3	Number of pages: 14	Abstract: 147 words	Number of tables: 1
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6	Experie	nces from partici	pation in 'Golf as Therapy'-groups
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8	Short title (Running hea	ad): Golf as Therapy	
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## **ABSTRACT**

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- 12 The aim of this study was to explore the experiences of people with mental health problems or substance use when introduced to systematic golf activities. The study examined the 13 perceived impact of golf activities on the participants' physical and mental health, social 14 contact, daily activities and their overall evaluation of involvement in a 'Golf as Therapy'-15 group. This qualitative, cross-sectional study gathered data from twelve individual interviews. 16 Qualitative content analysis based on the information from meaning units, sub-categories, 17 categories and themes determined the interpretation of manifest and latent concepts. The 18 findings revealed positive influence on health and social well-being in addition to positive 19 20 changes in daily activities. The main theme which arose from the data was 'shaping a new direction in life', elaborated by the categories: ameliorated physical fitness, creation of a 21 social meeting place, improved focus and concentration, practical help and support, and 22 reduced mental symptom burden. 23
- **Key words:** golf, therapy, mental health, physical fitness, social relatedness, life change

# Introduction

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For people experiencing mental health problems and the challenges caused by using drugs or alcohol, the public health system and organizations of volunteers offer a diversity of treatments and rehabilitation activities. Evidence-based strategies for improvement of such mental health problems are cognitive therapy (Fischer, Baucom, & Cohen, 2016; Roberts, Roberts, Jones, & Bisson, 2016) and physical activity (Dunn, Trivedi, Kampert, Clark, & Chambliss, 2005; Durstine et al., 2000; Glasper, 2016; Stubbs, Vancampfort, Hallgren, Firth, Veronese, Solmi, Brand, Cordes, Malchow, Gerber, Schmitt, Correll, De Hert, Gaughran, Schneider, Kinnafick, Falkai, Möller & Kahl, 2018; Trivedi, Greer, Grannemann, Chambliss, & Jordan, 2006). Developing appropriate and supportive therapy for people lacking initiative or empowerment, call for creativity because we have to take into consideration psychosocial challenges and health inequalities (Stansfield & Bell, 2019). Mental health nurses emphasize health promotion and recovery (Biong, Karlsson, & Svensson, 2008), and encourage performance of activities of daily living for those in need of help, supervision and support. When the goals are to improve the will to live, enhance quality of life, and support self-care, the biopsychosocial model (Engel, 2012) is often recommended due to its holistic approach incorporating both biological, mental, and social perspectives. Additionally, aspects of prevention and rehabilitation, e.g. from the Ottawa Charter for Health Promotion (1986) might serve as guide for organizations seeking to introduce helpful interventions. User participation is essential for meeting personal aims and individual challenges. Dekker and Williams (2017) have highlighted user-centered participatory design when developing serious games as interventions for anxiety and depression. Jørgensen and Rendtorff (2017) in their integrative review emphasize the importance of specific knowledge about patient participation in mental health care activities. Coming up with activities that seem attractive and enjoyable from the users' perspective may improve motivation for involvement. However, to investigate

this assumption, we need to know the users' perspectives and their immediate aims and needs.

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With this background, we performed an exploratory study in which the participants involved in one particular activity - playing golf - shared their experiences. In Europe, the Scots have long traditions playing golf (https://www.standrews.com). The essence of golf is to hit a little ball with a club reaching a hole in the ground with a minimum of hits. Golf simulators are common, used particularly during the winter season for practicing and perfecting one's game. Golf is a game enjoyed by millions of people all over the world and a game that requires both physical and mental awareness. It is a game to have fun with, to compete with and to socialize. As recommended by Stansfield and Bell (2019) this activity links socialization to a physical activity. Golf is a game for all, men and women, old and young. Playing golf is a cognitive and physical challenge due to the stress involved in hitting the ball from the correct angel with the right touch to carry the ball optimally towards the next hole (Evans & Tuttle, 2015). Clark, Tofler and Lardon (2005) have given an outline of the mental routines required, particularly for competitive golfers, since each golf swing lasts only 3 seconds and the total duration of the swings for a whole course round is just 3-4 minutes. Except when using the simulator, the golfers spend a long time walking on the course – maybe as much as four hours when completing an 18 hole-game. Golf, therefore, encourages social contact among the players when walking around in groups through the course. The topic for conversation in this setting often is improvement of one's personal golf performance. Therefore, playing golf is mentally, socially and physically stimulating and challenging. Research is limited regarding the impact of playing golf on the health and daily activities of people experiencing mental health problems and use of drugs or alcohol. Carless and Douglas (2004) studied nine men with mental health problems attending a golf program in the United Kingdom, and they described encouraging and threatening factors in joining the

program. Key factors in that regard were 'making a safety net', 'bubbling about golf', and 'a

relaxing sport'. In addition, they mentioned challenges as 'negative competition' and 'time to move on'. A dissertation from the United States describes rehabilitation benefits of a golf clinic for military personnel and veterans with disabilities (Flores, 2014). However, no significant changes related to self-efficacy, fatigue, pain, anxiety and depression resulted from the program. Since only 13 persons completed the program, the negative result may be attributed to lack of statistical power due to small sample size (type II-error).

In a scoping review, Murray et al. (2017) emphasize the relationship between golf and health. The authors conclude from the 301 papers reviewed that golf, a moderately intense physical activity, is associated with physical health. Playing golf might improve cardiovascular, respiratory and metabolic processes and thereby improve feelings of fitness. However, the authors claim limited evidence related to golf and mental health. As a conclusion, the review recommends to study golf and mental health, health behavior change and economic effects in specific populations. According to that review and our literature search, there are scarce research about the therapeutic effects of playing golf on mental health in particular groups. This invites further studies. Since research-based knowledge is so limited, studies with different designs are warranted.

The aim of this qualitative study was therefore to explore the experiences of people with mental health problems or previous substance use, after a systematic introduction to golf activities. The study examines the perceived impact on the participants' physical and mental health, social contact, daily activities as well as an overall evaluation of involvement in a 'Golf as Therapy' (GaT)-group.

Lasting for more than a decade, GaT is a program offered by a private legacy of senior people dedicated to the golf sport. The legacy applied for and received grants from private sponsors independent of the official health and social services. GaT keeps contact with both golf clubs and institutions treating clients with mental health problems or substance use. The

GaT administrators help the institutions to select proper candidates with mental disorders or previously substance use for recruitment to the GaT-program. The local clubs offer the participants golf trainers, golf simulators, and free access to the golf course and supply them with necessary golf equipment. The participants form groups of 5-8 participants who meet at the golf course once a week for three-four hours' golf performance and social networking. The program is free of charge for the participants. For those living in an institution, the administration organizes transportation to the golf course. However, most of the GaT-participants live by themselves and manage their own transport. At the time of inclusion to this study, none of the participants held a job; however, they were enrolled in individual and/or group interventions.

# Methods

## **Participants**

Individual face-to-face interviews were performed by the first author with 12 participants (informants) (9 men and 3 women) from the 157 participants enrolled in the GaT program. The GaT administrator who knew the names of those joining the GaT-groups recruited the informants to the study. The recruitment process included information about the study, voluntary participation, and that we needed 10-12 participants, preferably both females and males. In order to avoid possible coercion the recruiter informed that neither participation nor non-participation would have consequences for further membership of the GaT-program. The informants gave written informed consent with contact information before the interviewer received their documents.

# Practical procedure

The interviews took place at the golf courses' localities or in suitable offices close to where the participants lived. Five of the informants were from the rural golf courses (three men and two women), while seven joined the urban courses, though not located to the inner city. The interviews lasted from 26 minutes to 55 minutes gaining 202 pages transcribed text (font size 12, line space 1½).

# **Data analyses**

## Qualitative content analysis

After de-identification during the verbatim transcription of the interviews, the authors individually read the transcription and determined their meaning units before collaborating to decide the interpretation of manifest and latent concepts providing subcategories, categories and themes (Graneheim, Lindgren, & Lundman, 2017). Graneheim and Lundman (2004) recommend this approach as a means of achieving credibility and trustworthiness. They suggest presenting the findings in a diagram in which the content could be understood in two directions, i.e. from meaning units to themes and vice versa.

One of the GaT-informants read all the interviews and gave valuable input to the first steps in the analytic process. He determined meaning units relevant from his perspective, and he later confirmed the content of the table presenting examples of the analytic process. This particular user-participation was central in the process of selecting the quotations describing the essential findings. He also gave feedback on the first draft of this paper.

The quotations as well as the transparent presentation of the meaning units, subcategories and categories serve as background for the reader to develop familiarity with the data and confidence in the authors' interpretation of the material.

#### **Ethics**

The Norwegian Centre for Research Data (NSD) (application #53609) approved the study.

NSD decided that the GaT administrator should make the initial contact with possible

participants. All participants delivered written consents. NSD stores the raw data from this study.

# **Findings**

The informants were from 30 to 58 years of age, and they have attended the GaT-groups due to mental health problems or previous substance use. The participants gave rich descriptions of their experiences in their GaT-groups, particularly the impact on their health and daily activities. The overall impression was that the GaT experiences had **shaped a new direction in life** by *ameliorating physical fitness, generating a social meeting place, increasing focus and concentration, giving practical help and support,* and *reducing their mental symptom burden*.

### Please insert Table 1 about here

To achieve these particular improvements (presented as categories), subcategories as e.g. forgetting problems, weight loss, better sleep, good feeling of tiredness, skilled trainers and disconnection were articulated. The meaning units, subcategories and categories thereby emerged from the data as manifest findings (please see Table 1). Looking for latent findings, what we interpreted as the underlying message from the participants in this study, the **shaping** of a new direction in life was highlighted by all the informants. During the interviews, the first author had the impression that the informants were deeply moved when talking about their attachment with their GaT-group and their trainers, about the changes in habits and their abilities to improve their daily activities.

The new direction in terms of physical improvement, categorized as *ameliorated*physical fitness left increased physical activity and weight loss as fundamental experiences.

GaT consisted of physical activities such as walking and hitting the golf ball, demanding bodily fitness and precision of movements, as well as coordination and evaluation of direction

and distance. One of the informants expressed his experience: "...when trying the first golf swings, the instructor shouted: Oh my God, you are sweating. So I was in pretty bad shape."

Several of the participants proudly described weight reduction and the impact of physical fitness and improved physical function. "I lost 21 kg (46 lb). When entering golf, I also entered other activities." The influence of improved physical fitness had positive consequences such as motivation for other kind of activities and focus: "...when experiencing problems I gained weight enormously, but the GaT has inspired me to exercise, and I have lost tremendous number of kilos (lbs)."; "...when outdoors walking I feel a rinsing process, unwinding. And I can focus on the next swing."; "Outdoor activities = golf. I am not fond of hiking in the forest by my own."

The exercise involved in swinging the golf club might give the participants awareness of muscles and their strength: "In the beginning I felt muscular pain and complained about my bad shoulders and sore muscles in my back. Now I have rhythm in my body." However, one informant has a different perspective about the best activity, for even the simulator needs physical endurance: "I prefer playing the simulator. It is relaxing and causes me no pressure - so I can perform better."

Generated a social meeting place characterizes the new direction creating a location with others facing the same challenges in life. The subcategories represent relatedness; exert social skills, and arena for activity. One of the participants summarize all the latter aspects: "When someone has a "bad day", others from the group take contact for a chat and some positive comments to try get them started. I feel receiving support and attention when I need it. It is relatedness and safety in itself."; "I feel belonging to this place." Four informants specifically emphasize the social value, e.g.: "It provides so much fun and they include me."; "I prefer to play with others – I find it boring being alone." One of the other participants described a very different perspective on connection: "As long as I find it interesting, I am not

concerned about others. I prefer playing alone – it is comfortable and I do not need to engage in conversation." Connection in this case involved joining the social meeting place, which for this person was an interesting arena for physical activity and nothing more than that.

Increased focus and concentration represent the mental awareness required in playing golf. As a part of this mental awareness forgetting problems and disconnect seem to describe this new direction. One female participant stated: "During the game I am extremely concentrated. After the Golf-as-Therapy I am tired as I have used my dose of energy." Another participant emphasized the importance of focus while playing: "I lose concentration when people talk and when kidding. On the other hand, this is a part of the total picture which is positive." Yet another participant emphasized the necessity of assessing the distances, which demands focus: "It is hard to assess the distance and the power you need to reach the goal." Disconnect or 'staying off-line' might be interpreted as figuratively presence during the game, but at the same time feeing socially protected – locked out from the society: "I am not physically tired after playing golf, however my head is tired"; "Previously I checked my mobile phone. Now I leave the cell phone in my car. I do not need it at the course"

Shaping a new direction in life for these informants seemed to be dependent on practical help and support. Several of them pointed out that they had expectations and were open for new impressions, however were dependent on helpful and skilled leaders: "They were surprisingly encouraging and helpful. And I had reached a state in which I was not that inhibited by anxiety."; "... extremely hard in the beginning, the body would not obey... I emphasize the availability of skillful trainers."; "I have always got a feeling of doing things in a wrong way. In this group, we may play incorrectly, but no one says 'shame on you'. From the participants' point of view, leadership with an attitude to boost and encourage was xperienced as emphatic and supportive: "He (the instructor) managed to see me; he sensed my condition and accommodated the performance level to my limitations."; "He is fabulous with

encouragement when you do your best."; "I am sure the group would not have managed without leaders. They are always supportive, even when you repeatedly fail. In order for me to succeed the correction have to be motivating, not strict"; "The trainer is extremely clever and human. He shows us, spends time with each of us and is always kind and gentle." The interviews showed that the participants' experienced the mastering of practical tasks giving a sense of 'good feeling' after practical performance, particularly the golf play, as well as other daily activities. "The importance is the feeling of mastery which make the body function and gives me optimism in my daily life - since I want to be independent of others the aim is to get my driving license again."; "After a kind of adrenalin-kick (playing golf), I get inner calmness to make my day."; "Golf-as-Therapy helps me build energy."

The informants in this study highlighted *reduced mental symptom burden* as a meaningful description of their experiences. With a good feeling of tiredness, better sleep and relaxation, they could shape the new direction in life. One of the female informants described it like this: "After completing the round, my head is totally empty. Coming home, lying on my sofa, I think: Gosh, now I am comfortably tired, both mentally and physically." Another informant said: "I am so tired and satisfied after the Golf-as-Therapy that I fall out of the car when turning back home."

Quality of sleep is improved due to exercise: "When you are run down; then you can sleep."; "After walking the course and performance playing, I am tired. The result is better sleep than before" Problems such as symptoms or lack of energy had to be relieved to perform better in daily life – as exemplified by the ability to start the day: "I look forward to rise in the morning – it has not always been like that! I have joined the Golf-as-Therapy group even when having a flu because I want to be with them. I have reflected on this, and in the future I want to have a job for which I want to get up early in the morning." During the interviews, many informants emphasized the ability to keep calm during the game. Some of them

mentioned the relaxation required for the shape of the new direction in life: "Previously, when shopping, payment was a challenge and I said 'keep the change' – because I trembled (shivered) tremendously. Now it is gone!"; "It has been a rollercoaster, however when I felt a part of this, I got rid of boredom and stupid thoughts"; "We have a lot of gallows humor; I laugh while tears are dripping."; "...the activity is more therapeutic when having fun and feeling free."

Summing up the theme **shaping a new direction in life** states that the condition experienced by the participants had changed. GaT had, either as a single activity or in interaction with others along with appropriate support and follow-up, served as a catalyst for the new direction in life.

# **Discussion**

The aim of this study was to explore the experiences of people joining a GaT-group, including the possible impact on the participants' physical and mental health as well as the influence on their social contact and daily activities. The findings revealed positive influence on health and social well-being in addition to positive changes in daily activities.

Previous studies on golf as activity has emphasized attendance to a golf program where only men participated (Carless, 2004). Comparison to our sample is therefore difficult. However, their categories described as 'making a safety net', 'bubbling about golf', and 'a relaxing sport' correspond to some of the findings from our study, e.g. the category 'Generated a social meeting place' – a chat and some nice words. Flores (2014) highlighted one particular target group (military personnel and veterans) which is a different group of informants/participants than the one we have studied. No significant changes on self-efficacy and health aspects were shown for the 13 participants of that study, but different methodological approaches and measures do not allow for meaningful comparisons with our

study. Murray et al. (2017) refer to several studies describing the overall positive effect of golf on lipid profile and improved body composition. Adams, Goldufsky and Schlaff (2016) emphasized gender differences when designing educational programs on nutrition, weight and life style changes for athletes. The latter study highlights the importance of balanced diet to avoid eating disorders and to keep a healthy life style. The findings from our study capture to shape a new direction in life that may correspond to life style changes. Weight and gender differences seem irrelevant for the GaT-group. Both quantitative and qualitative studies have described mental benefits related to personal and group identity and to social connectedness (Murray et al., 2017). These findings correspond to our study, although here described in different terms, e.g. 'relatedness', 'social meeting place' and 'belonging'. Several theories describe and explain changes in life. The Self-Determination Theory (SDT) by Ryan and Deci (2000) particularly emphasizes intrinsic motives and needs to change life style. A background including autonomy, competence and relatedness is a key factor for activities, performance persistence and creativity requiring motivation and engagement. In our study, we found excitement to participate in GaT linked to what might be interpreted as autonomy. Focus and concentration, in addition to managed performance could be interpreted as a kind of competence. The social meeting place and connectedness as relatedness. The subcategories and categories from our study might therefore correspond to the fundamental components of the SDT. However, as we interpret our findings, external factors such as a beautiful course and skillful trainers and helpful leaders also play a significant role in our study. The exclusive GaT provision gave the participants opportunity to join golf courses with professional instruction free as well as access to the services available. From our findings, we are unable to identify all valuable factors for shaping a new direction in the lives of the informants. Nevertheless, we find it interesting that they have emphasized both the internal and external motivation during the interviews, which referring to the SDT are factors crucial for change.

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Even though the initiators of GaT did not have any theoretical concept concerning their activity, we conclude that for these informants GaT has given a new direction in which the content seem to fit the components for life style changes. As several of the informants in this study indicated, the GaT came at an appropriate time in their lives. We consider this to be an important factor since the GaT experience served as a catalyst for changes. User-centered participation is valuable, as Dekker and Williams (2017) describe for serious games used as therapy. In our study, the use-friendliness may be reflected upon regarding internal and external motivation (Ryan & Deci, 2000) as well as the way the GaT activity has been offered. Motivation depends on individual engagement, which correspond to user-involvement. In our study, we find that the informants emphasized to be taken seriously and receiving support. Thus, user-involvement may be interpreted as being fundamental to shape a new direction in life.

Qualitative approaches emphasize variations in perspectives from the participants' experiences, which was the case in this study. One of the informants preferred acting alone, did not appreciate conversation, liked the simulator better than playing in the open air and promoted the improvement through precise hits. Other informants described satisfaction from walking and talking on the beautiful golf course. The one person represents focused performance and perfectionism while most of the other participants in this study seem to appreciate the GaT activity by itself along with social relatedness and the support from the leaders and the trainers. Since the benefit of GaT includes physical fitness, social connection, though to a different degree, and reduced mental health symptoms, we find these aspects corresponding to the ideal of the biopsychosocial model (Engel, 2012) where all these characteristics are included. Additionally, the aspects of prevention and rehabilitation described in the Ottawa Charter for Health Promotion (1986) might also correspond to the findings in our study. GaT may be interpreted as a preventative activity as well as a part of

rehabilitation and recovery for the participants of this study. The theme 'shaping a new direction in life' might further be developed to a metaphor 'from hibernation to awakening' capturing the new physical, social and mental orientation due to GaT.

When the purpose is to improve physical fitness, mental health and ability to perform daily activities, different approaches are available. Structured activities like golf include several aspects such as walking the course or attending the simulator. The golf simulator is a digital device in addition to a place for physical performance. Lau et al. (2017) examined serious games for mental health purposes and found promising results on symptom relief. Dekker and Williams (2017) found 20 serious games with user-involvement which can prevent or treat anxiety and depression or can complement existing therapies. These games were all computer- or web-based. While Dekker and Williams (2017) refer to serious games as educative rather than entertaining, the enjoyable aspect might influence involvement and participation in the game. Making the game or activity enjoyable is thought to reduce the dropout rate (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). Playing golf on a course in addition to using the simulator might be a good combination to ensure variation and to sustain activity.

Beneficial treatment alliance is essential for mental health treatment (Biong et al., 2008). From our study, we have learned that the treatment alliance with trainers, leaders and the GaT-group might provide a kind of external motivation for showing up and joining the activity. The combination of internal and external motivation is necessary to shape a new direction - knowledge giving clinical implication for designing activities for this target group. However, further studies are recommended to investigate to what degree internal factors are of higher importance than external ones for people experiencing mental health problems and challenges using drugs or alcohol while enrolled in a GaT-group.

#### Strengths and limitations

Qualitative research searches for different perspectives from the participants. Data from the interviews are collected from both rural and urban parts of Norway, which has the advantage of capturing a broad view of the experience of GaT. Qualitative studies do not intend to give global answers. The purpose of studies based on small samples does not aim to generalize but rather gain in-depth knowledge and new hypotheses from the participants. Our study had an explorative design, and the findings from the 12 interviews gave a rich description of the experiences related to participating in GaT. One limitation to this study lies in the recruitment process: the participants, invited by the GaT administrator, might be those with the best connections to the administrator and may possibly be the most compliant. However, the NSD recommended this recruitment procedure. Another limitation is the follow-up and the particular content of the GaT-program, which make this study non-transferable to other groups. Finally, knowledge on diagnoses and current treatment programs available for the participants could shed light on a valuable combination of interventions to improve the participants' situation.

# **Conclusion**

The main findings of this study about the experiences of members from GaT-groups indicate a valuable activity, which shaped a new direction in life for the informants. In particular, they described improved physical fitness, social contact, increased focus and concentration, improved daily activities, and reduced mental symptom burden and the importance of practical help and support.

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# Table 1. An overview of the analysis with meanings units, subcategories, categories and theme.

Meaning unit	Subcategories	Categories	Theme
Walking as a rinsing	Activity	Ameliorated	Shaping a new
process	Weight loss	physical fitness	direction in life
Lost tremendous			
number of kg (lbs)			
A chat and some	Relatedness	Generated a social	
nice words	Exert social skills	meeting place	
Belonging to this	Arena for activity		
place			
During the game,	Forgetting problems	Increased focus and	
extremely	Disconnect (staying	concentration	
concentrated	off-line)		
Leave the cell phone			
Extremely clever	Skilled trainers	Practical help and	
trainer	Helpful leaders	support	
Sensed my condition	Managing practical		
Entering golf and	tasks		
entering other			
activities			
Look forward to rise	Good feeling of	Reduced mental	
in the morning	tiredness	symptom burden	
Rid of boredom and	Better sleep		
stupid thoughts	Relaxation		
After walking the			
course I am tired			