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Music as a 'friend in need'

An investigation of music preferences as moderators in the relationship between low social support and life satisfaction

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Abstract

The current study introduces the idea that certain types of music could be like a 'friend in need' and protect adolescents from the negative impact of low social support on life satisfaction (LS). First, the relationships between (1) music preference and (2) family/peer support and LS were investigated. Then, (3) six music preference categories (*Metal, Rock, Electronic, Pop, Urban,* and *Highbrow*) were examined as moderators in the relationships between family and peer support and LS, (4) scrutinizing potential gender differences. Data were used from the Dutch HBSC study (2013): the sample consisted of 5682 students, aged 10–18. As expected, the relationship between preference for Pop and LS was positive, whereas the one between preference for Metal and LS was negative. The preference for Rock was not associated with lower LS, highlighting the importance of examining Rock and Metal separately in music-related research. As predicted, both peer and family support were associated with higher LS. Furthermore, Urban was found to be a potential 'friend in need': when peer support was low, Urban fans reported higher LS than non-Urban fans did. Finally, gender did not influence the relationships between music preference, social support, and LS.

Keywords: music preference, adolescents, life satisfaction, social support, gender, HBSC, Netherlands

Introduction

Music is commonly known to play a profound role in the lives of adolescents (Delsing, Ter Bogt, Engels, & Meeus, 2008; Larson, 1995; Saarikallio & Erkkilä, 2007; Schwartz & Fouts, 2003). Listening to music is believed to be a generally pleasurable and positive experience (Miranda & Gaudreau, 2011) that satisfies adolescents' emotional, social, and cognitive needs (North, Hargreaves, & O'Neill, 2000). Even though research reveals considerable evidence of music's potential to impact adolescents positively, studies have not yet examined the link between youth's music preferences and life satisfaction (LS) – the subjective appraisal of one's quality of life (Proctor, Linley, & Maltby, 2009) and a key indicator of subjective well-being and happiness (Diener & Diener, 1995).

This study's focus on youth LS is inspired by and adheres to the growing movement of positive psychology, which considers the 'pursuit of happiness' a fundamental mission of psychology (Seligman, 2002). One possible way to increase happiness is by facilitating factors that promote LS, or by eliminating factors that might decrease LS (risk factors). Thus, the first goal of this study is to identify which types of music could promote or impede LS among Dutch youth. A second way to facilitate happiness is by reducing the negative *impact* of risk factors on LS (buffering effect). Accordingly, the second aim of this study is to investigate whether and which types of music could buffer the negative impact of one of the key risk factors that threaten LS: low social support.

Elaborating on these two goals, this study aims to contribute to the field of youth health promotion. Given that adolescents spend a lot of time listening to music (Rentfrow & Gosling, 2003), it might be of great benefit to identify (1) groups at risk of having low LS due to their music preferences, and (2) types of music that have the potential to protect adolescents' LS in case of insufficient social support.

Music Preference and Life Satisfaction

Instead of considering music in general, this study takes into account different music genres, which vary in their characteristics and impact on adolescents (Mulder, Ter Bogt, Raaijmakers, & Vollebergh, 2007; North & Hargreaves, 2007a, 2007b, 2007c). Accordingly, this study proposes that music genres might be differently related to youth LS.

Pop and *Soul* (hip-hop, R&B, reggae; in this paper – *Urban*) are likely to have a positive impact on youth LS, because they communicate positive messages about developmentally relevant issues: friendships, romantic relationships, and pleasure in Pop (Schwartz & Fouts, 2003); and partying, dancing, coping, optimism, and hope in Soul (Miranda & Claes, 2008). These music genres have been found to lower depressive symptoms

among adolescents (Miranda & Claes, 2007), which is in line with the idea that experiencing consolation through music is strongly related to the personal relevance and meaning of its lyrics (Ter Bogt, Vieno, Doornwaard, Pastore, & Van den Eijnden, 2017).

On the contrary, *Metal* (heavy metal, alternative rock, punk, etc.) is referred to as 'problem music' and claimed to have a potentially harmful effect on youth (Scheel & Westefeld, 1999), as it revolves around "negative themes, such as despair, mental pain, death, suicide, and depression" (Miranda & Claes, 2008, p. 279). Studies have linked the preference for Metal to depression and suicidal intentions (Martin, Clarke, & Pearce, 1993), antisocial behavior (Russel, 1997; Selfhout, Delsing, Ter Bogt, & Meeus, 2008), and sensation seeking (Arnett, 1991). Thus, preference for Metal is likely to be negatively linked to adolescents' LS.

Researchers in the field tend to include *Rock* and Metal in the same music preference category, due to strong stylistic similarities between the two genres. In this paper, however, two arguments are proposed on why Rock and Metal should be examined separately and why, unlike Metal, Rock is not likely have a negative impact on LS. First, Rock includes *soft rock*, which according to Hill (2007), evokes significantly less negative emotions (disgust, guilt, and sadness) and more positive emotions (happiness), as compared to *hard rock* (similar to Metal). Furthermore, Thompson and Larson (1995) define soft rock as "lyrically dominant; emphasis of the song is to explore private feelings about loves won, lost, and desired" (p. 736), which also speaks for the different characters of Rock and Metal.

Second, Rock includes highly commercialized *rock-classics/evergreens*, which have received abundant attention across radio stations, magazines, and the Internet (Appen & Doehering, 2006). Consequently, many adolescents might associate the term Rock with such commercial and well-known songs. The leaders in the rock-classics charts are musicians like The Beatles, The Rolling Stones, and Bob Dylan (Appen & Doehering, 2006), and none of these artists' music is similar to Metal. It is rather a combination of Rock and Pop (The Beatles), Rock and blues (The Rolling Stones), and Rock and folk (Bob Dylan).

Finally, little is known about the impact of classical/jazz (hereafter referred to as *Highbrow*) and *Electronic* music on adolescents' development, possibly because Highbrow is not popular among youth (Mulder et al., 2007), and Electronic is mainly investigated in relation to substance use (Forsyth, Barnard, & McKeganey,1997; Ter Bogt & Engels, 2005; Ter Bogt et al., 2012). Consequently, it remains unclear how these types of music might be related to LS.

Social Support and Life Satisfaction

Empirical research reveals a general consensus on the positive link between social support and well-being (Gallagher &Vella-Brodrick, 2008). As for adolescents, social support has been linked to healthy development (Helsen, Vollebergh, & Meeus, 2000) and positive mental health (Proctor et al., 2009). Furthermore, it has been consistently associated with high youth LS (Blau, Goldberg, & Benolol, 2018; Diener, Oishi, & Lucas, 2003; Kong & You, 2013; Piko & Hamvai, 2010; Rodríguez-Fernández, Droguett, & Revuelta, 2012; Schnettler et al., 2015; You, Lim, & Kim, 2018).

Several theoretical frameworks explain why social support is essential for youth well-being. According to the *stress and coping perspective* (Lakey & Cohen, 2000) and the *stress-buffering hypothesis* (Cohen &Wills, 1985; Rodriguez & Cohen, 1998), social support can attenuate the adverse effects of stress on health and well-being. Supportive actions can facilitate coping performance, while the belief that support is available can contribute to a less negative appraisal of stressful events. From a *social constructionist perspective* (Lakey & Cohen, 2000), social support has a positive influence on well-being, because it promotes self-esteem. On the contrary, negative perceptions of social relationships enhance negative perceptions of the self, which in turn leads to emotional distress (Baldwin & Holmes, 1987). In their *framework for thriving through relationships,* Feeney and Collins (2015) outline two reasons why social support facilitates well-being: it "strengthens/fortifies as well as comforts/protects in times of adversity" (p. 116) and "promotes engagement in life opportunities in non-adverse times" (p. 119).

The literature discussed above underpins the idea that low social support might impede adolescents' LS. The current study focuses on peer and family support, as during adolescence, peers are "central sources of companionship and emotional support" (Nickerson & Nagle, 2004, p. 55), while the relationship with parents remains a key predictor of LS (Man, 1991; Valois, Zullig, Huebner, & Drane, 2009; Young, Miller, Norton, & Hill, 1995).

Music as a 'Friend in Need'

The phrase 'music as a friend in need' is derived from the popular idiom 'a friend in need is a friend indeed', which implies that a true friend is reliable and helpful in difficult times. In this paper, the expression is used to emphasize that music might not only have a direct positive impact on adolescents' LS, but also facilitate happiness, particularly among youth who receive insufficient support from their family or friends.

This study proposes two arguments on why music could buffer the negative effect of low social support on LS. On the one hand, listening to music is a common tactic for emotion

and mood regulation among youth, and a potential tool for coping with negative feelings and difficulties in life (Schäfer, Sedlmeier, Städtler, & Huron, 2013; Ter Bogt, Mulder, Raaijmakers, & Nic Gabhain, 2010; Ter Bogt et al., 2017; Van Goethem & Sloboda, 2011). Thus, if music helps adolescents cope with the negative affect evoked by receiving insufficient support, the latter should no longer impede their LS.

On the other hand, music could act as a substitute for social relationships (Laiho, 2004; Lee, Andrade, & Palmer, 2013; Schäfer, & Eerola, 2018). Research demonstrates that people commonly perceive music as an "understanding friend" (Hanser, Ter Bogt, Van Den Tol, Mark, & Vingerhoets, 2016, p. 131) that is "empathizing with their circumstances and feelings, supporting them, making them feel understood, or making them feel less alone in the way they were feeling" (Van den Tol & Edwards, 2013, p. 453). Therefore, the support gained by music listening might counterbalance the lack of support from family/friends, in which case the latter should no longer affect one's LS.

Finally, it is worth noting that the moderating role of music preference in the relationship between low social support and LS might differ across gender. According to previous studies, girls engage more in mood-management and emotion regulation during music listening, as compared to boys (Miranda & Claes, 2007, 2008, 2009; North et al., 2000). Thus, music is more likely to be a 'friend in need' for girls.

Current Study

The current study investigates numerous relationships, which are visualized in Figure 1. First, it is hypothesized that family and peer support will be positively related to LS (Hypothesis 1), which would imply negative relationships between low family/peer support and LS. Second, preferences for Pop and Urban are expected to be positively associated with LS (Hypothesis 2). Hypothesis 3 states that preference for Metal will be negatively linked to LS, whereas preference for Rock will not. The investigation of Highbrow/Electronic music preference is of exploratory nature.

Furthermore, it is hypothesized that music genres, which are positively linked to LS, will buffer the negative link between either low family or low peer support on LS (Hypothesis 4). Thus, Pop and Urban are expected to be 'a friend in need'. Finally, it is proposed that the moderation effects of music preferences in the relationships between low social support and LS will be stronger for girls than for boys (Hypothesis 5).
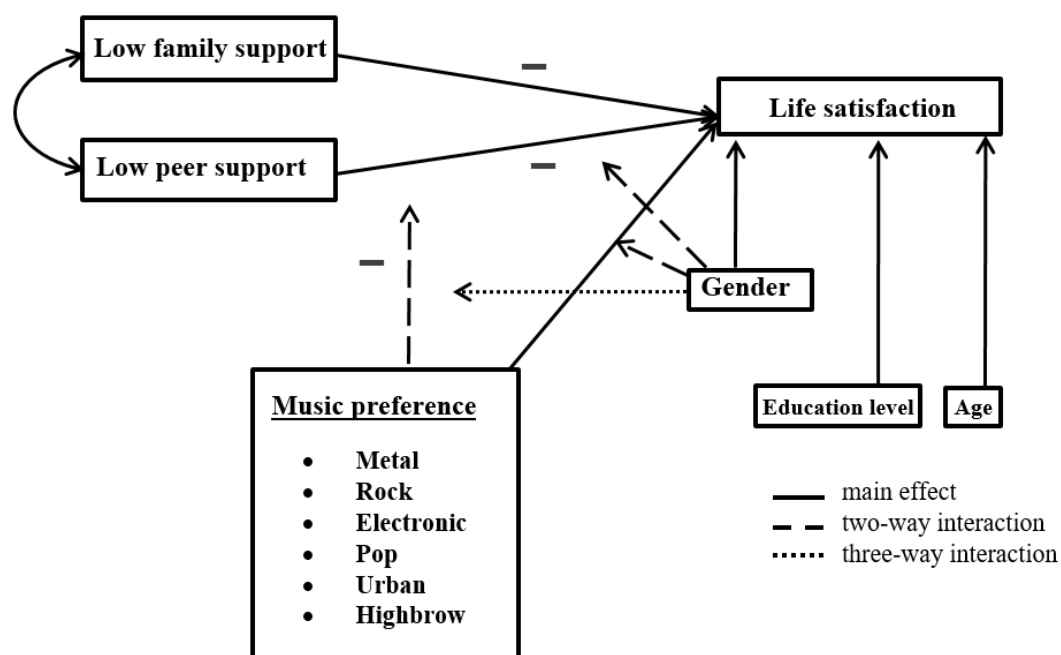
Figure 1. Research Model

Method

Sample

The data used in this study were derived from the Dutch Health Behavior in School-aged Children (HBSC) study, held in 2013. The HBSC study is an international study on health and health-related behaviors among adolescents, carried out every four years and supported by the World Health Organization (WHO). In the current study, only data from Dutch adolescents in their first to fourth year of secondary school were utilized. This sample was recruited through cluster sampling in 67 randomly selected schools in the Netherlands. At the end of 2013, a total of 5718 students anonymously completed the HBSC self-report questionnaires in their classrooms. Participation was voluntary but only possible if one's parents had given passive consent. After removing empty or unreliably filled in questionnaires, the total number of participants was 5682, aged 10-18 ($M = 13.81$, $SD = 1.35$): 2818 boys (49.6%) and 2864 girls (50.4%).

Measures

Life satisfaction. The dependent variable in this study (LS) was measured with a single item in the questionnaire. Participants were asked to rate their satisfaction with life, ranging from 0 ("worst life I can imagine") to 10 ("best life I can imagine"). This measurement was derived from Cantril's Self-Anchoring Ladder of Life Satisfaction (Cantril, 1965), also known as the *Cantril Scale*.

Music preference. For the assessment of music preference, participants could rate different music genres on a five-point Likert scale, or indicate that they were not familiar with the genre (1 = "dislike very much", 3 = neutral, 5 = "like very much"; Ter Bogt, Raaijmakers, Vollebergh, Van Wel, & Sikkema, 2003). Music preference categories were built based on the music taste groups identified in previous studies (Miranda & Claes, 2007, 2008; Ter Bogt et al., 2010): Pop (top 40/hit parade), Urban (hip-hop/rap and R&B), Electronic (dubstep, trance/house/dance, and techno/hard-house), Highbrow (jazz and classical music), and Metal (heavy metal, gothic, and punk/alternative). Rock was kept as a separate (sixth) category.

Social support. The independent variables – family and peer support – were each measured with four items (see Appendix). The items were rated by participants on the scale of 1 to 7, where a score of 1 indicated strong disagreement with the statement and a score of 7 indicated strong agreement with the statement. A *family support scale* (Cronbach's alpha = .92) and a *peer support scale* (Cronbach's alpha = .93) were used in the data analysis.

Control variables. Previous studies report little to no influence of socio-demographic variables on LS (Proctor et al., 2009). In this study, however, age, gender, and education level were included in the analysis as covariates, so as to check whether these variables influence LS among Dutch students in particular. Age was measured on a continuous scale (age in years), whereas gender and education level were measured on binary scales: 1 = boy, 2 = girl; 1 = vocational training, 2 = higher secondary education.

Strategy for Analysis

All analyses in the current study were conducted using IMB SPSS 25.0, and the significance level was set for *p<.05.* Descriptive statistics (*N, M, SD*) and independent samples t-tests were used to display the general characteristics of the sample. Missing values were (1) not found on the socio-demographic variables, (2) were less than 4% on each dependent or independent variable, and (3) were imputed using the expected means procedure in SPSS for the music preference variables. Furthermore, the relationships between the continuous variables were explored using the *Pearson correlation method.*

The hypotheses were explored in a hierarchical linear regression analysis, with LS as dependent variable. The continuous variables (except for age) were standardized, and all assumptions were checked. In the first step of the regression analysis, the control variables (gender, age, education level) were added. Family and peer support were introduced in the second step, and the six music categories – in the third. The fourth model included two-way interactions between family support, peer support, and gender, while the fifth included two-way interactions of music preferences with gender and family/peer support. Finally, three-way

interaction terms between each music preference category, the two types of support, and gender were computed and added to the last (sixth) model.

Within the regression analysis described above, the relationships between music preferences and LS were explored using a variable centered approach. Music fans, however, are also clustered in groups. In an additional analysis, the differences in LS between Rock and Metal fans were explored using a person centered approach, meaning that respondents were allocated to different fan groups: (1)*'Exclusive Rock'* – liking (rating above neutral) Rock and none of the three subgenres of Metal (heavy metal, gothic, punk/alternative), (2) *'Exclusive Metal'* – disliking (rating at/below neutral) Rock, but liking at least one of the three Metal subgenres, and (3)*'Rock & Metal'* – liking Rock as well as at least one of the Metal subgenres. A fourth group of adolescents (those who disliked Rock and all Metal subgenres) was kept as a reference category. A multiple linear regression was conducted, where gender, age, and education level were controlled for in Model 1. Model 2 included three dummy variables, representing each Rock and/or Metal fan-group. In the final step of the regression, peer and family support were added, so as to check whether the main effects of music preferences would hold.

Results

Descriptive Statistics

Table 1 presents the descriptive statistics of this study's main variables, based on gender (boys, girls), education level (low, high), and the total sample.

Results from independent samples t-tests revealed significant differences between students in vocational training (lower education level) and students in higher secondary education (high education level): adolescents with a higher education level scored higher on LS ($t(5336) = -6.14$, $p < .001$) and seemed to receive more support from their families ($t(5509) = -8.74$, $p < .001$). These adolescents rated Rock ($t(5680) = -6.70$, $p < .001$), Pop ($t(5635) = -3.64$, $p < .001$), and Highbrow ($t(5595) = -10.71$, $p < .001$) higher than adolescents in vocational training did. On the contrary, students in vocational training scored higher on preferences for Electronic ($t(5632) = 2.98$, $p < .01$) and Urban *($t(5680) = 4.11$, $p <$ .001)*, as compared to students of higher education level.

Results from the t-tests also indicated significant differences between boys and girls in the sample: boys reported higher LS then girls did ($t(5375) = 12.61$, $p < .001$), and seemed to receive more support from their families ($t(5620) = 2.18$, $p < .05$), but less support from their peers ($t(5453) = -16.89$, $p < .001$), as compared to girls. Preferences for Pop ($t(5510) = -$12.05$, $p < .001$), Urban ($t(5576) = -7.68$, $p < .001$), and Highbrow ($t(5680) = -7.02$, $p < .001$)

were higher for girls, whereas preferences for Rock *(t*(5635) = 4.45, *p* < .001) and Electronic *(t*(5611) = 13.45, *p* < .001) were higher for boys.

Table 1

Descriptive Statistics Based on Gender, Education Level, and the Total Sample

	Education Level				Gender				Total	
	Low (*n* = 2941)		High (*n* = 2741)		Boys (*n* = 2818)		Girls (*n* = 2864)		(*N* = 5682)	
	M	(SD)	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Dependent variable										
Life Satisfaction	7.45	(1.77)	7.71	(1.43)***	7.85	(1.45)***	7.31	(1.72)	7.57	(1.62)
Independent variables										
Family support	5.73	(1.50)	6.04	(1.19)***	5.92	(1.30)*	5.84	(1.43)	5.88	(1.37)
Peer support	5.75	(1.40)	5.78	(1.26)	5.46	(1.35)	6.06	(1.26)***	5.77	(1.34)
Moderators										
Metal	1.95	(.85)	1.99	(.84)	1.97	(.85)	1.96	(.84)	1.97	(.84)
Rock	2.71	(1.12)	2.91	(1.14)***	2.87	(1.17)***	2.74	(1.09)	2.81	(1.13)
Electronic	3.41	(.86)**	3.35	(.88)	3.54	(.90)***	3.23	(.82)	3.38	(.87)
Pop	3.61	(.96)	3.70	(.98)***	3.50	(1.03)	3.80	(.88)***	3.65	(.97)
Urban	3.68	(.85)***	3.59	(.82)	3.55	(.89)	3.72	(.78)***	3.64	(.84)
Highbrow	2.24	(.85)	2.49	(.90)***	2.27	(.88)	2.44	(.87)***	2.36	(.88)

*p<.05, **p<.01, ***p<.001.

Correlations

Pearson correlations between LS, age, family and peer support, and the six music categories are presented in Table 2. Age was significantly and negatively correlated with LS, indicating a decrease in LS with age. The table also reveals a significant positive relationship between peer support and LS, and even more so, between family support and LS.

Preferences for Metal and Rock were negatively related to LS, whereas the preference for Pop was positively related to LS. Preference for Metal was negatively linked to family support, whereas preferences for Pop and Highbrow were positively related to family support. Liking Pop/Urban was associated with higher peer support, while liking Rock was negatively linked to peer support.

Table 2

Pearson Correlations among Age, Social Support, Music Preferences, and Life Satisfaction

	1	2	3	4	5	6	7	8	9	10
1. Age	–									
2. Family support	-.12***	–								
3. Peer support	-.01	.34***	–							
4. Metal	-.06***	-.04**	-.02	–						
5. Rock	-.01	-.01	-.04**	.62***	–					
6. Electronic	-.12***	.00	.00	.18***	.14***	–				
7. Pop	-.06***	.08***	.10***	-.07***	-.02	.18***	–			
8. Urban	-.02	.00	.07***	-.02	.00	.31***	.20***	–		
9. Highbrow	.01	.04**	.01	.45***	.39***	.00	.09***	.14***	–	
10. Life satisfaction	-.14***	.41***	.18***	-.06***	-.03*	.02	.05***	.00	-.01	–

*p <.05, **p<.01, ***p<.001.

Testing the Hypotheses

Results of the conducted hierarchical linear regression are displayed in Table 3. The first step of the regression revealed that gender ($t(5429) = -12.93$, $p < .001$), age ($t(5429) = -10.07$, $p < .001$), and education level ($t(5429) = 4.41$, $p < .001$) were significantly related to LS: LS was higher for boys and for adolescents of higher education level, and lower for older adolescents. This finding implies that socio-demographic variables might be related to LS among Dutch students. Model 2 showed that both family ($t(5427) = 27.56$, $p < .001$) and peer ($t(5427) = 7.85$, $p < .001$) support were positively linked to LS, while Model 3 revealed a positive relationship between Pop and LS ($t(5421) = 2.14$, $p < .05$). Additionally, a negative relationship was found between Metal and LS ($t(5421) = -2.72$, $p < .01$), but not between Rock and LS ($t(5421) = -0.84$, $p > .05$), which shows that within a multivariate analysis, the link between Metal and LS remains significantly negative (as in the correlational analysis, Table 2), but the negative link between Rock and LS disappears.

Model 4 revealed two significant interactions: between family and peer support ($t(5418) = 9.65$, $p < .001$), and between family support and gender ($t(5418) = 6.28$, $p < .001$). The first interaction (Figure 2) implies that peer support led to a stronger increase in LS when family support was high. The second interaction (Figure 3) suggests that the negative impact of low family support on LS was stronger for girls than it was for boys.
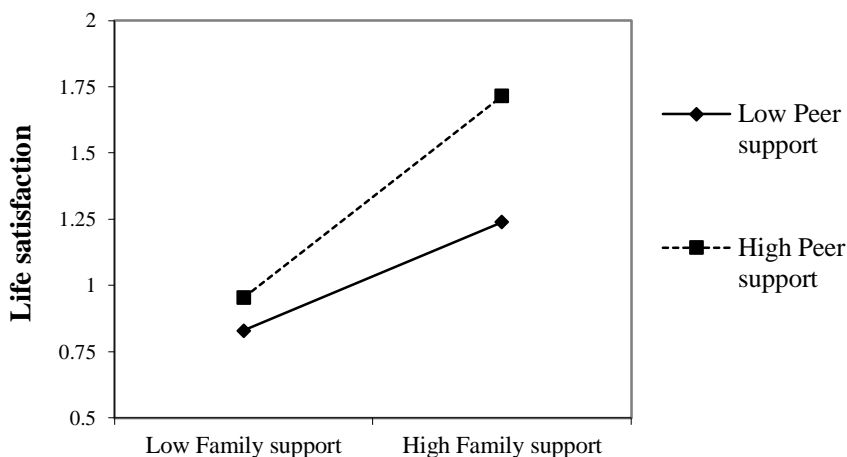
Figure 2. The interaction between family support and peer support in relation to life satisfaction.
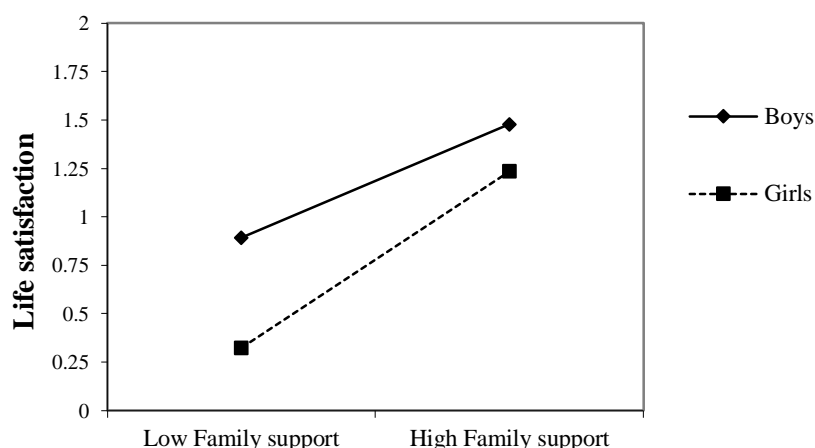

Figure 3. The interaction between family support and gender in relation to life satisfaction.

In the fifth step of the regression, all interactions among the six music categories, the two types of support, and gender were added. Two significant interactions were found: between preference for Electronic and family support ($t(5400) = -2.32$, $p < .05$), and between preference for Urban and peer support ($t(5400) = -2.39$, $p < .05$). Both interactions, however, only contributed to a small increase in explained variance, so they should be interpreted with caution. As visualized in Figure 4, preference for Electronic did not buffer the negative impact of low family support on LS: it was associated with lower LS in general, and the negative link between Electronic and LS was stronger when family support was high. As demonstrated in Figure 5, preference for Urban moderated the relationship between low peer

support and LS: liking Urban was associated with higher LS for adolescents when peer support was low. This finding implies that Urban might have the potential to attenuate the negative impact of low peer support on LS among adolescents.
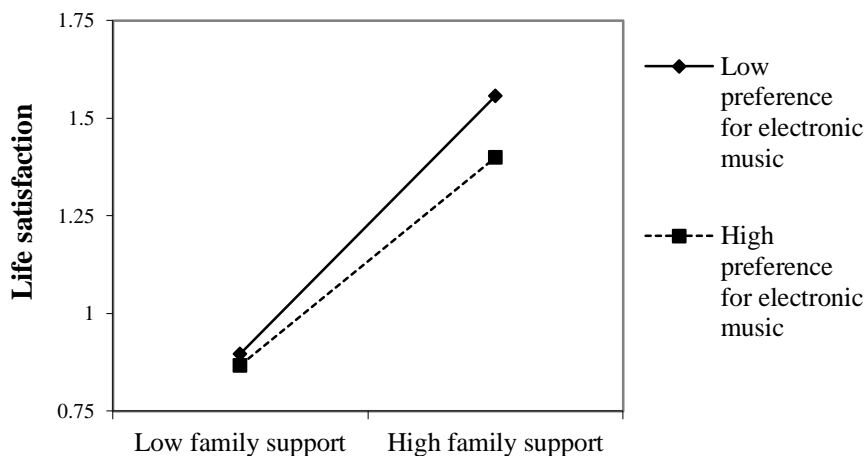

Figure 4. The interaction between family support and preference for Electronic in relation to life satisfaction.
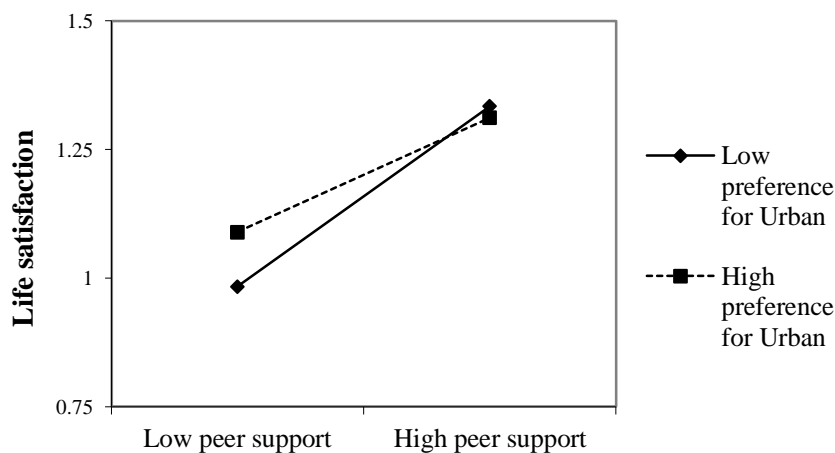
Figure 5. The interaction between peer support and preference for Urban in relation to life satisfaction.

A sixth model was added to the regression with the aim to check all three-way interactions among music preferences, social support, and gender. The model, however, is not included in Table 3, because it did not contribute to a significant increase in explained variance (R^2 change = .003, $F(12, 5388) = 1.68$, $p > .05$). This implies that gender did not influence the relationships between music preference, social support, and LS.

Table 3

Multiple Linear Regression Including Main Effects of and Two-Way Interactions among Social Support, Music Preference, and Gender

	Model 1			Model 2			Model 3			Model 4			Model 5		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Background															
Age	-0.10	.01	-.14***	-0.07	.01	-.09***	-0.07	.01	-.10***	-0.07	.01	-.10***	-0.07	.01	-.10***
Gender	-0.34	.03	-.17***	-0.36	.02	-.18***	-0.39	.03	-.19***	-0.41	.03	-.20***	-0.40	.03	-.20***
Education level	0.12	.03	.06***	0.05	.02	.02	0.04	.02	.02	0.04	.02	.02	0.05	.02	.02
Social support															
Family support				0.36	.01	.36***	0.35	.01	.35***	0.29	.02	.29***	0.30	.02	.30***
Peer support				0.10	.01	.10***	0.10	.01	.10***	0.15	.02	.15***	0.14	.02	.14***
Music preference															
Metal							-0.04	.02	-.04**	-0.04	.02	-.04**	-0.02	.02	-.02
Rock							-0.01	.02	-.01	-0.01	.02	-.01	0.00	.02	.00
Electronic							-0.02	.01	-.02	-0.02	.01	-.02	-0.05	.02	-.05*
Pop							0.03	.01	.03*	0.02	.01	.03*	0.01	.02	.01
Urban							0.01	.01	.01	0.01	.01	.01	0.02	.02	.02
Highbrow							0.02	.01	.02	0.01	.01	.01	-0.02	.02	-.02
Two-way interactions															
Peer support * Family support										0.09	.01	.13***	0.09	.01	.13***
Peer support * Gender										-0.01	.03	-.01	0.00	.03	.00
Family support * Gender										0.16	.03	.12***	0.15	.03	.11***

Metal * Gender					-0.04	.03	-.03
Rock * Gender					-0.02	.03	-.01
Electronic * Gender					0.05	.03	.04
Pop * Gender					0.03	.03	.02
Urban * Gender					-0.02	.03	-.01
Highbrow * Gender					0.05	.03	.04
Metal * Family support					0.00	.02	-.01
Metal * Peer support					0.01	.02	.01
Rock * Family support					0.02	.02	.02
Rock * Peer support					0.01	.02	.01
Electronic * Family support					-0.03	.01	-.03*
Electronic* Peer support					0.01	.01	.01
Pop * Family support					-0.01	.01	-.01
Pop * Peer support					-0.01	.01	-.01
Urban * Family support					0.02	.01	.02
Urban * Peer support					-0.03	.01	-.03*
Highbrow * Family support					-0.01	.01	-.01
Highbrow * Peer support					0.01	.01	.01
R^2	.05	.21	.22	.24	.24		
F change	99.94***	556.82***	4.71***	52.46***	1.72*		

Note. Dependent variable: Life satisfaction
*p<.05, ** p<.01, *** p<.001.

Additional Analysis

Coefficients and significance statistics of the additional hierarchical regression are displayed in Table 4. Results indicated that the groups *'Exclusive Metal'* ($n = 220$) and '*Rock & Metal'* ($n = 720$) reported significantly lower LS than the reference group did ($n = 3939$). In contrast, the *'Exclusive Rock'* group ($n = 803$) did not differ from the reference group with regard to LS. These associations remained significant when family and peer support were added to the regression (Model 3). They are also in line with the finding that Metal was negatively associated with LS, but Rock was not.

Table 4

The Effects of Rock and/or Metal Preferences on Life Satisfaction

	Model 1				Model 2				Model 3			
	B	SE B	β	t	B	SE B	β	t	B	SE B	β	t
Gender	-0.55	.04	-.17	-12.92***	-0.57	.04	-.17	-13.23***	-0.60	.04	-.19	-14.86***
Age	-0.16	.02	-.14	-10.07***	-0.16	.02	-.13	-9.87***	-0.11	.01	-.09	-7.49***
Education level	0.19	.04	.06	4.41***	0.21	.04	.06	4.74***	0.09	.04	.03	2.27*
Exclusive Rock					-0.05	.06	-.01	-0.76	-0.07	.06	-.01	-1.18
Exclusive Metal					-0.29	.11	-.03	-2.58**	-0.26	.10	-.03	-2.57*
Rock & Metal					-0.36	.07	-.07	-5.54***	-0.26	.06	-.05	-4.33***
Family support									0.42	.02	.36	27.30***
Peer support									0.13	.02	.10	7.94***
R^2	.05				.06				.22			
F Change	99.94***				11.72***				549.60***			

Note. The variables used in this regression analysis are not standardized.
*$p<.05$, ** $p<.01$, *** $p<.001$.

Discussion

This study explored the relationship between social support and LS among adolescents in the Netherlands, introducing the idea that music could serve as a source of support and attenuate the negative impact of low peer/family support on LS. Different music preferences, as well as gender effects, were investigated in that context.

Social Support

In line with the first hypothesis of this study, both family and peer support were associated with higher LS, confirming that low family/peer support is an important risk factor for youth LS.

Interestingly, an interaction between family and peer support indicated that peer support particularly increases LS when family support is already high. A possible explanation for this finding is rooted in Bowlby's theory of attachment (1973), which states that one's relationship with their parents has an overarching influence on their social relationships in the future. Supportive relationships with parents enable one to build supportive relationships with peers, which facilitates well-being; low parental support, however, hinders one's ability to build supportive relationships with peers, so friendships cannot compensate for the insufficient support of parents (Helsen et al., 2000).

Additionally, an interaction between gender and family support revealed that a decrease in family support was associated with a steeper decline in LS for girls. Previous findings indicate that girls benefit from (Saphire-Bernstein & Taylor, 2013) and value social support (Demaray & Malecki, 2003) more than boys do. The current study adds up to these findings by demonstrating that lacking family support might be more detrimental to LS for girls than for boys.

These results highlight the importance of family support for LS and could thus be valuable to professionals in the field of health promotion. Future interventions aimed at increasing LS among Dutch youth could take into account that (1) facilitating peer support might be of little benefit to adolescents who receive insufficient support from their families, and (2) girls who receive little family support might be at particularly high risk of dissatisfaction with their lives.

Music and Life Satisfaction

With regard to music preferences and LS, it was proposed that liking Pop and Urban will be positively linked to LS (Hypothesis 2), whereas liking Metal, but not Rock, will be negatively linked to LS (Hypothesis 3). The second hypothesis was partially confirmed, as only preference for Pop was positively associated with LS. It might be that preference for Urban was not linked to higher LS because the category Urban included the genre rap. While preference for hip-hop and soul is not associated with deviant behavior (Miranda & Claes, 2004), studies tend to view rap as 'problem music', comparable to Metal in its relation to antisocial behavior, substance use, or poor academic achievement (Took & Weiss, 1994). If preferring 'deviant music' has a negative impact on one's well-being, then it might be that rap fans lowered the mean LS score of the whole group of Urban fans. Still, in the HBSC questionnaire, hip-hop and rap were represented by one item, so a distinction/separation of these music genres was not possible with the current dataset.

Consistent with the third hypothesis, Metal was negatively linked to LS, but Rock was not. This result is in line with common findings that heavy metal in particular has a negative influence on adolescents (Arnett 1991, 1992). Results of the additional analysis also indicated that 'Exclusive Metal' fans, as well as 'Rock & Metal' fans, reported lower LS, as compared to the reference group (disliking both Rock and Metal). Nevertheless, 'Exclusive Rock' fans did not differ from the reference group in their LS. Distinguishing between the impact of Rock and Metal on adolescents' well-being might help researchers better identify vulnerable groups, as it might be only Metal, and not Rock, that threatens the adaptive development of youth.

Music as a 'Friend in Need'

The fourth hypothesis of this study was that music preference categories, which are positively linked to LS, will also moderate the negative relationship between low family/peer social support and LS. Preference for Pop was positively linked to LS, but it did not attenuate the negative impact of low support on LS. Therefore, this hypothesis was disconfirmed. Yet, preference for Urban was not directly linked to LS, but it did turn out to be 'a friend in need': when peer support was low, Urban fans reported higher LS than non-Urban fans did. It seems that the presence of rap in the Urban category did not influence the significance of these results, which implies that preference for Urban (in general) might still satisfy adolescents needs, although rap might be 'problem music'. This could also explain why Urban, together with Pop, was the highest rated/most liked music category among the sample.

Unexpectedly, liking Electronic particularly decreased LS when family support was high. This finding could be explained by the commonly discussed association between preference for Electronic and substance use (Ter Bogt et al., 2012): for adolescents who come from close and supportive families, engaging in behaviors that contradict the values shared in the family might create emotional distress and thus lower LS.

In disagreement with hypothesis five, gender did not influence the relationships between social support, music preference, and LS. This shows that the concept of music as a 'friend in need' might be applicable to all adolescents, and not dependent on gender.

Methodological issues might be responsible for the modesty of the findings and effect sizes in this study. First, it remains unclear to what extent participants were able to classify music that they like/dislike into the given music genres. It could be that they had incorrect/insufficient knowledge on the matter, and rated the genres on the basis of what they assumed those entail.

Thus, the reported ratings might not reflect the actual music taste of some participants. Second, the ratings of the music genres on the 5-point scale do not allow a straightforward identification of music *fans*. Future research might benefit from measuring music preference by asking participants to (1) rate a selection of songs after hearing them, and (2) indicate not only whether they like certain music, but also why, how often, and in which situations they would listen to it.

Conclusion

Strengths and Limitations

This study is based on the HBSC dataset, which is characterized by validated instruments and methodology and is representative of, and thus generalizable to, the entire Dutch youth population. Despite the large sample size and the reliability of the data, the cross-sectional design of this study makes it impossible to infer causal relationships between the variables. A negative association between liking Metal and having low LS, for example, might mean that (1) liking Metal leads to having low LS, or that (2) having low LS leads to liking Metal. Given that reverse causality is an important issue that limits the scope for interpretations and conclusions, future research could aim at investigating the topic using longitudinal data.

Directions for Future Research

Generally, results were not in favor of the idea that music can attenuate the negative impact of low social support on LS, despite the strong arguments implying that it could. This might be due to the discussed methodological issues. Alternatively, it is also possible that *how* adolescents use music is more important for well-being and emotion regulation than *what* music they listen to. According to McFerran, Hense, Koike, and Rickwood (2018), music can be used to enhance mood and promote positive well-being, but also to intensify rumination and negative emotions. These authors demonstrate that adolescents are often unaware of how they utilize music in daily life, and that interventions might help adolescents to actively use music to facilitate their well-being. Thus, it might not be the passive music listening that produces certain benefits/risks, but rather the way one engages with the music. Consequently, it is possible that music does have the potential to be a 'friend in need', but this potential needs to be unleashed by its listeners. If this is the case, future research might benefit from further exploring how adolescents utilize music in daily life. As stated by McFerran et al. (2018) "young people's relationship with music provides a powerful platform for leveraging engagement in services and improvements in distress, when well-timed and carefully scaffolded" (p. 578).

References

Appen, R., & Doehring, A. (2006). Nevermind the Beatles, here's Exile 61 and Nico: 'The top 100 records of all time'–a canon of pop and rock albums from a sociological and an aesthetic perspective. *Popular Music*, *25*(1), 21-39.

Arnett, J. (1991). Heavy metal music and reckless behavior among adolescents. *Journal of Youth and Adolescence*, *20*(6), 573-592.

Arnett, J. (1992). The soundtrack of recklessness: Musical preferences and reckless behavior among adolescents. *Journal of Adolescent Research*, *7*(3), 313-331.

Baldwin, M. W., & Holmes, J. G. (1987). Salient private audiences and awareness of the self. *Journal of Personality and Social Psychology*, *52*(6), 1087-1098.

Blau, I., Goldberg, S., & Benolol, N. (2018). Purpose and life satisfaction during adolescence: the role of meaning in life, social support, and problematic digital use. *Journal of Youth Studies*, 1-19.

Bowlby, J. (1973). *Attachment and Loss, Vol. 2, Separation.* Basic Books, New York.

Cantril, H. (1965). *The patterns of human concern.* New Brunswick, NJ: Rutgers University Press.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*(2), 310-357.

Delsing, M. J., Ter Bogt, T. F., Engels, R. C., & Meeus, W. H. (2008). Adolescents' music preferences and personality characteristics. *European Journal of Personality: Published for the European Association of Personality Psychology*, *22*(2), 109-130.

Demaray, M. K., & Malecki, C. K. (2003). Importance ratings of socially supportive behaviors by children and adolescents. *School Psychology Review*, *32*(1), 108-131.

Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology, 68,* 653–663.

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology*, *54*(1), 403-425

Feeney, B. C., & Collins, N. L. (2015). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review*, *19*(2), 113-147.

Forsyth, A. J., Barnard, M., & McKeganey, N. P. (1997). Musical preference as an indicator of adolescent drug use. *Addiction*, *92*(10), 1317-1325.

Gallagher, E. N., & Vella-Brodrick, D. A. (2008). Social support and emotional intelligence as predictors of subjective well-being. *Personality and Individual Differences*, *44*(7), 1551-1561.

Hanser, W. E., Ter Bogt, T. F. M., Van Den Tol, A. J. M., Mark, R. E., & Vingerhoets, A. J. J. M. (2016). Consolation through music: A survey study. *Musicae Scientiae*, *20*(1), 122–137.

Helsen, M., Vollebergh, W., & Meeus, W. (2000). Social support from parents and friends and emotional problems in adolescence. *Journal of Youth and Adolescence*, *29*(3), 319-335.

Hill, J. (2007). Assessing the influence of rock music on emotions. *Chrysalis: The Murray State University Journal of Undergraduate Research*, *3*, 27-33.

Kong, F., & You, X. (2013). Loneliness and self-esteem as mediators between social support and life satisfaction in late adolescence. *Social Indicators Research, 110*, 271–279.

Laiho, S. (2004). The psychological functions of music in adolescence. *Nordic Journal of Music Therapy*, *13*(1), 47-63.

Lakey, B., & Cohen, S. (2000). Social support and theory. *Social Support Measurement and Intervention: A Guide for Health and Social Scientists*, 29-52.

Larson, R. (1995). Secrets in the bedroom: Adolescents' private use of media. *Journal of Youth and Adolescence*, *24*(5), 535-550.

Lee, C. J., Andrade, E. B., & Palmer, S. E. (2013). Interpersonal relationships and preferences for mood-congruency in aesthetic experiences. *Journal of Consumer Research*, *40*(2), 382-391.

Man, P. (1991). The influence of peers and parents on youth life satisfaction in Hong Kong. *Social Indicators Research, 24,* 347–365.

Martin, G., Clarke, M. & Pearce, C. (1993). Adolescent suicide: Music preference as an indicator of vulnerability. *Journal of the American Child and Adolescent Psychiatry, 32*, 530-535.

McFerran, K. S., Hense, C., Koike, A., & Rickwood, D. (2018). Intentional music use to reduce psychological distress in adolescents accessing primary mental health care. *Clinical Child Psychology and Psychiatry*, *23*(4), 567-581.

Miranda, D., & Claes, M. (2004). Rap music genres and deviant behaviors in French-Canadian adolescents. *Journal of Youth and Adolescence*, *33*(2), 113-122.

Miranda, D., & Claes, M. (2007). Musical preferences and depression in adolescence. *International Journal of Adolescence and Youth*, *13*(4), 285-309.

Miranda, D., & Claes, M. (2008). Personality traits, music preferences and depression in adolescence. *International Journal of Adolescence and Youth*, *14*(3), 277-298.

Miranda, D., & Claes, M. (2009). Music listening, coping, peer affiliation and depression in adolescence. *Psychology of Music*, *37*(2), 215-233.

Miranda, D., & Gaudreau, P. (2011). Music listening and emotional well-being in adolescence: A person-and variable-oriented study. *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology*, *61*(1), 1-11.

Mulder, J., Ter Bogt, T., Raaijmakers, Q., & Vollebergh, W. (2007). Music taste groups and problem behavior. *Journal of Youth and Adolescence*, *36*(3), 313-324.

Nickerson, A. B., & Nagle, R. J. (2004). The influence of parent and peer attachments on life satisfaction in middle childhood and early adolescence. In *Quality-of-life Research on Children and Adolescents* (pp. 35-60). Springer, Dordrecht.

North, A. C., & Hargreaves, D. J. (2007a). Lifestyle correlates of musical preference: 1. Relationships, living arrangements, beliefs, and crime. *Psychology of Music*, *35*(1), 58-87.

North, A. C., & Hargreaves, D. J. (2007b). Lifestyle correlates of musical preference: 2. Media, leisure time and music. *Psychology of Music*, *35*(2), 179-200.

North, A. C., & Hargreaves, D. J. (2007c). Lifestyle correlates of musical preference: 3. Travel, money, education, employment and health. *Psychology of Music*, *35*(3), 473-497.

North, A. C., Hargreaves, D. J., & O'Neill, S. A. (2000). The importance of music to adolescents. *British Journal of Educational Psychology*, *70*(2), 255-272.

Piko, B. F., & Hamvai, C. (2010). Parent, school and peer-related correlates of adolescents' life satisfaction. *Children and Youth Services Review*, *32*(10), 1479-1482.

Proctor, C. L., Linley, P. A., & Maltby, J. (2009). Youth life satisfaction: A review of the literature. *Journal of Happiness Studies*, *10*(5), 583-630.

Rentfrow, P. J., & Gosling, S. D. (2003). The do re mi's of everyday life: the structure and personality correlates of music preferences. *Journal of Personality and Social Psychology*, *84*(6), 1236-1256.

Rodriguez, M. S., & Cohen, S. (1998). Social support. *Encyclopedia of Mental Health*, *3*, 535-544.

Rodríguez-Fernández, A., Droguett, L., & Revuelta, L. (2012). School and personal adjustment in adolescence: The role of academic self-concept and perceived social support. *Revista de Psicodidáctica*, *17*(2), 397-414.

Russel, P.A. (1997). Musical tastes and society. In J. Hargreaves and A.C. North (Eds.), *The Social Psychology of Music* pp. 141-158. Oxford University Press; New York.

Saarikallio, S., & Erkkilä, J. (2007). The role of music in adolescents' mood regulation. *Psychology of Music*, *35*(1), 88-109.

Saphire-Bernstein, S., & Taylor, S. E. (2013). Close relationships and happiness. In *Oxford Handbook of Happiness*.

Schäfer, K., & Eerola, T. (2018). How listening to music and engagement with other media provide a sense of belonging: An exploratory study of social surrogacy. *Psychology of Music*, 0305735618795036.

Schäfer, T., Sedlmeier, P., Städtler, C., & Huron, D. (2013). The psychological functions of music listening. *Frontiers in Psychology*, *4*, 1–33.

Scheel, K.R., & Westefeld, J.S. (1999). Heavy metal music and adolescent suicidality: An empirical investigation. *Adolescence, 34*, 253-273.

Schnettler, B., Denegri, M., Miranda, H., Sepúlveda, J., Orellana, L., Paiva, G., & Grunert, K. G. (2015). Family support and subjective well-being: an exploratory study of university students in southern Chile. *Social Indicators Research*, *122*(3), 833-864.

Schwartz, K. D., & Fouts, G. T. (2003). Music preferences, personality style, and developmental issues of adolescents. *Journal of Youth and Adolescence*, *32*(3), 205-213.

Selfhout, M. H., Delsing, M. J., Ter Bogt, T. F., & Meeus, W. H. (2008). Heavy metal and hip-hop style preferences and externalizing problem behavior: A two-wave longitudinal study. *Youth & Society*, *39*(4), 435-452.

Seligman, M. E. (2002). Positive psychology, positive prevention, and positive therapy. *Handbook of Positive Psychology*, *2*(2002), 3-12.

Ter Bogt, T. F., & Engels, R. C. (2005). "Partying" hard: party style, motives for and effects of MDMA use at rave parties. *Substance Use & Misuse*, *40*(9-10), 1479-1502.

Ter Bogt, T. F., Mulder, J., Raaijmakers, Q. A., & Nic Gabhainn, S. (2010). Moved by music: A typology of music listeners. *Psychology of Music*, *39*(2), 147-163.

Ter Bogt, T. F., Nic Gabhainn, S., Simons-Morton, B. G., Ferreira, M., Hublet, A., Godeau, E., ... & the HBSC Risk Behavior and the HBSC Peer Culture Focus Groups. (2012). Dance is the new metal: Adolescent music preferences and substance use across Europe. *Substance Use & Misuse*, *47*(2), 130-142.

Ter Bogt, T. F., Raaijmakers, Q. A. W., Vollebergh, W. A. M., van Wel, F. W., & Sikkema, P. (2003). Youngsters and their musical taste: Musical styles and taste groups. *The Netherlands Journal of Social Sciences, 39*(1), 35-52.

Ter Bogt, T. F., Vieno, A., Doornwaard, S. M., Pastore, M., & Van den Eijnden, R. J. (2017). "You're not alone": Music as a source of consolation among adolescents and young adults. *Psychology of Music*, *45*(2), 155-171

Thompson, R. L., & Larson, R. (1995). Social context and the subjective experience of different types of rock music. *Journal of Youth and Adolescence*, *24*(6), 731-744.

Took, K. J., & Weiss, D. S. (1994). The relationship between heavy metal and rap music and adolescent turmoil: real or artifact?. *Adolescence*, *29*(115), 613-621.

Valois, R. F., Zullig, K. J., Huebner, E. S., & Drane, J. W. (2009). Youth developmental assets and perceived life satisfaction: Is there a relationship?. *Applied Research in Quality of Life*, *4*(4), 315.

Van den Tol, A. J., & Edwards, J. (2013). Exploring a rationale for choosing to listen to sad music when feeling sad. *Psychology of Music*, *41*(4), 440-465.

Van Goethem, A., & Sloboda, J. (2011). The functions of music for affect regulation. *Musicae Scientiae*, *15*(2), 208-228.

You, S., Lim, S. A., & Kim, E. K. (2018). Relationships Between Social Support, Internal Assets, and Life Satisfaction in Korean Adolescents. *Journal of Happiness Studies*, *19*(3), 897-915.

Young, M. H., Miller, B. C., Norton, M. C., & Hill, E. J. (1995). The effect of parental supportive behaviors on life satisfaction of adolescent offspring. *Journal of Marriage and the Family*, 813-822.

Appendix

Items used for measuring social support (in the HBSC 2013 questionnaire)

Family support

Item 1: *"My family members do their best to understand each other."*

Item 2: *"At home, I get the emotional support that I need."*

Item 3: *"At home, I can talk about my worries."*

Item 4: *"My family members want to help me."*

Peer support

Item 1: *"My friends really try to help me."*

Item 2: *"I can rely on my friends when something goes wrong."*

Item 3: *"I have friends with whom I can share both happy and sad things."*

Item 4: *"I can talk to my friends about my worries."*