importance of distinguishing reality from the digital world:

> **P1:** *"The question is: Does it provoke aggressive behaviour, or can one channel one's aggression through a game? Making a clear line between the gaming world and real world is important."*
>
> *(FCG1, p.3, line 73-74)*

Hallas thought about this issue from the point of stigma:

> **E1:** *"I can only say that if the mental health issue is one that is being supported through a game, then it is a wonderful thing to have because there is still some stigma in Finland or elsewhere as well. […] However, if you do this through a game, it is a safe environment and kids are much more eager actually to use those services, than doing it traditionally."*
>
> *(Kadri Hallas, p.2, line 42-47)*

8.1.3 Clients Participating Coronaria Sähäkkä Rehabilitation

The professionals seemed to experience mostly the adverse effects of digital gaming at their work, as stated in the next quotes:

> **P9:** *"Well, if we discuss our clients, it is a thing that shows up many times as something that is messing up their sleep pattern. They play through the whole night, and they would sleep during the day. This is the case here at least with some of our clients. So, this gaming is not only a positive thing. If they would play only a few hours a day, it would be fine, but it tends to get out of hand. It confuses the sleeping pattern if they play PlayStation the whole night and sleep during the day."*
>
> *(FCG3, p.2, line 33-37)*

> **P7:** *"[…] when thinking about these youngsters who are at our care, we see mostly the problematic side of it. If we are not interfering in gaming, the sleep pattern is messed up, and they would play and stay awake through the night and sleep during the day."*
>
> *(FCG2, p.1, line 18-20)*

The professionals roughly evaluated the number of clients playing digital games in Coronaria Sähäkkä:

> **P1:** *"I would say that more than half of the rehabilitants are somehow involved daily in playing some kind of a game…some of them play online and some of them play for example strategy games."* *(FCG1, p.2, line 59-60)*

The amount of gaming and its effects on daily routines and inclusion was seen as a crucial issue, also in professionals´ statements. A possibility of addiction was brought up by some of the professionals as well:

> **P2:** "[…] well I have very controversial thoughts about gaming. Even if I would think that playing is good or that playing is bad. If it is related to spare time activities, it is possible to schedule gaming to be part of a part of the - smart spare time - in a way that it wouldn't influence the daily routine or take time from sleeping."
>
> *(FCG1, p.2, line 45-49)*

> **P3:** "I think it can mess their everyday life pattern. Playing at night, playing in the evening, and the games demand time. You must play a certain amount of time. You can't just stop even by pressing the pause button […]"
>
> *(FCG1, p.1, line 36-38)*

> **P4:** "As I said earlier, it is a good thing, but I meant that in a reasonable amount…like if you are in a danger of being excluded from the society…gaming can speed it up, or it can also cause addiction. I have noticed that some people are abusing substances, some people get hooked on games […]"
>
> *(FCG1, p.2, line 51-54)*

The number of clients with gaming related problems participating in the rehabilitation program seemed to be quite low:

> **P13:** "We have people for whom gaming is a problem, and they play online games on their computers with their friends and because of schedules being what they are they play the games during the night time, and they sleep during the day and are not participating in our activities. Roughly said we have one person all the time who behaves like this. A different person but one of the clients is like this all the time."
>
> *(FCG4, p.2, line 63-67)*

The same pattern showed itself in the following discussion between the professionals. The negative effects were thought to consider a very small number of clients:

P7: *"Well, it depends on the person, but some youngsters play more than half of each 24 hours period."*

(FCG2, p.2, line 45-46)

P8: *"Yes, some of them play 70% of the time when they are awake."*

(FCG2, p.2, line 47)

P5: *"Some of them make their daily plans according to playing games. For example, if a new game is about to be launched, they might sleep during the evening, so that they are capable of staying awake during the night to play. This considers especially games played in a group."*

(FCG2, p.2, line 48-50)

P7: *"Well, again this can't be generalized. It is only a small fraction of our clients who act this way."*

(FCG2, p.2, line 51-52)

On a general level, games were thought to belong to everyone, and they were seen as serving the same purposes as for anyone else. In the following statement, earlier experiences of digital games were expressed as well. This example highlighted the meaning of a restricting environment versus an open environment:

P9: *"[…] Well, I'd say that it is a way to escape reality or a way to relax…as I think gaming is for everyone else also. I don't see it as a negative thing only…however, if you get too deep into it, it's not good. However, as I have worked more in the hospital ward, I can't really tell, because in the hospital ward there are no digital games. It is now here at Sähäkkä, where I have encountered gaming. […] There is no chance to keep any consoles available. Television is the only entertainment. Well, mobile games are probably what they can use*

116

there but no computers or consoles. […] I think it is because the rooms are supposed to be very clear open, for example in an acute ward nothing extra can be held in the rooms…mostly because of safety reasons. The TV must be watched in common areas."

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(FCG3, p.2, line 54-64)

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The importance of having control was highlighted, and other activities in addition to gaming were brought up:

> **P1:** *"So probably it is about one´s own ability to control oneself and putting limits to playing. The ability to structure your day, like that there is a time for playing and media, but that there would also be something else that would uphold one's overall wellbeing. Like real life interaction and sports."*
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> *(FCG1, p.2, line 39-41)*
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Concerns on gaming habit´s financial impacts arose from the professionals´ comments:

> **P5:** *"Also, it can affect the economic part of one's life as they are using money for playing the games…it is something that we see as well."*
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> *(FCG2, p.1, line 21-22)*
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> **P3:** *"[…] new games cost some money and they kind of would not afford them, but it seems like, that sometimes they have money and sometimes not."*
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> *(FCG1, p.2, line 61-63)*
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> **P2:** **"***The newest games are bought straight away when they are published. Even though that it would seem, that they don't have money for basic life."*
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> *(FCG1, p.2, line 64-65)*
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8.2 Perceptions of the Present Role of Digital Games in Mental Health Care and Rehabilitation

This part of the discussion is showing results regarding the rehabitational aspects of digital games. This includes social and cognitive aspects as well as emotion regulation and coping with symptoms.

8.2.1 Social Aspects

The impact on social relationships and social interaction became an issue during the discussions and the interviews. Digital gaming was considered to create social interaction while being able to prevent it as well. Distinguishing online interactions from real-life interactions seemed to have a significant meaning:

> **P9:** *"[…] It is nice to see for example when a few clients are playing a dual game or even three at the same time in the couch….it makes their communication very different from other situations, and maybe it even gets them more intimate in their relationships."*
>
> *(FCG3, pp.5-6, line 187-189)*

> **P8:** *"[…] sometimes I've seen that if two clients share an interest in the same game, there is a chance that they become friends through playing a game […]"*
>
> (FCG2, p.6, line 217-219)

> **P5:** "*we can try to think together what else could be a source for social connections and what kind of things in life, would this new type of social interaction make possible – for example a possibility to meet your children."*
>
> *(FCG2, p.3, line 88-91)*

> **E4:** *"The games are after all offering some kind of a possibility for creating or maintaining a social network, or if we think about gaming as a tool in mental health work, it is a way to build a network around gaming consciously. Gaming*

can be a way to get to know new people that you could then meet in other settings…not just online…gaming may connect different people."

Some of the professionals saw online interaction via digital gaming becoming more natural for the next generations:

P13: *"Our social interaction will be transferring more to electronic environments that is natural for the youngsters, and on the other hand, the clients who have problems with gaming are experiencing that they only have friends online…friends found via online gaming."*

(FCG4, p.2, line 68-70)

Others were concerned about gaming affecting the clients participating in the rehabilitation program:

P10: *"Additionally, it can also influence their participation in other activities. They can say that they are not going to participate because of their gaming being more important and then, for example, social factors of the rehabilitation can be left out."*

(FCG3, p.2, line 49-51)

Many of the professionals identified challenges of online-only interaction. It was considered to decrease skills in real life social contacts:

P 14: *"[…] as an older person, I think that interaction online is not that natural, and I believe that one should have friends and social contacts elsewhere (offline) as well. I don't see that the internet can replace normal interaction."*

(FCG4, p.2, line 77-79)

P7: *"But, there is this problem that a lot of them may have 200 friends in the game world, but in real life settings, their social skills are extremely poor. That*

those skills have not developed as they would as a result of normal child educating. It is so different when the interaction is happening online."

Online gaming was seen either as a threat or a possibility depending on the client´s situation and personal opinions:

P5: *"Social relationships are available for those who are shyer or something. They can get peer support and conversational support."*

P7: *"Well, as I said, for many of those who live alone or try to live independently, it may be the only contact outside the apartment for many days — social contacts through gaming via the internet."*

Digital games were thought to be of use in arranging group activities:

P2: *"Well, if there would be games that people could play in a group. That if someone has a fear of social situations, it would help them to practice participating in social events. Because most games are designed to be played single, with other people playing single in distant places. But as you brought up the group activities, that would be it."*

8.2.2 Cognitive Aspects

Both the experts and the professionals identified digital games' positive impact on cognitive skills:

E3: *"[…] I know that game-based rehabilitation solutions are existing, but I haven't tried them out myself. I think they are mostly related to perception or memory."*

In addition, long-term effects were expected:

> **E4:** *"Games can teach long term determines and problem-solving skills that are often required in the situations that the clients are in. It can make one think about his/her situation for various perspectives. It is a possibility to counsel the person to start thinking about his/her challenges, a task that the client would otherwise ignore, or find reluctant. But when using games, it can happen even as kind of a subconscious act."*
>
> *(Jarkko Järvelin, p.4, line 132-136)*

The impact of digital gaming on thinking processes and learning were brought to the discussion by mental health professionals:

> **P11:** *"I think that it is beneficial for one´s thinking skills…"*
>
> *(FCG4, p.5, line 174-175)*

> **P8:** *"If one wants to find the positive aspects of this phenomenon, the youngsters who play these games are pretty good at speaking foreign languages, as they interact with foreign people. Their English skills have developed to a good level."*
>
> *(FCG2, p.2, line 37-39)*

8.2.3 Coping with Symptoms

The professionals saw digital games as a method to possibly relieve the symptoms relating to mental health disorders. Some of the professionals had already used digital games for this purpose intentionally:

> **P2:** *"[…] there is a girl who lives here and plays a game called Sims, in which one creates a…she has a family in the game that she controls. She has some kind of challenges with perception, so I see that as a very positive thing, that she can focus in the game and control her anxiety at the same time, with this kind of another dimension that exists in the game, that she is able to control, and she is able to do things there, that she would want to do in real life…or like…or live with a family that would have been more ideal for herself."*
>
> *(FCG1, p.3, line 73-78)*

> **P5:** *"Coping with symptoms, I think the Singstar game can be used to deal with symptoms…as a relaxation method, as a method to process one's feelings. It can definitely be used."*
>
> *(FCG2, p.3, line 112-113)*

Playing digital games together was considered to be capable of creating a setting for discussions, related to coping with symptoms and other matters related to psychoeducation:

> **P7:** *"I think it is a good way to build trust. Our age differences with the clients can be quite broad, so I think if we would do these things together or play games together, we could create contact and create trust and also at the same time it would be possible to bring these vital rehabilitation related topics into discussion…awareness et cetera."*
>
> *(FCG2, p.4, line 142-145)*

8.2.4 Emotion and Behaviour Regulation

The professionals perceived digital gaming as a phenomenon that might affect the clients´ behaviour. Both, negative and positive effects were identified. In some cases, it was thought to be a way for one to control oneself, but digital gaming may as well affect one´s sleep pattern and other behaviours negatively:

> **P5:** *"Gaming makes it possible for some clients to stay focused and to stay still at least for a little while."*
>
> *(FCG2, p.3, line 108-109)*

> **P2:** *"[…] I think that it takes a lot from efficient time or time from sleeping, but also a lot of them use gaming as a way to relieve anxiety."*
>
> *(FCG1, p.2, line 42-43)*

In the next quote, gaming was considered to have a positive impact on emotion and behaviour regulation, yet the client was believed to need counselling as well, due to the amount of time used in gaming:

> **P9:** *"In some cases it might be a relieving thing if they can focus on some specific matter…but then it is not a good thing if they are not able to stop it, because you can tell from a person when he or she has been playing for too long is too deep in the game."*
>
> *(FCG3, p.2, line 39-41)*

8.2.5 Experiencing Feelings of Success

The professionals saw that digital games hold potential in offering feelings of success for the clients. This was thought of as a feature likely to be transferred to consider parts of real life as well:

> **P5:** *"It is a way to offer experiences of success to the youngsters. It is something that it is not part of their daily life otherwise. At least it is an excellent way to get experiences of success at the beginning, and then after that, it may encourage to try to gain experiences of success from real-life settings."*
>
> *(FCG2, p.4, line 146-148)*

Shared gaming may produce and enhance experiencing equality and feeling competent:

> **P3:** *"[…] it somehow supports the experience of success, when the youngster is capable, and the counsellor is not […]"*
>
> *(FCG1, p.4, line 147-148)*

For anyone excluded from the society, as well as mental health clients living isolated from the average societal settings, digital games may be a way to experience positive life events:

> **E4:** *"There are a lot of people who suffer from loneliness, depression, anxiety or such conditions for whom the gaming can be a way to find communities and*

gain positive experiences and experience feelings of success that they might not get from anywhere else."

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(Jarkko Järvelin, p.2, line 66-69)

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8.2.6 Motor Skills and Co-Ordination

Motor skills, both gross and fine, were taken in to account in few of the comments by the professionals. Physical exercise was mentioned as well as was the skill of multitasking.

> **P4:** *"[…] for example, if a Wii is being used, physical exercise. Some of the clients gain weight because of Cyprexa medication and don't want to go outside."*
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> *(FCG1, p.5, line 167-168)*
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> **P9:** *"[…] it developed one's coordination skills, and I can't remember it right now, but I know that there are many benefits in playing games that have been shown in studies. […] For example, focusing and multitasking skills, because something is going on all the time at the screen, so your eyes develop to perceive things."*
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> *(FCG3, pp.4-5, line 147-151)*
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> **P2:** *"[…] well maybe the game (Nintendo Wii) she mentioned would be suitable for arranging group activities as multiple players can play it […] and also it would have a dimension of physical activity."*
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> *(FCG1, p.4, line 154-155)*
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8.3 Mental Healthcare Professionals´ Influence on Digital Gaming Habits of Mental Healthcare Clients and Clients in Coronaria Sähäkkä Rehabilitation

This segment of the results is focusing on the influence mental health professionals have on their clients' gaming behaviour with two roles emerging in the conversations: the counselling role and the participative role.

8.3.1 Counselling Role

The next statements were examples of how experts perceived the role, attitudes and first instincts of mental health care professionals. They also brought the interactive dimension of games to the discussion:

> **E5:** "*I think that the boundaries will be very different for the professionals. From my experience, I believe that in contrast to children, adults have much more polarized opinions when it comes to games and that they have fears that they can't quite put their finger on. There is something bad or dangerous, without knowing exactly why. There is something bad for security, but they can't tell why exactly. Especially with teachers, therapists or health professionals – the people I have to deal with. Therefore, I can imagine that the threshold to take action might be much lower.*"
>
> *(Beate Schrank, p.2, line 37-42)*

> **E4:** "*If we discuss especially the professionals working in health care, it is often….and this is also an age-related thing based on our own studies…the first reaction to think about gaming is usually from the addictive point of view. So, in many cases, the games are not necessarily seen as options or possibilities, and unfortunately, they are not seen as a normal way to spend time either. Like movies and tv for example are. They (games) are thought as especially challenging, even though as being interactive entertainment products, they have dimensions that might work as ways to rehabilitate from mental health challenges, rather than other passive forms of entertainment.*"
>
> *(Jarkko Järvelin, pp.2-3, line 80-87)*

Moilanen described negative escapism becoming a rehabilitative challenge:

> **E3:** "*[…] while playing one does not have to face one's everyday challenges or be aware of them…it is a challenge in rehabilitation, and these issues keep coming up time after time…we are thinking about ways to decrease the amount of gaming.*"
>
> *(Kristiina Moilanen, p.2, line 36-38)*

Koivisto saw the possibility for counselling as a chance:

> **E2:** *"I could imagine that the attitude in the mental healthcare, of the mental healthcare, that professionals can for example somehow influence the playing behavior and probably that is a good thing to some extent. For example, in the cases of quite severe situations, it can be a good thing to guide them somehow and direct the clients."*
>
> *(Jonna Koivisto, p.2, line 64-67)*

Järvelin suggested sensitive intervention in gaming related behaviour:

> **E4:** *"[…] it is essential to have a sensitive attitude about gaming and to get involved in conversations trying to find out, what is going on, what is it that gaming gives to the person and are there external contacts involved in the gaming."*
>
> *(Jarkko Järvelin, pp.2, line 69-72)*

Similar thoughts were presented by one of the professionals as well:

> **P13:** *"[…] we don't want to interfere with it too strongly and insult the identity of the client as for some people their achievements in games can be very meaningful."*
>
> *(FCG4, p.3, line 102-103)*

The professionals considered gaming as part of spare time activities and something that does not need to be influenced in a restrictive manner, as long as it would not affect participation in the rehabilitation program:

> **P9:** *"However, these activities that belong to Sähäkkä rehabilitation structure and are part of their rehabilitation that they have committed to participate. We wish that they wouldn't play games during these activities."*
>
> *(FCG3, p.3, line 78-80)*

> **P2:** *"Sometimes I have had to restrict it […] because there are everyday life actions and tasks that are prioritized here. So, then I have asked to quit gaming*

and come to do the things that are more important at the moment. So, I have tried to restrict the gaming to the clients' spare time."

<div align="right">(FCG1, p.4, line 115-119)</div>

P10: *"There are other activities such as group activities or arranged daily activities that the client should be participating...then we tell them that they have to pause the game. They can't lie in their beds 24/7 playing games…so in these situations we restrict the gaming. However, in other cases, we don't need to do it. I don't think we involve it in that much overall. We don't sit in their rooms "guarding" them."*

<div align="right">(FCG3, p.3, line 73-76)</div>

Moilanen assessed professionals´ knowledge of games concerning addiction treatment:

E3: *"[…] this lack of knowledge can be one reason why we can't help the kids as much as we would like to….I know that there are professionals working for a clinic that is specialized in treating gaming addictions, but on a more general level I think professionals lack knowledge about dealing with gaming addiction […]"*

<div align="right">(Kristiina Moilanen, p.2, line 68-70)</div>

Moilanen saw the current role of professionals in counselling as well as in restricting:

E3: *"[…] I think that still at this moment the role is pretty much about restricting gaming…quitting verbal conversations or taking away the client's computer et cetera."*

<div align="right">(Kristiina Moilanen, p.2, line 63-64)</div>

A professional described the situation, the role of the service provider and the selection of games when it comes to making digital gaming possible:

P1: *"We have made it possible by purchasing the equipment needed, shared game controls for gaming and other systems. It is like a gaming device placed in a shared part of the housing setting and the games there are mostly suitable for everybody. No shooting games are existing. They are more like sports games or problem-solving games or something like that."*

(FCG1, p.3, line 109-112)

Some professionals had experience in counselling the clients to use digital games as self-help:

P2: *"Sometimes I think I have counselled the youngster to go play a digital game, if I knew that it helps to reduce anxiety. I have even recommended gaming."*

(FCG1, p.3, line 111-112)

A few professionals were active in implementing games and digital solutions in rehabilitative work. The following quote describes this on-going implementation:

P13: *"On the other hand, I'm trying to implement games and other tools as a part of rehabilitative work, and I might offer more reasonable ways for the youngster to use games, but at the same time, it is ok for them to use games for relaxation as well. However, I could offer apps related to relaxation and stuff that could be beneficial for them…How could you use your digital device in a way that it would be beneficial for you? That's what I'm trying to solve."*

(FCG4, p.3, line 104-109)

Hallas found a lack of knowledge in the current state of mental health professionals:

E1: *"[…] I think there is not enough knowledge already on the part of the healthcare professionals, because they don't know about the existing solutions."*

(Kadri Hallas, p.2, line 75-76)

One of the professionals shared the same idea of the professional´s role and the situation of some of the clients participating in the rehabilitation program with Moilanen:

> **P10:** *"[…] I think here in Sähäkkä the situation for many of the clients is, that it should be restricted, and it has been tried earlier in their lives. So, it is a huge thing that defines their behaviour."*
>
> *(FCG3, p.2, line 66-67)*

> **E3:** *"[…] for some clients, it plays a quite significant role, and that is something that is interfered, and we are trying to interfere it […] so if the behaviour is beginning to reach characters of addiction or a kind of escapism, many of them describe it as a way to escape from everyday life and its challenges […]"*
>
> *(Kristiina Moilanen, pp.1-2, line 34-36)*

The possibilities of influencing clients gaming habits were thought to be limited, and all interventions were done in shared understanding with the client:

> **P9:** *"Moreover, it can become an over exaggerated thing. For example, with one of the clients we have been trying to make a deal that he would give the gaming controller for us for the night, but it is such an essential thing for him that we as counsellors are not allowed to touch it. Also, of course, we are not legally allowed to confiscate it even if we wanted."*
>
> *(FCG3, p.2, line 45-48)*

The next statement described the importance of voluntary change, highlighting the value of a client´s motivation and understanding as well:

> **P7:** *"With some clients, it is possible to make deals. For example, that they give the gaming device away for the night. However, this requires the clients own understanding and motivation to make decisions, that they think are favourable for them and that they are willing to change things."*
>
> *(FCG2, p.3, line 92-94)*

> **P7:** *"I think we try to make deals and contracts with the clients and think about what else they could do instead of gaming and having conversations about how to fill the gap if one stops playing and when there is more time to do something else. How it could benefit the client. - These are the things we would like them to discover."*
>
> *(FCG2, p.3, line 84-87)*

8.3.2 Participative Role

Next quote was an example of how professionals already used digital games as a tool in practice. It is possible that they did it without recognising themselves doing it. In this example, the professional was using a digital game to make the client participate and practice social skills:

> **P10:** *"Mostly the gaming here is happening in their rooms. We don't see for example a pair of them playing together in the common room for the whole day. What we do is, that we sometimes go and ask the clients to come to play with us in the common room, to get them out of their rooms for at least a little while. That is, on the other hand, a social event."*
>
> *(FCG3, p.3, line 81-85)*

The next quote was about using gaming as a way to start conversations. It described the professional´s role as well as taking an active role:

> **P9:** *"It is sometimes very good that the professional is playing with the rehabilitated as it might create some conversation that would not occur without this shared gaming event. However, it is a shame that it is very rarely based on their own activity. It often requires the professionals to go and ask them to come to play."*
>
> *(FCG3, p.3, line 86-89)*

Järvelin saw shared gaming experiences as a ground for beneficial interaction as well:

E4: *"It could create a setting for helpful discussions considering gaming if the professional and the client would play together. It could be eye-opening for both of them in some cases."*

(Jarkko Järvelin, pp.2, line 106-108)

In the next quote an entertainment gaming session was described by one the professionals from the interaction point of view:

P9: "[…] one can sometimes even see a little bit of smile or hear laughter from the clients because it is not a direct interaction between the client and the professional, but more like that they were watching a tv-screen together, and different events are taking place on the screen. Also, we might talk about the events, so I think it is a good way for interaction between the client and the professional. Of course, it is not a situation for serious discussions considering, for example, treatment, unless the conversation is going that way. However, I think that maybe the clients want the professionals to be present and for example play games with them."

(FCG3, p.3, line 96-103)

Professionals had experience in shared gaming sessions considering both, entertainment games and serious games. This was displayed in the following quotes:

P7: *"We have played PlayStation games together. Playing games is not always a bad thing, there are positive sides to it also. If it is not taking control of everything. Social interaction is created when playing a game together."*

(FCG2, p.3, line 105-107)

P3: *"[…] it wasn't that long ago, when I played with a client and even though it lasted only about 15 minutes, it was a very good moment with the youngster. I kind of went to participate inside her world a little bit."*

(FCG1, p.3, line 84-86)

The professionals shared further experiences with serious games:

> **P6***: "Well, I have not used the games they mentioned, but I have used and played games. I don't know if they are counted in this study, but there are digital games designed for mental health rehabilitation, and I have played those games."*
>
> *(FCG2, p.4, line 115-117)*

> **P6: "***Well very little so far, but it is something that we have started and trying to get to be part of this work."*
>
> *(FCG2, p.4, line 121-122)*

Professionals had participated in gaming as observers as well:

> **P13:** *"In my work, I have been watching people gaming to understand gaming."*
>
> *(FCG4, p.2, line 70-71)*

Järvelin discussed the flexibility and attitude required from a professional to participate in gaming. He described the role of the client as well as the possible positive impacts on the interaction between those two parties:

> **E4:** *"I think that is often a gap between generations in this matter that affects this thing, but there are good examples about this phenomenon. What it takes is that the professional needs to let go and get loose, because in many cases it requires the professional to enter a world unknown to him/her, and in a way, they need to let go of their professional role, because the situation is now that the client is more qualified in this matter. In in my own work I have experienced, that it can be a very strengthening experience for a person facing mental health issues. Through this, they enter a different role. So, it strengthens their self-esteem and also gives an experience of competence in many ways. Another factor is that it requires something extra from the client too as it is a different thing to know how to play a game and then at the same time to teach someone else how to play. So, not everyone is capable doing that, but overall, I see it as a chance to create communication between the professional and the client. I don't think that the game even matters that much. It breaks down the more formal traditional setting of client´s and professional interaction."*
>
> *(Jarkko Järvelin, p.3, line 89-101)*

The exact phenomenon was described in the next comment of a professional who has participated in gaming:

P2: *"[…] the youngster can experience moments of success in those situations. As an example: NHL (ice hockey) is one of the games that I have played with one of the clients, and I just push the buttons and I have no idea what happens from each of the buttons, so then the youngster can be the one who is guiding the adult."*

(FCG1, p.3, line 89-93)

Moilanen saw shared gaming as a possibility to understand more about the phenomenon:

E3: *"I think it (professionals and clients playing together) would be extremely important, I mean for real very important. I think it would be very educative. The professionals would be able to see and experience gaming. I think the only way to true understanding of someone else´s world has to happen through experiencing it. I think actually it would be an excellent thing because that would give a much clearer picture about the phenomenon…what it is about and what kind of things you can do in these games."*

(Kristiina Moilanen, p.3, line 81-86)

Very similar thoughts also came from Beate Schrank:

E5: *"Yet, if one wants to have a good look at it, one should sit down and simply play it, or at least watch someone on YouTube playing it. To know what one is talking about. And if an idea exists, what the benefits of playing together with a kid are, why not. Especially if the kid is open for it."*

(Beate Schrank, p.2, line 57-59)

Koivisto made a comparison between the parental role and the mental health professional´s role:

E2: *"[…]* we should consider the parents and children for example. It is a very important thing that the parents involve themselves in the children's behaviour.

> […] *I see the same kind of setting here. […] this mental healthcare clients and the professionals taking care of them.”*

> **E2:** *“I would think that they are of course kind of young people in general, even though they are young people with mental health problems, they are still young people who are involved in the culture and everything of their peers.”*

The same comparison was brought up in one of the professionals´ comments but from the opposite direction. The aspect of being from an older generation was added to the discussion:

> **P10:** *“[…] maybe it is related to my age, but as my child has done it always, I have never thought that as a mother I would be playing PlayStation games with my kid. So maybe that is why I do not see myself in that kind of a role here either. Perhaps I am just old fashioned. I don't know.”*
>
> *(FCG3, p.4, line 115-118)*

Hallas thought that time resources could be a challenge and an obstacle to shared gaming in mental health care. Yet, he also saw it as a chance:

> **E1:** *“[...] the doctors and mental health professionals are so busy that it is challenging to achieve. However, it would be fantastic though if someone could make it happen.”*
>
> *(Kadri Hallas, p.3, line 95-97)*

The same challenges, as well as the positive effects, were identified in the following quote by one of the professionals:

> **P4:** *“I have noticed that it can be a positive interaction with the counsellor. That, if there would be enough resources, the counsellor would be playing with the clients, as it tells a lot about the client, when u talk with her/him during gaming.”*
>
> *(FCG1, p.3, line 80-83)*

8.4 Future Outlook on the Use and Implementation of Digital Games in Young Adults´ Mental Healthcare & Rehabilitation

Ideas considering an implementation of digital gaming to the weekly rehabilitation program started to emerge during the focus groups. Positive aspects considering this arrangement were discussed in the following:

P12: *"I'm just wondering as we are always or at least often telling them, - no - and restricting them. I don't think that there is any planned time for gaming or using digital devices mentioned separately in any of their weekly programs. That could be included as an activity. It could develop their patience as they would know when the time for gaming is coming […]"*

(FCG4, p.3, line 110-113)

P15: *"I think what the other participant said earlier was a great idea. That we would plan a specific time for gaming in the clients' weekly program. A particular moment for playing digital games…maybe we could include it in our weekly program that way. Moreover, then it would develop their patience skills at the same time. I know very little about the games so I can't say anything about things related to their content…how the content could support the rehabilitation."*

(FCG4, p.4, line 127-131)

P14: *"I started to think that could these games provide something for me from the perspective of my work...could they be used in activity crafts as part of it…if there would be reasonable games to use I think that gaming would be a way to get the clients interested and excited about things….but not in a matter that it would take all the time from the event."*

(FCG4, p.5, line 184-187)

Both, the professionals as well as the experts saw potential in the use of digital games:

E3: *"I think there is potential that could be used in young adults' rehabilitation. So as we talk about juveniles and youth and the gaming world: Using digital games or digital solutions with a 50 or 60 year old mental health care client can*

be harder - or not necessarily - but I think, that for especially for the younger clients participating rehabilitation, there are games or other applications to be found, that could be used in rehabilitation."

(Kristiina Moilanen, p.4, line 124-128)

P8: *"Well, at least there are therapy services that work. So, I think there are elements in gaming as well that could be used. Therapy via the internet is studied to be as effective as a therapy in live conversations when talking about depression treatment. So, if it works according to therapy why couldn't we use games also? However, it depends on what kind of games there are nowadays available…I don't know what kind of games exist, but I would assume that they would work."*

(FCG2, p.4, line 128-132)

P2: *"[…] it would be good, if there would be games designed for that specific matter, that one could use with the clients. There are. - I have been working in other areas of therapy work, so I know that there are games, for example, for helping kids with their perception skills or games for elderly people that are related to memory issues. As these days memory games can be played with tablets, so that there would be something what I don't know, like games for training everyday living skills, or something focusing on that matter, that could be practiced with gaming."*

(FCG1, p.4, line 129-134)

Being new to the field limited the thoughts about potential use:

P7: *"[…] this is a strange field for me. I don't know them, and I am not familiar with these games that could be provided for the clients."*

(FCG2, p.5, line 161-162)

P14: *"I don't understand anything about the games so I would have to get to know the topic first to be able to make any comments about how they could be used in our work."*

(FCG4, p.4, line 132-133)

136

Järvelin discussed professionals' perceptions considering the validity of digital games as a tool:

> **E4:** *"The topic is still very unfamiliar to the professionals, and the mindset of the professional can be that they are supposed to be the experts and supposed to be able to provide some - real - help instead of these gaming related discussions. Also, they (the professionals) might question if it is professionally responsible to increase the amount of gaming still if the client is seen as a person who already plays vast amounts of time in a day or a week. Of course, the idea is not in the first place to increase it but more to modify the gaming habits."*
>
> *(Jarkko Järvelin, p.3, line 101-106)*

Järvelin, Hallas and Schrank identified challenges of game design and budgeting:

> **E4:** *"[…] I know that there are some successful games made for rehabilitation purposes, but I personally think that one of the problems in this topic is that, if someone has played a lot of games, they might be expecting a lot of the games. To get them excited, the budgets for making rehabilitation games should be very big. Another question is, how we could use entertainment games as tools for rehabilitative gaming. That is a debate of its own."*
>
> *(Jarkko Järvelin, p.3, line 72-76)*

> **E1:** *"[…] the main negative sides are related to the usability. Because there are many games supporting mental health more or less, but they are just boring, although they are on paper effective and evidence-based. If you end up using them, it is essentially something that doesn't work, so the games also need to be more fun and engaging for patients to benefit from those."*
>
> *(Kadri Hallas, p.3, line 144-148)*

> **E5:** *"The biggest problem is that these games tend to become very educative and that the kids don't like them then. That one has to be very aware. Because it is not sufficient just to have a digital game. They have high expectations regarding a game."*
>
> *(Beate Schrank, p.2, line 57-59)*

> **E5:** *"The existing games are outdated very quickly and often do not have the budget to be maintained or updated or receive graphics upgrades. This can result in the games not being as appealing as the adults think they are. Just being a digital game, does not make it better."*
>
> *(Beate Schrank, p.2, line 68-71)*

Moilanen and Schrank discussed the positive and negative aspects of digital solutions:

> **E3:** *"Digital solutions could bring the rehabilitation within reach of the clients, and there would be the possibility to do the rehabilitative practices when it suits the best. However, there are certain risks also in this as well. If the rehabilitation is on the client´s responsibility only, there is a chance that he/she will never play the game. But on the other hand, if it is within the service user's reach and if the game or the exercise is easily accessible, there is a chance that he/she uses it systematically and then it could be very beneficial to the rehabilitation process."*
>
> *(Kristiina Moilanen, p.4, line 135-141)*

> **E5:** *"Gamified things go down well, simply because people prefer playing to learning. One is learning while playing. Hip learning quasi. And surely especially juveniles."*
>
> *(Beate Schrank, p.3, line 82-83)*

The aspect of social pressure was identified by Moilanen:

> **E3:** *"[…] and maybe it is easier to start doing the exercises if one is alone instead of being accompanied by a professional. One does not have to feel pressure about success in these exercises or what other people think if one can't manage to play this game. So, it's a pretty safe environment to do it."*
>
> *(Kristiina Moilanen, p.4, line 145-148)*
>
> **E5:** *"One would make it less dependent on the professionals that are there, one would also make it less dependent on timing."*
>
> *(Beate Schrank, p.3, line 83-84)*

Moilanen identified the need for further knowledge about the issue, assuming that, the future generations will be more familiar with the topic.

> **E3:** *"I think that for other professionals and for me it would be beneficial to know more about the content of digital games, what they are about. We would need to understand more about the content because at least in my case I don't know much about the gaming world, only a small fraction of what it is. […] I believe that in the future the next generation of mental health care professionals will be more aware and more familiar with the gaming world, as they represent the same age group."*
>
> *(Kristiina Moilanen, p.2, line 64-73)*

Also, Beate Schrank saw many things still needed to be addressed for a successful implementation:

> **E5:** *"There is undoubtedly a lot missing, beginning with the acceptance and education of the professionals and reaching to the number of customizable games. Games which can sufficiently be adapted to the setting at hand. Games which are intelligent enough to adapt themselves to the individual. – What else is missing? - I assume the technical facilities. Yes. I'm sure one can prolong this list to a great extent."*
>
> *(Beate Schrank, p.3, line 110-114)*

One of the professionals was imagining future possibilities and solutions, maybe already existing without him/her knowing about it:

> **P6:** *"Relating to games, I would say that, for example, the game could be about exposal training or psychoeducation. There could be an information package. It could help people to be more focused on the given information, and they could proceed, for example, through a planned daily program with a quiz or something. So, I think there are a lot of possibilities there. I don't have much information about what kind of options there are available, but I believe that they could have been used more than they had been until now."*
>
> *(FCG2, p.4, line 133-138)*

Koivisto brought the aspect of normalisation to the discussion as an element likely to lower the threshold of entering mental health services:

> **E2:** *"When discussing this in the mental health context, one thought has been for example that if there are specific games that somehow support mental health. These can in a way maybe kind of a normalizing treatment and make it an everyday thing and nothing special."*
>
> *(Jonna Koivisto, p.3, line 91-93)*

> **E2:** *"[…] games could have the potential for this kind of normalization of these issues for example. In general, in mental healthcare being in hospitals or some institutions is games and some kind of gaming culture is broad in there […] It's in a way […] having this normal, common aspect of young people's lives […] in the hospitals and institutions. I would see this potential […]"*
>
> *(Jonna Koivisto, p.3, line 95-99)*

Hallas believed that game-based solutions for young adults facing mental health challenges are likely to increase in the future:

> **E1:** *"It has been shown, the market trend has confirmed, that if we talk about mobile games for example, then there have been coming up many, many mental health games that support mental health for young adults. So, it becomes more and more popular, and I think that is a very good thing."*
>
> *(Kadri Hallas, p.3, line 104-107)*

Moilanen identified the risk in the possible spread of digital solutions. She saw them as a way to add value to the rehabilitation process but also claimed that they should not substitute the existing rehabilitation services:

> **E3:** *"[…] there is a risk that if good digital games for rehabilitation start to get published there is a chance that people can begin to think that it can substitute example rehabilitation services provided in Sähäkkä. For example, that it could substitute the interaction between the rehabilitant and the counsellor and all the things occurring in those situations."*
>
> *(Kristiina Moilanen, p.5, line 187-191)*

> **E3:** *"I think that if we see digital games a possibility and as a phenomenon that can add value to rehabilitation, and not as a substitution, the situation is in balance."*
>
> *(Kristiina Moilanen, p.5, line 187-191)*

Beate Schrank shared a similar view on the topic:

> **E5:** *"I believe that a game alone can never be enough in therapy. This cannot be. I don't believe that a game can replace a therapist. I think that a game can be a useful addition to a therapist. But, having an institution with borderline patients, who are failing in school, hurting themselves, taking drugs, being depressive, having an early pregnancy and I don't know what else. That one is able to help them with a digital game and that they, therefore, would not need a therapist is unlikely to happen."*
>
> *(Beate Schrank, p.3, line 93-97)*

Schrank also saw no danger for a loss of jobs due to the phenomenon:

> **E5:** "*Yes. The digitalization will cost jobs. [...] Yet, in mental health care, with direct contact to the patient. - I see no danger for that to happen."*
>
> *(Beate Schrank, p.4, line 120-122)*

Moilanen highlighted the importance of game design from the addiction perspective:

> **E3** *"I don't think that the games themselves if they are built in such a manner and from a rehabilitation perspective that could create an issue with addiction. That is, of course, something that the developers will have to look into when designing the games. The games, of course, can't be used in rehabilitation if they are addictive."*
>
> *(Kristiina Moilanen, p.5, line 182-185)*

Addiction and related problems were thought to start more likely from the client's habits than the use of rehabilitative games:

> **P5:** *"So, I think that if you are using digital games in a planned way in mental health rehabilitation, there are definitely more positive sides than negative sides…for example, that we mentioned earlier about coping with symptoms and relaxation and getting experiences of success. So, I would say that if the gaming is based on the young adults' own interest from the beginning, it is more likely to cause problems."*
>
> *(FCG2, p.6, line 220-224)*

One of the professionals discussed the topic imagining the future outlook of digital games and digital solutions. In this quote, the concepts of virtual reality and biofeedback were mentioned:

> **P13:** *"As a negative effect I would mention that it decreases the ability to focus if push notices and such keep interrupting you. As a positive effect id mention the social relationships that might become actually quite broad. They can't substitute real-life social relationships, but it is better to have them online than not to have them at all. I think that experiencing joy and experiencing feelings of success are also things that digital or online games can provide. There are so many possibilities that one can't tell what is going to happen. If you think about virtual reality and biofeedback, for example, it is a very open question what the possibilities in rehabilitative use are - and how are we able to put them together."*
>
> *(FCG4, p.5, 184-187)*

8.5 Professional Development needed in-Order to implement Digital Games in Young Adults´ Mental Health Care & Rehabilitation

The first most important step was thought to be a change in attitudes. This crucial factor of professional development was brought into discussion by both the experts and the professionals:

E4: *"[…] a substantial part of them (professionals) would first of all need a change in their attitude. The biggest obstacle is that no one is willing to receive information about something that they have prejudices against and if there is a certain fear existing."*

(Jarkko Järvelin, p.4, line 157-159)

E3: *"One´s personal attitude towards the topic is essential. We should see the potential that lies in these gaming solutions. I actually have a very positive attitude towards this kind of an idea that there would be these kinds of tools for rehabilitation."*

(Kristiina Moilanen, p.4, 163-165)

One of the professionals thought that everything new causes natural resistance at first. A comparison to the threshold of computer era was made:

P7: *"The thing is that everything new always causes a natural resistance in people in the beginning. I had lived the period when computers first came to use for writing notes instead of using a pen and paper. There was much resistance at the beginning, not from me but my older colleagues. When people got more used to it, no one wanted to go back to the old system, so the attitude is something that needs a bit of work. However, I believe that as they are used and when people notice that they work well and if they are worthy of use and they are good I think that the attitude can change quite fast actually."*

(FCG2, p.5, line 173-179)

P4: *"I think maybe the positive talk about that the subject is valuable…to see that gaming is not only a negative phenomenon […]"*

(FCG1, p.6, line 190-192)

E1: *"They are more, psychologists, for example, are more aware of the negative things that are related to gaming…So, they are more aware of people and young adults gaming too much, and you know, the problem arising from that is less awareness of what can be done to improve the mental health by utilizing the same environment."*

(Kadri Hallas, pp.3-4, line 120-124)

Järvelin discussed the matter starting from the current professional education:

E4: *"[…] they (digital games) should be first implemented in professional education in social and health care, but I don't mean that everybody should be forced to use them. I think that when we are teaching to future professionals, games should be something we would introduce as tools that can be used like any other tool if needed. It should not be seen as something special."*

(Jarkko Järvelin, p.4, line 140-143)

E4: *"[…] I think that it still is a generation related issue. As we begin to have professionals that are used to using games in their own lives, they might be more encouraged to use them. But even for these younger professionals, I think it is necessary to encourage and tip them, that games are a valid tool to be used in working life as well."*

(Jarkko Järvelin, p.4, line 144-147)

E4: *"Relating to my own experience, I think that people need simplified information packages about games, easy to pass on, meaning examples like - this is a game that you can use in this situation and so on. - Everyday work of professionals is so hectic that there is no time for the professionals themselves to start searching gaming related solutions."*

(Jarkko Järvelin, p.4, line 147-150)

The challenges regarding game design were discussed in detail in the next statement by a professional, thinking in this example about the requirements for implementation starting from the very basics:

P12: *"First of all it would require listening to the clients and mental health professionals. The thing is that, in each case, the client's situation differs in the matter of goals, the disorder itself and the developmental challenges. What would be a game that would serve everybody's needs? - I don't know if it is even possible. How are we able to find the game programmers that would transfer our thought to the games? There would have to be a brilliant idea behind it, the interest of game producers, a business idea is required and a way*

to marketing the game. Also, how to make the professionals commit to this practice and how to make them understand the meaning of the game? There is always the possibility that the true meaning is not found. There is a chance that a specific game does not produce the wanted outcomes, so it is crucial to have it tested or studied to do marketing. - So, they would be able to say, that they have had these results concerning this test person."

Awareness was seen as the very first step in professional development needed in order to implement digital gaming to real life work:

P13: *"Many things should happen, but first, the professionals should be aware of the potential use of games. […] It requires knowledge, reminding and time. The games should be easy enough to use as well."*

A few professionals thought that the implementation would happen automatically as a result of generational change:

P8: *"It has to happen naturally. Just imagine a 63-year-old person working in mental health who uses a basic Nokia old-school mobile. It could be so strange for her that it is tough to get a grip on these kinds of new things just when you are about to enter pension…however, I think that some breakthrough will occur when younger generations come to working life as they are naturally raised to use digital technology."*

P4: *"I think it is more natural to these young people who are now graduating for the field. They are raised during the digital era. […] I am over 40 years old. So somehow the training...I am a bit – disconnected - with this topic and I think that the other people in my age are too."*

Some thought that professional development would happen through formal learning settings:

> **P2:** *"[…] by arranging training and lectures, that would clarify the idea of professional use, instead of seeing games just as games for spare time activities one would see the serious potential."*
>
> *(FCG1, p.5, line 175-176)*

Koivisto discussed the professionals' wishes to get to the gaming world in order to build further understanding:

> **E2:** **"**[…] *from what I have heard from these professionals myself, there is kind of a need for understanding the gaming world and the gaming culture and the role in the young people's lives and so, in order for the professionals to be kind of able to use these tools, and to somehow bring this part of the young people's lives also to the care environment."*
>
> *(Jonna Koivisto, p.4, line 137-141)*

> **E2:** *"[…] there is probably a lot of need for education for the professionals. Kind of bringing perspectives and educating them. Bringing knowledge about what it actually means in the context of the young people's lives."*
>
> *(Jonna Koivisto, p.4, line 141-143)*

Thoughts about the participation of the clients in the professionals teaching were brought up in the discussion:

> **P13:** **"**I think that it would be great if the youngsters could teach us about this topic."*
>
> *(FCG4, p.4, line 159)*

> **P2:** *"And also talk with the youngsters about this subject, about what it means for them and that we would let them to teach us."*
>
> *(FCG1, p.7, line 230-231)*

As Järvelin discussed the importance of practicality in training. He brought up the aspect of social acceptance when talking about digital games as a tool:

> **E4:** *"The training should be very practical. […] the training should be quite intense, as according to my experience, it is hard for professionals to engage in long training sessions, or they might not even get permission to participate in them."*
>
> *(Jarkko Järvelin, p.4, line 160-162)*

> **E4:** *"Web-based training could be ok as well, but on the other hand, they would probably need practical training. Trying out different games and maybe the games introduced as examples should be carefully selected beforehand."*
>
> *(Jarkko Järvelin, p.4, line 162-165)*

> **E4:** *"I think that when the seed about this possibility is planted to their minds, it may become a part of their own work. One perspective to this topic is an acceptance of the method in one´s work group. Even if you're not using gaming solutions personally, or you don't see it as your - own way to work -, you should accept and encourage other people to use them, if they are successfully doing it. You shouldn't be hostile or think that gaming is not an appropriate method in mental health work."*
>
> *(Jarkko Järvelin, p.4, line 165-169)*

Professionals imagined that they would develop professionally most effective in practical training considering the use of digital games:

> **P6:** *"A very practical approach would be the most beneficial. Like someone would have collected a list of the best games and then he would show how they work and where you can find them and have a complete list for you so that people wouldn't have to search for the games themselves because it takes much effort."*
>
> *(FCG2, p.6, line 199-202)*

147

> **P5:** *"[…] I have just figured out this whole gaming thing very recently in the past few weeks…I have gotten information about those games that might be good, and also it is essential that the professional can try out the game by her/himself…that's the thing…if we just recommend a game for a client and we haven't tried it out ourselves, it is very complicated. So, it is vital to have possibilities to try out different kind of game options."*
>
> *(FCG2, p.5, line 180-184)*

> **P2:** *"Very practical. Not any lecture telling what it is but for real like - that there is this kind of a machine and you can do these things with it - and people would be able to try out how it works."*
>
> *(FCG1, p.5, line 185-186)*

Also, Beate Schrank saw the need for professionals to try things out in a safe environment:

> **E5:** *"Things that are used commonly in training. Information, a bit trying things out, a bit gathering experience and a bit protected experience. Something in that way."*
>
> *(Beate Schrank, p.4, line 126-127)*

The need for a conversation to create a shared understanding was also manifested. Some of the professionals found the group discussions inspiring:

> **P3:** *"I was thinking about conversation and creating an overall understanding of the benefits for the client. For example, like right now in this situation, when I started to think about the matter, new thoughts came to my mind."*
>
> *(FCG1, p.5, line 187-189)*

8.6 Summary of the main results

The professionals´ perceptions on digital games varied a lot. They looked at them as a chance but as a challenge as well. They produced contradictive expressions on the topic and their personal experiences as well as work history had an impact on their opinions.

The professionals had a positive and curious attitude towards use of digital games. For some of them this was the first introduction to the topic as a few of them had implemented digital games in their own work. Both the professionals and he experts expect a change in the future regarding the use of digital games.

Experts thought that a lot of attitude related work would need to be done to make implementation of digital games possible. The professionals and the experts thought that the next generation of professionals will be more attached to use of digital games.

When it comes to professional development, both the experts and the professionals saw a need for further discussion and information sharing on the topic. In terms of learning about the digital gaming solutions the professionals prefer practical training and a possibility to test the games on their own. That is as well recommended by the experts.

9. Discussion (Kimmo Korhola & Peter Mautz)

In this chapter, the results are discussed relating to theory, literature, earlier studies and to some extent concerning Coronaria Sähäkkä rehabilitation program´s guidelines. The presentation of the results is compiled following the structure familiar from the presentation of results.

9.1 Young Adults playing Digital Games

The first topic to be discussed in the course of this chapter is mental health professionals' perceptions and attitudes towards digital gaming. An issue not deeply researched in the past yet considered to be crucial for a successful implementation of game-based solutions in the future (c.f. Hopia et al. 2018). In addition to that, it is something that, as prior research revealed, clients are very concerned about (c.f. Hopia & Raitio 2016).

These concerns do not come unreasoned since the professionals interviewed in the course of this research have expressed mixed feelings towards this topic.

Some professionals outed themselves as being gamers as well, seeing nothing wrong with it, as long one can take care of daily tasks. Others had a more critical perception of the matter, especially concerning the content consumed and the time spent, stating that too much is going on in terms of gaming. This impression is supported by the ESA (2018, 2) reporting 2.6 billion players worldwide and research conducted by Lenhart et al. (2008, 2) stating that 94% of the girls and 99% of boys aging between 11 and 17 are playing digital games. These figures match with the perception of one of the interviewed experts:

> **E5:** *"One cannot go into a single classroom, going as far back as the 4th class of elementary school, where no kid is not knowing Fortnite (game) or playing it as an example. Yet, the importance for them is varying, and it is serving different purposes."*
>
> *(Beate Schrank, p.1, line 10-12)*

However, despite being critical about the content and the consumed time. The interviewed professionals were very eager not to generalise gaming and gamers. Instead, they were interested in the possibilities of digital gaming and imagined possibilities of its use in their everyday mental healthcare, including those who have no gaming background and were from an older generation. This curiosity was remarkable, since many professionals also stated, that the primary contact with the gaming world for them, is through the negative consequences of compulsive gaming witnessed at their workplace. This observation features certain resemblances with the group of "late bloomers" identified in earlier research (c.f. Hopia et al. 2018).

Neither the demonization of the topic, as mentioned by an interviewed expert, nor the consequences of decades of research and media focusing on the negative aspects of gaming, as mentioned by Granic et al. (2014, 74), were significantly noticeable. Other factors mentioned in the interviews were age and opinions:

> **E4:** *"In many cases, the people close to the player have a very strong first opinion about this matter to a way or another, and it often defines their attitudes*

> *that are very hard to change, and I think that this is in a way a generation related issue."*

<p style="text-align:right">*(Jarkko Järvelin, pp.1-2, line 34-39)*</p>

At least one case showed that this is not impossible. - From rejection to a recommendation.

> **P1:** *"[…] I kind of a see myself belonging to an age category...my first reactions to digital gaming according to my own children as well as professionally were kind of rejecting, and I thought that gaming takes time away from traditional things such as sports and it makes people more passive but now, I have changed my mind a little bit…I see a lot of socializing factors in gaming…I recommend gaming with moderation."*

<p style="text-align:right">*(FCG1, p.1, line 16-20)*</p>

Overall, the results suggest that both groups perceive digital gaming as a phenomenon with many facets and a variety of up and downsides to being taken into considerations. While a moderate level of gaming was widely accepted, downsides like addiction or social isolation (c.f. Gentile et al. 2009) concerned the participants.

9.2 Mental Health Clients playing Digital Games

Considering the reach of digital games and the wide-spread nature of mental health issues worldwide (c.f. WHO 2015), many mental health care clients are playing digital games. According to experts and professionals, this is not a problem by itself. However, while a moderate level of gaming was widely accepted for unimpaired young adults, the situation with mental health clients is more complicated.

While the experts generally agree that gaming might not be a problem for most clients. They also underline that it is always a unique situation and strongly dependent on the clients' mental health problems. Also, mental health professionals questioned the suitability of certain games for certain clients:

> **P3:** *"Are all the games necessarily suitable if you have a certain type of mental health disorder? May it increase symptoms or something else?"*

> *(FCG1, p.2, line 69-70)*

The experts' statements furthermore suggest a two-sided issue. On the one hand, it can bring content to one's life when experiencing isolation or be a possibility for social interaction one would not have otherwise. On the other hand, gaming can be the cause for the social isolation in the first place, filling one's life beyond the point where it is beneficial, and exposing the client to toxic behaviour of others.

> **E1:** *"It's a two-sided thing. It can create something that is very fun and engaging, and if you can offer additional support with it, then that's wonderful but at the same time it is something that is addictive, and it can cause problems as well."*

> *(Kadri Hallas, p.2, line 52-55)*

The same powerful basic game mechanics that make games motivators, teachers and trainers for various skills, can cause addiction or reinforce antisocial or violent behaviour (c.f. Gentile et al. 2009; Granic et al. 2014). While digital gaming is according to some expert interviews not a central problem for most of the mental healthcare clients, it is seen as a possible future challenge for mental health rehabilitation. This claim is supported by research conducted by Lenhart et al. (2008, 2) showing a generation growing up where 99% of the boys and 94% of the girls between 11 and 17 are playing digital games.

However, following the data gathered from the interviews, a digital game can be a wonderful thing to have for a mental health client as long as it is selected thoughtfully. Then it can support the client and help against stigma, which is increasing the burden unnecessarily according to Lehtonen and Lönnqvist (2017c).

9.3 Perceptions of Digital Gaming at Coronaria-Sähäkkä

Digital gaming has been reported to be a common theme also at Coronaria-Sähäkkä. An estimated 50% of the clients there play digital games — some of

them playing 12 hours a day while others plan their whole day around gaming, which is showing strong resemblance with the group of compulsive gamers as discussed in Hopia et al. (2018, 4-5). However, according to the professionals working at Sähäkkä, this behaviour is only relating to a small fraction of the clients. Nevertheless, the negative side effects of gaming make up a considerable fraction of how gaming is perceived in the working environment. A core issue in this context seems to be the disruption of daily routines, with clients sleeping during the day to be able to play throughout the night. Another aspect mentioned was the willingness to spend vast parts of their already limited budget on the newest games.

The positive aspects of this phenomenon perceived by the professionals often consider social aspects and interactions. For example, how playing a game together is changing the communication between clients for the positive, or how shared interest in a game can become a friendship. Perceptions like these also support claims of Gentile et al. (2009), that gamers can quickly learn social skills and pro-social behaviour or have the possibility of practising social skills while playing games (cf. Ewoldsen et al. 2012, 3).

Also when focusing Sähäkkä and its employees, positive and negative perceptions of games were identified throughout the group discussions underlining the multifaceted nature of this topic.

9.4 Perceptions of the present role of digital games in mental health care and rehabilitation

In the rehabilitation context, mental health professionals find the recent role of digital games multidimensional. Digital games are considered addictive, restricting and isolating, but at the same time, they are being described as socialising, participating and harmless entertainment. It seems that grave examples of game addiction can strongly impact their perceptions if it occurs amongst even a small part of the clients. Still, they identify that in general, digital games cause no harm in most of the clients´ daily life.

The professionals see many benefits in the games that can be interpreted to match the goals of rehabilitation. According to the Finnish mental health association (2018), the day time activities provide a chance for the participants to talk about their problems with their peer group or with the professionals (Suomen mielenterveysseura 2018). Based on the results, the professionals perceive these chances to be provided at least partly using digital games in the rehabilitation, as described by one the professionals:

> **P7:** *"I think it is a good way to build trust. Our age differences with the clients can be quite broad, so I think if we would do these things together or play games together, we could create contact and create trust and also at the same time it would be possible to bring these vital rehabilitation related topics into discussion…awareness et cetera."*
>
> *(FCG2, p.4, line 142-145)*

Participating in day time activities of mental health rehabilitation can also help the service user to find new inner strength and competencies. Furthermore, it can improve the service user´s social skills (Suomen mielenterveysseura 2018). The professionals perceive that these aspects of rehabilitation can be achieved using digital games, but at the same time, they find a dilemma considering social interaction in real life settings versus digital settings. These aspects are shown in the results as the professionals claim that:

> **P5:** *"It is a way to offer experiences of success to the youngsters. It is something that it is not part of their daily life otherwise. At least it is an excellent way to get experiences of success at the beginning, and then after that, it may encourage to try to gain experiences of success from real-life settings."*
>
> *(FCG2, p.4, line 146-148)*

> **P5:** *"Social relationships are available for those who are shyer or something. They can get peer support and conversational support."*
>
> *(FCG2, p.2, line 32-33)*

The next quote from the professional shows clearly the two-sidedness of the phenomenon. Gaming creates social contact, but real-life social contacts are

thought to be more valuable. The client could be drawn out from an online social event to join a real-life social event:

> **P10:** *"Additionally, it can also influence their participation in other activities. They can say that they are not going to participate because of their gaming being more important and then, for example, social factors of the rehabilitation can be left out."*
>
> *(FCG3, p.2, line 49-51)*

Coronaria-Sähäkkä rehabilitation program includes, for example, the following aspects and support services: Personal counselling on a regular basis, rehabilitative group counselling and participation in events in order to increase social competence, peer support and cognitive rehabilitation methods (CRT/SCIT). (Coronaria-Sähäkkä 2018b.)

The same elements of rehabilitation are included in the use of digital games as the professionals' state that:

> **P5:** *"Coping with symptoms, I think the Singstar game can be used to deal with symptoms…as a relaxation method, as a method to process one's feelings. It can definitely be used."*
>
> *(FCG2, p.3, line 112-113)*

> **P13:** *"[…] solving problems together and interacting at the same time. So, I think it means social relationships, spare time activity, something to do and for most of them it is not an issue that would prevent them from doing normal things."*
>
> *(FCG4, p.2, line 73-75)*

The authors claim that a lot of rehabilitative elements in the use of digital games are similar to the goals of rehabilitation, in general, were found in the results. There was a match with Coronaria-Sähäkkä rehabilitation program´s goals and content as well.

9.5 Professionals´ Role and Professional Development needed in-order to implement Digital Games in Young Adults´ Mental Health Care & Rehabilitation

Professionals hold several different roles included in the professional´s central role. According to the competency-based framework canMED, this central role consists of seven other roles which a health care professional should be able to uphold in her/his work. These roles are a professional, scholar, health advocate, manager, communicator, collaborator and medical expert. (Royal College 2017; Kalén, Lachmann, Varttinen, Möller, Pexelius & Ponzer 2017, 2.)

Based on our results, mental health care professionals should be able to adapt to a specific role in order to implement gaming in their daily practices. At least when the professionals are expected to participate in the gaming. The findings suggest that the implementation of digital games would require a new orientation and absorbing a new professional role:

> **E4:** *"I think that is often a gap between generations in this matter that affects this thing, but there are good examples about this phenomenon. What it takes is that the professional needs to let go and get loose, because in many cases it requires the professional to enter a world unknown to him/her, and in a way, they need to let go of their professional role,*
>
> *(Jarkko Järvelin, p.3, line 89-101)*

Professional development is a continuing learning process. It includes different kinds of aspects and types of learning. A person may learn from random experiences, education or work practices. Professional development means training and developing new skills and competencies in order to perform better in recent work, or to learn a new one. (Ruohotie 2000, 9, 50.)

The majority of professionals was interested in learning about digital games. New knowledge can emerge from work practices as well. The type of learning they preferred was in most cases was practical learning:

P6: *"A very practical approach would be the most beneficial. Like someone would have collected a list of the best games and then he would show how they work and where you can find them and have a complete list for you so that people wouldn't have to search for the games themselves because it takes much effort."*

<div align="right">

(FCG2, p.6, line 199-202)

</div>

Professional development can be seen as a lifelong continuous process. It requires commitment and a real need and will to learn and develop. It requires effort, time, motivation and independent activity. In an ideal situation, a person experiences the possibilities to develop her/his competences continuously. (Ruohotie 2000, 9, 50.)

The elements of time and motivation are identified by professionals and experts when discussing the need for professional development:

E3 *"One´s personal attitude towards the topic is essential. We should see the potential that lies in these gaming solutions. I actually have a very positive attitude towards this kind of an idea that there would be these kinds of tools for rehabilitation."*

<div align="right">

(Kristiina Moilanen, p.4, 163-165)

</div>

P4 *"I think maybe the positive talk about that the subject is valuable…to see that gaming is not only a negative phenomenon […]"*

<div align="right">

(FCG1, p.6, line 190-192)

</div>

E4: *"Relating to my own experience, I think that people need simplified information packages about games, easy to pass on, meaning examples like - this is a game that you can use in this situation and so on. - Everyday work of professionals is so hectic that there is no time for the professionals themselves to start searching gaming related solutions."*

<div align="right">

(Jarkko Järvelin, p.4, line 147-150)

</div>

Professional identity is the profession related perception of a person about her/himself. It covers the present and the future. - The personal relationship

towards work at the moment, and the expectations and goals for the future. The professional identity as identity itself is dynamic and a transforming core element. It is re-constructed in relationship to everyday experiences through social interaction, people and circumstances that a person is dealing with. (Eteläpelto & Vähäsantanen 2010, 26.)

The results show that a change in professional identity is needed if digital games are to be implemented in mental health work. The change in professional identity should match the expectations and goals considering the whole field of mental health rehabilitation.

9.6 Answering the Research Questions

This segment is dedicated to answering the research questions.

Main question:

- **What perceptions do mental health care professionals, mental health care experts and gamification experts have about the potential and risks of using digital games in young adults´ mental health rehabilitation?**

According to the research findings, mental health care professionals, mental health care experts and gamification experts have mixed perceptions about the potential and risks of using digital games in young adults´ mental health rehabilitation. The overall attitude towards the use of digital games was accepting and positive. There was no significant risk identified in using digital games in mental health rehabilitation, but the assumption was that the implementation of games has to be planned carefully. The only segment of people participating in rehabilitation that were thought to be in risk were the ones who had a background with gaming related problems.

All the correspondents saw potential in digital games. They were thought as something new but something that could provide extra value and new solutions

to the present rehabilitation and mental health care in general. Some of the professionals were using entertainment games in their work already and found it only positive. It seemed that for the ones´ participating in gaming with the clients it was a natural way to create contact, produce experiences of success or to produce positive emotions through shared activities. Some of the mental health professionals started to consider using digital games in their work during the group discussions as a result of the conversation.

The importance of interaction and social factors was highlighted. Digital games were seen as a communicative phenomenon. Besides, other forms of rehabilitative aspects were brought up. These include elements relating to cognitive abilities, emotional regulation, emotional experiences, behavioural regulation, motor skills, co-ordination and coping with symptoms (psychoeducation).

Sub-question:

- **What perceptions do mental health care professionals, mental health experts and gamification experts have about the type of professional development needed for mental health professionals in order to be able to use digital games as a common tool in young adults' mental health rehabilitation?**

A vast majority of professionals included in this study is interested in learning about the use of digital games in young adults´ mental health rehabilitation. They are interested in gaining knowledge about digital games in general as well. Some of them would need very basic training in the use of digital devices. Most of them would prefer using digital games targeted at mental health rehabilitation.

The professionals wish for necessary information about digital games in general as well as already existing solutions targeted at mental health rehabilitation. They want to know more about already existing results and possibilities. Regarding training, they prefer a very practical approach. Getting to know the

games by experience seems to be relevant. Additional time targeted for this implementation is needed concerning working hours. Some of them would be willing to try digital games in their work. Most of them rely on the next generation of mental health care professionals being more familiar with the topic. According to the experts´ and professionals´ participating in digital gaming, solutions need a change in how the professionals´ perceive their professional role.

According to the experts, information about the possibilities of digital games solutions should be implemented in professional education — awareness of the solutions in general needs to be created in order to implement games in day-to-day work. The experts´ opinion on the attitudes did not match with the information gained from the professionals as the experts expect a need for a massive change in attitudes. Professionals´ general attitude on using games in their work seemed to be very open, and there is no significant resistance against gaming solutions.

- **What is the attitude and knowledge of mental health professionals, working with young adults, towards digital games and gaming in general?**

Based on the research findings, the attitude toward digital games can be described as open-minded and carefully positive. With the content of the game and the amount of playing time having a central impact on the way games are being perceived.

The knowledge about games and gaming was heterogeneous throughout the group of professionals, featuring hobby gamers as well as people with no gaming experience at all.

9.7 Transferability

The findings of this study can be transferred to instances providing a similar type of rehabilitation. Transferability is still dependant on various factors. As if the setting that the study would be conducted in, would have approximately the

same variables in accordance to age structure, work experience and education, the results would likely match the ones found in this study.

The timing of a study is, in big scale, most often random and it has an impact on transferability. In this case, some of the professionals are long term employees in the company, and some are new arrivals. In this respect, the transferability is related to the work experience in the present working situation as well. The amount of shared work history is a factor that might impact the results and therefore the transferability as well.

The results would as well, depend on the experts chosen for the interviews as all comments represented by the professionals are due to personal experience and views on the topic. In this study, the similarity of the experts´ backgrounds was taken into account with one exception. Kristiina Moilanen was the only expert chosen to be interviewed who had no prior experience on digital gaming or gamification.

9.8 Suggestions for Future Research

Though we did narrow down our topic to quite a specific focus, we now think that for the future studies it would be beneficial to make the study even more specific. This is because both phenomena "Young adults as mental health clients" and "digital games" are so broad that it makes it hard to evaluate things in a detailed fashion.

We would suggest further research on the possible use of entertainment games in young adults' depression treatment or young adults' mental health care in general. The reason for this is, that entertainment games and serious games share the fundamental core mechanics we heard about during the theoretical background. Yet, they are broadly available well maintained and better looking than most serious games. Weak-points mentioned by the experts and found in the literature. It could be worthy of exploring what it would need to train mental health professionals to recognise the beneficial features of an entertainment game and bring it to use with the devices he already has.

Another topic footing on the social aspect of digital games and working on a common objective as described in the literature as a strong beneficial factor

would be the use of e-sport in young adults´ preventive mental health care this could provide a higher goal and support social skills on the way.

Due to our results we recommend research considering mental health service users´, especially young adults´ perceptions about the topic. They would likely have highly important opinions and sights about the topic due to their personal experiences and possible use of digital games. They should be seen as experts by experience when conducting future research.

9.9 New Aspects Discovered by the Authors

It was brought up in one of the interviews that on the one hand professionals thought social interaction via online games is a good thing, but on the other hand, it prevents developing social skills needed in real life settings. This arouses an interesting question about how people value different kind of methods and ways of social interaction. It seems that the general opinion is that interaction happening in real life face-to-face settings is more valuable and more desired than social interaction via online games. So, is it that the device, digital solution or method, makes the communication less valuable and friends online are not "real" friends? As the digitalisation process continues, it is possible that more and more interaction is happening with the help of digital solutions. This creates a situation in which people have to rewire their thinking and perceptions about what is desirable communication.

The same issue is part of the discussion in online therapy. Yes, it increases the availability and helps to schedule, since there is no need to travel from a place to another for a meeting. However, one could ask, based on these perceptions about online communication, which is it as valuable or meaningful? So, what is the difference when meeting someone in the physical reality in comparison to a virtual reality or other types of digital interaction? In a real-life setting, it is possible to touch, smell or interpret behavioural aspects that one cannot see when talking using a headset or on the phone. Still, when phones first came up, we do not know if interaction with phones was considered less valuable than meeting in real-life-settings. In general, we believe it was something exciting and new at the beginning and then later just another way to interact. One interesting aspect about online gaming and interaction is interpreting the

behaviour of the other player's character. It after all somehow represents the person in charge of the character, and the characters movements are more or less his/her movements. We do not know if it has been studied, but research about interpreting a gaming characters' non-verbal communication would be interesting.

After all, many issues related to the use of digital gaming are linked to the overall results that the professionals think should be achieved through rehabilitation. Furthermore, these goals, set by professionals, are more or less related to the values of the surrounding society and its values. In a way, all the perceptions expressed by the professionals are related to their personal or shared values in private life or work life. For example, the next statement expresses a wish for appropriate behaviour seen from the professional's point of view as one of the professionals mentioned: "gaming makes it possible for some clients to stay focused and staying still at least for a little while".

According to this, it is more appropriate for people to stay still and focused. Being able to stay still is something that is demanded in various settings in society and is, therefore, a logic ability for one to have. The skill of being able to stay still is commonly needed. For example, in studying, when participating in lectures. Schools, teaching, learning and studying are yet things under a change due to the digital solutions and a change in what we know about learning. These changes in societal settings and other environments should be taken into account when setting goals for rehabilitation. The traditionally valued skill of one being able to stay still (and possibly quiet) could maybe not be an as valid goal as it used to be earlier.

> **P10:** *"[…] it is not a good thing if you do too much of it. Sometimes it can become the only content in one´s life like there's nothing else to do - so one will go and play a game."*
>
> *(FCG3, p.2, line 43-44)*

This statement represents only one opinion, but there is a possibility that digital games have earned a negative reputation because they are often used for self-entertainment in modern society and not for other "higher" purposes.

One could argue, as there is much evidence on positive effects of gaming that it is as beneficial as an activity, as some other examples of spending time presented previously. Walking outside is right for you - but so is playing digital games as well. Therefore, social acceptance appears to have a strong influence on practical activities in mental health work.

In the next chapter, we discuss the contrast of digital games in the relationship with other activity related phenomena, which have become accepted in mental health care or are even used as tools or methods today. We call this comparison the core factor.

9.9.1 Comparison between Digital Gaming and other Phenomenon-based Methods accepted and implemented in Mental Health Rehabilitation

One can compare the use of digital games to sports, music, handcraft, or visual arts (such as painting or photography) in mental health rehabilitation. In this chapter digital games, music and activity crafts are being compared. Music is a phenomenon that evolved hand in hand with human evolution and is still evolving. The role of music in peoples´ lives varies due to individual and environmental settings at it has a different role in different societies. In western societies, it has become a phenomenon influencing peoples´ life, and it is an essential part of pop-culture.

According to Helen (2019) music has been related to peoples´ wellbeing for centuries. It has been a part of religious and non-religious ceremonies and rituals. Music has been and still is also an element in various social events. It is a tool for people to experience emotions and to get in touch with them. Music is seen as a way to strengthen people and their performance. (Helén 2019.)

These days music is a widely accepted tool in mental health rehabilitation and is used in various forms. It can be listened to, or it can be played alone or in a group. Therapeutic use of music has led to the creation of music therapy, a separate form of psychotherapy including the use of music as a tool. Digital games have become an essential part of popular culture in a concise period but the effects on the individual level can be at least in some occasion compared to the effects of music. Digital games are being played in groups, they may offer relaxing experiences and they may strengthen people. There are even studies about the relationship between religion and digital games.

In young adults´ mental health rehabilitation different kinds of music groups or bands are quite common. This is often a matter of professionals´ skills gained through formal education or hobbies. A music group or a band needs someone who can manage to moderate the group. This requires professional development either from formal or non-formal learning setting. Due to Mr Korhola´s personal experience working in the field of mental health rehabilitation and special education skills in music and performing as a music group moderator are highly valued. The authors think that in order to implement digital games in young adults´ mental health rehabilitation the same amount of value should be given to professionals who have personal experience and expertise in digital gaming. This might encourage those individuals to use their expertise in work-life settings.

As digital games in mental healthcare are such a new phenomenon, it may take a considerable time for them to gain the same recognition as other methods in mental health rehabilitation. However, the possibility exists that this might never happen.

It is unclear to which extent the information gathered from the media is influencing the perception of digital games that mental health professionals have and how much of it truly comes from personal experience or educational settings. This can be explained once again to be due to the topic being relatively new in social and healthcare settings. This might as well be due to the professionals' age average and is therefore linked to generation and culture-related issues.

9. Limitations and Reliability (Kimmo Korhola & Peter Mautz)

Challenges occurred when scheduling the date and time for focus group discussions. The second focus group discussion in Jyväskylä was re-scheduled three times due to changes in professionals' daily work. It was then decided that the second group will consist of three professionals only. On the day the focus group took place, one of the professionals had to cancel her participation 15 minutes before the event. It was then decided by Mr Korhola to hold the focus group discussion with two participants only. This affected the possibility of discussion and limited the amount of it. Mr Korhola took a more prominent role in this focus group discussion, and the role of the moderator was highlighted. The authors believe that this discussion provided relevant data for the analysis, but the lack of participants in the discussion may have affected the results.

Answers related to work history were not detailed, and information considering two of the professionals´ overall work history is missing from the statistics. Work history was announced in the proximity of a year instead of a month. Therefore, the given data about the work history in general and in Coronaria Sähäkkä is approximate, not specific.

The focus group discussions and some of the interviews were translated from Finnish to English or German to English during the transcription process. This might have had an impact on the results as English is not the first language of either of the authors.

10. Validity of the Research (Kimmo Korhola & Peter Mautz)

In general, the data was gathered via semi-structured interviews and group discussions. While the topics were always covered, the sequence and wording of the questions adapted to the dynamic nature of the discussion. This could have had a minor impact on the answers. Another influencing factor was the complexity of terminology related to the topic. The questions were considering digital games in general. The interviewees found the term "digital game" a bit

confusing a few times and were unsure what types of games, devices and platforms used in gaming fit under this definition. The interviewer opened up the terminology when asked and clarified the terms used for the interviewees. The interviewees were unsure about whether the interview and the topic consider both, entertainment and serious games. There was some uncertainty about if the topic is related only to computer games or mobile games as well. A few of the interviewees seemed to be unfamiliar with the concept of "tool" in the context. After this notion, the interviewer added the term "method" to the question considering digital games as a tool and used it aside from the term "tool" as a synonym. Also, the term "serious game" was unfamiliar for at least one of the interviewed Professionals.

Being familiar or unfamiliar with the terms used in the research, affects the reliability. How it affects it, is a different question. When studying perceptions about a particular phenomenon, it could make the results more valid if the researcher would go through the used terms in a detailed fashion. On the other hand, this could be seen as leading their perceptions and shaping the interviewees pre-understanding about the topic. That is why even though it was unintentional not to explain the used terminology in a detailed fashion, it is considered in this thesis as an event that increases the validity of the research.

The construct validity of the research method was assessed in co-operation with two supervisors presenting both universities JAMK and CUAS. The validity of the research method was as well assessed by the supervisor presenting work life co-operation contact, Anu Vuolukka from Coronaria-Sähäkkä. The researchers got approval from all these three individuals to use interviews as the method of data gathering in order to answers the research questions.

The validity of the interview process was assessed by a test interview with an experienced mental health care professional working in young adults' mental healthcare. After Mr Mautz held the test interview in Austria, the process was analysed and discussed.

The focus group interviews were held in 30 to 40 minutes. This was due to scheduling issues. A strategy was chosen to make the participation more comfortable for the professionals during their regular work time. This limitation

of time may have impacted the breadth and depth of discussion. On the other hand, all the interviewees were given a chance to full fill their answers at the end of the discussions.

10. Conclusion (Kimmo Korhola & Peter Mautz)

Based on the results and the discussion Mental health professionals have various and mixed perceptions of digital games. They prefer digital gaming solutions tailored to the needs of mental health rehabilitation. There is a need for more information on existing solutions as well. Education and training should focus on the needs of mental health rehabilitation. The professionals would favour a practical training setting offering the possibility to try out games themselves in favour. This is what the interviewed experts recommend as well. Regarding professional development, it seems that in order to implement digital games in mental health rehabilitation the professionals will have to be ready to adapt to new roles.

Social and interaction related issues are in a prominent role when discussing digital games with mental health professionals. This is due to the diverse nature of the gaming phenomenon creating various situations for the people involved in it.

Mental health care professionals lack information on digital game-based solutions in mental healthcare and mental health rehabilitation. The experts call for a change in the professionals´ mind-set and attitude to happen first before implementation could happen. Due to our results, the participating professionals already were open-minded, yet mostly uninformed. In the majority they are keen on learning more about the topic. The multifaceted nature of digital gaming was shown in the study as the perceptions vary a lot. There was a contradiction in the perceptions as well.

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Focus Groups:
- FCG1
- FCG2
- FCG3
- FCG4

Interviews:
- Kadri Hallas (E1)
- Jonna Koivisto (E2)
- Kristiina Moilanen (E3)
- Jarkko Järvelin (E4)
- Beate Schrank (E5)
- Helén, Sanna. (phone call non-littered 24.1.2019)

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12. Appendices

APPENDIX 1. INVITATIONAL LETTER (EXPERTS)

Most honourable Mental healthcare / Gamification expert!

We are studying in a double degree program arranged by Jyväskylä (FIN) University of applied sciences and Carinthia (AUS) University of applied sciences. It is a master´s degree program of social a healthcare management and development. We are writing our thesis about "Digital games in young adults´ mental health rehabilitation". The purpose of our thesis is to find out perceptions of mental health care professionals and experts studying the use of digital games in mental health care and gamification.

We are collecting data with personal and group interviews. Honourably we ask you to participate in a **personal interview** for us to find out your personal perception about the use of digital games in mental health care. All the interview material will be processed with confidentiality and used only for the purposes considering the thesis.

For further information please contact

Kimmo Korhola

k.korhola@gmail.com

+ 358 44 53 86 119

APPENDIX 2. CONSENT FORM (EXPERTS)

Informed Consent Form for interviewees
Research Team: Kimmo Korhola, Peter Mautz

Supervisors: Katja Raitio (JAMK), Ralf Reiche (CUAS)

Organizations: JAMK University of Applied Sciences & Carinthia University of Applied Sciences

Project: Master's Thesis - "Digital games in young adults´ menta health rehabilitation -Perceptions of Professionals & Experts"

Name of the Participant:_____

Date of the Interview:_____

Interviewer: Kimmo Korhola / Peter Mautz

I have been informed about the aim of the study and the related Master's Thesis and I am willing to take part in an interview considering the use of Digital games in young adults´ Mental Health rehabilitation. I agree that the

audio of this discussion will be recorded and transcribed to be used in the research process.

The researchers guarantee that the audio recordings will be deleted after transcription and the material collected will be used on only in this specific Master´s thesis process. I allow the authors to use my full name in the thesis.

I know that taking part in the research is voluntary and that I can quit at any time without giving a reason.

_____   _____

 Date, Signature Interviewee   Date, Signature Interviewer

APPENDIX 3. INVITATIONAL LETTER (PROFESSIONALS)

Most honourable mental healthcare professional.

We are studying in a double degree program ran by JAMK & CUAS in a program of social a healthcare management and development. The degree that we will have will be master of health and Master of Arts in business. We are writing our thesis about the potential of entertainment games and serious games in mental health care. The purpose of our thesis is to find out the perceptions of mental health care professionals and experts researching the use of computer games in mental health care.

We are collecting the data with individual and group interviews. The mental health care professionals´ perceptions will be collected mainly from the workers of Coronaria-Sähakkä using group interviews during the autumn of 2018. In order to participate you don't need to have any earlier experience about the subject. Honourably we will ask you to join this interview to find out your personal perception about the use of computer games in mental health care. All the interview material will be processed with confidentiality by taking the safety of information and your personal information will not be available for anyone else than the researchers at any stage of the research. After the thesis has been finalized, the research data will be deleted. During the process all information will be held in a safe place following the safety regulations.

For further information please contact Kimmo Korhola

kimmo.korhola@coronaria,fi

+ 358 44 53 86 119

APPENDIX 4. CONSENT FORM (PROFESSIONALS)

Informed Consent Form for interviewees
Research Team: Kimmo Korhola, Peter Mautz

Supervisors: Katja Raitio (JAMK), Ralf Reiche (CUAS)
Organizations: JAMK University of Applied Sciences & Carinthia University of Applied Sciences

Project: Master's Thesis - "Digital games in young adults´ menta health rehabilitation -Perceptions of Professionals & Experts"

Name of the Participant:_____

Date of the Interview:_____

Interviewer: Kimmo Korhola / Peter Mautz

I have been informed about the aim of the study and the related Master's Thesis and I am willing to take part in an interview considering the use of Digital games in young adults´ Mental Health rehabilitation. I agree that the audio of this discussion will be recorded and transcribed to be used in the research process.

The researchers guarantee that the audio recordings will be deleted after transcription and the material collected will be used on only in this specific Master´s thesis process. All personal data will be anonymized.

I know that taking part in the research is voluntary and that I can quit at any time without giving a reason.

_____   _____

 Date, Signature Interviewee   Date, Signature Interviewer

APPENDIX 5. Interview quide in English

Interview Guide - English

Color Code:

- For Everyone
- For Mental Health Professionals
- For Expert Interviews

Background Information

- Age, professional education, work history

Mental Healthcare Professionals' view on Digital Games

- What do you think about young adults playing digital games?
- What part do digital games play in a clients' everyday life?
    - Note: 1st Sähäkkä & 2nd in general
- What do you think about your clients playing digital games?
- What do you think about mental health clients playing digital games?

How do you influence the clients' use of digital games?

- What do you think of professionals influencing the clients use of digital games?
- If they play, do you play with them?
    - If **yes**:   How do you participate?
    - If **no**:   Why not? What would if require for you to participate?
- What do you think about professionals and the clients playing digital games together?

Digital Games in Mental Healthcare

- What thoughts come to your mind when we talk about the use digital games in young adults' mental healthcare?

- Which experiences do you have with this topic?
- How do you think it could benefit the client´s rehabilitation?
- How could digital games be utilized as a common tool for professionals?
- What kind of training would you need to use them?
- What kind of training would a mental health professional need to use them?
- Which up- and downsides do you see in the use of digital games in young adults' mental rehabilitation?

Is there anything you want to add, anything we did not talk about yet?