The Role of Peer Acceptance in the Association between Music Preference and Internalizing Problems

Master Thesis

Youth studies

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Rosa Zijp (8351597)

Supervisor: Gerdien van Eersel & Winneke van der Schuur

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Samenvatting

Eerdere studies tonen aan dat een gothic muziekvoorkeur verband houdt met meer internaliserende problemen. Het houden van popmuziek is in verband gebracht met minder internaliserende problemen. In deze cross-sectionele studie werd het verband tussen muziekvoorkeuren (goth en pop) en internaliserende problemen verder onderzocht door de mediërende rol van peer-acceptatie mee te nemen. Ook is er gekeken naar eventuele verschillen tussen jongens en meisjes. Data is gebruikt van 6874 adolescenten die deelnamen aan de HBSC-studie. Uit de resultaten bleek dat acceptatie door leeftijdsgenoten het verband tussen gothic muziekvoorkeur en internaliserende problemen deels medieert voor zowel jongens als meisjes. Adolescenten die van gothic-muziek hielden, ervoeren minder acceptatie van leeftijdsgenoten en rapporteerden meer internaliserende problemen. Acceptatie door leeftijdsgenoten bleek ook deels de associatie tussen een popmuziekvoorkeur en internaliserende problemen te mediëren, voor zowel jongens als meisjes. Jongeren die van popmuziek hielden, ervoeren meer acceptatie door leeftijdsgenoten en rapporteerden minder internaliserende problemen. Deze bevindingen geven inzicht in het verband tussen pop en goth en internaliserende problemen. Het feit dat deze relaties gedeeltelijk verklaard kunnen worden door de acceptatie van leeftijdsgenoten, geeft belangrijke implicaties voor de praktijk.

Sleutelwoorden: muziek, goth, emo, pop, top 50, internaliserende problemen, acceptatie leeftijdsgenoten

Abstract

Previous studies show that liking goth music is related to more internalizing problems. Liking pop music has been linked to less internalizing problems. In this cross-sectional study the link between music preferences (goth and pop) and internalizing problems was further examined by exploring peer acceptance as a mediator. Potential differences in sex were examined. Data from 6874 adolescents participating in the HBSC-study were used. Results showed that peer acceptance partially mediates the association between goth music preference and internalizing problems for both boys and girls. Adolescents who liked goth music felt less accepted by peers and reported more internalizing problems. Furthermore, peer acceptance partially mediated the association between pop music preference and internalizing problems for both boys and girls. Youth who liked pop music experienced more peer acceptance and reported fewer internalizing problems. These findings help in understanding the link between both goth and pop and internalizing problems. The finding that the relationship could partially be explained by the acceptance of peers gives important implications for practice.

Keywords: music, goth, emo, pop, top 50, internalizing problems, peer acceptance

The Role of Peer Acceptance in the Association between Music Preference and Internalizing Problems

Adolescence is a phase of life in which a lot changes. Music starts to play an increasingly important role (e.g., Larson, 1995; Saarikallio and Erkkilä, 2007). Of all age groups, adolescents are most involved in music (e.g., Schwartz and Fouts, 2003). Furthermore, it is generally believed that during adolescence music preferences become definite (Holbrook and Schindler, 1989). Previous studies often considered music in general, this study takes into account different music preferences. Music styles have different characteristics and impact adolescents differently (e.g. Mulder et al., 2007).

Adolescence is not only a time of emerging music preferences, but also of emerging mental health problems (Miranda and Claes, 2007). Internalizing problems are mental problems that relate to a person's internal psychology (Eisenberg et al., 2001). Depression, loneliness, anxiety and stress are common internalizing problems among adolescents (Bask, 2015). Nowadays more adolescents (8%) are suffering from these problems (Schoemaker et al., 2019). Research suggests mental issues might be linked to music. However, this association has been much contested. Some researchers believe that the music industry is partially responsible for deteriorating teenagers' mental health (e.g., Garrido and Schubert, 2015). Others theorize that this association is reciprocal (Steele and Brown, 1995).

To understand how music is connected to internalizing problems it is important to examine underlying mechanisms. Peer acceptance could be one of these mechanisms. Research suggests that during adolescence peers become more important (Scholte and Van Aken, 2006). Adolescents indicate talking more with their peers and becoming more dependent on their friends (Arnett, 2003). Therefore, peer acceptance has an important impact on adolescents' life. Peer acceptance is explained as the degree to which individuals are liked by peers (Oberle et al., 2010). Peer acceptance seems to be associated with both music preference and mental health. Therefore, it might play a role in the relationship between the two. The current study aims to gain understanding of the relationship between music and internalizing problems and specifically about the role of peer acceptance. In this study two music preferences have been included; pop/ top 50 and goth/emo.

The Relationship between Music Preference and Internalizing Problems

There are different perspectives on how music preference and internalizing problems might be related. Miranda and Claes (2007) posit three different perspectives to explain the relationship. The first perspective, the cognitive/experimental perspective, is central in the

current study. This perspective posits that adolescents are passively impacted by music (Hansen, 1995). Garrido and Schubert (2015) state in supportive research that sad music lyrics may result in rumination, and consequently to depressive symptoms. This could explain a direct link between goth/emo music, which is known to have a lot of pessimistic lyrics and themes, and internalizing problems (Mueller, 2010). Pop/ top 50 music elicits more happy feelings (Baker et al., 2013). Therefore pop/ top 50 music could be linked to less internalizing problems. The second perspective is referred to as the psychosocial/correlational perspective. It assumes that adolescents actively select music suiting their characteristics (Arnett, 1995, 1999). Theories that look at this relationship in a similar way are the Uses and Gratifications and the Mood management theory (Roe, 1995; Zillmann, 1988). The third perspective, of interactive influence, theorizes that adolescents prefer music that suits their characteristics and that music in turn has an impact on them (Steele and Brown, 1995).

Overall, cross-sectional studies have shown that preferring pop/ top 50 music is generally associated with less internalizing problems. Till et al., (2016) found that if adolescents usually listened to R&B and pop they scored lower on hopelessness and depression. If adolescents preferred other genres, they scored higher on hopelessness and depression. In line with this, Mulder et al. (2007) found that adolescents who prefer chart music or urban music reported fewer internalizing problems than adolescents who preferred other types of music. They reported less withdrawn behaviour, thought problems and somatic complaints.

In addition, previous studies found that a goth/ emo music preference relates to more internalizing problems. A cross-sectional study found that youth who were exclusively fans of rock music (e.g., goth) experienced more internalizing problems, than youth who (also) liked other music (Mulder et al., 2007). A longitudinal cohort study among adolescents showed that self-harm and attempted suicide were associated with identifying with goth youth subculture (Young et al., 2006). Bowes et al. (2015) also found that when adolescents identified as goth more, they were more likely to score in the clinical range for self-harm and depression. Lastly, a study found that adolescents who liked goth music reported higher levels of depressive symptoms than their non-goth peers (Ter Bogt et al., 2020).

The Mediating Role of Peer Acceptance

It is possible that the potential relationship between music preference and internalizing problems can be explained by peer acceptance. The music marker theory suggests that music preference plays an important role in forming friendships (Ter Bogt et al., 2013; Franken et

al., 2017). Someone's music preference tells other people about their values, attitudes and opinions (Boer et al., 2011). For instance, through how someone looks based on their music preference. Adolescents who like goth music are known to often dress in a highly identifiable way (Bešić and Kerr 2009). Goths tend to wear make-up, skirts, jewellery, fishnet-tops and long hair (e.g., Hodkinson, 2007). Goth music is less mainstream and therefore this look sets them apart from the majority of their peers. Goths send less cues of shared values, attitudes and opinions which might lead to a lower peer acceptance. Empirical literature indeed shows that youth with a preference for goth music experienced rejection from peers outside of this group (Bešić and Kerr 2009). Pop on the other hand is a mainstream music style and perhaps the cues these adolescents send resonate with more peers. Hence, peer acceptance is expected to relate to pop and goth music in different ways.

Furthermore, several cross-sectional studies have found that a lower degree of peer acceptance is associated with more mental health problems in adolescents (Achenbach and Edelbrock, 1981; Steinhausen and Metzke, 2001). Besides, many studies have looked into the relationship between bullying and internalizing distress. A longitudinal study found that adolescents who were bullied in the past reported more anxiety and depression over time (Bond et al., 2001). A meta-analytic review reported that peer victimization was associated with higher levels of internalizing problems (Reijntjes et al., 2010). All in all, it is expected that goth-lovers are less likely to experience peer acceptance than adolescents who like pop music. Earlier research has shown that adolescents who experience less peer acceptance are more likely to have mental health issues. Therefore, it is expected that peer-acceptance might play an important mediating role. Studies that link these concepts are thus far very scarce.

The Moderating Role of Sex

Sex might have a moderating role in the link between music preference and internalizing problems. Overall, this link may be stronger for girls compared to boys. Girls report internalizing problems more frequently than boys (Leadbeater et al.; 1999). Possibly, girls are more vulnerable to developing internalizing problems than boys. Furthermore, it is known that there are gender differences in music behaviours. Existing literature shows that girls spend more time listening to music, are more focussed on lyrics and more often use music to regulate their state of mind (Miranda and Claes, 2007, 2009; North et al. 2000). Being exposed longer to negative music might lead to more negative effects. Also, focussing on lyrics more might make the impact of music preference on mental health stronger. Therefore, it would make sense that the relationship between music preference and
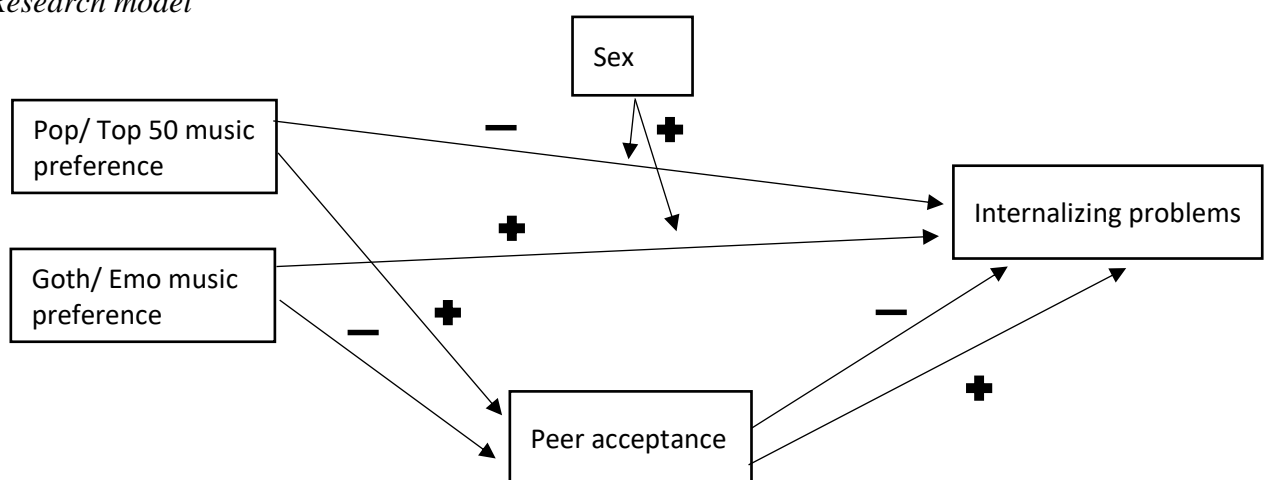
internalizing problems is stronger for girls.

Overall, empirical literature indeed predominantly shows that for girls music preferences are more linked to their mental state than for boys. Only one study was found that reported a link only for boys and not for girls. This study found a link between preferring Heavy Metal/Rock music and more suicidal thoughts among boys in particular (Burge et al., 2002). Other cross-sectional studies found associations specifically for adolescent girls. Martin et al. (1993) found that pop music was associated with less depression and that Rock/Heavy Metal music was related to more suicidal thoughts and depression, but again only for girls. Similarly, research reported a higher suicidal risk for female adolescent fans of Heavy metal versus non-fans (Scheel and Westefeld, 1999). This result was not found for boys.

The Current Study

The present study aimed to investigate the association between two different music preferences and internalizing problems. Peer acceptance was examined as a possible underlying mechanism, which has not been done before. From the research examined, it was expected that a pop music preference would be related to lower levels of internalizing problems (H1). Goth music would be related to higher levels of internalizing problems (H2). Peer acceptance would have a mediating role in this link (H3-4). Preferring goth music would lead to less peer acceptance (H3a) and therefore to more internalizing problems (H3b). A pop music preference was expected to be linked to higher peer acceptance (H4a) and therefore fewer internalizing problems (H4b). Finally, sex would moderate the relationship between music preference and internalizing problems, being stronger for girls compared to boys (H5).

Figure 1

Research model

Method

Participants and procedure

The data used in this study were derived from a 2017 study called the Dutch Health Behavior in School aged Children study (HBSC). This is a cross-sectional study that gathers quantitative data every 4 years. The HBSC-study collects data on youths' health behaviours, health, well-being, lifestyle and social contexts through digital questionnaires that youth fill in in their classroom. The HBSC-sample is representative of the Netherlands.

The Dutch HBSC-dataset consists of anonymous data from 8980 participants attending primary or secondary school. The 1595 participants attending primary school were not included in the current study, because they did not receive questions about music preference. 7450 secondary schoolers participated in the study of which 58 cases were excluded because of a high amount of missing values. An additional 518 cases were excluded because of missing values on relevant variables. This resulted in a sample with 6874 participants. No systematic response tendencies were found. Boxplots showed a few outliers, these were possible responses so they were not excluded. Participants were between 11 and 20 years old ($M = 14.7$; $SD = 1.65$). About half of the participants were girls (52%). Participants attended different levels of secondary school, VMBO b/k (14.5%), VMBO g/t (26.8%), HAVO (26.3%) and VWO (32.4%).

Measures

Pop and Goth Music

There are two independent variables in this study; liking pop music and liking goth music. For the assessment, participants could originally rate these genres on a five-point Likert scale, or indicate that they did not know the genre (1 = *dislike very much,* 5 = *like very much*). These variables were dichotomised because they were not normally distributed. Scores 1, 2 or 3 were transformed to a score 0, meaning the participant did not like the genre. Scores 4 and 5 were transformed to a score 1, indicating that the participant did like the genre.

Internalizing problem behaviour

The dependent variable in this study is internalizing problem behaviour. A Dutch version of the Strength and Difficulty Questionnaire (SDQ) was used (Muris et al., 2003). The subscale emotional problems was used to measure internalizing problems. This scale consists of 5 items. Participants were asked to what extent statements about emotional problems were true *(1 = not true; 2 = somewhat true; 3 = definitely true)*. The statements were: 'I often

experience headaches/ stomach aches/ nausea'; 'I worry a lot'; 'I am often unhappy/ down/ in tears'; 'I am often nervous in new situations'; 'I am afraid of many things/ get anxious easily'. A higher score indicated more internalizing problems. In previous studies the construct validity of the SDQ has been questioned (Goodman et al., 2010). The Cronbach's alpha for emotional problems was acceptable ($\alpha = .711$). Because this scale was not normally distributed, the binary variable was used. Scores 0-4 were transformed to 0, indicating a normal score. Scores 5-10 were transformed to 1, indicating an abnormal/ high score on internalizing problems.

Peer acceptance

To measure the construct peer acceptance 3 items from the SDQ subscale peer problems were used. Participants were asked to what extent statements were true (*1 = not true; 2 = somewhat true; 3 = definitely true*). Two items from the subscale were excluded because they did not measure peer acceptance. The questions included were: 'I have at least 1 good friend'; 'My peers generally like me' and 'I am bullied by others'. This last question was recoded. Mean scores were calculated. The Cronbach's alpha for peer acceptance was low ($\alpha = .358$). Again this scale was not normally distributed. Mean scores 1-2 were transformed to 0, indicating lower peer acceptance. Means scores 2-3 were transformed to 1, indicating higher peer acceptance.

Sex

Sex is taken into account as a moderator in this study. Sex was measured with the question 'Are you a boy or a girl?'. Participants could answer boy (1) or girl (2).

Data analysis

Data analyses were conducted using IBM SPSS Statistics 27. A syntax was used to create a replicable study. First the assumptions for binary logistic regression were checked. Then the hypotheses were tested using binary regression analyses following the model of Baron and Kenny (1986). These analyses were conducted to measure the direct association between pop music and goth music and internalizing problems. Additionally logistic regression analyses were conducted to determine the relation between goth and pop music and peer acceptance. Lastly, logistic regression analyses were conducted to determine the link between peer acceptance and internalizing problems and to determine the mediating role of peer acceptance.

Results

Descriptives

Internalizing problems were prevalent among 19.6% of the participants. 15% were girls and 4.6% were boys. 8.5% of the participants liked goth music and 63.6% liked pop music. In Table 1, bivariate correlations between the studied variables are shown. In line with expectations preferring goth/ emo music was positively related to internalizing problems. A pop/ top 50 music preference was not significantly related to internalizing problems. As expected goth and peer acceptance were negatively related, and pop and peer acceptance were positively related. These relations were significant.

Additionally, chi-square tests of independence were performed to examine the relation between gender and both internalizing problems and peer acceptance, as shown in table 2. Girls were significantly more likely to have internalizing problems, $X2 (1, N = 7356) = 460.086, p < .001$. This effect of gender on internalizing problems was small to medium, $\phi = .250$. Girls were also more likely to feel accepted by peers, $X2 (1, N = 7357) = 16.971, p < .001$. The effect of gender on peer acceptance was small, $\phi = .048$. These results confirmed that the relations between the variables might be different for boys and girls. Therefore data for boys and girls were analysed separately.

Table 1.

Spearman correlation matrix study variables and control variables

Variable	1	2	3	4
1.Internalizing problems				
2. Peer acceptance	-,140***			
3. Liking goth music	,123***	-,097***		
4. Liking pop music	-,002	,074***	-,002	
5. Gender	,250***	,048***	,065***	,208***

*Note. *p<0.05, ** p<0.01, ***p<0.001*

Table 2.

Differences between boys and girls on study variables

	Girls		Boys			
	N	%	N	%	X^2	phi
Internalizing problems absent	2675	36,4%	3242	44,1%		
Internalizing problems present	1104	15,0%	335	4,6%		
					460,086***	.250
Low peer acceptance	195	2,7%	268	3,6 %		
High peer acceptance	3585	48,7%	3309	45,0%		
					16,971***	.048

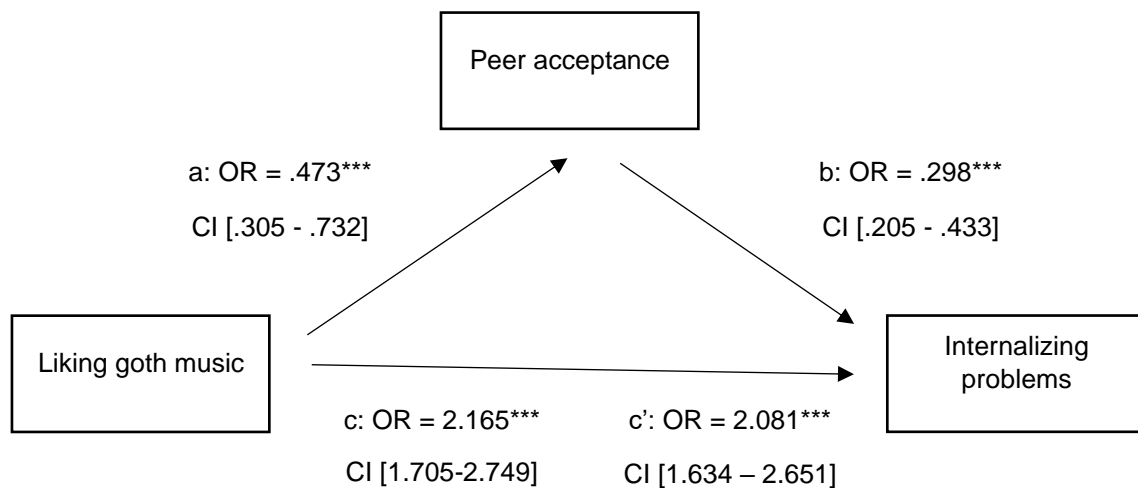*Note. *p<0.05, ** p<0.01, ***p<0.001*

Mediation analyses for girls

The hypothesis that the association between liking goth music and having internalizing problems is mediated by peer acceptance was tested by the mediation analysis as described by Baron and Kenny (1986). At each step of the mediation analysis, binary logistic regression analyses were conducted. The odds ratios and confidence intervals of the different paths are shown in figure 1. Table 3 shows additional results from the logistic regression analyses for girls. There was a significant direct effect of liking goth music on internalizing problems (path c; OR = 2.165; p < .001). If girls indicated liking goth music, they were 2.165 times more likely to report internalizing problems than when they did not like goth music. This finding is in line with the expectation. The effect of liking goth music on peer acceptance was also significant (path a; OR = .473; p = .001). It shows that girls who liked goth music were .473 times more likely to feel accepted by peers than girls who did not like goth music. Furthermore, the effect of peer acceptance on internalizing problems was significant (path b; OR = .298; p < .001) while controlling for liking goth music. Experiencing a higher peer acceptance made girls .298 times more likely to experience internalizing problems than girls experiencing lower peer acceptance. These findings support the hypotheses. Lastly, the effect of liking goth music on internalizing problems became smaller while controlling for peer acceptance yet remained significant (path c'; OR = 2.081; p < .001).
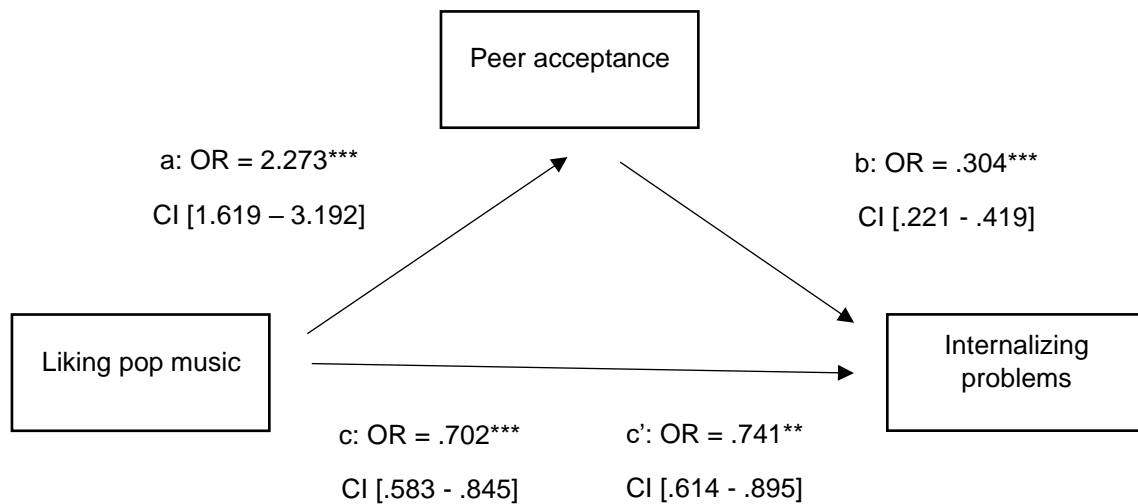
Using the same method; the hypothesis that the association between liking pop music and having internalizing problems is mediated by peer acceptance was tested. The odds ratios of the mediation analysis are shown in figure 2. The direct effect of liking pop music on internalizing problems was significant (path c; OR = .702; p < .001). Girls who liked pop music were .702 times more likely to report internalizing problems than girls who did not like pop music. The effect of liking pop music on peer acceptance was also significant (path a; OR = 2.273; p < .001). Girls who like pop music are 2.273 times more likely to feel accepted by their peers, than girls without a pop music preference. Additionally, the effect of peer acceptance on internalizing problems was significant, while controlling for liking pop music (path b; OR = .304; p < .001). Girls who experienced more peer acceptance were .304 times more likely to have internalizing problems than girls who experienced less peer acceptance. The effect of pop music on internalizing problems became smaller while controlling for peer acceptance, but it remained significant (path c'; OR = .741; p = .002). In conclusion, peer acceptance partially mediates the relationship between pop music and internalizing problems.

Figure 1

Peer Acceptance mediating Goth Music and Internalizing Problems for girls

*Note. *p<0.05, ** p<0.01, ***p<0.001*

Figure 2

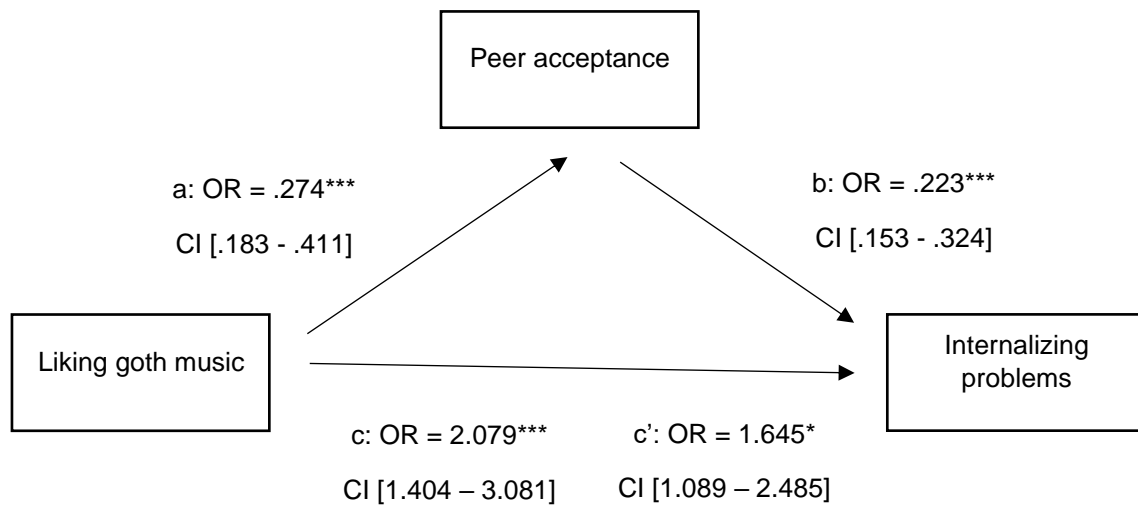*Peer Acceptance mediating Pop Music and Internalizing Problems for girls*

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                              ┌─────────────────┐
                              │ Peer acceptance │
                              └─────────────────┘
     a: OR = 2.273***                                    b: OR = .304***
     CI [1.619 – 3.192]                                  CI [.221 - .419]

┌──────────────────┐                              ┌──────────────────┐
│ Liking pop music │ ───────────────────────────> │   Internalizing  │
└──────────────────┘                              │     problems     │
        c: OR = .702***      c': OR = .741**       └──────────────────┘
        CI [.583 - .845]     CI [.614 - .895]
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*Note. *p<0.05, ** p<0.01, ***p<0.001*

Table 3

Logistic Regression Analyses for girls

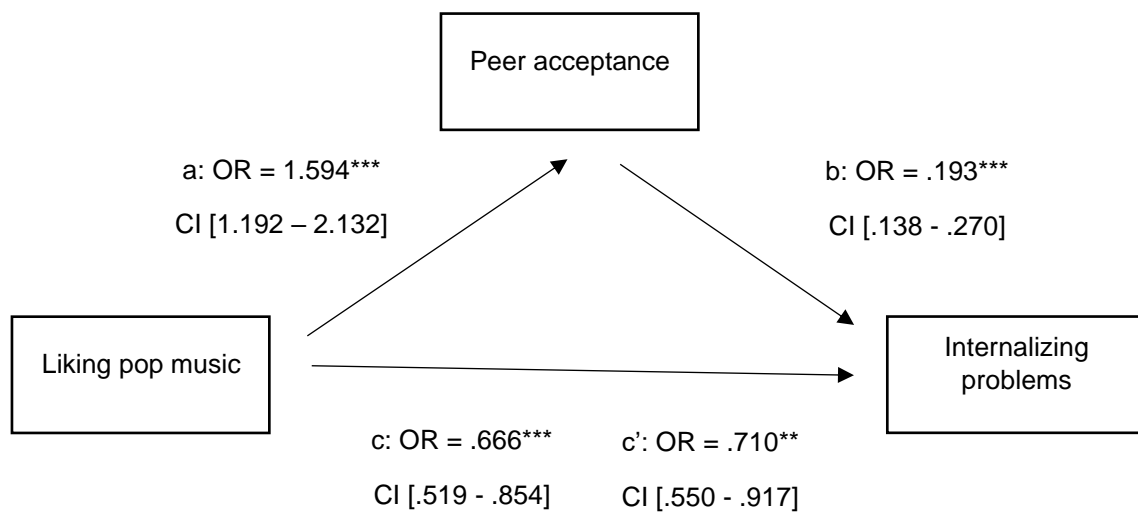| Paths	B	S.E.	Cox & Snell R2	Nagelkerke R2
C: goth/ emo → internalizing problems	.772	.122	.015	.022
A: goth/ emo → peer acceptance	-.749	.224	.004	.012
B: peer acceptance → internalizing problems; controlling for goth	-1.210	.190	.031	.044
C': goth/ emo → internalizing problems; mediator peer acceptance	.733	.123	.031	.044
C: pop/ top 50 → internalizing problems	-.354	.095	.004	.006
A: pop/ top 50 → peer acceptance	.821	.173	.006	.019
B: peer acceptance → internalizing problems; controlling for pop	-1.991	.163	.020	.028
C': pop/ top 50 → internalizing problems; mediator peer acceptance	-.299	.096	.020	.028

Mediation analyses for boys

For boys; the hypothesis that the association between liking goth music and having internalizing problems is mediated by peer acceptance was also tested through mediation analysis. The odds ratios and confidence intervals of the logistic regression analyses are shown in figure 3. Additional results are depicted in table 4. The main effect of liking goth music on internalizing problems was significant (path c; OR = 2.079; $p < .001$). Boys who liked goth music were 2.079 times more likely to report internalizing problems, than boys who did not like goth music. The effect of liking goth music on peer acceptance was also significant (path a; OR = .274; $p < .001$). As expected, boys were less likely to experience peer acceptance if they liked goth music, than when they did not like goth music. The effect of peer acceptance on internalizing problems was also significant, while controlling for liking goth music (path b; OR = .223; $p < .001$). Experiencing peer acceptance made boys .223 times more likely to report internalizing problem behaviour. When controlling for peer acceptance the effect of goth music on internalizing problems became smaller but was still significant (path c'; OR = 1.645 ; $p = .018$).

The same steps were followed for the hypothesis that the association between liking pop music and having internalizing problems is mediated by peer acceptance. The odds ratios are shown in figure 4. The direct effect of liking pop music on internalizing problems was significant (path c, OR = .666; $p = .001$). This means that, as expected, boys who like pop music are .666 times more likely to report internalizing problems than boys who do not like pop music. The effect of pop music on peer acceptance was significant (path a, OR = 1.594; $p = .002$). This means that boys who like pop music are 1.594 times more likely to feel accepted by their peers, than boys who do not prefer pop music. Additionally, the effect of peer acceptance on internalizing problems was significant, while controlling for liking pop music (path b, OR = .193; $p < .001$). Boys who experienced peer acceptance were .193 times more likely to report internalizing problems than boys who did not feel accepted by their peers. Lastly, when controlling for peer acceptance the effect of goth music on internalizing problems became smaller but remained significant (path c'; OR = .710; $p = .009$). All in all, peer acceptance partially mediates the relationship between pop music and internalizing problems.

Figure 3

Peer Acceptance mediating Goth Music and Internalizing Problems for boys

a: OR = .274***

CI [.183 - .411]

b: OR = .223***

CI [.153 - .324]

Peer acceptance

Liking goth music

Internalizing problems

c: OR = 2.079***

CI [1.404 – 3.081]

c': OR = 1.645*

CI [1.089 – 2.485]

*Note. *p<0.05, ** p<0.01, ***p<0.001*

Figure 4

Peer Acceptance mediating Pop Music and Internalizing Problems for boys

a: OR = 1.594***

CI [1.192 – 2.132]

b: OR = .193***

CI [.138 - .270]

Peer acceptance

Liking pop music

Internalizing problems

c: OR = .666***

CI [.519 - .854]

c': OR = .710**

CI [.550 - .917]

*Note. *p<0.05, ** p<0.01, ***p<0.001*

Table 4

Logistic Regression Analyses for boys

Paths	B	S.E.	Cox & Snell R2	Nagelkerke R2
C: goth/ emo → internalizing problems	.732	.201	.005	.011
A: goth/ emo → peer acceptance	-1.295	.206	.014	.035
B: peer acceptance → internalizing problems; controlling for goth	-1.502	.192	.027	.056
C': goth/ emo → internalizing problems; mediator peer acceptance	.498	.192	.027	.056
C: pop/ top 50 → internalizing problems	-.407	.127	.003	.007
A: pop/ top 50 → peer acceptance	.466	.148	.003	.008
B: peer acceptance → internalizing problems; controlling for pop	-1.664	.171	.028	.062
C': pop/ top 50 → internalizing problems; mediator peer acceptance	-.342	.130	.028	.062

Discussion

This study aimed to examine whether peer acceptance mediates the association between liking goth or pop music and internalizing problems. It was examined if these pathways differed for boys and girls. Mediation analyses confirmed relations between music preference, peer acceptance and internalizing problems. Peer acceptance partially mediated the relation between goth music and internalizing problems as well as the relation between pop music and internalizing problems. Almost all effects were similar for boys and girls. One effect seemed to differ in size. For boys, liking goth music seemed to impact their sense of being accepted by peers more than for girls. Still, for both boys and girls liking goth music was related to lower peer acceptance

Effects of pop music on internalizing problems

It was hypothesized that liking pop music would be linked to lower levels of internalizing problems (H1). The results showed that both boys and girls who liked pop music

were less likely to have internalizing problems than those who did not like pop music. It was expected that boys' music preference would have weaker links with internalizing problems (H3) than for girls. H3 was rejected because the relations for boys (OR = .666) and girls (OR = .702) were of similar strength. This contrasts previous empirical literature which has predominantly shown that girls' music preferences are more linked to their mental state than for boys. Several studies showed that preferring happy and mainstream music such as pop, soul, R&B or hip-hop was related to lower levels of depression only for girls, and not for boys (Miranda and Claes, 2008; Martin et al. 1993; Miranda and Claes, 2007).

The mood management theory has proposed that girls focus more on lyrics and use music more to regulate their state of mind (Miranda and Claes, 2007, 2009; North et al. 2000). Girls more often select music to enhance or match their mood than boys (Dillman Carpentier et al., 2008). In the introduction it was therefore theorized that girls choose pop music because it matches their happy feelings, or because it will make them feel happy. Therefore, girls' pop music preference could be more strongly related to internalizing problems than for boys.

 However, this is not the case in the current study. Boys and girls who like pop music are equally less likely to report internalizing problems than those who dislike pop music. Perhaps this can be explained by the way the mood management theory looks at the effects of music. This theory is based on the second perspective discussed in the introduction, which assumes that adolescents select music based on their characteristics (Arnett, 1995, 1999; Roe, 1995; Zillmann, 1988). The current findings might be better explained by the other two perspectives. These also take into account the impact that music has on adolescents rather than just the impact that their characteristics have on the music they choose (Hansen, 1995). Then results for boys and girls could be similar because boys and girls are equally impacted by music.

Mediating role of peer acceptance

It was hypothesized that liking pop music would be linked to more peer acceptance (H4a) and peer acceptance to fewer internalizing problems (H4b). Results indeed showed that peer acceptance partially mediated the relationship between pop music and internalizing problems for both girls and boys. The link between a pop music preference and peer acceptance can be explained by the music marker theory. This theory suggests that music preference plays an important role in forming friendships (Ter Bogt et al., 2013; Franken et al., 2017). Someone's music preference tells others about their values, attitudes and opinions (Boer et al., 2011). When these are shared it might lead to acceptance. It is more likely for

pop music lovers to recognize shared values in others based on music preference, as there are simply a lot more adolescents who like pop music. In the current study the majority of the adolescents indicated to like pop music (63.6%). Furthermore, a lower peer acceptance was linked to more internalizing problems, which is in line with several previous studies (e.g., Achenbach and Edelbrock, 1981; Steinhausen, and Metzke, 2001).

Effects of goth music on internalizing problems

It was hypothesized that liking goth music would be linked to higher levels of internalizing problems (H2). In line with this hypothesis, the results showed that both boys and girls who liked goth music were significantly more likely to have internalizing problems. This effect was of similar strength for boys (OR = 2.079) and girls (OR = 2.165).

This finding was not in line with hypothesis 3, which states that links would be stronger for girls than for boys. The majority of previous research reported higher links, or solely links between goth music and internalizing problems for girls (Martin et al., 1993; Miranda and Claes, 2007; Scheel and Westefeld, 1999). However, there are also studies that found links between boys' goth music preference and internalizing problems (Burge et al., 2002; Ter Bogt et al, 2020). Contrary to expectation based on the mood management theory, goth music does not seem to be less related to mood for boys.

Mediating role of peer acceptance

It was expected that liking goth music was linked to less peer acceptance (H4a) and therefore more internalizing problems (H4b). For both boys and girls, results showed that peer acceptance partially mediates the relationship between liking goth music and internalizing problems.

These results might be explained by the highly identifiable looks of many adolescents who like goth music (Bešić and Kerr 2009). Their appearance sets them apart from their peers. Therefore these peers might pick up less cues of shared values with goth loving adolescents. This can explain why adolescents who like goth music experience less peer acceptance. Furthermore, several previous studies have shown that a lower degree of peer acceptance has a negative effect on the mental health of adolescents (Achenbach and Edelbrock, 1981; Steinhausen and Metzke, 2001). This explains the mediating role of peer acceptance in the relation between goth music and internalizing problems.

The effect of liking goth music on peer acceptance seemed to be stronger for boys (OR = .274) than for girls (OR = .473). This indicates that liking goth music plays a bigger role for boys in whether or not they get accepted by peers than for girls. In a previous study boys were

more likely than girls to identify as belonging to the goth youth subculture (Young et al., 2006). Adolescents who identify with the goth youth subculture often also dress identifiably goth. If boys look goth more often than girls, their peers might sense less shared values and accept them less.

It is also possible that the goth aesthetic is overall less accepted for boys than for girls. Both male and female goths often wear make-up, skirts, jewellery, fishnet-tops and long hair (e.g., Hodkinson, 2007). All these go against the broadly accepted hetero-normative masculine style (Ragusa and Ward; 2017). More research is needed to examine whether the effect of liking goth music on peer acceptance differs significantly between boys and girls.

Furthermore, it could be interesting to gain understanding about why goth-loving adolescents feel less accepted by peers. Interestingly, this study shows that this difference in peer acceptance does not impact the relation between liking goth music and internalizing problems differently for boys and girls. More insight about the role of peer acceptance could contribute to the prevention of mental health problems as peer acceptance seems to be an important mediator for both boys and girls.

Strengths and limitations

This study has several strengths. Firstly, the sample size of the study is a clear strength. A big sample is especially important when researching goth music, because goth fans are relatively rare (8.5%). Another strength of the sample is its representativity of the Dutch population, which makes findings generalizable to Dutch youth. A limitation of this study is the cross-sectional design, which makes it impossible to infer causality between variables. Another limitation is the validity of the measurement of peer acceptance. The newly created scale had a low chronbach's alpha ($\alpha = .358$). In future research peer acceptance should be measured with a more reliable scale to draw more solid conclusions.

Additionally, the dichotomization of the variables is a limitation in this study. With dichotomizing variables some information is inevitably lost. For instance, participants originally reported how much they liked a certain music genre on a five-point scale. By dichotomizing this variable, the adolescents who said they liked the music and who said they liked the music very much were put into one category. Relations between variables could have differed for these adolescents. This applies for all variables included in the study. This loss of information might lead to a loss of power (Fedorov et al., 2009). However, this might not be a problem because of the large sample size.

Conclusion

This study contributes to scientific knowledge about goth and pop music and internalizing problems. For professionals working with young people it is helpful to know that liking goth music might be indicative of internalizing problems. On the other hand, liking pop music might indicate positive mental health. This knowledge can help in preventing or identifying internalizing problems early. Furthermore, peer acceptance turned out to be an important mediator for both boys and girls in the relation between goth and pop music and internalizing problems. More research is needed to understand exactly why peer acceptance is an important mediator. It would also be valuable to study these relations longitudinally, to gain understanding about the direction of the relationships.

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Appendix A – Interdisciplinarity

Bronfenbrenner's Ecological model states that there are several contexts that have an impact on a child's development (Bronfenbrenner, 1979). First, there is the microsystem, which consists of environments and people that are in direct contact with the child (Bronfenbrenner, 1979). In the case of internalizing problems of an adolescent a relevant factor on this level of the ecological model can be peer acceptance. As peer acceptance could be an important influencing factor on internalizing problems (Achenbach and Edelbrock, 1981; Steinhausen, & Metzke, 2001).The next layer of the model is the mesosystem. On this level it is about contact between groups in the microsystem (Bronfenbrenner, 1979). An example of this could be the contact between parents and school. For this current study factors on the mesosystem will not be examined. The exosystem can also be important for an adolescent's development. Factors in the exosystem are not in direct contact with the adolescent but do influence the child. Examples of factors in this system are politics or media. For this study the factor media is taken into account, in the form of music preference and its influence on mental health.

Earlier research has already shown a relationship between the two. For example Mulder et al. (2007) found that adolescents who prefer chart music report less internalizing problems. And they also found that adolescents who are exclusively fans of rock music experience more internalizing problems (Mulder et al., 2007).The last system layer in the ecological model is the macrosystem. This system entails the broader context in which the child grows up (Bronfenbrenner, 1979). Culture could be a good example. The culture could perhaps have an impact on the development of internalizing problems (Aldwin, Greenberger, 1987; Juhasz, et al., 2012). Or maybe culture also impacts the way music preferences are viewed. Music also plays a central role in youth cultures (Zillmann & Gan, 1997). This last point will be indirectly taken into account as peer relationships and (non-) mainstream music preferences might be tied to certain youth cultures.

Appendix B – Syntax

cases removed BO

DATASET ACTIVATE DataSet1.

USE ALL.

COMPUTE filter_$=(soort = 2).

VARIABLE LABELS filter_$ 'soort = 2 (FILTER)'.

VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.

FORMATS filter_$ (f1.0).

FILTER BY filter_$.

EXECUTE.

Checking assumptions, normality and outliers

EXAMINE VARIABLES=sdqem1 BY Peer_Acceptance_Mean v92a v92c

  /PLOT BOXPLOT STEMLEAF

  /COMPARE GROUPS

  /STATISTICS DESCRIPTIVES

  /CINTERVAL 95

  /MISSING REPORT

  /NOTOTAL.

REGRESSION

  /MISSING LISTWISE

  /STATISTICS COEFF OUTS R ANOVA COLLIN TOL

  /CRITERIA=PIN(.05) POUT(.10)

  /NOORIGIN

  /DEPENDENT sdqem1

  /METHOD=ENTER Peer_Acceptance_Mean v92a v92c

  /SCATTERPLOT=(*ZPRED ,*ZRESID)

  /RESIDUALS NORMPROB(ZRESID).

Dummy variables created music preferences

RECODE v92a v92c (2=0) (3=0) (4=0) (5=1) (6=1) (ELSE=SYSMIS) INTO v92aR_Dummy
v92cR_Dummy.

VARIABLE LABELS v92aR_Dummy 'Pop/Top50_Dummy' /v92cR_Dummy
'Gothic/Emo_Dummy'.

EXECUTE.

Hercoderen vraag 15: nu hoge score ook hoge peer acceptatie

RECODE v56_15 (1=3) (2=2) (3=1) INTO v56_15R.

VARIABLE LABELS v56_15R 'ik word gepest/getreiterd door anderen'.

EXECUTE.

meanscale peer acceptance

COMPUTE Peer_Acceptance_Mean=MEAN(v56_08,v56_11,v56_15R).

EXECUTE.

Dummy peer acceptance

RECODE Peer_Acceptance_Mean (1 thru 2=0) (2 thru 3=1) INTO PeerAcceptance_Dummy.

VARIABLE LABELS PeerAcceptance_Dummy 'PeerAcceptance_Dummy'.

EXECUTE.

*Chi square voor peer acceptance, internalizing problems and gender *

CROSSTABS

  /TABLES=v2 BY PeerAcceptance_Dummy sdqem3

  /FORMAT=AVALUE TABLES

  /STATISTICS=CHISQ PHI

  /CELLS=COUNT

  /COUNT ROUND CELL.

correlatie spearman

```
DATASET ACTIVATE DataSet1.
NONPAR CORR
  /VARIABLES=PeerAcceptance_Dummy v92aR_Dummy v92cR_Dummy
  /PRINT=SPEARMAN TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
```

only boys

```
 USE ALL.
COMPUTE filter_$=(v2 = 1).
VARIABLE LABELS filter_$ 'v2 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
```

only girls

```
   DATASET ACTIVATE DataSet1.
USE ALL.
COMPUTE filter_$=(v2 = 2).
VARIABLE LABELS filter_$ 'v2 = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
```

*Logistische regressie path c Goth *

```
LOGISTIC REGRESSION VARIABLES sdqem3
  /METHOD=ENTER v92cR_Dummy
   /PRINT=CI(95)
 /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

* logistische regressie path a: peer acceptance goth*

```
LOGISTIC REGRESSION VARIABLES PeerAcceptance_Dummy
  /METHOD=ENTER v92cR_Dummy
   /PRINT=CI(95)
   /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

* logistische regressie path b and C', goth*

```
LOGISTIC REGRESSION VARIABLES sdqem3
  /METHOD=ENTER PeerAcceptance_Dummy
  /METHOD=ENTER v92cR_Dummy
   /PRINT=CI(95)
   /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

Logistische regressie path c pop

```
LOGISTIC REGRESSION VARIABLES sdqem3
  /METHOD=ENTER v92aR_Dummy
   /PRINT=CI(95)
   /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

* logistische regressie path a: peer acceptance pop*

```
LOGISTIC REGRESSION VARIABLES PeerAcceptance_Dummy
  /METHOD=ENTER  v92aR_Dummy
   /PRINT=CI(95)
   /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

* logistische regressie path b and C', pop*

```
LOGISTIC REGRESSION VARIABLES sdqem3
  /METHOD=ENTER  PeerAcceptance_Dummy
  /METHOD=ENTER v92aR_Dummy
```

```
 /PRINT=CI(95)
 /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```