

**MUSIC AS A TRIGGER FOR CRAVING:  
Exploring the Phenomenon and Possible Music Therapy Approaches from  
a Client and Music Therapist Perspective.**

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| Tiivistelmä – Abstract<br>It is known that craving can be elicited by various triggers, such as visual and auditory cues. Less is known about music as a trigger for craving. Only recently the interest towards this topic has somewhat increased. Two quantitative studies showed that music can increase and evoke craving. Additionally, some music therapists described experiences of their clients with music and craving. Furthermore, few different therapeutic approaches to cope with this phenomenon in music therapy have been proposed. However, the body of research focusing on this topic remains small. Therefore, the purpose of this research is to further explore if music can elicit craving, if so, how music evokes craving and to further explore the music therapy approaches concerning this phenomenon. Due to the exploratory nature of this study, it was decided to conduct qualitative research using semi-structured interviews as data-collection method and constructivist grounded theory as method of analysis. The participants were three Dutch music therapists working in the field of addiction care and four clients with substance use disorder. The findings of this study resulted in a conceptualization of the phenomenon of music as a trigger for craving in which specific music could possibly elicit craving through associations with substance use experiences and negative life-events. The latter resulted in negative emotions, which the clients wanted to suppress through substance use resulting in craving. Whether or not the specific music would elicit craving was influenced by situational factors. Furthermore, several coping strategies were found to deal with music-induced craving. The music therapy approaches appeared to be divided in a direct approach on one hand, focusing directly on the phenomenon by either exposing clients to musical triggers or by the natural occurrence of craving in music therapy. On the other hand, there was an indirect approach, in which music therapists focused on the underlying issues of substance use disorder which seemed to indirectly influence the phenomenon. |  |
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# CONTENTS

|  |    |
|--|----|
| ACKNOWLEDGEMENTS.....  | 1  |
| 1 INTRODUCTION .....   | 2  |
| 2 LITERATURE REVIEW .....  | 4  |
| 2.1 Definition of craving .....  | 4  |
| 2.2 Triggers for craving.....  | 5  |
| 2.2.1 Cues.....  | 5  |
| 2.2.2 Stress.....  | 6  |
| 2.2.3 Mood.....  | 7  |
| 2.2.4 Rumination.....  | 8  |
| 2.3 Music as a trigger for craving.....  | 8  |
| 2.3.1 Music as a cue.....  | 10 |
| 2.3.2 Music, mood and craving.....   | 11 |
| 2.3.3 Explicit music .....   | 12 |
| 2.4 Music therapy approaches concerning music as a trigger for craving .....             | 13 |
| 2.5 Purpose of the current study .....   | 15 |
| 3 METHODOLOGY .....  | 17 |
| 3.1 Recruiting participants.....   | 17 |
| 3.2 Data-collection: semi-structured interviewing .....                                  | 20 |
| 3.3 Gathering data .....   | 21 |
| 3.4 Data-analysis: constructivist grounded theory .....                                  | 22 |
| 4 RESULTS .....  | 26 |
| 4.1 Conceptualization of music as a trigger for craving.....                             | 26 |
| 4.1.1 Specific Music .....   | 27 |
| 4.1.2 Associating Music.....   | 28 |
| 4.1.3 Possibility of craving .....   | 33 |
| 4.1.4 Situational factors .....  | 34 |
| 4.1.5 Coping strategies.....   | 38 |
| 4.2 Music therapy approaches .....   | 40 |
| 4.2.1 Direct approach.....   | 40 |
| 4.2.2 Indirect approach .....  | 45 |
| 4.2.3 Clients' perceived effect of music therapy .....                                   | 46 |
| 5 DISCUSSION.....  | 48 |
| 5.1 Findings.....  | 48 |
| 5.1.1 Conceptualization of music as a trigger for craving.....                           | 48 |
| 5.1.2 Possible music therapy approaches to deal with music as a trigger for craving..... | 51 |
| 5.2 Reliability and validity .....   | 53 |
| 5.3 Limitations.....   | 55 |
| 5.4 Implications and future research .....   | 56 |
| 6 CONCLUSION.....  | 58 |
| REFERENCES .....   | 60 |

# 1 INTRODUCTION

The relationship between music and addiction is complex (Horesh, 2010). On the one hand music can be 'healing'. It can be used for relaxation, as a form of self-medication, can evoke feelings of pleasure and fill the emotional vacuum that people suffering from addiction often experience (Horesh, 2010, 2006a, 2006b). Music is used in the same way as substances and becomes a 'safe' substitute for substance use (Horesh, 2010). Furthermore, several studies have focused on music therapy in addiction treatment which revealed some preliminary favourable outcomes (among others Silverman, 2003; Baker, Gleadhill & Dingle, 2007; Mays, Clark & Gordon, 2008). On the other hand, specific music can be 'destructive' because it might cause relapse (Horesh, 2010, 2006b; Fachner, 2010; Abdollahnejad, 2010, 2006); might evoke feelings of longing, craving and pain (Dijkstra & Hakvoort, 2010) and a dependency towards music can be created (Horesh, 2010).

Even though the body of research concerning music, music therapy and addiction is growing, the subject of music as a possible trigger for craving has not been studied intensively. Craving on the other hand is thought to be an important aspect of substance use disorder and plays an important role in relapse in substance use (Skinner & Aubin, 2010). Recently, craving was even added to the criteria of substance use disorder in the Diagnostic and Statistical Manual of Mental Disorders V (American Psychiatric Association, 2013). Treatment partially focuses on coping with triggers for craving in order to reduce the chance of relapse. If specific music appears to be a trigger for craving, one might assume that it should be addressed in treatment like other related triggers. However, besides in music therapy, this topic often seems to be disregarded due to the insufficient body of research, leaving the clients to cope with this trigger independently. Furthermore, there is little literature concerning how to deal with this phenomenon in music therapy which might be challenging for beginning music therapist working in the field of addiction care. More research is needed to increase the body of knowledge concerning this phenomenon and associated music therapy approaches. Therefore, this qualitative study focuses on further exploring this topic.

The following chapter entails a literature study concerning the following topics: the definition of craving, triggers for craving, music as a trigger for craving, and music therapy approaches used to address the phenomenon in music therapy. The overview of the already existing knowledge leads to the more detailed description of the purpose of the current study. Following this, chapter 3 outlines the methodology which explains the reasoning behind the choice of data-collection and data-analysis. Furthermore, it describes how the research was executed. Afterwards, chapter 4 displays the results found through data-analysis. Those will be discussed in chapter 5 together with the reliability and validity of the study, its limitations, possible implications and propositions for future research. Finally, chapter 6 will provide a conclusion of the whole study.

## **2 LITERATURE REVIEW**

In order to identify specific research aims and a suitable methodology, one must clarify and develop an understanding of the researched topic by conducting a literature review (Brinkmann & Kvale, 2015). The following topics will be reviewed: triggers for craving, music as a trigger for craving, and possible music therapy approaches to address the phenomenon of music as a trigger for craving. However, before proceeding to the first topic, it is necessary to define the phenomenon of craving.

### **2.1 Definition of craving**

Craving is a term frequently mentioned in literature concerning addiction theories. It is seen as an important aspect of substance use disorder, and is closely related to relapse in substance use (Skinner & Aubin, 2010). It is seen as one of the strongest predictors of relapse in pre-clinical and clinical research studies (Witkiewitz, Bowen, Douglas, & Hsu, 2013). Furthermore, in the recently released fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) craving is added to the diagnostic criteria for substance use disorder (American Psychiatric Association, 2013). Even though craving is an important aspect of addiction, no theoretical consensus could be formed concerning the definition of craving due to the many different theories that have been formed over the past sixty years (Skinner & Aubin, 2010; Drummond, 2001).

However, despite the diversity Tiffany and Wray (2012) proposed that most researchers view craving as a subjective experience of wanting. It is an expression of the desire to use a specific substance (Skinner & Aubin, 2010; Tiffany & Wray, 2012). On the other hand, people refer to an urge to use substances instead of a desire (Skinner & Aubin, 2010). Witkiewitz et al. (2013) attempted to combine different definitions of craving from various theoretical models and propose that craving can be experienced as:

“Intrusive thoughts and their elaboration (Kavanghet et al., 2006), an impulsive drive or motivation (Cox & Klinger, 2002), substance wanting (Robinson & Berridge, 1993), an emotional state (Tiffany & Wray, 2009), a physical sensation (Paulus, 2007), a stress response (Sinha & Li, 2007) or any other manifestation that is salient for an individual when experiencing “craving” or an “urge” to use substances” (p. 1564).

For the purpose of this thesis, craving refers to the desire to use substances and can be experienced as described in the definition by Witkiewitz et al. (2013).

## **2.2 Triggers for craving**

Having defined what is meant by craving, the focus of this literature review can shift towards identifying triggers for craving. The following section aims to describe different kinds of triggers, namely cues, stress, mood and possibly rumination.

### **2.2.1 Cues**

One of the most well-known triggers for craving are cues. Cues are substance-related sensory stimuli that can increase the experience of craving during exposure (Henderson, 2001). A distinction can be made between visual, olfactory, auditory and imagery cues (Carter & Tiffany, 1999; Skinner & Aubin, 2010). Those stimuli were present in the environment where substances were used or in the form of drug paraphernalia (Skinner & Aubin, 2010). Despite distinct viewpoints several craving theories include cues as triggers for craving, such as cognitive-, psychobiological- and motivational craving theories and ones based on classical conditioning (Skinner & Aubin, 2010).

In the 80s and 90s a large body of research focused on these cues. Carter and Tiffany (1999) conducted a meta-analysis of 41 cue-reactivity studies from that period of time and found a significant increase in self-report of craving when exposed to drug-related versus drug-neutral stimuli. The included research focused on alcohol (N=558), opiate (N=282), cocaine (N=84) and nicotine addiction (N=510). Across all substance groups the overall effect size was large, namely +0.92. The stimuli were most often presented as visual cues (photo and video) or imagery cues. Auditory cues were presented in some research concerning nicotine addiction and only once in alcohol addiction (the researchers did not specify which research). Olfactory cues were not used.

It appeared that less research has been conducted concerning olfactory and auditory cues in comparison to visual and imagery cues. One study, by Stormark, Laberg, Bjerland, Nordby and Hugdahl (1995), focused on the physiological and psychological responses to olfactory



stimuli in 20 participants with an alcohol addiction and 20 social drinkers. Results showed that physiological responses to olfactory stimuli were stronger in participants with an addiction compared to the social drinkers. Besides, those participants found it harder to resist an alcohol drink offer than before exposure to the olfactory stimuli. However, the desire to consume alcohol did not increase. Contrastingly, Schneider et al. (2001) found that in 10 participants in treatment for an alcohol addiction an ethanol odor could elicit craving. Concerning auditory cues, Heinze, Wölfling and Grüsser (2007) found that alcohol-related auditory cues elicited a significantly higher level of craving than neutral auditory cues in 10 participants with an alcohol addiction. One might conclude that research findings support the idea of visual and imagery cues as triggers for craving. However, olfactory and auditory cues are researched less and therefore the impact on craving seems to be less clear.

### **2.2.2 Stress**

In the last two decades there has been growing interest towards the influence of stress on craving. Research has so far focused on alcohol, opioid and cocaine addiction. Sinha, Fuse, Aubin and O'Mally (2000) investigated craving responses to stress, drug-cue and neutral-relaxing imagery of 20 participants with a cocaine addiction. Findings showed that both stress and drug-cue imagery increased craving significantly compared to the neutral-relaxing imagery. Besides, anxiety and negative emotions were correlated with an increase in craving, which implies that anxiety and negative affect are a component of the craving state. Similarly, Preston and Epstein (2011) found positive correlations between stress, craving and negative-mood in cocaine- and heroine- abusing outpatients. However, causality between stress and craving was not identified. Negative mood, on the other hand, did result in stress.

Concerning alcohol addiction, Fox, Bergquist, Hong and Sinha (2007) found a significant increase of alcohol craving during stressful and cue-related imagery with 20 participants with an alcohol addiction compared to neutral/relaxing imagery. In a similar but larger study, Sinha et al. (2009) found that stress evoked by guided imagery increased alcohol craving in 28 participants with an alcohol addiction compared to the 28 participants of the control group. This significant increase was also present after the alcohol cue exposure guided imagery, whereas the relaxing imagery did not result in a significant increase. These results support the earlier findings of Fox et al. (2007).

Regarding opioid addiction Hyman, Fox, Hong, Doebrick and Sinha (2007) found that stress and drug-cue imagery significantly increased craving compared to the neutral-relaxing imagery in 15 participants. McRae-Clark et al. (2011) focused on the influence of social stress on craving levels in participants with a marijuana addiction. Participants in the stress group (45 participants) were exposed to stress using the Trier Social Stress Task (TSST) opposed to the non-stress group. Afterwards, the participants were exposed to marijuana related and neutral cues. Craving increased significantly after the TSST, but not after the marijuana related cue-exposure. These results imply that social stress can increase craving in people with a marijuana addiction.

The body of research concerning stress as a trigger for craving is growing. So far there is some evidence that stress can induce craving in people with a cocaine, alcohol, heroine or marijuana addiction. However, more research is necessary to further explore this phenomenon.

### **2.2.3 Mood**

In some of the research concerning stress and craving, negative mood was found to correlate with an increase of craving or the preceded state of stress (Sinha et al., 2000; Preston & Epstein, 2011). In several theories negative mood is thought to elicit craving, because the substance abuser wants to relief this aversive state. Positive mood on the other hand can elicit craving because it is associated with substance use through classical conditioning (Skinner & Aubin, 2010). However, only a small number of studies specifically focused on the influence of mood on craving.

Most recent studies investigated the impact of negative and positive mood on the level of craving after exposure to drug-related cues (e.g. Schlauch, Gwynn-Shapiro, Stasiewicz, Molnar & Lang, 2013; Mason, Light, Escher & Drobles, 2008). Schlauch et al. (2013) found that higher levels of negative mood in participants with an alcohol addiction were positively correlated with higher approach inclinations (which includes craving) after cue-exposure to alcohol cues. Higher levels of positive mood, on the other hand, were positively correlated with avoidance. Contrastingly, Mason et al. (2008) describe that only the presentation of positively affective stimuli was associated with an increased level of craving after cue-exposure with participants with an alcohol addiction. However, the authors note that the used

negative affective stimuli represented general aversive states which are not linked to the personal life of the participants. One might wonder if results would differ if the negative affect stimuli were related to substance use or represented experiences from the personal life of the participant. Smith (2009) found that feelings of sadness, depression, anger and loneliness were triggers for relapse in females who were victim from child abuse and had an addiction. Craving is closely related to relapse. Therefore, these feelings might have affected the level of craving.

The above mentioned studies reveal contrasting results. Some indicate that negative mood increases craving whereas others indicate that positive mood increases craving. Further research is necessary to gain deeper understanding about this phenomenon.

#### **2.2.4 Rumination**

A recent study by Caselli et al. (2013) focused on the influence of rumination on craving levels in 6 participants with alcohol-dependency, 26 problem drinkers and 29 social drinkers. The participants were randomly assigned to a distraction or rumination thinking task. Before and after the task the level of craving was measured through self-reports. Results showed that rumination significantly increased the perceived level of current craving in the participants with an alcohol-dependency compared to the distraction task. The level of craving persisted after the rest-phase and even increased slightly. In the problem- and social-drinkers no significant increase was found. The researchers propose that rumination can cause craving. However, no conclusions can be drawn from one single study with a small sample size.

### **2.3 Music as a trigger for craving**

Besides the previous described triggers for craving, a small body of literature proposes that music might trigger craving. Some researchers and clinicians describe, based on their clinical experience, that music can elicit craving (Dijkstra & Hakvoort, 2010), can evoke a strong wish to use substances (Fachner, 2010) or can trigger the use of substances (White, 1996). Two qualitative studies focused, as a small part of their research, on the experiences of clients with music causing relapse (Horesh, 2006b, 2010) or music as a motivator to ‘abuse aggressively’ (Abdollahnejad, 2006, 2010). Horesh (2006b, 2010) interviewed eight clients

suffering from substance use disorder with the aim to identify multiple aspects of the relationship between addiction and music. One of those aspects appeared to be music and relapse. Participants described experiences in which specific music they had listened to caused a relapse in substance use. Craving might also have been a part of that experience while it is often inherent to the process of relapse. However, the term *craving* was not specifically mentioned. Therefore, it cannot be concluded that craving was present in those situations.

In another qualitative study, Abdollahnejad (2006, 2010) asked participants during their music therapy intake session to describe if specific music could motivate them to ‘abuse aggressively’. Twelve of the 20 participants stated that this was the case. The other 8 participants, to the contrary, reported that music had no effect on their motivation to use substances. Abdollahnejad (2006) states that “the music the abusers listened to during their addiction period significantly tempted them to go back to drugs during their recovery period” (p. 325). However, the question rises why the other 40% of the participants did not experience any effect of music on motivation. Moreover, it is unclear whether or not the clients experienced craving, because the term was not specifically used. The words that were used, ‘tempted’ and ‘motivation’, are related to the phenomenon of craving. Therefore, similarly to the research of Horesh (2006b, 2010), there might be indicators that craving possibly was present. However, it does not provide any clear evidence whether or not music can evoke craving.

Recently, an experimental study was published in which music as an auditory cue was examined (Short & Dingle, 2015). Nineteen participants in treatment for substance use disorder were asked to select a song that created an urge to use substances and one that motivated them to remain abstinent. The ‘urge’ song increased craving significantly in the majority of the participants. The ‘clean’ song contrastingly decreased the level of craving. These findings form preliminary evidence that music can evoke and prevent craving.

Even though little research has been conducted concerning this phenomenon, several clinicians and researchers have expressed theories about how music might elicit craving. Those theories will be displayed in the following paragraphs.

### 2.3.1 Music as a cue

Cues are substance-related stimuli that were present during substance use and can evoke craving during exposure, as mentioned earlier. Fachner (2010) points out that music can become a cue when it was repeatedly present while using substances. Similarly, Ficken (2010) proposes that “certain things in the environment can become strong triggers for substance use, misuse, abuse, and dependency. Smells, sounds, people, locations, and music can all be cues to engage in harmful, risky behaviors” (p. 108). One might relate these statements to the earlier description of cues where one theory suggested that through a process of classical conditioning a certain cue can become a trigger for craving. Accordingly, White (1996) describes the potential of music as a conditioned cue for craving. “Addicts, like Pavlov’s dogs, can be conditioned to link two seemingly unrelated events together, in this case musical stimuli to the experiences of intoxication” (p. 63). He continues with explaining how music can become a cue for substance use: “if one has consistently listened to certain kinds of music or to particular songs while intoxicated, these songs will come to constitute triggers or stimuli for use” (p. 63). The previous mentioned statements of Fachner (2010), Ficken (2010) and White (1996) seem to be based on practical experience seeing that either no other references were mentioned or the references did not specifically elaborate on music as a cue for craving.

Similarly, Short and Dingle (2015) based their experimental study on the theory that music becomes a cue through conditioning and depicted it as an auditory cue. The music used in the study was selected by the participants as music that would elicit an urge to use substances. However, it is not clear whether or not this music had been present during substance use or if the music elicited craving in other ways. The results indicate that music can elicit craving, but not in which ways. The findings of Polston, Rubbinaccio, Morra, Sell and Glick (2011), however, support the ideas of White (1996) and Short and Dingle (2015). In their experimental research with rats, music and methamphetamine were paired. After 7 days of pairing, the musical stimuli alone evoked loco motor activity which indicates that the musical stimulus had become a cue for methamphetamine use. The only issue concerning this work is that it is conducted with rats and not with humans. The question arises if similar results were to be found with humans. Furthermore, the researchers questioned whether or not music can be seen as an auditory cue. As mentioned earlier auditory cues refer to sounds like opening a

beer can or filling a beer glass (Heinze et al., 2007). Music, on the other hand, might be seen as a more complex cue in comparison to a specific sound (Polston et al., 2011).

Based on the above mentioned literature it seems as if music might form a cue for craving. However, the term is often not specifically used in literature even though the descriptions correspond to the definition of cues. It appears that most statements are based on practical experience of professionals in the field of music therapy and addiction and little experimental studies have been performed.

### **2.3.2 Music, mood and craving**

Besides cues, mood might also evoke craving. Research shows that music can elicit negative and positive emotions (an overview can be found in Juslin and Sloboda, 2010). Horesh (2006a) portrayed how clients are overwhelmed with emotional memories of pain, abuse and rejection while listening to certain music. They are not capable to cope with the negative mood and “figuratively drown in the oceanic feeling of regression, and reach out to the kind of acting they know best – substance abuse” (Horesh, 2006a, p. 134). In some cases, the music could even literally be the trauma, the original pain or negative emotion and is not only a symbol of the trauma (Horesh, 2010).

The majority of the 12 participants in Abdollahnejad’s research (2010) reported that listening to sad music had motivated them to abuse drugs. Music also encouraged the participants to relive substance-use memories, especially complementary pleasurable feelings. It seems as if both negative and positive mood could motivate participants to use substances. One might question if craving was part of that process or not, while craving and motivation might be related (Skinner & Aubin, 2010).

Fachner (2010) proposed that music can be a trigger for craving through a process of state-dependent recall, which is part of the state-dependent learning theory. This theory implies that when information is learned in a certain state it will be more easily recalled when the person enters the same state (Pam, 2015). “Emotional cascades of state-related drug memory will be reactivated when certain cues are heard in the music or during events in dance” (Fachner, 2010, p. 31). It seems as if Fachner (2010) refers to the possibility of music to induce moods that are similar to moods in which substances were used. He referred to Blood and Zatorre

(2001) who found that music can activate the reward system partially in the same way as substances. This reward system is responsible for pleasurable states (Esch & Stefano, 2004). The question arises if music indeed can trigger similar reward responses as substance use. According to Volkow, Fowler, Wang, Baler and Telang (2009), substances evoke a significantly larger amount of dopamine release in the reward system than other non-substance use related rewards such as eating and sex. This indicates that music might not elicit a similar strong pleasurable state as substance use. Another idea of Fachner (2010) is that sad music activates the endogenous opioid system, which brings the person in a similar state as when using certain drugs. Therefore, it could trigger a desire to use. These propositions, however, are currently not supported by experimental research.

Similar to Fachner (2010), Abdollahnejad (2010) implied that “some music that clients listen to during their drug use revives the atmosphere of that time” (p. 87). He categorized this as state-dependent learning “where specific memories and emotional states are related to the physiological and mental state of the person” (p. 87). Likewise, Ortiz (1997, as cited in Horesh, 2010) implied that “music recreates a mental and emotional representation of the essence of the moment when it was first heard” (p. 70). According to Horesh (2010) this could apply to negative emotions or the actual drug use.

On the contrary, Horesh (2010) noted that music can reflect an already existing mood and not necessarily induces it. Still, the music can heighten the emotional unstableness in those cases (Horesh, 2010). The question remains whether or not music will also enhance craving in that situation. It seems as if music might induce moods that elicit craving. However, more research is needed to investigate this proposition. Besides, it is unclear whether the music has to be related to substance use or if music, not related to substance use, but inducing certain moods can elicit craving.

### **2.3.3 Explicit music**

Substance use frequently occurs in song lyrics of different musical genres. Markert (2001) found 784 songs with lyrics concerning substance use in the period from 1960-1998. Some songs celebrated drug use and others condemned it. The celebration might lead to normalization of substance use and could reinforce addiction (White, 1996). Young people are especially susceptible to the content of songs and the lifestyle of artists while they are

forming their own identity (Fachner, 2010). Short and Dingle (2015) noted that the lyrics of many of the ‘urge’ songs, selected by participants, contained themes of substance use and normalized or glorified drug use.

Horesh (2010) pointed out how clients could completely identify with the message of the lyrics and music of a certain song. There are song lyrics about substance use and they seem to have an impact on people with addiction but the question remains if this evokes craving. Ficken (2010) described one situation in which a participant of a workshop experienced craving when listening to a song about substance use (Comfortably Numb by Pink Floyd). The lyrics of this song illustrate the harmful effects of drug use and therefore condemn it. In this case it seems as if the lyrics elicited craving. However, this was just one anecdotal example which makes it impossible to draw any conclusions.

In summary of the previous section, it seems that some researchers and clinicians share the opinion that specific music can elicit craving or cause a relapse in substance use. However, little research has specifically focused on this topic. Music is theorized to elicit craving as being a cue, by inducing moods or emotional states that elicit craving or by referring to substance use in song lyrics. Again, there seems to be little specific research concerning these theories.

## **2.4 Music therapy approaches concerning music as a trigger for craving**

Music therapy can be a part of substance abuse disorder treatment and focuses on different goal settings (an overview can be found in Dijkstra & Hakvoort, 2006). A few clinicians have described possible approaches to cope with craving in music therapy, which will be described in the following section.

One viewpoint is to avoid music that elicits craving, both in music therapy and in the daily lives of clients with addiction. Horesh (2006a) described this approach as an isolation technique that aims to protect the client from exposure to drug related stimuli, in this case music that is related to drug use. This technique is suitable in the beginning stages of the treatment, which focuses on physical detoxification. This process evokes withdrawal symptoms and negative emotions. The temptation to relieve those states by substance use can



be strong. Therefore, listening to music that enhances craving might discourage clients to remain abstinent. In practice this approach conveys that professionals regulate the music that clients are allowed to listen to.

However, Horesh (2010) also pointed out some downsides to this approach. It asks the clients to abandon their music in order to recover from their addiction. However, this can be difficult for clients, while music plays an important and integral part in their lives. Moreover, the clients do not learn to cope with music that elicits craving and are not aware of the impact music can have. This might have negative consequences (Horesh, 2006a; Horesh, 2010). White (1996) on the other hand stated that in some cases it is better to abandon certain music or certain songs, because it elicits a too powerful craving response through a long course of repeated pairing with substance use. In those incidents it might not be possible to diminish the craving response by for example exposing clients to music that elicits craving without using substances, an approach that will be described later on. The only option seems to be abandoning the music. However, White (1996) did note that if music is 'taken', the therapist and client should search for new music to fill the created gap.

Another viewpoint is to apply music that elicits craving in music therapy instead of avoiding it. Several ways of using this music in music therapy have been described. Horesh (2006a), for example, proposed to explore the impact of music on craving and emotions in the safe and containing environment of the music therapy group by listening to the client's 'dangerous' music. Clients can learn to cope with evoked emotions and craving and therefore learn how to deal with it in their daily lives. In the first stage of their therapy method for enhancing coping skills of clients with an addiction, Dijkstra and Hakvoort (2010) explored what kind of memories or reactions (including craving) can be triggered by different musical styles or songs. After identifying those responses, the focus shifts to enhancing and learning new coping skills to deal with them.

White (1996) suggested another possible approach: exposing clients repeatedly to musical cues without reinforcement of substance use. This intervention might reduce the intensity of the experienced craving. The client's response to the musical cue might satiate. This approach is based on the extinction principle in classical conditioning theory. Another possibility is reframing the meaning of musical cues in music therapy. Ficken (2010) described in his

music therapy relapse prevention model that ‘non-relapsers’ avoid or reframe old cues whereas ‘relapsers’ respond to old cues. According to White (1996) reframing can, for example, be done by rewriting the song lyrics of those musical cues. The new lyric can contain recovery values and principles in order to replace the original meaning concerning substance use. Lastly, Dougherty (1984) described how in music therapy clients learned to consciously decide whether to avoid or listen to musical cues. Music therapists could aim to work on this awareness of choice. Either they chose to stop listening to musical cues and listen to music that elicits a more positive reaction or they keep on listening and work through the feelings that elicit craving. This decision is left to the client.

In summary, different therapeutic approaches can be identified. On one hand musical cues for craving are excluded from music therapy and clients are encouraged to avoid those musical cues. On the other hand, they are integrated in music therapy with the goal to increase the awareness of music-induced craving, to enhance coping skills, to reduce the intensity of the craving response, to reframe the meaning of musical cues and to enhance the awareness of choosing between avoiding or listening to musical cues.

## **2.5 Purpose of the current study**

Based on the literature review several purposes of the current study have been established. First of all, it seems as if little research has been conducted specifically focusing on the phenomenon of music eliciting craving. One experimental study showed that self selected ‘urge’ music can increase craving. Other qualitative studies investigated music as a trigger for relapse, of which craving might be a part of. However, they did not specifically focus on the process of music eliciting craving. Therefore, one aim of the study is to further explore if music can elicit craving. The second aim is to understand in which ways music can trigger craving. Clinicians and researchers have proposed several ideas based on their clinical experience. Furthermore, two qualitative studies focused on how music could lead to relapse (Horesh, 2010; Abdollahnejad, 2010). However, more specific research seems to be needed to further clarify this process. Throughout this study the focus lies on music which is listened to as opposed to music which is actively made. This choice was made in order to make research as specific as possible taking the limited time to conduct the study into account. The third and

final purpose is to further explore and understand therapeutic approaches to cope with the studied phenomenon in music therapy and extend the current body of knowledge.

### **3 METHODOLOGY**

The purpose of the following chapter is to describe and justify the choice of methods of data-collection and analysis. As mentioned in the previous section, this study aims to explore if music can elicit craving, if this is the case, how music can elicit craving, and to further explore and understand music therapy approaches concerning this phenomenon. Qualitative research seemed suitable to meet the proposed aims and exploratory nature of this study. As Leavy (2014) proposed, qualitative research is used to explore, describe or explain phenomena in human experience, reveal the meanings people attribute to those phenomena and obtain in-depth understanding. In the current study, this process is based on the interpretative paradigm which supposes that reality is constructed through the subjective comprehension and interpretations of reality. Therefore, in order to gain knowledge concerning a phenomena researchers using this paradigm study the subjective experience and attribution of meaning that people apply towards a human experience by analysing individualised purposes, intentions and goals (Croucher & Cronn-Mills, 2015). Now that the background premises of this study are conveyed, the recruitment of participants, the data-collection method of semi-structured interviewing, the process of data-gathering and the data-analysis based on constructivist grounded theory by Charmaz (2006) can be further described and justified.

#### **3.1 Recruiting participants**

As mentioned before, this study entails two groups of participants: music therapists working in the field of addiction care and clients with a substance use disorder. The clients could describe their viewpoint on whether or not music can elicit craving and could possibly portray personal experiences concerning the phenomena. Similarly, the music therapists could convey their ideas concerning the topic based on experiences in music therapy combined with literature and education based knowledge. The phenomena would therefore be approached from two viewpoints. Furthermore, the music therapists could convey used music therapy approaches concerning the phenomena in music therapy and clients could describe how they perceived these approaches.

The music therapists were selected through purposive sampling which conveys that the researcher selects participants based upon a variety of criteria. Those participants are more likely to provide relevant and rich data (Oliver, 2006a). These criteria were defined in consultation with my supervisor. The music therapist participants required a Bachelor Degree in music therapy or creative therapy with a specialization in music, were currently working in the field of addiction care and had a minimum of 5 years work experience in this field. It is likely that data from interviews with more experienced music therapists will lead to richer data. I contacted several music therapists who met the predefined criteria, in my personal network and through LinkedIn.

The clients were recruited through snowball sampling, which entails that participants selected by the researcher propose possible respondents from their own network who can partake in the study (Olivier, 2006b). In this case, the music therapists who agreed to participate in this study were asked to identify a possible participant from their clients. These clients had to meet several criteria which I had determined in consultation with my supervisor. They needed to have a diagnoses of substance use disorder according to the DSM-V, were currently in treatment concerning this diagnosis, participated currently in music therapy, and engaged regularly in music listening activities. These criteria were thought to enhance the possibility of gathering rich data. Furthermore, all participants had Dutch as a mother tongue, while it would enable me to analyze the data more thoroughly because of a better language comprehension as Dutch is my mother tongue.

The amount of interviews was determined in consultation with the supervisor of this thesis. According to Hugh-Jones and Gibson (2012), the supervisor is ablest to tailor advice concerning the amount of data needed. Eventually, we set the goal of recruiting three music therapists and three clients. Gough, Lawton, Madwill and Stratton (2003, as cited in Hugh-Jones and Gibson, 2012) proposed that for thematic analysis, interpretative phenomenological analysis and grounded theory five hours of data are recommended. Six interviews lasting between 45 and 75 minutes would therefore provide enough data. However, Croucher and Cronn-Mills (2015) focused on data saturation. Enough data is obtained when information starts repeating in interviews and no significant new themes occur. This might require more than six participants. However, this was not possible due to the timeframe of this master's

thesis and the availability of Dutch music-therapists currently working in the field of addiction.

The participant recruitment was conducted following the above described process and resulted in three music therapist participants and four client participants. Eventually, one music therapist proposed two clients instead of one. While the duration of interviews was slightly shorter than I had anticipated before, I decided to include this seventh participant to ensure the five hours of data that was aimed for. Table 1 below displays the background information of the four client participants. The names of the clients are fictitious to ensure their anonymity. Three out of the four clients had a double diagnosis, which indicates that besides the diagnosis of substance use disorder the clients were diagnosed with another disorder(s). Currently, the treatment they followed focused on the substance use disorder. In the Netherlands there are specific wards in addiction care clinics that are specialized in the treatment of substance use disorder for clients with double diagnosis.

TABLE 1. Background information participants: clients

|                      | <b>Gender</b> | <b>Age</b> | <b>Main Addiction</b>      | <b>Other Diagnoses</b>   | <b>Amount of Music therapy sessions</b> |
|----------------------|---------------|------------|----------------------------|--|---|
| <b><i>Lucas</i></b>  | Male          | 26         | Cannabis, Poly- hard drugs | Borderline Personality Disorder & Post-Traumatic Stress Disorder | ±50 sessions                            |
| <b><i>Louise</i></b> | Female        | 33         | Alcohol                    | –  | ± 30 sessions                           |
| <b><i>Dennis</i></b> | Male          | 39         | Alcohol, Cocaine           | Bipolar Disorder, ADHD, Dependent Personality Disorder           | ± 15 sessions                           |
| <b><i>Rick</i></b>   | Male          | 36         | Alcohol                    | Borderline, Post-Traumatic Stress Disorder                       | ± 21 sessions                           |

The music therapists were given the choice whether or not to use fictitious names and all decided to use their actual names. The following background information was gathered concerning the three participating music therapists:

- *Roeland* is a 33-year-old male music therapist, who has a Bachelor Degree in creative therapy with a specialization in music therapy obtained at the University of Applied Sciences Utrecht (HU). At the time of the interview he was working for 6 years as a music therapist at a youth double diagnoses ward and for 5 years at an adult double diagnosis ward of the ‘Dimence’ addiction care clinic. He proposed *Lucas* as a suitable participant for the research.
- *Prabha* is a 36-year-old female music therapist. She has a Bachelor Degree in creative therapy with a specialization in music therapy obtained at the Zuyd University of Applied Sciences. She had been working as a music therapist in addiction care for 9 years at the time of the study, including double diagnosis at ‘Novadic-Kentron’ and ‘GGZ VOF Breburg’. *Louise* was one of her clients.
- *Diewertje*, is a female 36-year-old music therapist. She has a Bachelor Degree in music therapy retrieved at the ‘ArtEZ School of Music’ and at the time of the study she had 9 years work-experience as a music therapist working with clients with substance use disorder and double diagnoses, both youngsters and adults, at ‘Novadic-Kentron’. She proposed both *Dennis* and *Rick* as possible participants for the study.

### **3.2 Data-collection: semi-structured interviewing**

Exploring the many different possible data collection methods, I eventually chose to conduct semi-structured interviews to gather data for this study. As Kvale and Brinkmann (2008, p. 3) described, this data collection method has the “purpose of obtaining descriptions of the life world of the interviewee in order to interpret meaning of the described phenomenon”, which suits the aim of the current study. Furthermore, Brinkmann and Kvale (2015, p. 57) described that an interviewer can be seen as a ‘miner’ who views knowledge as buried metal that he has to unearth.

Semi-structured interviewing involves that the researcher beforehand identifies key topics that need to be discussed and creates a flexible interview guide with mostly open-ended questions. ‘Flexible’ indicates that the researcher is free to follow the flow of the conversation and can

deviate from the interview guide if necessary (Croucher & Cronn-Mills, 2015; Given, 2008). I created two separate interview guides, one for the client interviews and one for the music-therapist interviews. The client interview guide contained questions such as ‘What do you think about the idea that music and craving might be related?’, ‘Can you give some examples of experiences in which music elicited craving?’ (when clients described that music could elicit craving) and ‘Did music therapy influence your relationship with music, and if so, how?’. The key-topics were viewpoints on a possible relationship between music and craving, possible experiences of music eliciting craving and the possible effect of music therapy on their relationship with music. The music therapist interview guide had similar questions concerning the before mentioned key-topics. However, questions were added concerning the approach they used in music therapy to cope with the phenomenon and its effects. Besides creating interview guides, I prepared myself for the interviews by developing my knowledge concerning interviewing by reading a book by Brinkmann and Kvale (2015), which contains practical information and strategies concerning conducting semi-structured interviews.

### **3.3 Gathering data**

Once the clients were recruited and preparations were completed, the actual interviews could be conducted during the summer break in the Netherlands. Ideally the client would be interviewed before the music therapist, while information obtained from the client interview could be used in the music therapist interviews in order to gain more understanding concerning the experiences and meaning construction of the client. Furthermore, the interviews between different music therapist/client combinations would ideally be scheduled with a couple weeks in between. In that way I would be able to reflect on my interview skills and start reading and transcribing the data in order to gain initial information that could be used in the following interviews.

In reality the scheduling of the interviews appeared to be difficult, both due to the summer holiday and the small availabilities in the schedules of the music therapists. The participants could propose a preferable place where an interview could be conducted privately without other people around. The first interview was conducted in the beginning of August with *Roeland* at the music therapy clinic of his work. Two weeks later the interview with his client *Lucas* took place, again in the music therapy clinic. In the first week of September the



interview with *Louise* took place at her own apartment. Two days later the interview of her music therapist *Prabha* was conducted at the music therapy clinic at her work. The same day *Dennis*, *Diewertje* and *Rick* were also interviewed. The clients were interviewed in one of the ‘conversation’ rooms which therapists and nurses used to have private conversations with clients. The interview with *Diewertje* took place in her office. The interviews lasted between 30 and 70 minutes, with a total of 5 hours and 5 minutes. Due to the less ideal scheduling, there was less time to reflect on my interviewing skills and to read through the data as I anticipated. However, there was enough time between the first two interviews and the others which made it possible to reflect on my initial experiences. This was most important for me.

The interviews were audio-recorded, which the participants agreed to by signing a consent form prior to the interviews. Furthermore, those consent forms entailed information concerning the study, ensuring anonymity, the use of the data for the study and presentations or writings concerning the study, and the right to withdraw from participation.

### **3.4 Data-analysis: constructivist grounded theory**

Once the interviews were conducted, the data could be analyzed. Constructivist grounded theory as defined by Charmaz (2006) was the method of data-analysis applied in this study. This method aims to construct theoretical frameworks and is used to provide a conceptual comprehension of the studied phenomena. While one of the aims of the current study is to understand how music might elicit craving, a method was needed that moves beyond descriptive analysis and focuses on a conceptual understanding of the phenomenon. Therefore, grounded theory was chosen as an appropriate data-analysis method for this study.

Grounded theory was originally established by Glaser and Strauss (1967) with the aim to create a systematic method of qualitative analysis to generate theory. In the 1960s qualitative research in sociology was overruled by quantitative research, which based on positivist conceptions of ‘objectivity, generality, replication of research and falsification of competing hypotheses and theories’ (Charmaz, 2006, p. 4). The grounded theory method by Glaser and Strauss (1967) increased the legitimacy and credibility of qualitative research methodology, while it provided a systematic way of conducting analysis to obtain abstract and conceptual

understandings of the studied phenomena. Important components of the practice of grounded theory include:

‘simultaneous involvement in data collection and analysis; constructing analytic codes and categories from data, not from preconceived logically deduced hypotheses; using the constant comparative method (...); advancing theory development during each step of data collection and analysis; memo-writing to elaborate categories, specify their properties, define relationships between categories, and identify gaps; sampling aimed toward theory construction (...); conducting literature review after developing an independent analysis’ (Charmaz, 2006, p. 6).

However, since Glaser and Strauss (1967) initial statements concerning grounded theory, they diverged their view upon grounded theory and developed it further independently. Whereas Glaser stuck closely to the original ideas of the method, Strauss focused the method together with Corbin more upon verification in order to obtain and strengthen theories (Charmaz, 2006). Hereafter several researchers have further developed the grounded theory method, including Charmaz (2006). She emphasized investigating processes, actions and the creation of abstract interpretive understandings of the data. Whereas Glaser and Strauss (1967) assume that data and theories are discovered, Charmaz (2006) believes that grounded theories are constructed through the ‘past and present involvements and interactions with people, perspectives and research practices’ (p. 10). The researcher is viewed as an inherent part of the studied world and the collected data as opposed to an outside observer. Furthermore, the approach assumes that ‘theoretical rendering offers an interpretive portrayal of the studied world, not an exact picture of it’ (p. 10). Eventually I chose to follow Charmaz’s approach, while it is a more flexible way of conducting grounded theory and takes the methodological and theoretical developments of the past four decades into account (Charmaz, 2006). Through a process of inductive coding, memo-writing and constant comparative, categories can emerge and relationships between categories can appear resulting in a conceptual understanding of the studied phenomenon. During the analysis there are several phases as described by Charmaz (2006) which I went through.

During the first phase I transcribed the data with a program called “F5”. Before moving on with the second phase, I learned to use the qualitative data-analysis program ATLAS.ti. This program makes the process of coding and memo-writing more convenient and well-organized.

Once I got acquainted with the software, I could continue with the second phase in which I read through the data to get more familiar with it. I wrote down initial ideas to reveal preconceptions in order to be able to start the coding process with an open mind.

The third phase consisted of conduct initial coding. I started with ‘line-by-line coding’, but soon it appeared that this was too time-consuming taking the large amount of data into consideration. Further more it resulted in a too large set of initial codes including many irrelevant codes concerning the studied phenomenon. In consultation with my supervisor we decided to focus on meaning-units, which indicated that I searched for units with multiple sentences that formed a coherent meaning unit and were relevant to the studied phenomenon. The coding was conducted through an inductive process, which means that the codes arose from the data itself instead of using a predefined code-set (Croucher & Cronn-Mills, 2015). In this phase of initial coding it was important to stay close to the data in order to stay objective and open to all possible theoretical directions indicated by the data. Throughout this process, I kept writing initial memos which gradually allowed the process of raising codes to tentative categories begin.

The fourth phase consisted of focused coding. I sorted through my initial codes to decide which ones were most frequent, useful and made most analytical sense. Moreover, I had to determine the conceptual strength of the initial codes. This was conducted through a process of constant comparison in which I compared codes with codes, codes with data, data with data, etc. Advanced memos were written, which raised the conceptual level and refined conceptual categories. Table 2 on the following page, forms an example of how initial and focused coding were applied to a meaning unit resulting in a conceptual category.

The final phase consisted of sorting and integrating memos to decide which categories were most important and to define relationships between categories. The categories and relationships were diagrammed, which raised the conceptual level of the analysis to its full potential and resulted in a conceptualization of the phenomenon of music as a trigger for craving. Furthermore, this final phase led to a description of the music therapy approaches that were used to cope with the phenomenon in music therapy. These findings will be displayed in the following chapter.

TABLE 2. Example of data-analysis phases of initial coding and focused coding resulting in a category

| <b>Meaning unit</b>  |  |  |
|--|--|--|
| <p>“Another example, by the way I think it’s a horrible, really bad song, but Gerard Joling once sang a song ‘No more boleros’. And my grandma in the meanwhile. I’m 39 now, so she’s 20, she’s almost 30 years dead and then that song was played on the funeral. And now, when I hear that song nowadays, it still brings me back to memories of my grandma and the funeral and the sadness which went with it.”</p> |  |  |
| <b>Initial Codes</b>   | <b>Focused Codes</b>   | <b>Category</b>  |
| <p>Music listening<br/>                     Specific song<br/>                     Associating Music<br/>                     Funeral<br/>                     Person<br/>                     Sadness</p>   | <p>Specific song<br/>                     Associating Music<br/>                     Life-Event<br/>                     Negative emotions</p> | <p>Associating Music<br/>                     &gt; Negative Life-Event<br/>                     (sub-category)</p> |

## 4 RESULTS

The current chapter discusses the findings which emerged from the analysis presented in the previous section. This chapter is divided in two sections. The first section describes the conceptualization of the phenomenon of music as a trigger for craving which arose from the emerging categories and relationships between those categories. The second section displays the findings concerning the music therapy approaches that were used to cope with the phenomenon and its possible effects. All quotations used in this chapter are translated from the original Dutch data.

### 4.1 Conceptualization of music as a trigger for craving

First of all, the data showed that music can elicit craving. Three out of the four clients described experiences in which craving was evoked through music listening. *Louise* did not experience craving through music listening. However, her music therapist noted that this client probably was not aware of the process of music eliciting craving. Therefore, she might have stated not experiencing craving through music listening, even though it did occur. Furthermore, all three music therapists were certain that music can evoke craving based on their practical experience. Their clients were in some cases aware of this phenomenon, but in other cases not.

The analysis of the experiences of the participants in combination with the professional viewpoint of the music therapists showed that the process of how music can elicit craving is complex. The following paragraphs aim to describe the conceptualization of this complex process which arose from the data analysis. In order to provide a clear overview of this conceptualization, a diagram was constructed including all main categories and their relationships. This diagram is displayed in Figure 1 on the following page.

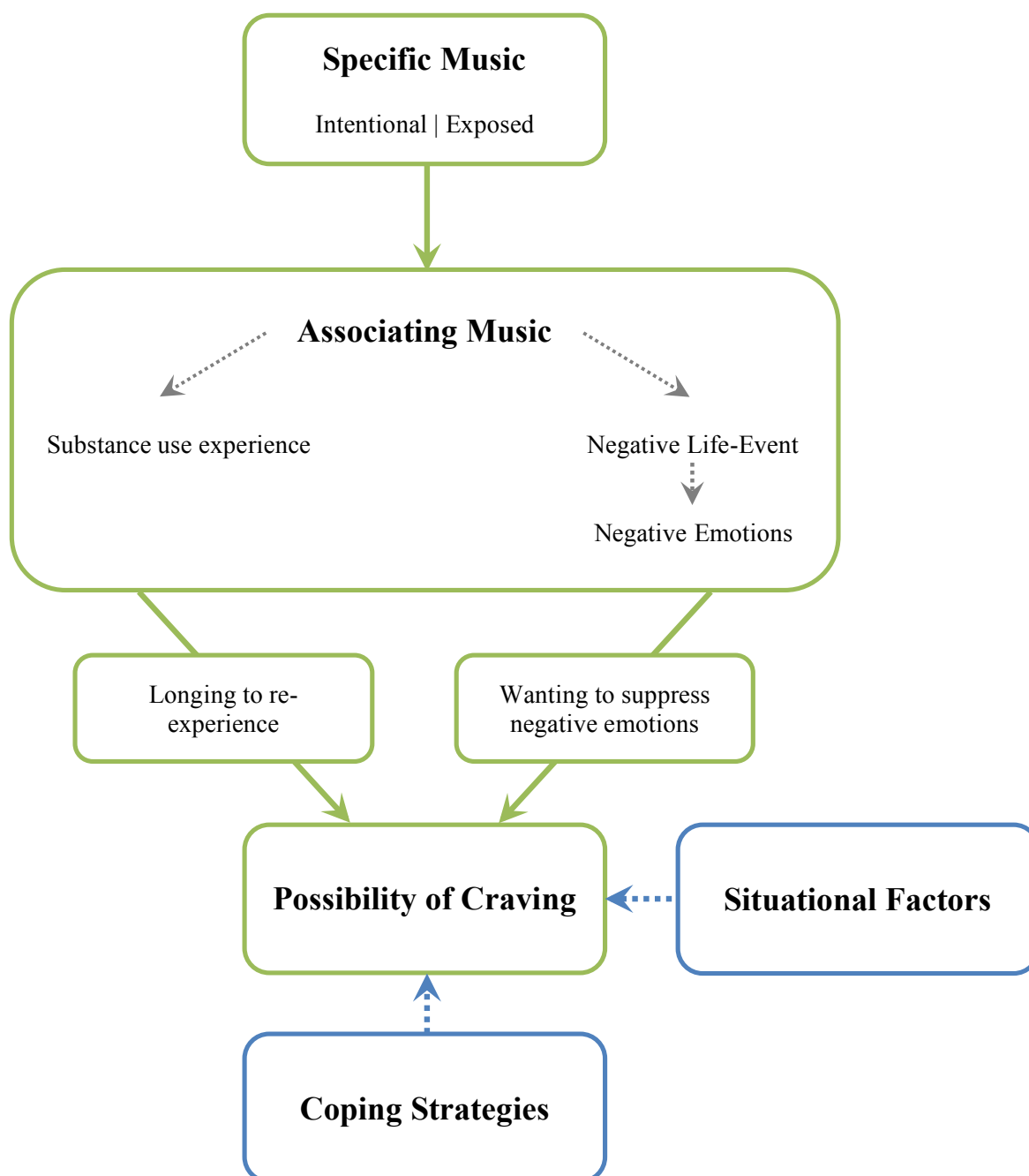


FIGURE 1: Conceptualization of the phenomenon of music as trigger for craving.

#### 4.1.1 Specific Music

The process started when the client came across specific music. The term 'specific' is important, while not all music appeared to elicit craving: only certain specific songs, music from a particular artist or a specific music style. These musical triggers differed per individual. Furthermore, the clients expressed that they were always familiar with the music

and did not recall instances that unfamiliar music had elicited craving. One music therapist however, thought that unfamiliar music could elicit craving when musical features were similar to the familiar music that was known to possibly evoke craving.

Clients came across the specific music either through intentional music listening or by being exposed to music. In the latter case, they do not have control over the musical impulse and were often surprised by it. Intentional music listening occurred in private situations (at home or at their room in the clinic), at music events or in music therapy. Clients were exposed to music at the clinic, when other patients were playing music in the communal living room or at a loud volume in their private rooms, in group music therapy when the music therapist or other clients chose music to listen to, in public places like restaurants, bars, shops, and at events like social gatherings, weddings, funerals etcetera. As *Roeland* stated in the quotations below, in the Netherlands music is everywhere and therefore clients can come across music anywhere in their daily lives.

“There is so much music around you. There is music at the supermarket, at all stores. Music is played at important events like funerals, weddings. You name it. Music is everywhere. So unconsciously you could have got impulses anywhere.” (*Roeland, music therapist*)

#### 4.1.2 Associating Music

A common factor in all clients’ and therapists’ examples was that the specific music elicited a certain association. These could be categorized under substance use experience or negative life-event.

##### *Substance use experience*

Clients associated specific music with experiences in which the music was listened to while using substances, often at a specific venue. *Dennis*, for example, described how a particular song reminded him of going to festivals and using XTC. *Rick*, similarly, associated certain music with parties where the music was played and where he used substances. There were also other substances they used besides the ones they were currently addicted to and in treatment for. The quotations below illustrate the before mentioned examples further.

“I’ve visited a lot of festivals in the past. I also used a lot of substances there. Also other things besides just alcohol and cocaine. But, for example, when I listen to ‘Rockaffeler Skank’ by Fatboy Slim, it

brings me back to that moment and sometimes that evokes craving. Because at that moment you're high on XTC, dancing on the music. And when you hear that now, then there's an association with that moment and that can evoke. Sometimes, not always, but sometimes it can evoke craving." (*Dennis, client*)

"It is more so that you then recall memories about. When you hear a familiar song that you've been partying on and that your, that quite quickly in your mind a combination, a link with drugs is made and that you think 'oh, I'm longing for a party' and together with 'I'm longing for a party' almost automatically comes 'I'm longing to use substances.'" (*Rick, client*)

The music therapists observed similar experiences of other clients, mostly in adolescents and young adults, for example as visible in the statement of *Prabha* below. The music therapists explained that the music and the substance use are often connected through a particular life-style or subculture. For example, in the hardcore scene people go to hardcore parties at which hardcore music is being played and cocaine is being used. On the other hand, people who use cannabis often go to so called "coffeeshops", which are places in the Netherlands where people can buy and use cannabis legally, where often reggae music is being played. There is also a scene where people use alcohol in café's where Dutch folk music is being played. Therefore, in these cases it can be a particular music style that forms a trigger, and not only a specific artist or a specific song.

"What I often notice with clients, mostly young clients, is that in the moment when they listen to that [music] and after an association, for example, when somebody listens to hardcore then very quickly he recalls the party where he used substances in the past. Party straight away means 'house' party or something like that, [which] directly means substance use and, yeah, then, I think, they experience craving on the spot." (*Prabha, music therapist*)

"I've often noticed that specific music, which is linked to a particular life-style of people, can evoke craving straight away. Once I've seen it very strongly with a boy. He was addicted to cocaine and he put on a piece of music which he linked to substance use (...) He linked that straight away to his life-style of partying, raving." (*Diewertje, music therapist*)

"I see for example often in the youth clinic that really that party-music almost always does that [evoking craving]. They listen off course also a lot of hardcore and, yeah, dance-like trance music. And there I can see, you can kind of say that in general, that the party-style music, depending on which parties they attended, but it is often more the hardcore-like scene that evokes a lot of craving (...) Yes, and besides the music [played] at coffeeshops. I forgot to say that, but it is very important. (...) Reggae-like music, then almost always people start [talking] about the coffeeshop or smoking marijuana." (*Diewertje, music therapist*)

One music therapist had the impression that specific music and substance use were linked through a process of conditioning. This seemed to resonate with statements of *Lucas* below in which he explained that particular music is so entrenched with substance use that it became a



trigger for craving. In the past he did everything under the influence of substance use, including music listening.

“I experience that [craving] mostly, [with] what I call ‘worldly’ music, just radio music or music of the party scene. That can cause craving (...) and lounge music, as I call it, a bit soul, jazz. Yes, that can evoke craving. (...) It is so rooted in the past together with substance use, that the sounds cause something in craving.” (*Lucas, client*)

“Everything in the past is just almost, how do you describe it. Twenty-four seven I was intoxicated. So everything I did, I did together with my substance.” (*Lucas, client*)

Clients often viewed the associated substance use experiences as positive experiences in which they experienced positive feelings. *Rick* for example described feeling euphoric and happy during open-air music events. Whereas *Dennis* sometimes felt nostalgia when listening to certain music related to substance use experiences and would long for that period in his life. It seemed as if the clients longed to re-experience those positively valued substance use experiences, which could possibly result in craving. However, the music therapists also described that clients could experience negative emotions during substance use experiences. Some clients could only allow and deal with negative emotions through substance use. Music listening was then used to intensify these feelings. It is unclear whether or not the clients in these situations viewed this kind of experience as negative or positive.

“And an XTC pill often makes you feel euphoric, and happy, and cheerful. Because of that. I only go to outdoor parties five times a year, but I do always experience that [positive feelings]. I’m always ultimately happy during such a day when the sun is shining, and it’s outdoors and everybody is partying (...) Or that you want to go back to that euphoric feeling.” (*Rick, client*)

“It is more, I think, a cognitive memory [concerning substance use experiences]. Because you don’t have that sensation, that feeling which you had during that moment or that substance use. It is quite separated. There is little feeling to that. The little feeling that is there, is so to say, that has more to do with nostalgia and melancholy.” (*Dennis, client*)

Concerning explicit music, in which the lyrics specifically refer to substance use, two clients stated clearly that they did not experience craving by listening to that kind of music. Whereas another client said that it had a ‘counteracting’ effect. However, he did not specifically say that it could evoke craving. One music therapist explained that this kind of music does not necessarily have to induce craving, only because the lyrics are related to substance use. She experienced that clients find recognition and confirmation in those lyrics, which makes them feel at ease. Furthermore, these songs have a short duration and form a clear framework in which the client shortly is reminded of substance use. She experienced that this has less

impact on clients than for example talking about relapses or substance use. It seems that for some clients, explicit music does not form a trigger for craving, whereas for others it might have an impact.

“I can’t name the song, but a few times ‘beer’ comes along, you know. (...) and the one [song] with that worldly, ‘Sex and drugs’ (*clients sings Dutch song*), you know? That is something, that I find difficult. So to say, it is more that part of me. Because I can understand that someone else can become totally happy through it, but for me it actually counteracts.” (*Lucas, client*)

“Last week I talked to a boy who, we were talking about Cypress Hill. He went to a concert of Cypress Hill and he relapsed there, because Cypress Hill sings about substance use. That is something that I don’t have. For example, what I was thinking about lately. In Born Slippy the word ‘Lager’, beer, is sung the whole time ‘lager, lager, lager’. I listen to Rory Block, often ‘Lovin Whiskey’. (...) I discovered that there is quite a lot of music that I like, that mentions substance use. (...) It is actually quite typical that you like that kind of songs. And that you can also get cheerful because of some of them. (...) Yeah, I can bear those well.” (*Dennis, client*)

“Yeah, I know that for example people who are not addicted always think that ‘oh, that [listening to explicit music] is not possible, whereas people who have an addiction themselves often have less trouble with that. (...) I notice that often also a feeling of recognition arises and that they [clients] actually feel more at ease than people who are not addicted. (...) They rather experience that it [substance use] is not a taboo. Than you just speak about it. There [in the explicit music] is mentioned what they feel. So that forms some recognition and confirmation.” (*Prabha, music therapist*)

### *Negative life-events*

Craving was not only evoked by music that was associated with substance use experiences, but also through specific songs or artists that clients associated with negative life-events. They described that specific songs or artists reminded them of, for example, the loss of a loved one, a funeral, and a bad relationship with an ex-partner. In some cases, the music was directly related to the specific event or person that was key in that life-event. Furthermore, some music was present during the event or in the period after the event. The quotations below are examples of the clients’ experiences.

“When I listen to James Blunt, ‘Goodbye My lover’, it recalls a lot of negative memories about 10 years ago, so to say, about a friend 10 years ago. About 2007, 2008. And then that negativity in itself can evoke craving.” (*Dennis, client*)

“Another example, by the way I think it’s a horrible, really bad song, but Gerard Joling once sang a song ‘No more boleros’. And my grandma in the meanwhile. I’m 39 now, so she’s 20, she’s almost 30 years dead and then that song was played on the funeral. And now, when I hear that song nowadays, it still brings me back to memories of my grandma and the funeral and the sadness which went with it.” (*Dennis, client*)

“My brother passed away, and for a long time it was difficult for me to listen to that [music] which in that moment was played on the funeral or something like that. And then, I’m more closed in myself, don’t talk that easily about my emotions and then I can also create craving through that.” (*Rick, client*)

“Michael Jackson, for example, that causes craving. Sam Smith. When a song from. Yeah, it’s very beautiful music, but it does cause craving. It’s the ‘Earth song’ from Michael Jackson by the way. And Anouk (...) There’s a bit of aggression in it and I don’t like aggression. It is, yeah. Through powerful music most of all. Predominant music. Yeah, it has associations with the past. These are also artists which my ex mostly loved. And yeah, that is anyhow a difficult issue.” (*Lucas, client*)

A common factor in the examples was the experience of negative emotions evoked by the negative life-event association. Clients described not wanting to feel those emotions, as is displayed in the quotation of *Rick* below. He wanted to use substances in order to suppress and relief those negative emotions, which could possibly result in craving. The music therapists similarly described that clients with addiction often use substances in order to deal with negative emotions and that therefore craving might arise when music evokes those emotions. *Roeland* thought that the function of substance use is related to when craving arises. So if a client uses substances to suppress negative feelings, music might elicit craving when it evokes negative emotions through associations with negative life events. However, when the client uses substances for another function and is capable of coping with negative feelings without substance use, music might not elicit craving through this process.

“I’ve got a song of Smashing Pumpkins ‘Disarm’. And the lyrics they, they are exactly like how I felt when my brother passed away, how that I, those lyrics say, they appeal so much to me, how in that moment I was, so to say, when I was 13, 14 how I felt. And it is more that then, then you get more the urge to it [substance use] because you, because you want to conceal it [negative feelings]. Then it is more that you want to use substances in order to, bluntly said, take that shit feeling away.” (*Rick, client*)

“And others [clients] have it more like: ‘I’m becoming sad now and that’s why I want something [substances] to suppress it.’” (*Prabha, music therapist*)

“I think that craving also depends on the function of substance use. So if the function of substance use always is to suppress emotions when too much was felt. Then in those moments craving will become most intense. Whereas if you, for example with people with autism, for example, and alcohol, they often experience that through alcohol, that they don’t feel social anxiety anymore and make social contacts more easily. So then their craving will arise on different moments, I think.” (*Roeland, music therapist*)

The findings mentioned in this paragraph described that once the clients came across specific music, they associated it with either substance use experiences or negative-life events. It seemed that on one hand craving could arise because the clients were reminded of substance use experience which they longed to re-experience. On the other hand, the association with a negative life-event could evoke negative emotions, which the clients wanted to suppress

through substance use in which case craving could possibly arise. The associations seem to play a key-role in the process of music as a trigger for craving. Like *Lucas* and *Dennis* stated:

“Perhaps more the association than the music itself.” (*Lucas, client*)

“It is not so much about that the music itself [evokes] craving, but the memories that it [the music] recalls, they evoke craving.” (*Dennis, client*)

### 4.1.3 Possibility of craving

The above mentioned process would in some situations lead to craving and in others not. Therefore, this category was described as the possibility of craving, while it is not possible to definitely state that the certain specific music will always lead to craving. Several situational factors appeared to influence this possibility of craving. These factors will be described later on.

The clients experienced music-induced craving mostly as a physical sensation. *Dennis* experienced varying bodily sensations, such as shaking, restlessness, goose bumps and an ‘unheimlich’ feeling. *Lucas* stated that craving felt as if adrenaline was running through his body. Whereas *Rick* felt a feeling rising upwards from his abdomen. Through the bodily signals the clients became aware that they were experiencing craving. Similarly, the music therapists had observed various bodily reactions like sweating, increase of bodily temperature, restlessness, teary eyes, headache, and tensed muscles. The quotes below illustrate some responses of the participants.

“That [craving] evokes some kind of adrenaline in you.” (*Lucas, client*)

“Shaking, restlessness. An unpleasant feeling (...). Yeah, there is that German word ‘unheimlich’, you know, something like that. (...) Sometimes you just get Goosebumps and shivers. That you think ‘ooh, something is happening right now’ and, yes. (...) Yeah, afterwards you often become aware and then you think ‘oh, yeah’.” (*Dennis, client*)

“Once I’ve seen it [craving response] very clearly with a boy. And he was addicted to cocaine and he put a nice piece of music on which he linked to substance use and he straight away got a physical reaction. He started sweating a lot and got a headache.” (*Diewertje, music therapist*)

“I also observe sometimes that people then [when experiencing craving] really start sweating a lot for example. There are clients who, for example speed users, you notice that for example with certain music their muscles become tensed.” (*Roeland, music therapist*)

According to the music therapists, some clients are aware that they are experiencing craving and they know that the physical reactions are related to craving. However, other clients are not. Therefore, it seems that music-induced craving manifests itself both consciously and unconsciously. According to *Roeland*, double diagnosis can play a role in whether or not clients are conscious of the craving response. He stated that clients with autism, for example, have problems with body awareness and therefore do not notice those physical reactions as mentioned in the quote below.

“Sometimes I think that it could be craving, but that the clients are not yet that capable of getting in touch with their bodily signals in order to realize that it’s also craving. (...) Anyhow, look, this is a double diagnosis treatment, whereby besides the addiction there is also a psychiatric disorder. One of those is for instance autism. And, yeah, most people with autism have difficulties in getting in touch with their body and feelings. So then it is also difficult to recognize these [bodily] signals.” (*Roeland, music therapist*)

#### 4.1.4 Situational factors

As mentioned before, there seemed to be situational factors that influenced whether or not specific music in a specific moment would lead to craving or not. Three factors were identified in the current data set, namely the mood of the client, the function of music listening and the stability of the client in that specific moment.

##### *Mood*

The music therapists pointed out that a negative mood could increase the possibility of craving, as mentioned in the quotes below. It seemed as if clients in that state were more prone to craving. *Louise*, the client who stated she did not experience craving through music, only listened to music when she was in a positive mood. She avoided music listening during a negative mood, while she knew the music would make her emotional. One can wonder if she did not experience craving because she did not listen to music in a negative mood. Moreover, her music therapist, *Prabha*, thought that when *Louise* would have ‘a bad day’ and would listen to music that reminded her of the period of substance use it could possibly cause craving, while it would remind her of those easy and good times. However, this is something that *Louise* avoids.

“So I can imagine, suppose that she [Lousie] has a very bad day and would listen to music, which she associates with a time that things went well with her. Well in her opinion. She knows that it was not

well. But it were the easier times, as she calls it. Then she would experience craving quickly.” (*Prabha, music therapist*)

“You just, that is what I explain most of the times, you just have to be in a very wrong mood and you hear a specific song, where you have a certain substance use-association with. And then it can be the case that you, that it triggers you to go to the coffeeshop.” (*Roeland, music therapist*)

On the other hand, the question arises if the chance of craving would be reduced when the client is in a positive mood. That would possible explain why *Louise* did not experience craving through music listening, while she only listens to music when she is in a positive mood. *Prabha* had the impression that clients who state not experiencing craving through music, only do so when they are feeling well. Still, this question could not clearly be answered based on the current data set.

### *Function of music listening.*

The function of music listening in the particular moment seemed to play an important role in whether or not craving would be induced. Clients appeared to listen to music with different intentions, which were in some cases destructive and in others constructive uses of music listening. *Rick* and *Dennis*, for instance, described how in the past they used music to intensify negative emotions when feeling depressed, through which they became stuck in those negative feelings. They could not or did not want to move out of the depressed state. *Roeland* and *Diewertje* described this as using music in a destructive way, which they observed quite frequently in working with their clients. The quotes below illustrate this destructive function of music listening.

“Sometimes you do it [music listening] as well. Sometimes you experience a mood that moves towards depression and then it is. Sometimes it is very difficult to consciously chose music that changes you, because you are actually inclined to put music on that reinforces your mood. To go lie on your bed listen to certain music and just cry. That it intensifies or at least that you stay in that feeling. Apparently you want to stay in that feeling or something like that. It is some sort of. I always call it self-flagellation or self-harm, like ‘I’ve probably earned it to feel this way. So I’m going to stay in it.’” (*Dennis, client*)

“Sometimes, sometimes you want, like I just tried to say, sometimes you want to stay in a certain feeling, so to say. Also with down-hearted songs. When you feel down, to then [listen to] a song that feels quite heavy, for me at least, then you can also sometimes just listen to it five times in a row to stay in that feeling or something like that.” (*Rick, client*)

As mentioned earlier, clients with substance use disorder often use substances to cope with emotions. One can imagine that if a client uses music in a destructive way to stay in a negative feeling, the need to use substances will increase when they do not have other coping

skills to deal with those emotions. Therefore, one might wonder if the possibility of craving will increase in a situation in which clients use music in this destructive way. However, intensifying emotions through music listening is not always used in a destructive way. All music therapists agreed that intensifying emotions for a short period of time can aid in processing and dealing with those feelings, which can be beneficial for the client. Furthermore, the music therapists and clients described the use of music listening to express and regulate inner feelings, and for relaxation. This might also help the client to deal with emotions without the use of substances. In those cases, one can wonder if the possibility of craving might be reduced. Therefore, the intention of the client to either use the music in a destructive or constructive way might have an influence on the possibility of the occurrence of craving.

In some other examples, music was used as background music while conducting other activities like cleaning, drawing or working on a computer. In those situations, the focus was more on the activity rather than on the music. *Dennis* experienced that this would reduce the amount of associations that would arise as opposed to when he would fully focus on the music, as noted in the quote below. While less associations arose, the chance for craving became less for him. Therefore, one can wonder if the chance of craving becomes smaller when a client uses music as background music. On the other hand, when a client would fully focus on the specific music and the evoked associations the possibility of craving might increase.

“It is how important or how important you make that music or how much you allow it. And when you are doing other things, then it is just a background sound. And if you take the focus of that [the other activity] and you put the focus on that music, then the associations arise more often.” (*Dennis, client*)

*Roeland* and his client *Lucas* described another possible function, namely intentionally listening to music that is connected to substance use with the aim to induce a feeling of being intoxicated. In some cases, this music is related to a personal substance use experience or the music has explicit lyrics which refer to substance use. *Roeland* explained that these clients are trying to maintain the addiction mechanism instead of trying to change it, as described in the following quotation. He experienced that this use of music could induce craving. Therefore, one might wonder if this function of music listening increases the possibility of craving.

“There are clients who have a strong tendency to listen to music which is connected to a strong personal substance use experience, for example. So it can be music that, yeah, was played in a coffeeshop or music that was played during hardstyle parties. (...) It is also some sort of self guided, it can be that as well. (...) So, for example that clients listen to Reggae for a long time. Then they cause, then they actually maintain their addiction mechanism by continuously seeking out that feeling of ‘oh yeah, this is good music, while it recalls the feeling of being intoxicated.” (*Roeland, music therapist*)

### *Stability*

The final situational factor seemed to be the degree of stability of the client. *Prabha* experienced that the chance of craving reduced the more her clients moved towards a successful ending of their treatment. Clients became more self-confident and created more distance from their addiction the longer they remained abstinent. *Louise*, for example, thought she experienced less craving, because she felt more confident after being in treatment for a longer time. She became aware of the negative effects of substance use and did not want to relapse to her old behavior and life. Similarly, *Rick* experienced that the better he felt about himself, the less craving he would experience.

“I think that when you’re stable, then it [craving] has less impact on you. Then you’re. Not anymore craving like in the phase where you didn’t feel good. Where you’re still active or close to the addiction. I think the stronger you become and the closer you are to successfully completing the treatment, the smaller the chance becomes to experience that feeling of craving.” (*Prabha, music therapist*)

“Yes [answering to the question if music therapy had an influence on the decrease of craving], because I gained more self confidence, yes. (...) Yes, that you keep your feet more on the ground and think, yes, I don’t need that [substance use] anymore. (...) I want to built on my future. I’m strong now. And if I concede to it [substance use], then I’m back to square one.” (*Louise, client*)

“But and the longer you feel better, a bit more comfortable in your own skin, the more it [craving] reduces, yes.” (*Rick, client*)

Lastly, *Roeland*, theorized that the craving responses might reduce when clients develop new coping strategies. As mentioned earlier he thought that craving is related to the function of substance use. Therefore, one can wonder that if the function of substance use is replaced by new coping strategies, the need to use substances might become smaller and therefore the craving response might reduce as well. The music-induced craving through the urge to suppress negative emotions evoked by associations with negative life-events could possibly be reduced when a client learns new coping strategies to cope with those emotions. However, the clients did not express experiences like this.

“Perhaps it is the case that if you, for a while, go through life sober and you’ve developed new skills, that on a certain moment. Yeah, how do you describe it, that the conditioning aspect, so to say,



disappears of the music and that it again is possible to just bear that particular music without feelings of craving.” (Roeland, *music therapist*)

#### 4.1.5 Coping strategies

The final aspect of the conceptualization of the phenomenon is the use of coping strategies to deal with music induced craving. The coping strategies were used to reduce the experienced craving, gain control over the craving or prevent it.

##### *Removing the musical trigger*

First of all, when clients experienced music-induced craving they tried to remove the musical trigger, by for example turning off the music or skipping the song. There were, however, also instances in which the clients could not control the music and therefore walked away from the situation. The following quotations illustrate this coping strategy.

“And when music is played, for example, downstairs at the ward, then I walk away from the room. Just going to my own room for a while.” (Lucas, *client*)

“Yes, actually very simple. Then I skip it [music that evokes craving]. Then, I mean, yes, that’s the downside of the radio, that doesn’t work then. Yes, then you can walk away or turn it off, but I, then I just skip a song. Or if a song evokes a bad mood or a bad feeling or something like that, then I just skip it.” (Dennis, *client*)

##### *Shifting focus away from craving*

On the other hand, clients tried to shift the focus away to something else. They sought distraction by engaging in other activities that would take their mind off the craving. Lucas described that he could shut himself off from the musical trigger and focus on something different. Then he would still hear the music, but not listen to it anymore, as pointed out in the quote below.

“Yes, starting to do something else. (...) Put the television on or doing something else, engage in something.” (Rick, *client*)

“I think it’s [coping strategy] more engaging with my own things. So that is, yeah, ignoring I think. (...) Or yeah, focusing on something else. (...) Yeah, then, yeah. Off course you hear it, but you don’t listen anymore. That’s it I think.” (Lucas, *client*)

### *Sharing*

*Lucas* also described that he tried to share the experienced craving by talking with others. Whenever he did so, the craving reduced as pointed out in the quotations below. The other clients did not mention this coping strategy.

“When the [music] session is done, then I ask downstairs [at the ward] a moment [for a conversation] to blow of some steam; like ‘well, my craving has increased, this and that has happened, occurred or I’ve experienced this.’ And sharing makes lighter, so then it [craving] reduces quite quickly.” (*Lucas, client*)

### *Avoiding music*

Lastly, in some cases clients decided to avoid specific music. This strategy is not conducted when craving is experienced, but as a preventive method. The avoided music was either strongly connected to substance use experiences or was known to elicit certain emotions that the clients did not want to experience. According to the music therapists, clients sometimes developed anxiety towards listening to music they had been avoiding for a while.

“And I already had to get rid of some cd’s. (...) Enigma, I really liked that, but when I started to look into what it actually was, I thought ‘that really has to go’.” (*Lucas, client*)

“So if you then hear an emotional song, then yeah. Then you [get] teary eyes. And then, yes, you just try to avoid those songs a little bit. Yeah, because you don’t want to experience those emotions. So, yeah.” (*Louise, client*)

This section described the conceptualization of the phenomenon of music as a trigger for craving derived from the data-analysis. To summarize, the process started with coming across specific music either intentionally or by being exposed to it. Hereafter, associations arose either concerning substance use experiences or negative life-events. The substance use experience was possibly followed by craving, because the clients seemed to long to re-experience it and were reminded of substance use. In contrast, the negative life-events would lead to negative emotions, which the clients wanted to suppress through substance use which in return could evoke craving. These associations would in some cases lead to craving, but in others not. Situational factors seemed to influence this possibility of craving. Furthermore, clients appeared to use several coping strategies to deal with music-induced craving. The next section will focus on the music therapy approaches which the music therapist in the current study used to deal with this phenomenon in music therapy.

## 4.2 Music therapy approaches

The interviewed music therapists appeared to have different approaches concerning how to address the phenomenon of music as a trigger for craving in music therapy. There was a distinction between directly focusing on the phenomenon or indirectly by treating underlying issues. *Roeland*, as mentioned in the quote below, thought it is very important to focus directly on the issue, while it is an inevitable topic according to him.

“I think, yeah, in music therapy it is sort of, yeah, the elephant in the room which you can’t ignore. So that [the relation between music and craving] just has to have a place [in music therapy] and that needs attention. I think that it [music therapy] is the appropriate way of dealing with that [music as a trigger for craving].” (*Roeland, music therapist*)

*Prabha* on the other hand changed her view throughout her career. In the beginning she focused on craving directly, but later on in her career she started focusing more on the underlying issues while this would also influence the phenomenon. Therefore, directly approaching the phenomenon became less apparent in the therapy.

“I think that craving is something, through which you can learn to get hold of something you didn’t had until now. So I believe it’s very important. I notice that in the past I focused more on it [the phenomenon of music as a trigger for craving], because then I also treated addiction differently. Then I was still in the beginning [of my career] here and then the addiction was at the center of attention. Not that much, but more pivotal than now. Now it is really. In my own development as a therapist I realized more, or in the meantime I know, how it works a little bit. And therefore, it got a different role in my therapies. But surely. It is an essential part of the whole. I just think that the direct focusing, where people do perhaps often are in need of, because they are so used to having to work with their addiction. While I think, well, that can also go a bit more to the background and so you get more and more grip on what you’re most scared of. So you’re working more on the underlying issues.” (*Prabha, music therapist*)

*Diewertje* pointed out that whether or not she would focus directly on the phenomenon depended on the goal setting of the therapy. The following paragraphs describe both the direct and indirect approach more thoroughly, based on the viewpoints of the interviewed music therapists. The final paragraph displays the effect that music therapy had according to the participating clients.

### 4.2.1 Direct approach

The direct approach conveyed that the music therapist and client focused directly and specifically on the phenomenon of music as a trigger for craving. The music therapists identified several goals:

- Recognizing craving
- Becoming aware of the relationship between music, substance use and craving
- Developing coping strategies to deal with craving

All of these goals were worked on in a later phase of the treatment, when the clients would already be more stable. For clients in the beginning stage of the therapy, including detoxification, the focus on the phenomenon itself was thought to be too risky. Safety and some stability were needed before starting to focus on these goals.

The music therapists found it important that the clients learned to recognize craving and learned to see the relationship between music, substance use and craving. As mentioned before, craving became noticeable by bodily reactions. Therefore, these were used in the process of working on these goals. *Roeland*, for example, would in a later stage of treatment challenge clients to bring music to the therapy which they related to substance use. He chose to expose the clients to musical triggers in order to explore their responses to that music. Whenever he observed physical reactions tied to experiencing craving, he would mention this to the client. On the one hand it would help the client to identify bodily signals, which can assist in learning to recognize craving. On the other hand, it helped the clients to realize that music can be a trigger for craving and therefore clarify the relationship between music, substance use and craving. The quotes below illustrate this viewpoint.

“You observe something, that someone for example starts to sweat or something like that. That are really very convenient moments to convey this to the client in a response ‘I see this [physical] reaction with you.’ Or if someone describes a feeling: ‘well, is this then also the feeling through which. Is this then also the feeling when you feel the need to start using [substances]?’ (...) And that you then at a certain point create the awareness that there is a relationship between the music and the substance use, whether or not sort of indirectly. ‘I hear that music. I feel this, because I feel this, my craving increases and I could start using’.” (*Roeland, music therapist*)

“Yes, so that is an aim to work towards, that with music listening, that you then at a certain point craving as such, yeah, can recognize.” (*Roeland, music therapist*)

The other music therapists chose not to expose the clients, but rather wanted craving to occur naturally in the music therapy. *Prabha* stated that craving is something that occurs unexpectedly and wanted this to happen in music therapy as well. Therefore, she did not ask clients to bring music which is related to substance use to therapy nor expose clients to music

which she selected with the aim to evoke craving. She thought that whenever you work with music listening and emotions there is a chance that craving can occur. If this happened naturally, she would, similarly to *Roeland*, explore the response to that music. In some cases, she also gave feedback about the observed bodily reactions. Her viewpoint became apparent in the quote below. Furthermore, *Diewertje* noted the importance that clients become aware of the relationship between music and craving independently. She experienced that clients do not always agree with the observations of the music therapist.

“No, no. We don’t do that [exposing clients to music that evokes craving]. Because I think, craving is something that in particular happens unexpectedly. It surprises a client actually a little bit (...). So, I think it’s important that it occurs similarly in music therapy, as it is natural for the client (...). While I think that always when you’re dealing with emotions, you actually play with that [craving]. It is almost something of which you assume that it [craving] could happen. But it is not something that I consciously implement. ‘Today we’re going to deal with that’. That is really something which I think should occur naturally.” (*Prabha, music therapist*)

“Yes, principally it’s really about becoming aware, so to say, then I try and that often doesn’t work, especially with youngster, so to say, if they don’t see or feel it [music-induced craving] like that themselves, then. Then, yes, they should actually experience by themselves that it [specific music] can indeed form such a strong trigger and sometimes after a while it is like that.” (*Diewertje, music therapist*)

Once the clients became aware of the relationship between music and craving, *Diewertje* also focused on becoming aware of the function and meaning of that music. For example, there were clients who listened to André Hazes while drinking alcohol to intensify certain emotions. When they would listen to that music when being abstinent the meaning changed. The clients could not bear those negative emotions while being sober and would link it to substance use. Other clients listened to reggae music to feel relaxed when being abstinent even though that music was strongly connected to substance use and could evoke craving. The clients learned to become aware of this change in meaning and function. However, reframing this meaning appeared to be difficult. In some cases, it was even necessary to find new music that would replace the music related to substance use.

“Yes, but that change of the meaning is anyhow very difficult, that is not really easy in music therapy. So it is more that you then, the awareness for example, if you then indeed talk about what I often hear, people who for example when they drink alcohol, start listening to all the songs of André Hazes. And then they enjoy going into the deep, you know. (...) Then you say: ‘okay, but you’re not drinking right now and you, still it recalls too much of the same feeling. (...) Because often it is the case that when they’ve been drinking, then they can bear the music and it’s something nice. And when they don’t drink, then it does have a different meaning. Only it evokes a lot of craving, they link it straight away with ‘I always listened that while I was drinking’.” (*Diewertje, music therapist*)

Another goal in the direct approach was developing coping strategies to deal with craving. *Prabha* noted the importance of gaining control over the craving, while it is one of the core skills one needs to be able to remain abstinent. The music therapists described several coping strategies which they aimed to develop, such as seeking distraction by engaging in other activities, as mentioned in the quotes below. This would take the focus away from the craving and therefore reduce it. As *Prabha* stated, this would prevent the client from intensifying the feeling of craving. The strategy of sharing the experience of craving with others was thought to have the same effect.

“Sometimes it’s just calling someone or talking to someone and express that you’re suffering from craving. And sometimes it is also trying not to focus on the feeling of ‘I want something now’. Go and distract yourself, get in touch with people. (...) When you’re really focusing on that feeling [of craving], then it becomes stronger and then you need something [substances]. And if you try to distract yourself, you let the craving come through less and then it comes through less.” (*Prabha, music therapist*)

“Look, if off course the craving is very strong, then I think it is also good to seek distraction or to redirect your focus, your attention.” (*Diewertje, music therapist*)

The above mentioned strategies aim to reduce craving by taking action. However, *Prabha* and *Diewertje* thought it is also important that clients learn to bear craving and accept it without actively trying to change it, particularly when the craving is connected to experiencing negative feelings. The clients can learn that it is not wrong to experience negative feelings and craving, and that one can just move along with it until it disappears naturally. The client could put the craving into perspective and not intensify it by his/her thoughts. However, when the craving is too strong it is better to seek distraction. The clients can learn to assess which coping strategy is more beneficial for them in the moment. The quotes below illustrate this viewpoint.

“But often when craving for example is evoked through sadness or something like that, a very strong sadness, you know. Then you start searching like ‘okay’, that people become aware of that and that it’s normal, that it’s something you can learn to bear, so to say. So that it’s not something wrong, but just like a feeling of sadness. That someone then gets craving, but actually it’s also sadness and that you also can, go through it, crave along with it, so to say.” (*Diewertje, music therapist*)

“Seeking distraction or actually to learn to talk about it and to learn that the feeling [of craving] can be there and that it does not have to become very big and through that I don’t have grip on it anymore. It’s really about gaining some control over what is happening to you. Those feelings are allowed to be there. That estimations when it’s good to seek distraction and not focus on it and when, yeah, can you just accept that it’s there.” (*Prabha, music therapist*)

Avoiding music was thought to be beneficial when it forms a too strong trigger for craving. Changing the meaning of those songs appeared to be impossible in some cases, according to *Diewertje*. In this case it was better to avoid the music and discover new music to listen to. However, that can be difficult, while some clients have identified themselves with certain music and therefore have difficulties not listening to it, as *Roeland* described in the quote below. On the other hand, *Prabha* thought it can be dangerous to avoid music, while it can always occur somewhere and in those cases the client does not know how to cope with it. Instead, she encourages clients to cope with that difficult music and avoid avoidance, as stated in the quotation below. Clients seemed to develop anxiety towards the avoided music, which when focused on in music therapy could be taken away. Often the response to the music is then less strong as the clients expected.

“There are also addicts, I’ve noticed that for a long time, they’re triggered so strongly by [specific music] and they’re so addicted that you really, yeah, you actually really have to avoid listening to certain music.” (*Diewertje, music therapist*)

“You can also not not listen to it [music related to substance use], while you’ve identified yourself with it in the past.” (*Roeland, music therapist*)

“It can always happen that you listen to music and then when you’re panicking, then [something] happens, yeah, actually that what you [don’t want]. So I think ‘learn to deal with it’. Learn to, in the moment that you perhaps get an uncomfortable feeling, to talk about it or find something which helps you to deal with it. Rather than to say I avoid it. I think that avoiding something is always a sign that you’re really not, you can’t really stand it and I always think that is scarier for a person than to say I’m gaining control over it.” (*Prabha, music therapist*)

To obtain the goal of developing coping strategies, music therapists discussed and practiced the above mentioned coping strategies. They made the topic discussable in therapy in order to teach the clients to talk and share experiences with craving. They discussed which activities they could undertake to distract themselves. Furthermore, *Prabha* stated to analyze the feeling of craving to investigate why it in some cases became so strong and if that was realistic. This might help the clients to learn to put craving into perspective and not intensify the feeling. Lastly, *Roeland* and *Diewertje* sometimes searched, together with clients, for new music to replace strong musical triggers. Such triggers could then be avoided.

### 4.2.2 Indirect approach

The music therapy appeared to mostly focus on underlying issues of the substance use disorder. It seemed as if this indirectly had an impact on the phenomenon of music as a trigger for craving. Therefore, this approach was named the indirect approach.

One of the frequent mentioned goals concerning underlying issues was enhancing emotion regulation skills. As described earlier, many clients use substances to regulate their feelings instead of using healthy skills. In music therapy, clients first learned to recognize emotions. Then they would learn to bear experiencing emotions and reduce their anxiety towards them. Finally, they would learn to use music listening or other actions to influence and regulate their emotions. This whole process would counteract the need to use substances to suppress feelings. As mentioned in the paragraph of situational factors, the capability of regulating emotions without substance might influence the possibility of craving evoked by music which was associated with negative life-events. Therefore, one might wonder if working on this underlying issue would indirectly influence the phenomenon of music as a trigger for craving.

“What you actually want is that they develop a different coping. You actually want that the clients can leave that addiction-mechanism for what it is. And that they then, yeah, that they can just experience their emotions and that they can learn that it also has a natural course and goes away again and that music can contribute to that.” (Roeland, *music therapist*)

Another example of the indirect approach is working on the goal of gaining insight into the function that music listening has for clients. As described in the section of situational factors, music was in some cases used in a destructive way to lose oneself in negative feelings or to purposefully induce a feeling of being intoxicated. On the other hand, it could also be used in a positive way to enhance relaxation or cope with negative emotions for example. The music therapist focused on enhancing the awareness of clients of those functions of music listening and their impact, so that they could choose more consciously whether or not to use music in a certain way. The quote below illustrates this. Furthermore, they could learn to use music in more positive ways. While the function of music listening might influence the possibility of craving, one might wonder if focusing on this subject can reduce the occurrence of craving.

“And then [during music therapy] that clients quite often experience that they, that they also often used the music, so to say, not particularly to seek a positive mood, but sometimes actually to move towards the destructive. And they are often not aware of that, but only if you then, so to say, focus on that in music therapy then: ‘oh yeah, I recognize that actually, then I listen to certain music and then I started



to feel more and more miserable and then I didn't want anything anymore, something like that." (*Diewertje, music therapist*)

As mentioned in the beginning of this section, the phenomenon can be approached directly and indirectly. Often the focus in music therapy seems to be more on dealing with underlying issues of the substance use disorder, which might indirectly have an impact on the phenomenon of music as a trigger for craving. However, on the other hand the phenomenon was dealt with directly by specifically focusing on craving responses to music, either naturally occurring in music therapy or by conscious exposure by the therapist.

### 4.2.3 Clients' perceived effect of music therapy

Finally, this section will describe the effect that music therapy had according to the clients. Only *Lucas* described how music therapy directly influenced the phenomenon of music as a trigger for craving. He learned to cope with craving differently, as he describes in the quotation below.

"But the choice to follow a different path [without substance use] becomes more and more easy. And that is also caused by doing music. Really also by the music therapy sessions (...). If I associate something now, then I can be consequent for myself and say 'well, I notice this. I don't want to hear this. I walk away or I step away.'" (*Lucas, client*)

However, all clients described how music therapy had an impact on underlying issues. Some clients described that music therapy helped with self-acceptance and increasing self-confidence, like *Lucas* and *Louise* state in the quote below.

"Roeland, the music therapist, he let me listen to music, through which I could really accept my sexuality more easily." (*Lucas, client*)

"I gained more courage through that [music therapy]." (*Lucas, client*)

"Yeah, just gaining more self confidence, like, yeah, that's how I want to do it, that's how I'm going to do it. Period. And then it is okay. Or it goes better (...) Yeah, because of that [music therapy] I've gained more self-confidence. (...) That you stand more with two feet on the ground and that you think, yeah, I don't need that [substances] anymore. (...) I want to reach a future. I'm stronger now." (*Louise, client*)

Clients also experienced effects concerning emotion regulation, as described in the quotes below. *Rick* for example learned to recognize emotions and link music to them, while *Louise* developed her capability of expressing emotions and *Lucas* learned to share emotions with

others. Furthermore, *Dennis* learned to use music more consciously to influence his emotions.

“I gain, I think, a lot from music therapy. (...) And that you can make connections between those four basic emotions. That you are better capable of making connections between those. (...). Yeah, better can recognize and better point out [emotions].” (*Rick, client*)

“That was what I actually learned in music therapy. That I do too much with my mind and too little with my feelings. So I think then ‘ooh, I’m doing it wrong. Ooh, I have to do it like this. That sounds better, this sounds better’, but after a while I just went along with the flow and then I just had to let my thoughts go and then my feeling arose again and then, yeah. Then something came out (...). Yeah, letting things go and let my feelings speak more than my mind.” (*Louise, client*)

“And not doing it alone, what I was talking about in the beginning. Here [in music therapy] you really work together and now I see the advantages of doing things together. Because, yeah, together is something very beautiful. You. And especially when you haven’t learned that. And yes, here I got the chance to learn that.” (*Lucas, client*)

“That I consciously started to work with music again. After I quit [working for] the radio, I’ve listened little to no music for a while. And I’ve also learned now to use music in a different way to influence my mood and not to intensify my mood. That is actually the biggest learning moment.” (*Dennis, client*)

Another impact mentioned was the increase in interest of music and the discovery of new music. Like *Lucas* described in the quote below.

“Now it’s just that I only want to listen to music that fits to me. And, music is bigger then only what I listened to and therewith I, yeah, got further here.” (*Lucas, client*)

The clients’ descriptions showed that they mostly experienced an effect of music therapy on underlying issues. However, the client whose music therapist directly focused on the phenomenon did mention a development in the coping strategies he used to cope with music induced craving.

## **5 DISCUSSION**

The current chapter will provide a discussion of the findings displayed in the previous chapter the validity and reliability of the study, its limitations, possible implementations of the study and recommendations for future research.

### **5.1 Findings**

The aim of the current study was to explore if music can elicit craving, if so, how music can elicit craving and to explore possible music therapy approaches which are used to address the phenomenon of music as a trigger for craving in music therapy. First of all, the findings which answer the first two questions concerning the phenomenon will be discussed. Afterwards findings concerning possible music therapy approaches to address the phenomenon will be reflected on.

#### **5.1.1 Conceptualization of music as a trigger for craving**

The results, as displayed in the previous chapter, showed that music can possibly elicit craving. However, this was not the case for all clients. This coincides with the findings of Short and Dingle (2015) in which self-selected music related to substance use could significantly increase self-reported craving for the majority of the participants. Similarly, a study by Dingle, Kelly, Flynn and Baker (2015), which was retrieved after conducting the data-analysis of this study, showed that 43% of the participants reported that particular music could increase the urge to use substances. These results indicate that music can indeed increase and elicit craving for some clients, but not all. It remains unclear why certain clients do experience music as a trigger for craving and others not. However, in the current study the music therapist of the client who did not experience music as a trigger for craving noted that the client was unaware of those experiences and therefore noted that music did not elicit craving. One can wonder if this unawareness partially explains why some clients report not experiencing craving through music listening, while all mentioned studies relied on self-reports of the participants.

The second question, how music can evoke craving was answered in the conceptualization, which was displayed in the previous chapter. Specific music, which clients came across intentionally or via exposure, could evoke associations with either substance use experiences or negative life events. The associations with substance use experiences seemed to evoke craving, while the clients longed to re-experience those experiences. On the contrary, the negative life-events associations would lead to craving, while they elicited negative emotions which the clients wanted to suppress through substance use. The finding that music might elicit craving through associations with both substance use experiences and negative life-events possibly indicates that music is a more complex trigger than merely an auditory cue. Short and Dingle (2015), for example, view music as an auditory cue which was present in the environmental context of substance use. Similarly, Fachner (2010), Ficken (2010) and White (1996) proposed that music can become a cue for substance use through a process of classical conditioning in which music and substance use have been paired repeatedly. However, Polston et al. (2011) also proposed the idea that music might be a more complex trigger than just an auditory cue in their experimental research on music as a cue for substance use with rats. Similarly, research by Dingle et al. (2015) showed that music could increase craving when it was, among other things, associated with past experiences of substance use or when it evoked emotions related to substance use.

The finding that specific music associated with negative life-events can evoke negative emotions correlates with the theory of Juslin, Liljeström, Västfjäll and Lundqvist (2010) concerning how music can induce emotions. Among other things, music can induce emotions through episodic memory, in which music elicits a memory of an event which then evokes certain emotions. Another possibility is through evaluative conditioning, in which music evokes emotions, because the music has been paired with other positive or negative stimuli such as negative emotions. The finding that craving arises because the client wants to suppress negative emotions, corresponds with theories that craving arises because the substance abuser wants to relieve the aversive state (Loth, Rutten, Huson-Anbeek & Linde, 1999; Skinner & Aubin, 2010) and with the findings of Horesh (2006a) that clients can drown in negative feelings and reach out to substance use to deal with those emotions. The current finding that music elicits craving in multiple ways seems to imply that music is indeed a more complex trigger for craving than merely an auditory cue.

Another finding which add to the existing body of knowledge is the possible influence of situational factors on the possible occurrence of craving. To my knowledge, this has not been reported in preceding research. Situational factors in the current study appeared to be the mood of the client, the function of music listening and the stability of the client. The finding that a negative mood might increase the possibility of craving through a musical trigger corresponds with the findings of Schlauch et al. (2013), which indicate that higher levels of negative mood increased approach inclinations (including craving) after cue-exposure.

The function of music listening, either constructive or destructive, similarly seemed to influence the occurrence of craving. A more constructive use, for example to regulate emotions, might decrease the possibility of craving, whereas a destructive function, like loosing oneself in negative emotions, might increase the possibility of craving. It is known that music can be used both in constructive and destructive ways. Saarikallio (2008) for example, described that music can be used to induce positive feelings (entertainment), to relax (revival), to experience strong emotions (strong sensation), to distract oneself (diversion), to release anger and sadness (discharge), as a form of mental contemplation (mental work) and to feel accepted and understood when feeling sad or troubled (solace). McFerran, O'Grady and Sawyer (2013), on the other hand, found that some adolescents with psychopathology use music to hurt themselves, i.e., 'musical cutting'. However, to my knowledge no study has yet focused specifically on the influence of the function of music listening on the possible occurrence of craving.

Lastly, the stability of the client appeared to influence the possibility of craving. To my knowledge, little research has been conducted concerning the effect of the stability of the client on the experience of craving. However, one study by Lou, Wang, Shen, Wang (2012) illustrates that in clients with heroin addiction, who were long term abstinent, brain responses to heroin-related cues decreased significantly comparing to when they were short-term abstinent. This might form preliminary evidence that the longer a client is abstinent and therefore more stable, the less strong craving responses will be. However, it is unsure if the possibility that craving will arise is also influenced by the degree of stability of the client.

### **5.1.2 Possible music therapy approaches to deal with music as a trigger for craving**

The findings of the current study show that the participating music therapists used different approaches to deal with music as a trigger for craving in music therapy. These approaches could be categorized under a direct and indirect approach. When using the direct approach, the therapist focused specifically on the subject of music as a trigger for craving in music therapy with the aim to learn to recognize craving, to become aware of the relationship between music, substance use and craving, and to develop new coping strategies to cope with craving.

The indirect approach, on the other hand, consisted of working on underlying issues of the substance use disorder, which was thought to indirectly effect the phenomenon of music as a trigger for craving. Enhancing emotion regulation was, for example, one of those underlying issues. Some clients use substances to regulate their emotions. However, when clients learn new coping skills to deal with those emotions, the need to use substances might be replaced. This process might in turn influence the possibility of the occurrence of craving when listening to music which evokes negative emotions through associations with negative life-events. Furthermore, if the stability of the client has an impact on the possibility of craving one can wonder if the focus of music therapy on enhancing the stability of the client might also indirectly influence the possibility of craving. To my knowledge, this idea has not yet been described in literature. However, research by Baker et al. (2007) did reveal a positive effect of music therapy on the possibility of experiencing emotions without the need to use substances. Moreover, research by Hwang and Oh (2013) provides preliminary evidence that music therapy can significantly reduce anger, stress and depression in clients with alcohol addiction. However, other research does not support these findings (Albornoz, 2010; Silverman, 2011). On the other hand, the client descriptions concerning the perceived effect of music therapy revealed that the therapy could enhance coping strategies to deal with craving, increased self-confidence and self-acceptance, enhanced emotion regulation skills, and assisted in discovering new music to listen too. Therefore, it seems that music therapy can have a positive effect on underlying issues of the substance use disorder. However, more research is needed to explore the effect of working on underlying issues on the possible occurrence of craving through music listening or the occurrence of craving in general.

Even though the findings concerning the direct approach mostly correlate with preceding literature, some findings complement the existing body of knowledge. First of all, within the direct approach there appeared to be different ways of addressing the phenomenon of music as a trigger for craving. On the one hand, one music therapist exposed clients to musical triggers by asking them to bring music related to substance use to the therapy or by exposing clients to different musical genres related to substance use and explicit music referring to substance use. These interventions coincide with the cue-exposure method as described by Horesh (2006a) and the method of Dijkstra and Hakvoort (2010). On the other hand, one music therapist chose not to expose clients, but only focused on the craving when it naturally occurred in music therapy. To my knowledge, this approach has not been described in research yet. Despite the differences in those approaches, all music therapists explored the responses to the musical trigger, which corresponds with the ideas of Horesh (2006a) and Dijkstra and Hakvoort (2010), including focusing on bodily signals. Furthermore, one therapist aimed to reframe the meaning of the musical trigger, which is similar to the ideas of Ficken (2010) and White (1996). Lastly, all therapist aimed to enhance coping skills to deal with craving. For example, in some situations clients were advised to avoid listening to specific music which formed a too strong trigger for craving. In therapy new music was sought to replace these very strong musical triggers. These interventions concord with literature of Horesh (2006a), Hakvoort and Dijkstra (2012), and White (1996). On the other hand, some music therapists thought that besides sharing the craving experience or seeking distraction, clients could also learn to bear craving. This corresponds with the idea of Dougherty (1984) that clients, once they are aware of musical cues, can learn to decide to either remove the trigger, listen to music that elicits a more positive reaction or to keep listening and work through the feelings that elicit craving.

Lastly, it was interesting to note that none of the participating therapists excluded musical triggers completely from the therapy, even though this approach of excluding musical triggers has been described in literature (Horesh, 2006a; White, 1996). However, musical triggers were often only introduced in a later stage of therapy when the clients were more stable and safety in the music therapy was provided. All therapists agreed that this phenomenon should have a place within music therapy, regardless of the differences in used approaches. Clients can come across these musical triggers anywhere, therefore avoiding them completely seems to be impossible. Moreover, if these triggers are avoided in music therapy clients do not learn

how to cope with them in their daily lives and might develop an anxiety towards listening to that music.

## **5.2 Reliability and validity**

The following section aims to discuss the reliability and validity of the findings of the current study. Some qualitative researchers have ignored to review issues of reliability and validity in their studies, based on the belief that those concepts are designed for quantitative research and are not applicable to qualitative research (Brinkmann & Kvale, 2015). Reliability in the context of quantitative research refers to whether or not results are replicable. Validity, on the other hand, indicates the degree to which used measurements are accurate and whether they actually measure what they are destined to measure. These concepts are tied to the main goals of quantitative research to seek causal determination, prediction and generalization of findings in which the credibility of the research relies on the instrument construction (Golafshani, 2003). Qualitative researchers, on the other hand, 'seek instead illumination, understanding and extrapolation to similar situations' (Golafshani 2003, p. 600) in which 'the researcher is the instrument' (Patton, 2001, p. 41). These differentiating goals in combination with a different philosophical view regarding research, have lead qualitative researchers to redefine terms of validity and reliability. Lincoln and Guba (1985, as cited in Golafshani, 2003), for instance, examine the value of their findings using concepts like trustworthiness, credibility, dependability, and confirmability.

Brinkmann and Kvale (2015), on the other hand, decided to redefine the original terminology of validity and reliability in the context of qualitative research using interviews. They define reliability as the consistency and trustworthiness of research findings, whereas validity indicates the truth, correctness and strength of findings. Furthermore, Brinkmann and Kvale (2015) described practical ways how qualitative researchers can enhance and examine the validity and reliability of their research. First of all, the objectivity of the study can be investigated in order to identify the degree of reliability and validity. Even though qualitative interview studies investigate the subjective reality of participants it does not mean that the produced knowledge can not be objective (Brinkmann & Kvale, 2015). Objectivity can, among other things, be obtained when research is conducted free from personal bias and prejudice. During this study, I reflected on my personal bias and prejudice throughout the



process of data collection and analysis. Prior to conducting interviews, I wrote a research epoch and afterwards I kept writing reflective memos throughout the research process. As Brinkmann and Kvale (2015) proposed, objectivity can mean ‘striving for objectivity about subjectivity’ (p278), while it is important to realize that the researcher forms a part of the studied world when conducting qualitative research (Charmaz, 2006). Furthermore, during interviews the participants and researcher negotiate meaning in which the participants should feel free to object statements made by the researcher. During the interviews I kept reflecting back what participants stated in order to provide the opportunity to rectify misunderstood conceptions, which happened several times. Objectivity can also be obtained by inter-coder reliability in which several people independently code a set of data. However, this is mostly done with deductive coding where a predefined data set is used for analysis. However, this was not the case in the current study. Instead the coding process was discussed with my supervisor.

Reliability, the consistency and trustworthiness of findings, depend mostly on whether or not data is reproducible. Therefore, data obtained from interviews is not reliable when the subject changes his opinion during the interview (Brinkmann & Kvale, 2015). Therefore, I asked several questions about one topic during different moments in the interview in order to investigate whether or not the client would change his opinion. Furthermore, I made sure to ask open-ended questions and avoided leading questions, since leading questions are thought to reduce the reliability of the answers of the participants (Brinkmann & Kvale, 2015). Concerning the transcription of the data, it was important to precisely transcribe every word mentioned by the participant. I checked the transcriptions several times in order to reduce the chance of errors.

Validity of the research, the truth, correctness and strength of findings, can be increased through careful questioning about the meaning conveyed by participants and by checking obtained information throughout the interview (Brinkmann & Kvale, 2015). During interviewing, I tried to follow this guideline by asking clarification, further elaboration and by reflecting obtained information. Furthermore, this continuous checking and questioning should also be conducted throughout the analysis phase. I followed this guideline through constant comparative of the data, staying critical, and investigating possible falsifications of the findings. Additionally, I discussed findings and issues during the analysis process with my

supervisor. Lastly, the before mentioned objectivity plays an important role in obtaining valid findings.

### **5.3 Limitations**

When reflecting back on conducting this study some limitations became apparent. First of all, it is important to note that this was my first time conducting qualitative research using semi-structured interviews and constructivist grounded theory analysis. The experience of the researcher plays an important role in the quality of the research (Brinkmann & Kvale, 2015). Therefore, the lack of experience in conducting this type of research forms a limitation. Another restraint is the fairly small group of participants on which the conceptualization is based. However, for the scope of this master thesis eight participants appeared to be the maximum attainable, since the analysis of the obtained data was highly time consuming. However, to create a more solid theory a bigger participants group would have been beneficial.

In retrospect, it would have been better not to schedule four interviews on one day, because it might have influenced the quality of the last interviews. Conducting one or two interviews per day was most favorable. However, there was no other scheduling opportunities possible. Planning interviews should be started as early as possible in the research process in order to prevent less favorable schedules. During interviewing it was in some instances difficult to make sure the participants did not stray too much from the path by discussing irrelevant side-topics. Furthermore, only one interview per participant was conducted. Therefore, it was not possible to further investigate certain gaps in the data or collect more data to check the accuracy of the conceptualization. However, these gaps have been mentioned in the results section and throughout the analysis constant comparative was used to investigate the accuracy of arising themes and categories. Besides, the viewpoints of both client and music therapist assisted in clarifying categories. Lastly, another downside to only conducting one interview per participant is the short amount of time to establish rapport with the participants in order to create an atmosphere of trust in which the participants feel safe to share highly personal information. Even though this was challenging, I did have the impression that my experience as a music therapist assisted in creating a safe atmosphere. Furthermore, the data shows that the participants felt comfortable with sharing personal information.

## 5.4 Implications and future research

The results obtained from this study might be implicated in music therapy within the field of addiction care. First of all, the finding that specific music associated with negative life-events might evoke craving, can possibly be implemented besides the cue-exposure method as described by Horesh (2006a). The music therapist could not only expose the clients to music related to substance use, but also to music related to negative life-events in order to investigate whether or not it elicits craving and if so, how to deal with the evoked craving. Secondly, the conceptualization model might be used as a preliminary tool in music therapy in order to enhance the awareness of clients concerning music as a trigger for craving. The data showed that the participants perceive the phenomenon to be complex and therefore a clear-cut visual conceptualization might be beneficial in making the phenomenon more concrete, both for music therapists and clients. The description of possible music therapy approaches might be used by novice music therapists in the field of addiction care, while it can be daunting at first to decide how to work with this phenomenon in music therapy. Therefore, it might be helpful to review ideas by other music therapists and use it as a base for their own practice. Also, experienced music therapists can benefit from comparing and reflecting on the approaches found in this study in order to further develop their own practice. Furthermore, the study might be used to inform co-workers and managers about how the phenomenon of music as a trigger for craving might work and which different approaches can be applied in music therapy to cope with this issue.

The findings of the study are still preliminary and need to be further investigated in future research. First of all, the conceptualization needs to be further developed in future research using a larger group of participants. As mentioned in the results section, there are gaps in information about some concepts which need to be further studied. For example, music related to negative life-events evoked craving because the clients wanted to suppress negative feelings which arose through the association. However, it is unclear whether or not music that evokes negative feelings, but which is not associated with negative life-events can also evoke craving. Furthermore, it remains unclear if music associated with a negative substance use experience will also evoke craving or not, while the substance use experiences described by the clients in this study were all positive. Also, the effect of situational factors on craving should be researched further to understand what this impact exactly entails and if there are

more possible situational factors. Moreover, the conceptualization can only be raised to a theory after extensive research with many different participants. Besides the conceptualization, more research is also needed concerning the possible music therapy approaches, while probably not all possible approaches have been described in this study. Therefore, it would be important to extend this knowledge in future research by interviewing more music therapists. Moreover, the effects of these approaches have not been identified in this study. When the possible music therapy approaches are further defined, an effect study might be conducted in order to investigate which approaches are most beneficial.

## 6 CONCLUSION

Craving is an important aspect of substance use disorder and is elicited by various triggers such as visual and auditory cues, mood and stress. Some clinicians and researchers have proposed that music similarly can form a trigger for craving. However, this phenomenon has not been researched extensively. Furthermore, little research has been conducted concerning the possible music therapy approaches to address the phenomenon of music as a trigger for craving in music therapy. Therefore, the aim of the current study was to explore if music can form a trigger for craving, if so, how music can elicit craving and to further explore possible music therapy approaches to address this phenomenon in music therapy. Data was collected through semi-structured interviewing. In total 7 participants partook in the study including 3 music therapists working in the field of addiction care and 4 clients with a substance use disorder. Constructivist grounded theory, as described by Charmaz (2006), was applied as method of data-analysis.

The results indicated that music can form a trigger for craving for most clients. It appeared that only specific music can form a trigger for craving. Clients came across this specific music either intentionally or through exposure. The specific music elicited associations, either with substance use experiences or with negative life-events. The associations with substance use experiences could possibly lead to craving while the clients seemed to long to re-experience those substance use experiences. The negative life-events, on the contrary, would elicit negative emotions which the clients seemed to long to suppress through substance, which could possibly result in craving. The before mentioned process would in some cases result in craving, however in other situations not. It seemed as if certain situational factors influenced the possibility of the occurrence of craving, such as the mood and degree of stability of the client and the function of music listening. However, more research is needed to further investigate the influence of those situational factors on the occurrence of craving. Furthermore, clients appeared to use several coping strategies to cope with craving such as removing the musical trigger, shifting the focus away from the craving, sharing the experience of craving and avoiding certain music. The obtained conceptualization concerning the phenomenon of music as trigger for craving needs further investigation in future research to strengthen the understanding of this phenomenon.

Furthermore, the findings resulted in a description of several music therapy approaches to address the phenomenon of music as a trigger for craving in music therapy. The participating music therapists appeared to apply different music therapy approaches, which could be categorized under a direct and indirect approach. When using the direct approach, the music therapists focused directly on the phenomenon of craving working on goals such as recognizing craving, becoming aware of the relationship between music, substances and craving, and developing coping strategies to deal with craving. One music therapist exposed clients to musical triggers in order to work on the previous mentioned goals, whereas another music therapist chose to only focus on craving when it naturally occurred in music therapy. Despite these differences, all music therapists explored the craving responses to the musical trigger including focusing on bodily signals.

The indirect approach, on the other hand, entailed working on underlying issues of the substance use disorder, which were thought to indirectly influence the phenomenon of music as a trigger for craving. The music therapists, for example, focused on enhancing emotion regulation skills with the aim to replace the use of substances to regulate emotions with other healthy coping skills. One can wonder, if this could result in a decrease of the need to use substances to suppress negative emotions evoked by listening to music associated with negative life-events, which might also result in a decrease of the craving response. The participating clients described that music therapy lead to a change in the way they used coping strategies to cope with music induced craving. Furthermore, music therapy resulted in an increase of self-confidence and self-acceptance, an enhancement of emotion regulation skills, and assisted in discovering new musical preferences. Despite the differences within the direct and indirect approaches, all music therapists thought it is important to focus on the phenomenon of music as a trigger for craving in music therapy, since clients can come across musical triggers everywhere in their daily lives. Therefore, this subject should be addressed in music therapy. However, more research is needed to further explore and elaborate on possible music therapy approaches concerning this phenomenon and to investigate the effect of different approaches on the phenomenon in order to establish which approach is most effective.

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