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# The Role of Music on Eating Behavior

*Aikaterini A. Karapetsa[1], Argyris V.Karapetsas[2], Bambou Maria[3], Irini-Rodopi M. Laskaraki[4,3]*

**Abstract**

*The fact is that eating behavior is influenced and determined not only by internal factors, thus innate factors concerning the individual, but also by external factors that form the so-called ambience and, especially, a dinner condition. Music is one of those factors, the power of which is equally observed in health conditions and in infirmities (physical or mental weakness).*

**Keywords:** Eating Behavior, Health, Nutrition, Music

## Introduction

Research data support the idea that food intake and an individual's eating behavior in general may be influenced not only by internal (physiological) factors, thus factors associated with the individual alone, but also by external i.e. environmental factors. A number of external (non-physiological) factors may influence individuals' food intake and also may act as food intake regulators, as they affect food choice or timing (amount of time spent) of a meal (Stroebele & De Castro, 2004, Zachari & Mamalaki, 2013). It should here be emphasized that external factors may be correlated directly with the food that is to be consumed and are related to how it is provided or presented, or act independently from the food themselves and consist in the microenvironment.

Factors such as food temperature, smell or food color, lighting or ambient sounds may affect energy intake and behaviors associated with it (Kotler, 1973, Wansink, 2004a, Rolls, Roe & Meengs, 2006, Péneau et al., 2009).

Conclusively, all these factors that determine ambience could stimulate perceptual and emotional responses of consumers and affect their behavior (Caldwell and Hibbert, 1999).

## Music, Brain and Feelings - Mood

Change in eating behavior occurs as a result of a mood change (improvement) that is observed in a music listening condition. In fact, this important change takes place in the brain (Karapetsas, 1988). More particularly, listening to music causes the release of a number of neurotransmitters such as norepinephrine and epinephrine as well as serotonin, dopamine, leptin and oxytocin which, when acting in combination, can affect and regulate mood. (Yamasaki, 2012, Chanda & Levitin, 2013, Cheng, 2013).

The emotional aspect of music affects a person's mood directly, inducing changes not only to his eating behavior but to his behavior in general (Gardner, 1985). Music listening has been identified as an effective means of mood regulation and improvement (North, Hargreaves & O'Neill, 2000) but also as a vehicle of stress reduction and relaxation (Saarikallio & Erkkilä, 2007). Furthermore, music can be used by all humans, regardless of age, for emotional understanding and self-regulation (Saarikallio et al., 2007, Davidson, Lange, McNamara & Lewin, 2008). Furthermore, the healing aspects of music are confirmed in conditions where people express feelings which may not be possible to be expressed by other means (Hargreaves and North, 1999). Finally, music enhances or alters emotions, is a means of relaxation and enables a person to gain valued emotional experiences (Juslin &Laukka, 2004, Karapetsas & Laskaraki, 2015).

1 External collaborator in Laboratory of Neuropsychology, Department of Special Education, University of Thessaly

2 Professor of Neuropsychology-Neurolinguistics, Department of Special Education, University of Thessaly & Head of Laboratory of Neuropsychology Department of Special Education, University of Thessaly

3 Member of Laboratory of Neuropsychology, Department of Special Education, University of Thessaly

4 PhD Candidate, Department of Special Education, University of Thessaly
Laboratory of Neuropsychology, Department of Special Education, University of Thessaly, Argonafton & Filelinon Str., GR38221, Volos, Greece, +302421074678/7, email address: laskaraki@uth.gr

## The Effect of Music on Eating Behavior

Various types and styles of background music influence human emotions, physiology and behavior in various ways (Roballey et al., 1985). Scientific data confirm the effect of music on an individual's cognitive functions, academic performance, intelligence and emotional state (Karapetsas, Laskaraki & Zygouris, 2011, Karapetsas & Laskaraki, 2015, Karapetsas, Laskaraki, Fotis & Psaltopoulou, 2015). In fact, scientific data support the idea that music affects purchasing and eating behaviors (Stroebele & De Castro, 2006, Smith & Ditschun, 2009, Hallam, 2012, Liu & Jiang, 2014). Moreover, as far as eating behavior is concerned, background music during a meal can influence not only the flavor and appetite but also the amount of food being consumed. Indeed, various music genres can have a different effect on food consumption (Wansink, 2004b, Wansink & Van Ittersum, 2012).

## Different styles of music and food consumption: How does background music influence food consumption rate?

Musical aspects such as tempo or volume of background music seem to influence eating behavior and food intake in different ways.

### Tempo –Rhythm of music

The food consumption rate seems to be influenced by the tempo of background music (Caldwell & Hibbert, 2002). A laboratory research conducted among university students revealed that participants were drinking faster when fast music was played than in a slow music condition (McElrea & Standing, 1992). Similar findings are corroborated by other researchers, where a slow consumption rate had been correlated with slow background music tempo (Milliman, 1986, Caldwell et al., 2002).

Thus, as confirmed by research data, tempo and music genre influence the food consumption rate. Slow tempo music results in decreased food intake (thus eating less), as it affects the food consumption rate. Contrarily, faster music is responsible for faster food consumption and thus increased food intake, until the consumer has reached the point of satiety, i.e. a sense of fullness (Wansink et al., 2012).

Moreover, the music genre is another factor that affects eating behavior. A study conducted in a restaurant showed that diners who ate while they were listening to classical music enjoyed more their dinner in comparison to diners that ate without background music (Novak, La Lopa & Novak, 2010).

### Intensity of music – Dynamics

Food intake seems to be affected by another music aspect, that of volume–dynamics. Thus, a high volume music increases food and drink consumption (North, Shilcock & Hargreaves, 2003, Gueguen, Jacob, Lourel and Le Guellec, 2007, Guéguen, Jacob, Le Guellec, Morineau & Lourel, 2008). Contrarily, a low music of lower volume, thus a more relaxed environment, increases meal satisfaction and decreases consumption. The findings of a study indicated that soft music led people eat less and rated the food and the dinner environment condition as being more enjoyable (Wansink et al., 2012).

## The Effect of Music on Patients' Eating Behavior

Several research data confirm the healing properties of music and its usage in rehabilitation settings of a wide range of disorders correlated to mental and physical health (Williamon & Valentine, 2002, Huang, Good & Zauszniewski, 2010, Chu et al., 2013, Karapetsas, Laskaraki & Laskarakis, 2014, Karapetsas & Laskaraki, 2015).

The following data confirm the crucial effect of dinner music on demented patients' eating behavior. Scientific data suggest that music has a positive effect on symptoms which are common in dementia disorders. People with dementia symptoms display a progressive and irreversible decline in mental ability, which is characterized by memory loss and critical thinking deficits. As a result, these impairments affect the patients' overall ability to interact successfully with the environment (Prince et al., 2013).

Research data support the idea that background music during a meal affects not only food intake but also the symptoms of demented patients, especially that of irritability, depressed mood and fear-panic (Goddaer & Abraham, 1994, Ragneskog, Bråne, Karlsson & Kihlgren, 1996, Denney, 1997, Heeok Park, 2009).

In fact, Ragneskog, Bråne, Karlsson & Kihlgren (1996) examined the effect of dinner music on demented patients of a nursing home in Sweden. In

particular, different dinner conditions had been arranged, where patients either listened to different styles of background music while they were eating or did not listen to any music at all.

The music intervention period lasted nine weeks. On the first week of intervention, patients ate without dinner music. For the next two weeks, soothing music was played as dinner music. Following the same period, patients ate their meal while Swedish tunes from the 1920s and 1930s were played and another two weeks pop music was played. At the end of the intervention there was a two-week control period, where patients ate their meal in the absence of background music.

As confirmed by the assessment that had been carried out by means of psychological tests, during all three music periods, patients ate more, particularly the dessert, in comparison to the period with no music. Music seems to have influenced the staff too, as they served patients more food, both main course and dessert, in all the music periods. Also, a significant effect was observed in the psychological well-being of the patients, as they were less agitated and irritable, less anxious and with enhanced mood during the music periods.

As a conclusion, it seems that music does have a great benefit on human health (Wheeler, 2015). In particular, as revealed not only by the certain study but as corroborated by other studies as well, music in general, and especially soothing music during a meal, decreases irritability, agitation, anxiety, fear-panic and depressed mood of demented patients. Moreover, of great significance is the fact that music can serve as a stimulator for hospitalized patients to increase their food consumption (Denney, 1997, Thomas & Smith, 2009, O'Neil & Freeman, 2011).

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